



# Psychological Applications and Trends 2022

Edited by  
Clara Pracana  
Michael Wang

# **Psychological Applications and Trends**

## **2022**

**Edited by:**

**Clara Pracana**

**&**

**Michael Wang**

*Edited by:*

- Prof. Clara Pracana, Full and Training Member of the Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy, Portugal,

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## FOREWORD

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This book contains a compilation of papers presented at the International Psychological Applications Conference and Trends (InPACT) 2022, organized by the World Institute for Advanced Research and Science (W.I.A.R.S.), held in Funchal, Madeira Island, Portugal, from 23 to 25 of April 2022.

Modern psychology offers a large range of scientific fields where it can be applied. The goal of understanding individuals and groups (mental functions and behavioral standpoints), from this academic and practical scientific discipline, aims ultimately to benefit society.

The International Conference seeks to provide some answers and explore the several areas within the Psychology field, new developments in studies and proposals for future scientific projects. The goal is to offer a worldwide connection between psychologists, researchers and lecturers, from a wide range of academic fields, interested in exploring and giving their contribution in psychological issues. We take pride in having been able to connect and bring together academics, scholars, practitioners and others interested in a field that is fertile in new perspectives, ideas and knowledge.

We counted on an extensive variety of contributors and presenters, which can supplement the view of the human essence and behavior, showing the impact of their different personal, academic and cultural experiences. This is, certainly, one of the reasons there are several nationalities and cultures represented, inspiring multi-disciplinary collaborative links, fomenting intellectual encounters and development.

InPACT 2022 received 364 submissions, from more than 35 different countries all over the world, reviewed by a double-blind process. Submissions were prepared to take the form of Oral Presentations, Posters and Virtual Presentations. 121 submissions (overall, 33% acceptance rate) were accepted for presentation at the conference.

The conference also includes:

- One keynote presentation by Prof. Dr. Ross White (Professor of Clinical Psychology, School of Psychology, Queen's University Belfast, Northern Ireland, United Kingdom).
- Two Special Talks, one by Dr. Ana Gaspar and Prof. Dr. Clara Pracana (both from the Portuguese Association of Psychoanalysis and Psychoanalytical Psychotherapy, Portugal), and one by Prof. Dr. Michael Wang (Emeritus Professor of Clinical Psychology, University of Leicester, United Kingdom).

We would like to express our gratitude to our invitees.

This year we also counted on the support of "Madeira Promotion Bureau", contributing to the success of the event and providing a pleasant experience to all InPACT 2022 participants. We would like to thank the "Madeira Promotion Bureau" for welcoming InPACT 2022 to its beautiful island.

The Conference addresses different categories inside Applied Psychology area and papers fit broadly into one of the named themes and sub-themes. The conference program includes six main broad-ranging categories that cover diversified interest areas:

- **CLINICAL PSYCHOLOGY:** Emotions and related psychological processes; Assessment; Psychotherapy and counseling; Addictive behaviors; Eating disorders; Personality disorders; Quality of life and mental health; Communication within relationships; Services of mental health; and Psychopathology.
- **EDUCATIONAL PSYCHOLOGY:** Language and cognitive processes; School environment and childhood disorders; Parenting and parenting related processes; Learning and technology; Psychology in schools; Intelligence and creativity; Motivation in classroom; Perspectives on teaching; Assessment and evaluation; and Individual differences in learning.
- **SOCIAL PSYCHOLOGY:** Cross-cultural dimensions of mental disorders; Employment issues and training; Organizational psychology; Psychology in politics and international issues; Social factors in adolescence and its development; Social anxiety and self-esteem; Immigration and social policy;

Self-efficacy and identity development; Parenting and social support; Addiction and stigmatization; and Psychological and social impact of virtual networks.

- **LEGAL PSYCHOLOGY:** Violence and trauma; Mass-media and aggression; Intra-familial violence; Juvenile delinquency; Aggressive behavior in childhood; Internet offending; Working with crime perpetrators; Forensic psychology; Violent risk assessment; and Law enforcement and stress.
- **COGNITIVE AND EXPERIMENTAL PSYCHOLOGY:** Perception, memory, and attention; Decision making and problem-solving; Concept formation, reasoning, and judgment; Language processing; Learning skills and education; Cognitive Neuroscience; Computer analogies and information processing (Artificial Intelligence and computer simulations); Social and cultural factors in the cognitive approach; Experimental methods, research and statistics; and Biopsychology.
- **PSYCHOANALYSIS AND PSYCHOANALYTICAL PSYCHOTHERAPY:** Psychoanalysis and psychology; The unconscious; The Oedipus complex; Psychoanalysis of children; Pathological mourning; Addictive personalities; Borderline organizations; Narcissistic personalities; Anxiety and phobias; Psychosis; Neuropsychoanalysis.

This book contains the results of the different researches conducted by authors who focused on what they are passionate about: to study and develop research in areas related to Psychology and its applications. It includes an extensive variety of contributors and presenters that are hereby sharing with us their different personal, academic and cultural experiences.

We would like to thank all the authors and participants, the members of the academic scientific committee, and of course, to the organizing and administration team for making and putting this conference together.

Looking forward to continuing our collaboration in the future,

Prof. Clara Pracana

*Full and Training Member of the Portuguese Association of Psychoanalysis and Psychoanalytic Psychotherapy, Portugal  
Conference and Program Co-Chair*

Prof. Michael Wang

*Emeritus Professor of Clinical Psychology, University of Leicester, United Kingdom  
Conference and Program Co-Chair*

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## KEYNOTE LECTURE

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### SUPPORTING THE MENTAL HEALTH NEEDS OF FORCIBLY DISPLACED PEOPLE

**Prof. Dr. Ross White**

*PhD, D.ClinPsy*

*Professor of Clinical Psychology, School of Psychology, Queen's University Belfast, Northern Ireland  
(United Kingdom)*

#### Abstract

The United Nations High Commissioner for Refugees (UNHCR) estimated that as of 2021 there were currently 84 million who have been forcibly displaced from their homes across the globe. The conflict in Ukraine has led to a further marked increase in these numbers. Mental health difficulties have been shown to be elevated in forcibly displaced people (including asylum seeking and refugee populations). Risk factors can be associated with events that occurred prior to, during, and after the migratory journey. Whilst there is recognition of the important impact that a history of traumatic events (e.g., torture, abuse and neglect) can have, social adversity in the form of 'daily stressors' (e.g., a lack of access to basic resources, isolation, lack of safety and security, family violence) is being increasingly recognised as an important determinant of the mental health of forcibly displaced people. Concerns have been raised about the potential medicalization of social adversity faced by displaced populations. There has also been a comparative lack of research investigating approaches that may be helpful for enhancing the quality of life and subjective wellbeing of forcibly displaced people. Psychosocial interventions and low-intensity psychological interventions can provide scalable opportunities for treating common mental disorders and promoting wellbeing. This presentation will focus on research studies that I have been involved in which have been undertaken in the EU and in sub-Saharan Africa to evaluate the efficacy of psychosocial interventions for forcibly displaced people. These projects have involved the linguistic and cultural adaptation of interventions and assessment measures. The implications that this research has for the integration of forcibly displaced people in the EU and beyond will be discussed. This will include a focus on conceptual frameworks that provide opportunities for situating determinants of mental health in the socio-political context in which forcibly displaced people live their lives, and not just risk- and protective-factors specific to the individual.

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#### Biography

Prof. Ross White (PhD, DClinPsy) is a Professor of Clinical Psychology at Queen's University Belfast. He is an expert in Global Mental Health. He was lead editor of 'The Palgrave Handbook of Socio-cultural Perspectives on Global Mental Health'. Ross has research collaborations with the World Health Organization and United Nations High Commissioner for Refugees investigating the efficacy of psychosocial interventions for reducing distress experienced by refugees particularly in the context and/or aftermath of humanitarian crises. He also has an interest in the processes involved in the linguistic/cultural adaptation of psychological therapies. Ross is the Principal Investigator on the ESRC/AHRC funded Community-based Sociotherapy Adapted for Refugees (COSTAR) project that is evaluating a psychosocial intervention for Congolese refugees living in Uganda and Rwanda. Ross was a co-investigator on the EU Horizon2020 funded Refugee Emergency: DEFinIng and Implementing Novel Evidence-based psychosocial interventions (RE-DEFINE) project that is evaluating a group-based guided self-help intervention for refugees and asylum seekers across the EU and in Turkey.



## SPECIAL TALKS

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### PSYCHOANALYSIS AND BUDDHISM: THE TRUE NATURE OF THE MIND

**Dr. Ana Gaspar<sup>1</sup>, & Prof. Dr. Clara Pracana<sup>2</sup>**

<sup>1</sup>MSc

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#### Abstract

This paper analyzes the nature of mind and the relationship between Psycho-analysis and Buddhism. On the side of Psycho-analysis, we will consider the three theories of W. R. Bion: The theory of thinking, the theory of knowledge and the theory of transformations.

On the side of Buddhism: The Buddha's four noble truths.

We hope to convey how the intercrossing of these two models of understanding the world and the mind can be fruitful and enlightening. We will see how Bion's concept of "O" is quite similar to what Buddhists refer to when they speak of the "true nature of the mind".

We'll also see the psychological benefits of meditation and its impact on the brain, analyzed by neuroscientists.

**Keywords:** *Freud, Bion, Dalai Lama, meditation, Buddhism, Psycho-analysis, truth, true nature of the mind, awakening, self-knowledge.*

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#### 1. Buddhism

One of the simplest definitions of Buddhism is that of a set of methods that help to develop the human potential through an understanding of the true nature of the mind. These methods include several practices - namely, meditation - and are proposed by the Dalai Lama, who refers to Buddhism, in a secular perspective, as a "science of the mind" (1).

Learning the Buddhist teachings begins with logical understanding. The Dalai Lama himself states that "Buddhist teachings are not simple mysticism; they are based on reason" (1). Reason is used to know the mind. This knowledge is not finished knowledge because it cultivates detachment from fixed ideas and habits.

For Buddhism, the pursuit of wisdom is not sufficient. It is necessary to learn from one's own experience (e.g., the experience of meditation). "Buddhists do not believe in the Buddha's teachings simply because he expounded them. We approach the teachings with a skeptical attitude and then investigate whether they are correct" (1). Without experience we cannot verify the teachings.

Essentially, Buddhism is based on the idea that the mind precedes all things and that we are the ones who create the reality we live in. Therefore, we must question what world we are building in our heads. And that's exactly where Prince Siddhartha Gautama started, when he sat meditating by a tree. And he did something very promising: he disobeyed and investigated.

S. Gautama decided to break the then current rules that aimed to achieve salvation and went in search, by himself, for the solution to suffering. To this end, he decided to start investigating precisely where suffering began: his own mind. He sat by a tree meditating for several days, and found what he was looking for: freedom from suffering and a clear vision of reality, the ultimate reality. S. Gautama awoke recognizing that ultimate reality is the true nature of the mind. He became enlightened, attained Nirvana, became Buddha, good metaphors for what in the 21st century could be called a state of awakened consciousness.

## 2. Freud and the Neurosciences

Bringing psychoanalysis and Buddhism together can elicit a vague, somewhat neurotic feeling of heresy among Freud's heirs. The description to Freud by French writer and Nobel laureate in Literature Romain Rolland of the mystical state he had experienced, is well known. In the description, Rolland used the masterful poetic image of "oceanic feeling". Freud diagnosed a regression "to a primitive stage of the feeling of the ego" (2), a primary ego feeling. Freud hypothesized that elements of the primitive ego - which are undifferentiated from the world - could be preserved in the adult, along with all the transformations that usually follow in mental development.

In this regard, Goleman and Davidson (3) point out that at the time, Freud did not have the means to ascertain that the state of consciousness reached by Rolland would be identical to the one observed and named today, using advanced imaging techniques, as a high synchronization state.

These authors also noted, when studying the brain of a Tibetan Buddhist monk (Yongey Mingyur Rinpoche) in a state of compassion meditation, a sudden and massive burst of electrical activity that lasted the entire time of the meditation (and the monk did not move a single millimeter), as well as a whole minute of gamma waves activity (revealing a high-amplitude synchrony that emerges at the moment when different brain regions fire in harmony - like what happens in moments of intuition, when different pieces of a mental puzzle "fit" together), in contrast to "normal" people, who only manage to reach a maximum of 12 seconds when they have an episode of creative intuition.

Furthermore, the brain of this 41-year-old monk was close to that of a 33-year-old one. These authors' thesis is that they found a true "altered trait" - within the framework of recent discoveries on neuroplasticity - like a neuronal signature that shows a lasting and revealing transformation, not of a regression to early stages of development, but of a functional excellence never found before.

## 3. William James, mindfulness, and the awakening of consciousness

Epstein (4), an author who has studied the relationship between Buddhism and Western psychology, says that at the beginning of the 20th century, William James had already been impressed by the essential psychological dimension of the Buddhist experience and predicted that it would have a major influence on Western psychology. However, this did not happen, at least in the times that immediately followed.

It was Freud who had a great impact on Western psychology, and furthermore, after the split with Jung, oriental thought would eventually be demoted, and would end up being encompassed in what later came to be called "alternative therapies".

Recently, the West became interested in Buddhism again, what was evident in the attention shown in the study of meditation practices and their application to psychotherapies, such as the Mindfulness program (created in 1979 by Jon Kabat-Zinn) and its connection to Cognitive-Behavioral Therapies. However, the reflection we want to bring here, is not a proposal of a psychotherapeutic model, but a possibility of looking at the nature of the mind, through the convergence of the path presented by Buddhism and a model of contemporary psychoanalysis, specifically the theories of W. Bion. Following this, we will hypothesize about the benefits of Buddhist meditation practices, not for patients seeking psychotherapy, but for psychoanalysts and psychotherapists.

In order to produce this hypothesis, we are going to make a very simple and direct connection between the Four Noble Truths that constitute the foundations of Buddhism and the three fundamental theories of Bion.

## 4. The four noble truths

Upon awakening, Siddhartha Gautama must have realized the overwhelming impact of his discovery and remained silent for a while, probably not knowing how he was going to convey it. It's not difficult to understand, in the beginning of the 21st century, Buddha's hesitations 2500 years ago, for what he had to show was the reality of our suffering, and for what his proposal was to examine our minds with such frankness that we would prefer not to do it. This is what we find in clinical practice. It is what we find within us, if we examine our minds carefully.

- **First noble truth: recognize suffering:** If we want to be free from suffering, the first Noble Truth tells us that the first thing to do is to recognize suffering itself, from the most obvious, e.g., physical pain, going through to the suffering due to the permanent change of the states of pleasure and happiness, because they simply don't last and then comes frustration; and finally, a deeper suffering, which has to do with a profound ignorance about our true nature.

• **Second noble truth: attachment, aversion and dualism:** The Second Noble Truth presents the causes of suffering. For the Western world, suffering is the experience of physical or psychological pain. For Buddhism, suffering happens for the simple fact that we maintain an existence of illusion and ignorance about our own Self. Everyone, without exception, yearns to improve their state. And the overwhelming majority look for that even in external objects. In doing so, attachment ensues, to things, status, or pleasure. At the same time, this mindset creates rejection and aversion to what is unpleasant. In this way, our idea of Self is linked to craving and rejection which is itself a form of suffering that causes more suffering.

We are ignorant because we place our Self at the center of all phenomena, as a distinct entity, separate from others. The truth is that this perception is omnipresent in us. This is how we see ourselves and how we see reality all the time. Acknowledging this ignorance is no easy task.

• **Third noble truth: impermanence and interdependence:** The Third Noble Truth says that the causes of suffering or dissatisfaction can be eliminated. And for that it is necessary to eradicate the ignorance that upholds the separation between the Self and Others.

This idea of separation or dualism is linked to the conviction of the permanence and independence of phenomena. If we are willing to think clearly and rationally about reality, we realize though that everything is always changing, that is, everything is impermanent, and that everything is connected to everything, that is, all things are interdependent. When there is a change in one part, however insignificant it may be, everything changes because everything is connected.

• **Fourth noble truth: awakening of consciousness:** The possibility of eradicating suffering is reaffirmed in the fourth Noble Truth. This Truth introduces a path that leads to the liberation from ignorance, which involves freeing ourselves from a cycle of wandering around the Self, through a very deep knowledge about ourselves and about reality. It is an awakening of consciousness.

We know that one of the great unsolved mysteries of science is consciousness. Neuroscientists who knew nothing about meditation joined contemplatives who knew nothing about the brain, and the recent discipline of contemplative neuroscience was created. The meeting between these two sides took place for the first time formally in 1987 at the Mind and Life Institute (5) conference, organized by biologist Francisco Varela, with several other scientists and the Dalai Lama himself.

In 1989, another conference dedicated to the intersection of neurosciences and Buddhism took place. One of the neuroscientists, A. Damásio, who hypothesizes that consciousness is built in the brain, based his research on the brain. On the Buddhist side, it was mentioned that research on consciousness can be done directly. Buddhists enter highly concentrated meditative states and observe their nature.

The two positions seem irreconcilable insofar as they start from completely different assumptions, but the dialogue continues today.

If Freud inflicted the third blow on humanity's self-centeredness by claiming that with the discovery of the unconscious, the ego was no longer master of its own house (6), Buddhism goes a step further by claiming that, more than that, the ego is an illusion. The Self is, as we have seen, devoid of inherent and permanent existence, and to not recognize this is a cause of suffering. For Buddhism there is no distinction between conscious and unconscious; instead, different degrees of clarity and subtlety of consciousness are proposed, ranging from gross (brain-dependent) consciousness to subtle or primordial (brain-independent) consciousness (7).

It's not possible to use words to objectively describe primordial consciousness, although it is possible to recognize it through meditative experience. It's about recognizing something that is already there, and always has been.

The path that the Fourth Noble Truth points to is this awakening of consciousness, a path that gives us access to the true nature of the mind. It is precisely this awakening of consciousness that we will address in a cross analysis between W. Bion's psychoanalysis and Buddhism.

## 5. W.R. Bion's Psychoanalysis

W.R. Bion (1897-1979) was an English psychoanalyst who grounded his psychoanalytic model on the theories of S. Freud and M. Klein. The evolution of his work shows however that he would eventually move away from his antecessors and develop an original thought.

Bion was born in India to a traditional English family and was raised by an Indian nanny until he was 8 years old. Several authors mention this fact to hypothesize an influence and innovative relationship of eastern culture with his familiar western culture. No other psychoanalyst developed as he did the question of the true nature of the mind.

What we intend to show is the possibility of making a direct, simple, and immediate connection between the Four Noble Truths and the three main theories of W. R. Bion's psychoanalysis: the Theory of Thinking, Theory of Knowledge and Theory of Transformations. Furthermore, we want to show how, through these theories, Bion arrived at the true nature of the mind that coincides with the Buddhist proposal.

## **6. Theory of thinking and the first noble truth**

Thinking is central to Bion's psychoanalysis. Bion took a conceptual leap in relation to the classical Freudian psychoanalysis themes on the origin of sexuality or of conflicts between psychic instances and described psychopathological manifestations as disturbances in mental growth in which thought is stunted and does not develop.

Emotions are a part of this theory insofar as they are inseparable from thought. One of the most relevant examples of this connection is the dilemma that arises in the mind in the face of emotions that bring suffering: How can thought deal with the emotion of pain? For Bion, we have two options: fight or flight. If we run away, thought loses fluidity, gets stuck in the associative process, painfully repeats itself and there is no mental growth. This generates symptoms that can take many forms. Basically, all psychopathology can be reduced to the escape - more or less severe - from mental pain. If we face it, however, we develop thoughts, we develop new mental associations and we develop knowledge. This is how the mind grows, adapts, and transforms.

Between the Theory of Thinking and the First Noble Truth, the relationship could not be more direct, as the central point of both is the need to recognize suffering; otherwise, it will persist.

## **7. Theory of transformations and the third and fourth noble truths**

The Theory of Transformations identifies two types of transformation: the transformation we saw earlier, which is related to the knowledge link K and that simply refers to "knowing anything"; and the transformation that is in relation to the true nature of the mind. Bion designates this true nature by "O" and says that "O" represents the absolute immanent truth of any object; the human being does not know it; but one feels it and recognizes its presence, although unknowable. "O" is about becoming (8). What he means is that we can make a transformation beyond the mere knowledge of things. We can make transformations towards our true nature, but we cannot do it through simple knowledge. We can only do this by recognizing or feeling the presence of this truth in us. We can only access the true nature of our mind by becoming one with it. This is the pivotal point of resemblance to Buddhism, as it becomes evident that this "O" or ultimate reality or true nature of the mind is the primordial consciousness that we have just seen in Buddhism.

The Fourth Noble Truth points the way to the liberation from suffering through the recognition of consciousness. So, what are we talking about when we say liberation from suffering? We are talking about the transformations in "O" - for Bion; and the recognition of primordial consciousness - to Buddhism. Bion's intuition is close to Buddhism, as what is at stake here is not reaching "O", it is precisely recognizing something that is already in us.

## **8. The path of meditation**

So, we need to ask: What is the way to eliminate suffering and access the high-resolution state of lucidity of our consciousness? The Buddhist proposal is meditation.

Meditation appears to be an extraordinarily simple practice. It has the magic of being so basic and repetitive while simultaneously taking us to such heightened states. Meditation is being aware, it is observing what goes on in the mind. The focus can be any mental phenomenon, the sensation of breathing, a sound, a visual object, the flow of thoughts or consciousness itself. Observing the mind with awareness is the only way to detect mental activities. So, in meditation, we watch the thoughts/mental images arise and dissipate.

Currently, studies on the benefits of meditation abound. For example, Goleman and Davidson, report that with 8 minutes of meditation there is a temporary decrease in mind wandering, and with 30 minutes a day there's an improvement, in the short term, in both concentration and working memory. Also, after about 30 hours, spread over 8 weeks, the amygdala shows slowed reactivity meaning a significant improvement in stress reduction.

Meditation may have contraindications. The most obvious is that only a sufficiently strengthened Self will be able to free itself from the excesses of Self. Therefore, the proposal we leave here is not to recommend meditation for patients, but, as we have already mentioned, for psychoanalysts and psychotherapists.

## 9. How can meditation help the psychoanalyst/ psychotherapist?

Bion made a very specific recommendation to analysts. He mentions that for the analyst to be focused on “O”, a great amount of discipline is necessary. Such a discipline requires liberation from two types of mental phenomena: memory and desire. Memory is an attachment linked to the past; desire is an attachment linked to the future. The psychoanalyst's mind, stripping itself of past and future, becomes infinite.

As in the Buddhist perspective, the analyst achieves an open and receptive state of consciousness. Our hypothesis is then that this state can help psychoanalysts and psychotherapists to welcome the minds of their patients in a truer way.

We end with the following reflection: Buddhism and Bion's psychoanalysis lead us to the recognition of the true nature of our minds. To become who we truly are.

### *References*

- (1) Dalai-Lama (2019). Fúria. Ed. Marcador. Lisboa.
  - (2) Freud, S. (1997). Mal estar na civilização. Ed. Imago. Rio de Janeiro. P.19.
  - (3) Goleman, D; Davidson, R. (2018). Traços alterados. Ed. Círculo de leitores. Lisboa.
  - (4) Epstein, M. (1995). Thoughts without a thinker.
  - (5) Goleman. D. (2015). A force for good – The Dalai Lama's vision for our world. Trad. Portuguesa: “Uma força para o bem. A visão do Dalai-Lama para o nosso mundo”, Ed. Círculo de Leitores. Lisboa.
  - (6) S. Freud. (1917). Uma dificuldade da psicanálise. In: Obras completas vol. XIV, p.271 E. Imago. Rio de Janeiro.
  - (7) Wallace, A. (1999). Consciousness at the Crossroads”. Trad. Portuguesa “os caminhos cruzados da consciência. Conversas com o Dalai Lama sobre ciência do cérebro e budismo”. 2001. Ed. Asa. Lisboa.
  - (8) Bion, W. (1970): Attention and interpretation. Trad. Portuguesa: Atenção e interpretação. 1991. Ed. Imago. Rio de Janeiro. P.40.
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### **Biographies**

**Ana Gaspar** studied Psychomotricity, Clinical Psychology and Philosophy of Science. She is a Psychoanalyst, with also a training in Psychodrama, Family Therapy, EMDR Therapy and Clinical Hypnosis. She has been interested in the relationship between Psychoanalysis and Poetic Imagination, which led her to publish a book about this topic and Gaston Bachelard Philosophy. Recently, she started focusing her research on the relationship between Psychoanalysis and Buddhism. At the moment, she works as a Clinical Psychologist at Nova University of Lisbon.

**Clara Pracana** is a psychoanalyst, a psychotherapist, a coach and a lecturer. She was born in the Azores, Portugal. She has a PhD in Applied Psychology (UNL, 2008), a Masters in Clinical Psychology and Psychopathology (ISPA, 2000), an MBA (UNL/Wharton School, 1982) and honors in Economics (ISEG, 1976). She teaches organizational behavior as an Invited Professor at ISMAT, Portugal, and is part of its scientific committee. She is a regular lecturer of psychoanalytical topics at APPPP, Portugal. She is also a tutor with the Lisbon MBA (UNL/UCL) and ISEG. She is a founding and training member of the Portuguese Association of Psychoanalysis and Psychoanalytical Psychotherapy as well as a member of the Portuguese Psychoanalytical Society, of the International Coaching Community (ICC) and of the American Psychological Association (APA). As a psychoanalyst, a counselor and an international certified coach, she has a private practice in Lisbon. Her research addresses guilt and shame, depression, emotional intelligence, leadership, change, motivation and group dynamics. She has published several papers and four books, mainly on psycho-analysis

# **30 YEARS AS A PSYCHOLOGIST WORKING ON THE PROBLEM OF ACCIDENTAL AWARENESS DURING GENERAL ANAESTHESIA AND SURGERY: A REFLECTION**

**Prof. Dr. Michael Wang**

*Emeritus Professor of Clinical Psychology, University of Leicester (United Kingdom)*

## **Abstract**

In 1989, having recently arrived in the Department of Psychology, University of Hull, England, I was approached by a local consultant anaesthetist, Dr Ian Russell: he had noticed that his American colleagues were collaborating with psychologists and wondered whether I might be interested. Thus began a thirty-year voyage of adventure and discovery into the nature of consciousness through the lens of general anaesthesia. It turned out that Dr Russell was one of only a handful of anaesthetists in the world conducting research with the Isolated Forearm Technique, which provides a window into consciousness and cognitive function during anaesthesia. I will summarise some of the highlights of the work, whilst also describing my experiences as a psychologist in the operating theatre, culminating in the award of the Humphry Davy Medal by the Royal College of Anaesthetists in 2015.

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## **Biography**

Prof. Michael Wang, BSc(Hons), MSc(Clin.Psy), PhD, C. Psychol., FBPsS, is Emeritus Professor of Clinical Psychology in the Clinical Psychology Unit, Centre for Medicine, University of Leicester, and former Director of the National Health Service-funded Doctoral Postgraduate Clinical Psychology Training Course (2005-2014). He is a former Chair of the Division of Clinical Psychology of the British Psychological Society. Prof. Wang is also a full practitioner member of the BPS Division of Neuropsychology and a member of the BPS Division of Health Psychology. He is Chair of the Association of Clinical Psychologists UK.

He has worked as a clinical psychologist for 40 years. Prior to his appointment in Leicester he was Director of the 6-year, integrated Doctoral Clinical Psychology Training Course at the University of Hull. Throughout his academic career he has maintained an Honorary Consultant role in the NHS, treating patients with anxiety disorders, depression and obsessional compulsive disorder. He has more than 20 years' experience of examining patients with traumatic brain injury for the UK courts.

He obtained his three degrees from the University of Manchester: following graduating with a BSc in Psychology in 1978 he began his professional postgraduate training in Clinical Psychology in the Faculty of Medicine. Subsequently he completed a research PhD in 1990 which investigated learning and memory in alcoholics.

Over recent years Prof Wang has gained an international reputation for his research on cognitive and memory function during general anaesthesia. In 2004 he organized the 6th International Symposium on Memory and Awareness in Anaesthesia and Intensive Care (in Hull) – the foremost international forum for clinical research in this particular field. He has held appointments on a number of prominent committees in the British Psychological Society including the professional accrediting body for clinical psychology training, and a committee that is in the process of determining national standards for competence in the use of neuropsychological tests. He has served as an expert advisor on a NICE (UK) Committee in relation to the monitoring of depth of anaesthesia and also as an expert member of the Royal College of Anaesthesia's National Audit Project 5 (a national audit of anaesthetic awareness reports). In 1999 he was made Fellow of the British Psychological Society and is also a Fellow of the Royal Society of Medicine.

In 2015 he was awarded the Humphry Davy Medal by the Royal College of Anaesthetists for his contribution to the understanding of accidental awareness during general anaesthesia.

Prof. Wang has published more than 60 papers in peer-reviewed journals, and numerous book chapters. He has been an invited speaker at international conferences on more than 30 occasions. In collaboration with colleagues, he has won more than £1.2 million in research funding. He has supervised more than 40 doctoral research projects over the past 25 years. He has been a regular contributor and session chair at recent InPACT conferences, and recently joined the conference team as a co-organiser.



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# ORAL PRESENTATIONS



## MALADAPTIVE COGNITIONS AND EMOTIONAL REGULATION IN PTSD

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### Abstract

**Background:** PTSD causes alterations in cognitive functioning like in emotional regulation and the production of cognitive distortions.

**Objective:** To determine how PTSD impacts emotional regulation and the production of cognitive distortions.

**Method:** An intergroup comparison was performed on the 180 participants divided into 3 groups. First group (n=60) was recruited from a psychotrauma center, second group (n=60) was recruited from victim support associations, and third group (n=60) was recruited from the general population. All participants completed a questionnaire validated by the ethics committee, including the PCL-5, LEC 5, CERQ, DES, and EDC-A.

**Results:** Outcomes indicate that individuals with PTSD produce more negative cognitive distortions and use more maladaptive emotion regulation strategies. Furthermore, the production of negative cognitive distortions and maladaptive emotion regulation strategies are positively correlated. This relationship maintains the severity of PTSD symptoms.

**Conclusion:** The results confirm that the PTSD group has the most unfavorable clinical picture, which gives indications on the management to be put in place. Moreover, the presence of the intermediate group remains relevant since it allows us to identify changes in the observed alterations. It would be relevant to extend the experimental design used here to the study of traumatic events that may cause a specific type of disorder.

**Keywords:** *Post-Traumatic stress disorder, emotion regulation, cognitive distortions.*

### 1. Introduction

Posttraumatic stress disorder is known to have comorbidities with cognitive functioning, including cognitive distortions (Cieslak et al., 2008) and emotion regulation (Radomski, 2016). This disorder is characterized by various symptoms such as re-experiencing, avoidance, persistence of negative cognitive impairments or hypervigilance and mood disorders (anxiety and depression).

Initially, cognitive distortions refer to erroneous thoughts that cause an individual to perceive events inappropriately (Beck, 1995). Negative automatic thoughts about the self, the environment and the future are induced by dysfunctional thinking (Ellis, 1958). Moreover, cognitive distortions are linked to the development of mental disorders such as anxiety and depression (Franceschi, 2007).

We rely on Franceschi's (2007) conceptual model, which is built around three concepts: 1) the reference class, which is a set of events, phenomena or stimuli in general; 2) the principle of duality, which makes it possible to characterize an event in the reference class according to a dichotomy between two poles (positive/negative; internal/external...). And finally, 3) the taxon system which encompasses the first two points, this refers to the way in which individuals classify the elements of the reference class according to a given duality.

Franceschi (2007) distinguishes between general cognitive distortions (dichotomous reasoning, maximization, minimization, arbitrary focus, omission of the neutral, and reclassification into the other pole) and specific distortions, defined as instances of general distortions (disqualification of one of the poles, selective abstraction, and catastrophism). Experimental research has shown that interventions to alter negative cognitions after trauma can lead to more positive beliefs. However, by distorting negative cognitions, the mechanisms activate the response element that causes individuals to re-experience the intense emotion associated with the trauma (Owens et al., 2008). This mechanism is the reason why trauma-induced disorders are inextricably linked to emotional disorders (Gratz & Roemer, 2004).

Emotion regulation is "the process by which individuals influence what emotions they have, when they have them, and how they experience and express those emotions" (John & Gross, 2004). Several studies (McDermott, Tull, Gratz, Daughters, & Lejuez, 2009; Tull, Barrett, McMillan, & Roemer, 2007) have reported that PTSD symptoms are associated with more limited access and less ideal use of emotion regulation strategies (Weiss, Tull, Anestis, & Gratz, 2013). This is what leads to unsuccessful efforts to avoid negative experiences (Salters-Pedneault, Tull, & Roemer, 2004; Radomski & Read, 2016). Finally, emotion regulation has been shown to identify individuals who have experienced trauma but have not developed PTSD, as opposed to those who have been exposed to trauma and have developed PTSD (Weiss, Tull, Davis, Dehon, Fulton, & Gratz, 2012).

In sum, the literature has shown that the interactions between emotional regulation strategies and cognitive distortions in individuals with PTSD are not fully explored. First, we hypothesize that PTSD severity is positively correlated with disruptions in (maladaptive) emotional regulation strategies and cognitive distortions. Second, we hypothesized that the production of cognitive distortions was negatively correlated with the use of maladaptive emotional strategies. Thus, the purpose of the study is to demonstrate the impacts of PTSD on cognitive functioning, particularly on emotional regulation and the production of cognitive distortions.

## 2. Methods

The study and procedures were approved by the ethics committee (Comité d'Ethique de la Recherche Tours-Poitiers, n°2019-11-06). The participants were clinical participants (group 1) recruited after psychiatric consultations in a university hospital. They had experienced a traumatic event in the previous year, had been diagnosed with PTSD for more than 3 months by a qualified psychiatrist (WEH) based on a structured clinical interview, and had been in unchanged treatment/therapy for at least 4 weeks. Group 2 participants (exposed without PTSD) had experienced a traumatic event but had not developed PTSD. Finally, non-clinical participants (Group 3) were recruited through notices posted on university bulletin boards and social media, with no history of a traumatic event or ongoing treatment/therapy. Exclusion criteria for all participants included age, all participants were over 18 years of age, and did not have a history of neurological or mental health disorders (e.g., bipolar disorder, substance use disorders, schizophrenia and psychotic disorders, major depressive disorder) and substance abuse. All participants completed the entire experiment face-to-face with the examiner in a quiet environment. They answered some sociodemographic questions and completed the following scales: PCL-5 (posttraumatic stress disorder), DES-T (dissociation), EDC-A (cognitive distortions) and, CERQ (emotional regulation).

Data were collected anonymously; each participant was assigned a unique, random code. The reason for this was to respect the confidentiality of the participants. The average time to complete the questionnaire was 45 minutes.

## 3. Results

Table 1. Descriptive statistics of all variables for the three groups. Variables are expressed as Means (SD).

|  | Exposed PTSD<br>(N=60) | Exposed non-PTSD<br>(N=60) | Control group<br>(N=60) | F (2,181)  |
|--|------------------------|----------------------------|-------------------------|------------|
| <b>Age</b>                               | 35.86 (13.14)          | 34.01 (11.80)              | 34.28 (11.91)           | 0.40 ns    |
| <b>Psychopathology</b>                   |                        |                            |                         |            |
| <i>PCL-5, PTSD score</i>                 | 53.10 (9.35)           | 17.33 (11.81)              | 2.57 (5.90)             | 464.22 *** |
| <i>DES-T, Dissociation score</i>         | 18.96 (18.12)          | 8.50 (10.84)               | 3.41 (7.12)             | 22.78***   |
| <b>Emotion regulation, CERQ scores</b>   |                        |                            |                         |            |
| <b>Maladaptive strategies</b>            | 46.80 (10.09)          | 34.58 (10.93)              | 32.16 (8.93)            | 36.75***   |
| <i>Self-blame</i>                        | 10.61 (5.00)           | 8.41 (3.76)                | 9.08 (3.42)             | 4.50***    |
| <i>Rumination</i>                        | 15.36 (3.23)           | 11.15 (4.28)               | 9.98 (4.10)             | 31.56***   |
| <i>Catastrophizing</i>                   | 11.60 (3.34)           | 8.05 (3.79)                | 6.43 (2.49)             | 39.50***   |
| <i>Other-blame</i>                       | 9.21 (4.87)            | 6.96 (2.95)                | 6.66 (2.18)             | 9.40***    |
| <b>Adaptive strategies</b>               | 63.33 (13.44)          | 63.68 (14.85)              | 62.10 (14.73)           | 0.20 ns    |
| <i>Acceptance</i>                        | 15.01 (3.63)           | 13.36 (4.11)               | 12.55 (3.88)            | 6.28***    |
| <i>Positive refocusing</i>               | 11.16 (3.91)           | 11.06 (4.08)               | 10.60 (3.95)            | 0.34 ns    |
| <i>Planning</i>                          | 12.91 (3.65)           | 13.48 (3.88)               | 12.86 (3.89)            | 0.48 ns    |
| <i>Positive reappraisal</i>              | 11.45 (4.37)           | 12.46 (3.86)               | 12.45 (3.96)            | 1.22 ns    |
| <i>Putting into perspective</i>          | 12.78 (4.15)           | 13.30 (4.29)               | 13.63 (3.84)            | 0.65 ns    |
| <b>Cognitive distortions, CDI scores</b> |                        |                            |                         |            |
| <b>CD positive</b>                       | 65.58 (18.01)          | 63.96 (14.76)              | 65.20 (17.38)           | 0.15 ns    |
| <i>Dichotomous reasoning +</i>           | 21.35 (6.24)           | 23.45 (5.14)               | 23.53 (5.20)            | 2.98 ns    |

|                                  |               |               |               |         |
|----------------------------------|---------------|---------------|---------------|---------|
| <i>Disqualification pole +</i>   | 7.85 (5.79)   | 7.05 (4.58)   | 6.53 (4.82)   | 1.01 ns |
| <i>Omission of the neutral +</i> | 8.36 (5.11)   | 8.16 (5.00)   | 8.98 (4.45)   | 0.45 ns |
| <i>Requalification pole +</i>    | 6.46 (6.01)   | 4.10 (4.66)   | 5.01 (6.05)   | 2.70 ns |
| <i>Minimization +</i>            | 8.40 (5.91)   | 7.81 (4.59)   | 8.16 (4.81)   | 0.19 ns |
| <i>Maximization +</i>            | 6.95 (4.40)   | 6.96 (5.05)   | 6.68 (4.86)   | 0.06 ns |
| <i>Arbitrary focus +</i>         | 6.20 (4.96)   | 6.41 (5.84)   | 6.28 (4.28)   | 0.02 ns |
| <b>CD negative</b>               | 76.31 (24.86) | 71.74 (26.51) | 67.76 (22.90) | 1.78 ns |
| <i>Dichotomous reasoning -</i>   | 7.13 (5.82)   | 5.10 (5.64)   | 4.51 (4.67)   | 3.87*** |
| <i>Disqualification pole -</i>   | 9.93 (6.30)   | 10.28 (6.53)  | 10.18 (5.44)  | 0.05 ns |
| <i>Omission of the neutral -</i> | 12.72 (6.32)  | 12.88 (6.49)  | 12.06 (5.40)  | 0.31 ns |
| <i>Requalification pole -</i>    | 12.51 (5.12)  | 13.03 (5.15)  | 12.10 (4.84)  | 0.51 ns |
| <i>Minimization -</i>            | 13.36 (5.84)  | 12.00 (6.58)  | 11.48 (5.99)  | 1.50 ns |
| <i>Maximization -</i>            | 10.65 (5.02)  | 9.16 (4.93)   | 8.75 (4.53)   | 2.56 ns |
| <i>Arbitrary focus -</i>         | 9.95 (5.89)   | 9.25 (5.61)   | 8.66 (5.10)   | 0.80 ns |

*One way anova; \*p<0.05; \*\*p<0.01; \*\*\*p<0.001; ns: non-significant; CERQ: Cognitive Emotion Regulation Questionnaire; HADS: Hospital Anxiety and Depression Scale; PCL-5: Post-traumatic Stress Disorder Checklist for DSM-5 (PCL-5); PTSD: Post-traumatic stress disorder; Ratio M/F: Ratio of males to females*

Statistically significant differences were detected in all mean scores of the scales (Table 1) for emotion regulation. The clinical group exposed with PTSD had significantly higher scores for the PTS score (53.10 ± 9.35), also for dissociation (18.96 ± 18.12). Group 2 had scores for PTSD of 17.33 (± 11.81) and for dissociation 8.50 (± 10.84). Finally, group 3 had lower scores for post-traumatic stress 2.57 (± 5.90) and 3.41 (± 7.12) for dissociation.

Table 2. Correlation analysis of PTSD severity and cognitive alterations in the group 1.

|                                  | <b>PCL-5</b> | <b>DES-T</b> |
|----------------------------------|--------------|--------------|
| <b>Maladaptive strategies</b>    | .4455*       | .1202        |
| <i>Self-blame</i>                | .2783*       | .0908        |
| <i>Rumination</i>                | .3499*       | .1586        |
| <i>Catastrophizing</i>           | .3680*       | .0083        |
| <i>Other blame</i>               | .1524        | .0447        |
| <b>Adaptive strategies</b>       | .0341        | .1459        |
| <i>Acceptance</i>                | .0691        | .1465        |
| <i>Positive refocusing</i>       | -.3647*      | -.0231       |
| <i>Planning</i>                  | .0498        | .0982        |
| <i>Positive reappraisal</i>      | .1226        | .0652        |
| <i>Putting into perspective</i>  | .2198        | .2103        |
| <b>CD positive</b>               | .0459        | .1383        |
| <i>Dichotomous reasoning +</i>   | -.0395       | -.0648       |
| <i>Disqualification pole +</i>   | .1469        | .1438        |
| <i>Omission of the neutral +</i> | -.0404       | .1080        |
| <i>Requalification pole +</i>    | .1039        | .1106        |
| <i>Minimization +</i>            | -.0838       | .1213        |
| <i>Maximization +</i>            | -.3115       | -.1573       |
| <i>Arbitrary focus +</i>         | .0882        | .1655        |
| <b>CD negative</b>               | .0282        | -.1304       |
| <i>Dichotomous reasoning -</i>   | .0302        | -.0337       |
| <i>Disqualification pole -</i>   | .0104        | .0571        |
| <i>Omission of the neutral -</i> | .1915        | -.1787       |
| <i>Requalification pole -</i>    | .1703        | .0711        |
| <i>Minimization -</i>            | -.1181       | -.1995       |
| <i>Maximization -</i>            | -.0375       | -.1673       |
| <i>Arbitrary focus -</i>         | -.1262       | -.1073       |

*Coefficients r of correlations (significant at p=.05; N = 60); PCL-5: post-traumatic checklist; DES-T: dissociation experiences scale-T; CD positive: positive cognitive distortions; CD negative: negative cognitive distortions*

First, we note that the post-traumatic score is positively correlated with the subscales composing the non-adaptive emotional regulation strategies. Moreover, only acceptance is significantly correlated with the PCL-5. In relation to the cognitive distortion production scores, the PCL-5 is correlated with positive and negative dichotomous reasoning and negative minimization. The subscales of the DES-T are positively correlated with maladaptive emotional regulation strategies. Here again, we note a correlation with acceptance. For cognitive distortions, positive and negative dichotomous reasoning are also correlated with the DES-T and requalification in the other positive pole.

#### 4. Discussion

The objective of our research was to observe the existing interactions between the production of cognitive distortions (positive and negative) and the use of emotional regulation strategies (adaptive or maladaptive). In accordance with our first hypothesis, we observed positive correlations between maladaptive emotional regulation strategies and the severity of PTSD but also with acceptance. These findings echo the scientific literature, including the fact that individuals with PTSD have more difficulty managing their emotions (Fairholme et al., 2013; Weiss et al., 2013). We had also hypothesized that the production of cognitive distortions was negatively correlated with the use of maladaptive emotional strategies. According to the results, a significant positive correlation was shown regarding the production of negative cognitive distortions and the use of maladaptive emotional regulation strategies.

Furthermore, concerning the production of cognitive distortions, we note a positive correlation between the severity of PTSD and the reclassification into other (positive), dichotomous reasoning (negative), minimization (negative), maximization (negative) and total cognitive distortions (negative). This means that the difficulties associated with these distortions increase with the severity of post-traumatic symptoms. Indeed, Brewin et al. (2003) have proposed several explanations for why negative thoughts can influence the onset and maintenance of PTSD, including distortions that often support traumatic reactions (Cielsak et al., 2008). For emotional regulation strategies, Boden's (2013) study had also indicated a clear association between alterations in emotion management and posttraumatic symptoms. We can also ask whether the strategy "acceptance" is not a particular strategy because of the trauma, it would have a role in emotion management in the same way as resilience.

Furthermore, our results support the idea of considering an intermediate group, this allows us to observe a change in outcomes between the three groups (Cascardi, 2015).

The main novelty with this study was the observation that the production of cognitive distortions was associated with emotion regulation strategies. Our results showed that these two variables were related. The results also suggest that the ability to control impulsive behaviors during distress and access to effective emotion regulation strategies may be protective factors against the development of PTSD. Thus, we could complement trauma and comorbidity treatment techniques by focusing on impulsive behaviors and then allowing emotions to be regulated as they should be. Finally, our results indicate that an awareness of the links between emotional difficulties (Spinhoven et al., 2015) and maladaptive cognitions (Booth RW et al., 2019) is necessary for the proposed management of patients with PTSD. Furthermore, it would be relevant to extend the experimental design used here to the study of traumatic events more likely to cause a specific type of disorder (Kira et al., 2020).

In conclusion, the strength of this study is the examination of disparities in alterations in emotion regulation and the production of cognitive distortions as a function of both traumatic exposure (Group 2 exposed without PTSD) and PTSD status (Group 1 exposed with PTSD) while comparing these results to a control group (Group 3). Specifically, the research findings support the relevance of studying emotional regulation and cognitive distortions in PTSD. It seems essential to identify the mechanism(s) by which some individuals develop PTSD following a traumatic event, while others do not. This allows for specific prevention protocols to be established in those with risk factors, early and effective management of those affected in the first few days following the experience, and ultimately understanding the common etiology with other comorbidities (Kessler et al., 2014).

#### References

- Beck, J.S. (1995). *Cognitive therapy: Basics and Beyond*. New York, NY: Guilford Press.
- Booth RW, Sharma D, Dawood F, Doğan M, Emam HMA, Gönenç SS, et al. (2019) A relationship between weak attentional control and cognitive distortions, explained by negative affect. *PLoS ONE* 14(4): e0215399. <https://doi.org/10.1371/journal.pone.0215399>
- Cieslak, R., Benight, C. C., & Caden Lehman, V. (2008). Coping self-efficacy mediates the effects of negative cognitions on posttraumatic distress. *Behaviour Research and Therapy*, 46(7), 788-798. <https://doi.org/10.1016/j.brat.2008.03.007>
- Ellis, A. (1958). Rational Psychotherapy. *The Journal of General Psychology*, 59(1), 35-49. <https://doi.org/10.1080/00221309.1958.9710170>
- Fairholme, C. P., Nosen, E. L., Nillni, Y. I., Schumacher, J. A., Tull, M. T., & Coffey, S. F. (2013). Sleep disturbance and emotion dysregulation as transdiagnostic processes in a comorbid sample. *Behaviour Research and Therapy*, 51(9), 540-546. <https://doi.org/10.1016/j.brat.2013.05.014>
- Franceschi, P. (2007). Compléments pour une théorie des distorsions cognitives. *Journal de Thérapie Comportementale et Cognitive*, 17(2), 84-88. [https://doi.org/10.1016/s1155-1704\(07\)89710-2](https://doi.org/10.1016/s1155-1704(07)89710-2)

- Gratz, K. L., & Roemer, L. (2004). Multidimensional Assessment of Emotion Regulation and Dysregulation: Development, Factor Structure, and Initial Validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment*, 26(1), 41-54. <https://doi.org/10.1023/b:joba.0000007455.08539.94>
- John, O. P., & Gross, J. J. (2004). Healthy and Unhealthy Emotion Regulation: Personality Processes, Individual Differences, and Life Span Development. *Journal of Personality*, 72, 1301-1334. <http://dx.doi.org/10.1111/j.1467-6494.2004.00298.x>
- Kessler, R. C., Rose, S., Koenen, K. C., Karam, E. G., Stang, P. E., Stein, D. J., Heeringa, S. G., Hill, E. D., Liberzon, I., McLaughlin, K. A., McLean, S. A., Pennell, B. E., Petukhova, M., Rosellini, A. J., Ruscio, A. M., Shahly, V., Shalev, A. Y., Silove, D., Zaslavsky, A. M., ... Carmen Viana, M. (2014). How well can post-traumatic stress disorder be predicted from pre-trauma risk factors? An exploratory study in the WHO World Mental Health Surveys. *World Psychiatry*, 13(3), 265-274. <https://doi.org/10.1002/ws.20150>
- Kira, I. A., Shuweikh, H., Al-Huwailiah, A., El-wakeel, S. A., Waheep, N. N., Ebada, E. E., & Ibrahim, E. S. R. (2020). The direct and indirect impact of trauma types and cumulative stressors and traumas on executive functions. *Applied Neuropsychology: Adult*, 1-17. <https://doi.org/10.1080/23279095.2020.1848835>
- McDermott, M. J., Tull, M. T., Gratz, K. L., Daughters, S. B., & Lejuez, C. (2009). The role of anxiety sensitivity and difficulties in emotion regulation in posttraumatic stress disorder among crack/cocaine dependent patients in residential substance abuse treatment. *Journal of Anxiety Disorders*, 23(5), 591-599. <https://doi.org/10.1016/j.janxdis.2009.01.006>
- Owens, G. P., Chard, K. M., & Ann Cox, T. (2008). The Relationship Between Maladaptive Cognitions, Anger Expression, and Posttraumatic Stress Disorder Among Veterans in Residential Treatment. *Journal of Aggression, Maltreatment & Trauma*, 17(4), 439-452. <https://doi.org/10.1080/10926770802473908>
- Radomski, S. A., & Read, J. P. (2016). Mechanistic role of emotion regulation in the PTSD and alcohol association. *Traumatology*, 22(2), 113-121. <https://doi.org/10.1037/trm0000068>
- Salters-Pedneault, K., Tull, M. T., & Roemer, L. (2004). The role of avoidance of emotional material in the anxiety disorders. *Applied and Preventive Psychology*, 11(2), 95-114. <https://doi.org/10.1016/j.appsy.2004.09.001>
- Spinhoven, P., Drost, J., van Hemert, B., & Penninx, B. W. (2015). Common rather than unique aspects of repetitive negative thinking are related to depressive and anxiety disorders and symptoms. *Journal of Anxiety Disorders*, 33, 45-52. <https://doi.org/10.1016/j.janxdis.2015.05.001>
- Tull, M. T., Barrett, H. M., McMillan, E. S., & Roemer, L. (2007). A Preliminary Investigation of the Relationship Between Emotion Regulation Difficulties and Posttraumatic Stress Symptoms. *Behavior Therapy*, 38(3), 303-313. <https://doi.org/10.1016/j.beth.2006.10.001>
- Weiss, N. H., Tull, M. T., Anestis, M. D., & Gratz, K. L. (2013). The relative and unique contributions of emotion dysregulation and impulsivity to posttraumatic stress disorder among substance dependent inpatients. *Drug and Alcohol Dependence*, 128(1-2), 45-51. <https://doi.org/10.1016/j.drugalcdep.2012.07.017>
- Weiss, N. H., Tull, M. T., Viana, A. G., Anestis, M. D., & Gratz, K. L. (2012). Impulsive behaviors as an emotion regulation strategy: Examining associations between PTSD, emotion dysregulation, and impulsive behaviors among substance dependent inpatients. *Journal of Anxiety Disorders*, 26(3), 453-458. <https://doi.org/10.1016/j.janxdis.2012.01.007>



# MICROAGGRESSIONS TOWARD MINORITY UNIVERSITY STUDENTS AND THEIR MENTAL HEALTH SYMPTOMS ONE YEAR LATER

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## Abstract

Minority university students in the US often regularly face the toxic effects of racial-ethnic microaggressions that may negatively impact their mental health. Although the impact of racial-ethnic microaggressions has been frequently studied in cross-sectional studies, little is known about their potential long-term consequences to mental health among minority students in universities. To investigate these hypothesized relationships, 45 minority university students were recruited to participate in a study examining microaggressions longitudinally. It was hypothesized that racial-ethnic microaggressions would be significantly associated with anxiety and depression symptoms as reported by the students longitudinally. Participants completed the College Student Microaggressions Measure (CSMM) at baseline, and then completed the Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI) at the one-year follow-up assessment. Thirty-five (77.8%) participants completed the follow-up. Multiple linear regression found support for study hypotheses. Total CSMM scores were significantly and positively associated with total BAI scores (Full Model  $R^2 = .247, p < .01$ ) and with total BDI scores (Full Model  $R^2 = .244, p < .01$ ), when controlling for gender effects. Racial-ethnic microaggressions appear to be a potential threat to the long-term health of minority students in universities. Next steps are suggested for research and campus interventions.

**Keywords:** *Anxiety, depression, microaggressions, minorities, students.*

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## 1. Introduction

Minority university students in the US often regularly face the toxic effects of racial-ethnic microaggressions that may negatively impact their mental health. Microaggressions are verbal or non-verbal acts that convey demeaning stereotyped beliefs that insult or denigrate racial and ethnic minorities. Although the impact of racial-ethnic microaggressions has been frequently studied in cross-sectional studies, little is known about the potential long-term consequences to the mental health of minority students in universities. One would reasonably expect that greater numbers of racial-ethnic microaggressions would be related to greater negative mental health symptoms among university students over time just as those associations have been found in cross-sectional studies.

University students encounter many challenges in their educational experiences that threaten to hinder progress toward graduation. Some of these difficulties may contribute to health and mental health challenges related to stressors of campus life. In the US, anxiety and depression have been reported broadly, and both mental health concerns have the capacity to contribute to poor academic and health outcomes for students on campuses (American College Health Association, 2018; Beiter et al., 2015; Lipson et al., 2018; Mackenzie et al., 2011). Racial-ethnic minority university students typically face significant challenges that may be linked to anxiety and depression in particular (Blume, 2018; Blume et al., 2012; Fisher & Hartmann, 1995; Lopez, 2005; Suarez-Balcazar et al., 2003). Anxiety and depression may represent barriers to academic performance for racial-ethnic minority students and therefore represent a serious threat to students who already at risk for not graduating from universities (Schmaling et al., 2017). Identifying and intervening on potential contributors to anxiety and depression among racial-ethnic minority university students, such as racial-ethnic microaggressions, may be helpful for improving student success rates for this at-risk group.

## 2. Background

Racial-ethnic microaggressions are experienced by victims as acts of personal insults and put-downs emanating from implicitly biased attitudes and stereotypes about racial-ethnic minority groups. Microaggressions are often covert or ambiguous acts that may take the form of verbal or non-verbal (often symbolic) disrespect (Sue, 2010; Sue et al., 2007). In the US, racial-ethnic microaggressions occur frequently on university campuses (Blume et al., 2012; Suárez-Orozco et al., 2015). Since microaggressions tend to be subtle and covert rather than overt acts of racism and hate, the victim is often left wondering about the intentionality of the transgression and feels alone with the consequential stress of the insult (Sue et al., 2007). Greater numbers of racial-ethnic microaggressions have been associated with mental health symptoms including anxiety and depression (Blume et al., 2012; Donovan et al., 2013; Nadal et al., 2014; Torres & Taknint, 2015). There are concerns that chronic exposure to racial-ethnic microaggressions may be associated with long-term mental health concerns including anxiety and depression, but the research to date had been focused on cross-sectional rather than longitudinal outcomes.

In this study, a longitudinal examination of the relationship of racial-ethnic microaggression with symptoms of anxiety and depression will be examined longitudinally in an effort to understand long-term associations and risks. It was hypothesized that total number of racial-ethnic microaggressions at baseline assessment would be significantly associated with total anxiety and total depression symptoms reported by the racial-ethnic minority students at one-year follow-up at a university in the US.

## 3. Method

### 3.1. Participants

The present study included 45 minority university students were recruited to participate in a study examining microaggressions longitudinally. The age range of participants was 18-43 years of age (mean = 23.31 years of age). The sample was predominantly female ( $n = 29$ ; 64.4%). The sample had great diversity with regard to race and ethnicity, with 8 students self-identifying as African American, 3 as Indigenous American, 17 as Asian American, 19 as Latinx, and 3 as Pacific Islanders, ( $n > 45$  due to 5 indicating one than more race).

### 3.2. Measures

The College Student Microaggressions Measure (CSMM) was administered at baseline. The assessment has been used previously with racial-ethnic minority university students with good results (Blume et al., 2012). The version used in this study included three additional items added to assess microaggressions in the classroom specifically. The slightly modified CSMM included 54 items with 0-6 Likert type scale responses and showed excellent internal consistency ( $\alpha = .944$ ) in the study.

In addition, the Beck Anxiety Inventory (BAI; Beck et al., 1988) and Beck Depression Inventory (BDI; Beck et al., 1961) were administered at the one-year follow-up assessment. The BAI and BDI, are widely used 21-item (possible range of scores 0-63) clinical assessments of anxiety and depression symptoms respectively. Both the BAI ( $\alpha = .833$ ) and BDI ( $\alpha = .872$ ) were found to have good internal consistency in the study.

### 3.3. Procedure

Students were recruited by means of campus announcements using study fliers distributed around the campus. When potential participants shared their interest in the study by phone, they were contacted by research assistants, who then scheduled potential participants for the baseline assessment. If the students meant the study requirements of being a racial-ethnic minority student, they were provided informed consent. If they agreed to participate, the baseline assessment was conducted immediately following consent. Participants completed the College Student Microaggressions Measure (CSMM) at baseline that included three additional items added to assess microaggressions in the classroom specifically.

One year later, research assistants contacted participants to schedule the follow-up. Participants then completed the Beck Anxiety Inventory (BAI) and Beck Depression Inventory (BDI) at the one-year follow-up assessment. The Institutional Review Board of the author's institution reviewed and approved the protocol prior to the conduct of the study.

### 3.4. Results

Thirty-five of the participants completed the follow-up (77.8% follow-up rate), which represents a satisfactory retention rate for university student participants for a study with of this duration. Attrition analysis found no evidence of differential attrition with regard to gender, age, and CSMM scores.

Multiple linear regression was used to test the hypotheses. Gender differences have been found for certain mental health symptoms historically, so gender was used as a covariate. Both study hypotheses were supported. Total CSMM scores were significantly and positively associated with total BAI scores (see Table 1; Full Model  $R^2 = .247$ ,  $p < .01$ ) and with total BDI scores (see Table 2; Full Model  $R^2 = .244$ ,  $p < .01$ ), when controlling for gender effects. Gender was also a statistically significant predictor of BAI scores (Table 1) but not BDI scores (Table 2).

### 4. Future research directions

Subsequent research should focus on whether other types of mental health symptoms beyond anxiety and depression may have longitudinal associations with racial-ethnic microaggressions experienced by minority university students. Additionally, it would be helpful to examine if there may be particular moderators or mediators of the potential deleterious effects of microaggressions on health and mental health, such as levels of ethnic identity and acculturation. Larger sample sizes than used in this exploratory study would be useful for these future investigations and to improve statistical power. Additionally, developing university-wide interventions to address microaggressions and their potential negative impact on racial-ethnic minority students would be particular useful to improving campus climate and health.

### 5. Conclusion/discussion

Racial-ethnic microaggressions were significantly associated with both anxiety and depressive symptoms at one-year follow-up in this study. Strengths of the study included use of a previously tested of racial-ethnic microaggressions for minority students (CSMM), the use of two gold standard assessments of mental health symptoms (BAI and BDI), and a longitudinal design. Despite limitations of a small sample, the results remain compelling, suggesting potential long-term deleterious effects from microaggressions on student mental health

One concern is that racial-ethnic microaggressions may compound the stressors that racial-ethnic minority students already experience on campuses where they are in the minority. For example, racial-ethnic minorities often have self-perceptions that they are imposters who may not belong in the university due to societal stereotypes that suggest racial-ethnic minorities are academically incapable or likely to fail in universities. Certainly, these imposter feelings may be enhanced by perceived discrimination on campus and by campus climates that are unwelcoming (Cokley et al., 2017). The daily or almost daily experience of racial-ethnic microaggressions certainly qualifies as regularly experienced discrimination that makes students feel unwelcomed, and the microaggressions likely increase the perception of being an imposter on campus, psychologically stressing minority students further.

The clinical implications of the results suggest that racial-ethnic microaggression not only create the conditions for a toxic climate, those toxic effects may have long-term consequences that may negatively impact mental health of minority students on university campuses. Universities may wish to address these potential threats to mental health by implementing campus policies meant to reduce the expression of racial-ethnic microaggressions on campus, and may wish to provide clinical services meant to provide racial-ethnic minority students with support when they experience microaggressions and counseling for the mental health consequences of microaggressions if necessary. Universities have a responsibility to ensure that students feel safe on campuses, especially if they are experiencing almost daily expressions of microaggressions. Creating a safe campus climate will involve steps to eliminate microaggressions in- and outside the classroom while simultaneously improving mental health services to minority students in need.

### References

- American College Health Association (2018). American College Health Association-National College Health Assessment II: Undergraduate Student Executive Summary Fall 2018. (Silver Spring, MD: American College Health Association).
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology*, 56(6), 893-897.

- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. *Archives of General Psychiatry*, 4, 561-571.
- Beiter, R., Nash, R., McCrady, M., Rhoades, D., Linscomb, M., Clarahan, M., & Sammut, S. (2015). The prevalence and correlates of depression, anxiety, and stress in a sample of college students. *Journal of Affective Disorders*, 173, 90-96. <http://dx.doi.org/10.1016/j.jad.2014.10.054>
- Blume, A. W. (2018). Racial-ethnic microaggressions, daily hassles, and mental health concerns among students. *Psychological Applications & Developments*, 4, 3-11.
- Blume, A. W., Lovato, L. V., Thyken, B. N., & Denny, N. (2012). The relationship of microaggressions with alcohol use and anxiety among ethnic minority college students in a historically white institution. *Cultural Diversity and Ethnic Minority Psychology*, 18(1), 45-54.
- Cokley, K., Smith, L., Bernard, D., Hurst, A., Jackson, S., Stone, S., Awosogba, O., Saucer, C., Bailey, M., & Roberts, D. (2017). Impostor feelings as a moderator and mediator of the relationship between perceived discrimination and mental health among racial/ethnic minority college students. *Journal of Counseling Psychology*, 64(2), 141-154.
- Donovan, R. A., Galban, D. J., Grace, R. K., Bennett, J. K., & Felicié, S. Z. (2013). Impact of racial macro-and microaggressions in Black women's lives: A preliminary analysis. *Journal of Black Psychology*, 39(2), 185-196.
- Fisher, B., & Hartmann, D. J. (1995). The impact of race on the social experience of college students at a predominantly White university. *Journal of Black Studies*, 26, 117-133.
- Lipson, S. K., Kern, A., Eisenberg, D., & Breland-Noble, A. (2018). Mental health disparities among college students of color. *Journal of Adolescent Health*, 63(3), 348-356.
- Lopez, J. D. (2005). Race-related stress and sociocultural orientation among Latino students during their transition into a predominantly White, highly selective institution. *Journal of Hispanic Higher Education*, 4, 354-365.
- Mackenzie, S., Wiegel, J. R., Mundt, M., Brown, D., Saewyc, E., Heiligenstein, E., Harahan, B., & Fleming, M. (2011). Depression and suicide ideation among students accessing campus health care. *American Journal of Orthopsychiatry*, 81(1), 101-107.
- Nadal, K. L., Griffin, K. E., Wong, Y., Hamit, S., & Rasmus, M. (2014). The impact of racial microaggressions on mental health: Counseling implications for clients of color. *Journal of Counseling & Development*, 92(1), 57-66.
- Schmaling, K. B., Blume, A. W., Engstrom, M. R., Paulos, R., & De Fina, S. (2017). Leaky educational pipeline for racial/ethnic minorities. In A. Czopp (Vol. Ed.), *Social issues in living color: Challenges and solutions from the perspective of ethnic minority psychology*, Vol. 2, (pp. 103-122). *Ethnic minority psychology: Promoting health and well-being*. A. W. Blume, Series Ed. Santa Barbara, CA: Praeger.
- Suarez-Balcazar, Y., Orellana-Damacela, L., Portillo, N., Rowan, J. M., & Andrews-Guillen, C. (2003). Experiences of differential treatment among college students of color. *Journal of Higher Education*, 74, 428-444.
- Suárez-Orozco, C., Casanova, S., Martin, M., Katsiaficas, D., Cuellar, V., Smith, N. A., & Dias, S. I. (2015). Toxic rain in class: Classroom interpersonal microaggressions. *Educational Researcher*, 44(3), 151-160.
- Sue, D. W. (2010). *Microaggressions in everyday life*. Hoboken, NJ: John Wiley & Sons.
- Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A. M. B., Nadal, K. L., & Esquilin, M. (2007). Racial microaggressions in everyday life: Implications for clinical practice. *American Psychologist*, 62(4), 271-286.
- Torres, L., & Taknint, J. T. (2015). Ethnic microaggressions, traumatic stress symptoms, and Latino depression: A moderated mediational model. *Journal of Counseling Psychology*.

## Appendix

*Table 1. Regression Model of BAI Scores.*

| <u>Predictor Variable(s):</u>             | <u>Beta</u> | <u>t</u> | <u>95% C. I.</u> |
|---|-------------|----------|------------------|
| Gender                                    | .358        | 2.361*   | 0.611 to 8.229   |
| CSMM Racial-Ethnic Microaggression Scores | .380        | 2.504*   | 0.009 to 0.084   |

Table 1 Notes:  $R^2 = .25$ ;  $F(2, 33) = 5.40$ ;  $p < .01$  for the full model. Betas, t values, and 95% confidence intervals for each regression coefficient listed are for the full model. \*  $p < .05$

*Table 2. Regression Model of BDI Scores.*

| <u>Predictor Variable(s):</u>             | <u>Beta</u> | <u>t</u> | <u>95% C. I.</u> |
|---|-------------|----------|------------------|
| Gender                                    | .299        | 1.964    | -0.159 to 8.972  |
| CSMM Racial-Ethnic Microaggression Scores | .424        | 2.786**  | 0.017 to 0.107   |

Table 2 Notes:  $R^2 = .24$ ;  $F(2, 33) = 5.33$ ;  $p < .01$  for the full model. Betas, t values, and 95% confidence intervals for each regression coefficient listed are for the full model. \*  $p < .05$ ; \*\*  $p < .01$

## PAIN ANXIETY, AFFECT, COPING AND RESILIENCE AMONG RHEUMATOID ARTHRITIS PATIENTS

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### Abstract

The Rheumatoid-arthritis considered as a chronic disease, which affects approximately 21 million individuals worldwide (UN World Population Database, 2004 revision). The rheumatoid-arthritis affects 15% of Indian population, such as over 180 million people suffers by rheumatoid-arthritis in India. In the present study, total sample of 122 male and female rheumatoid arthritis patients (Mean age = 55) were taken from one RA specialized hospital in Pune city (India). Incidental and snow-ball sampling methods were used for data collection. *The Brief Resilience Scale (Smith et al., 2008)*, *Brief Coping Inventory (Carver et al., 1987)*, *PANAS-SF (Watson & Tellegen, 1988)*, and *Pain Anxiety Symptoms Scale (PASS-20) (McCracken & Dingra, 2002)* were used. Age found positively correlated with duration of suffering ( $r = .383, P < .01$ ), active coping found positively correlated ( $r = .224, P < .01$ ) with resilience and positive affect was found positively correlated with resilience ( $r = .94, P < .01$ ), and pain anxiety found positively correlated with negative affect ( $r = .234, P < .01$ ). In regression, results indicated that religious coping and negative affect were found jointly 19% predictor of approach coping, and physiological anxiety emerged as only predictor of negative affect which was explaining 4.8% of variance. The results are discussed in detail manner with supporting researcher in complete paper of present study.

**Keywords:** *Psychology and rheumatoid-arthritis, affect and rheumatoid-arthritis, coping and rheumatoid-arthritis, psychological well-being and rheumatoid-arthritis.*

### 1. Introduction

Rheumatoid arthritis is considered to be chronic disease and the number of deaths due to chronic diseases has been steadily rising in Indian population. Arthritis affects 15% of Indian population, such as over 180 million people suffers by arthritis in India (www.arthritis-India-com, 2021), and approximately 21 million individuals affected by rheumatoid-arthritis worldwide (UN World Population Database, 2004)). Arthritic conditions are a group of approximately 110 diseases and syndrome associated with intense pain that usually worsens over time, rheumatoid-arthritis is an autoimmune disease that results in significant joint inflammation and pain. It affects nearly 1% of the adult population in world (Sangha, 2000).

Increasing body of evidences are suggesting that psychological disorders and arthritis are intimately intertwined (Harris, 2016). An individual in response to arthritis-related symptoms such as pain have a significant impact on psychological and physical health outcomes (Brown et al., 1989; Covic et al., 2000; Covic et al., 2003). Most of the research suggested that pain adversely affects all aspects of functioning, including more frequent and disruptive maladaptive thoughts about pain (Sturgeon & Zautra, 2013). Adult with arthritis experiences high levels of anxiety, and prevalence of depression is approximately twice as high as depression (Murphy et al., 2012), and patients also found associated with higher risk of anxiety (Zautra et al., 1995).

In coping, passive maladaptive coping approaches have found associated with increased arthritis pain, disability, and depression in comparison to individuals who employ problem-based coping strategies (Brown et al., 1989; Covic et al., 2000; Covic et al., 2003; Evers et al., 2003; & Van et al., 2000), rheumatoid patients found using higher levels of maladaptive coping, and maladaptive coping found associated with lower positive affect and higher negative affect, and due to higher activity limitation patients use less adoptive coping (Billings et al., 2000), avoidant coping was found related to negative affect with more physical symptoms (Qui et al., 2019).

Resilient individuals confront crisis effectively and tend to engage in behaviour that ultimately lead to effective adaptation to a situation (Fitzpatrick & Vacha-Haase, 2010; Blum, 1998; Cederblad et al., 1994; and Rutter, 1995). In chronic pain, resilience sustainability refers to continued positive engagement (Strugeon & Zautra, 2010), variety of positive outcomes in chronic pain, including increased feelings of vitality (Salathe et al., 2013), and physical functioning (Torma et al., 2013), and lower rates of disability and mortality (Elliot et al., 2014). Some studies suggested that positive affect contribute more resilient psychological and physical health trajectories in coping with a serious illness (Moskowitz, 2010). Some studies found gender differences in pain perception and negative affectivity (Keogh, 2001), and previous findings show that women reported more negative pain-related experiences, different pain coping strategies than men (Keogh & Asmundson, 2007).

## 2. Objectives of the study

The present study was plan to understand the role of anxiety, affect, coping, and resilience in arthritis patients, the study will also help to analyze predictors of coping, negative affect, and resilience among arthritis patients.

## 3. Hypotheses

On the basis of previous research and present objectives of the study, we assume that there will be positive correlation between age and duration of suffering, active coping and religious coping will be positively correlated with positive affect and resilience. Resilience will be negatively correlated with negative affect, and anxiety and coping will be the predictors of negative affect in rheumatoid patients.

## 4. Methodology

### 4.1. Sample description and procedure

A total sample of 122 rheumatoid arthritis patients (M= 22 and F= 100) were taken from specialized hospital in Pune (India). The age range of patients were from 25-85. All patients were educated and from middle-class to upper-middle class socio-economic status. Convenient and snow ball sampling techniques were used for data collection. Confidentiality of data was maintained and all precautionary measures were taken.

### 4.2. Tools/Measurement used

**4.2.1. Personal data sheet.** Through this personal information such as name, sex, age, education, physical problems, information of present disease, annual income and co-morbidity of diseases collected from patient.

**4.2.2. The brief resilience scale (Smith et al., 2008).** This scale has six items along with five responses (1 to 5) from Strongly Disagree to Strongly Agree. The Cronbach's alpha ranging from .80 to .91 is given for internal reliability and for validity, convergent and discriminant predictive validity used.

**4.2.3. Brief coping inventory (Carver et al., 1987).** The test contained 28 items with four alternative responses from 1 to 5. This inventory divided in two types of coping namely, avoidant coping and approach coping. The internal consistency measured by Cronbach's alpha for 12 sub-scales from .71 to .75 is given.

**4.2.4. Positive and negative affect schedule (PANAS-SF) (Watson & Tellegen, 1988).** This scale is a self-report measure of affect. It has 20 items, respondent indicated the extent he has felt this feeling over the past week thorough five alternative responses (1= Very slightly or Not at all to 5= Extremely) for scoring. Test-retest reliability reported as .79 for positive affect and .81 for negative affect.

**4.2.5. Pain anxiety symptoms scale (PASS-20) (McCracken & Dhingra, 2002).** PASS-20 is a shorter version of PASS-40, respondent rate each item in terms of frequency from 0 (Never) to 5 (Always). The Cronbach's alpha for four subscales ranges from .86 to .91.

## 5. Results and discussion

Table 1. Show correlation matrix of age, duration of suffering, pain anxiety, affect, coping and resilience among Rheumatoid Arthritis patients (N = 112).

| Variables | Age                 | DoS                 | AC                  | Humor               | RC                  | NA                  | PA                 | PAnx               | Res                 |
|-----------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|--------------------|--------------------|---------------------|
| Age       | ---                 | .383**              | -.003 <sup>NS</sup> | -.198*              | -.154 <sup>NS</sup> | .005 <sup>NS</sup>  | .073 <sup>NS</sup> | .092 <sup>NS</sup> | .148 <sup>NS</sup>  |
| DoS       | .383**              | ---                 | -.071 <sup>NS</sup> | -.136 <sup>NS</sup> | -.154 <sup>NS</sup> | -.052 <sup>NS</sup> | .096 <sup>NS</sup> | .071 <sup>NS</sup> | -.128 <sup>NS</sup> |
| AC        | -.003 <sup>NS</sup> | -.071 <sup>NS</sup> | ----                | -.162 <sup>NS</sup> | .412**              | -.266**             | .028 <sup>NS</sup> | .051 <sup>NS</sup> | .224**              |
| RC        | -.055 <sup>NS</sup> | -.154 <sup>NS</sup> | .412**              | -.052 <sup>NS</sup> | -----               | -.177 <sup>NS</sup> | .151 <sup>NS</sup> | .051 <sup>NS</sup> | .193*               |
| NA        | .005 <sup>NS</sup>  | -.052 <sup>NS</sup> | -.177 <sup>NS</sup> | .242*               | -.177 <sup>NS</sup> | -----               | .206 <sup>NS</sup> | .234*              | -.192*              |
| PA        | .073 <sup>NS</sup>  | .096 <sup>NS</sup>  | .151 <sup>NS</sup>  | -.162 <sup>NS</sup> | .172 <sup>NS</sup>  | .206 <sup>NS</sup>  | -----              | .159 <sup>NS</sup> | .194*               |
| PAnx      | .092 <sup>NS</sup>  | .071 <sup>NS</sup>  | .051 <sup>NS</sup>  | .205*               | .051 <sup>NS</sup>  | .234**              | .159 <sup>NS</sup> | -----              | .118 <sup>NS</sup>  |

Var = Variables, DoS = Duration of Suffering, AC = Active Coping, RC = Religious Coping, NA = Negative Affect, PA = Positive Affect, PAnx = Pain Anxiety, Res = Resilience. \*\*  $p < .01$  level, \*  $p < .05$  level, NS = Not Significant.

As results shows positive correlation ( $r = .383$ ,  $p < .01$ ) between age and duration of suffering therefore. According to history of disease, age of onset of arthritis is very early and people aged from 18 to 44 years reported 7.1% disease (www.cdc.gov/chronicdisease/resources, 2021). Due to chronicity of the disease many patients suffer in young age and experience of pain and disability lasted till older age, and due to this, age and duration of suffering found positively correlated in present research and results also supported first hypothesis.

In coping and affect, religious coping ( $r = .193$ ,  $p < .05$ ), active coping ( $r = .224$ ,  $p < .01$ ), and positive affect ( $r = .194$ ,  $p < .05$ ) found positively correlated with resilience. As studies reported that older men and women with rheumatoid arthritis used a variety of coping strategies in order to adjust with disease (Melanson & Downe-Wamboldt, 2003), active coping strategies, such as planning and problem solving, have been linked to a higher degree of well-being and capacity to handle stress, trauma, and medical illness (Southwick et al., 2005), active coping is an adaptive way of dealing with stressful events and is a major component of resilience in the face of stress and adversity (Carroll, 2013), the religious or spiritual beliefs are also used as one strategy to cope with the suffering (Rippentrop, 2005).

Resilience found negatively correlated with negative affect ( $r = -.192$ ,  $p < .05$ ), and positively associated with positive affect ( $r = .195$ ,  $p < .05$ ), as study found that resilient individuals confront a crisis successfully and engage in positive behaviour to adjust coping strategies for effective adaptation to the situation (Qiu et al., 2019), and positive affect found relevant to recovery from pain (Zautra & Smith, 2001). High resilient individuals tend to report positive emotions in stress and these positive emotions contributed to recovery from stress-related negative effects (Tugade & Fredrickson, 2004), persons with higher positive affect show greater capacity to recover psychologically and physiologically to stressful events (Fredrickson, 2001).

As multiple regression analysis carried out with physiological anxiety as the predictor variable and negative affect entered as dependent variable. For the negative affect obtained value was  $R^2 = .057$ , adjusted  $R^2 = .048$ ,  $F = 6.63$ ,  $p < .05$ , and beta value was .239,  $p < .05$ . The result indicated that physiological anxiety emerged as the predictor of negative affect explaining 5 % of the variance.

As anxiety and pain is a key component of negative affect and many studies reported that pain is common phenomenon in arthritis and pain increases prevalence of depression and anxiety (Pincus et al., 1996), and negative moods found associated with a wide range of pain-related symptoms such as increased pain experiences (Taenzer et al., 1986; & Geisser et al., 2000), disturbed physical functioning (Holzberg et al., 1996).

In present study, negative affect found positively correlated with pain anxiety ( $r = .234$ ,  $p < .05$ ) and out of 122 total sample 100 patients were female, and previous study also reported that in osteoarthritis patients' women reported higher levels of pain and disability than men (Keefe et al., 2000), and finding is highly relevant with the present study, as we hypothesized that anxiety and coping would be predictors of negative affect, and as per results physiological anxiety as a subscale of pain anxiety is predicting 5% variance of negative affect, but coping was not found as significant predictor, therefore, our last hypothesis partially accepted.

## 6. Application of present study

The present findings will be applicable in following manner:

1. Useful to understand the interaction of anxiety, affect, coping and resilience among rheumatoid-arthritis patients.
2. To plan intervention strategies to increase coping and decrease pain anxiety in RA patients.



3. To understand the adaptive coping mechanism against pain and adjustment with rheumatoid-arthritis.

4. As study found positive association between coping, positive affect and resilience, which will help patients increase their personal resources and greater perceptions of growth in handling the symptoms of arthritis.

5. On the basis of findings some counseling techniques may plan to provide psychological help such as how to increase the resilience and positive behavior and decrease the anxiety, pain, and maladapted coping strategies.

## References

- Arthritis-Indian: Fight Arthritis with knowledge and courage (2021). Retrieved from [www.arthritis-india.com](http://www.arthritis-india.com). on January 28, 2021.
- Billings, D. W., Folkman, S., Acree, M., & Moskowitz, J. T. (2000). Coping and physical health during caregivers: The roles of positive and negative affect. *Journal of Personality and Social Psychology*, 79 (1), 131.
- Blum, R. W. (1998). Healthy youth development as a model for youth promotion: A review. *Journal of Adolescent Health*, 22 (5), 358-375.
- Brown, G. K., Nicassio, P. M., & Wallston, K. A. (1989). Pain coping strategies and depression in rheumatoid arthritis. *Journal of Consulting and Clinical Psychology*, 57 (5), 652-657.
- Carroll, L. (2013). Active coping, In Gellman, K., & Turner, J. (Eds.). *Encyclopedia of behavioural medicine*. New York: NY: Springer.
- Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56 (2), 267.
- Cederblad, M., Dahlin, L., Hangdell, O., & Hansoon, K. (1994). Salutogenic childhood factors reported by middle-aged individuals. *European Archives of Psychiatry and Clinical Neuroscience*, 244 (1), 1-11.
- Center for Disease Control and Promotion: U. S. Health Department (2021). Retrieved from [www.cdc.gov/chronicdisease/resources/publication](http://www.cdc.gov/chronicdisease/resources/publication) on 14th December, 2021.
- Covic, T., Adamson, B., & Hough, M. (2000). The impact of passive coping on rheumatoid arthritis pain. *Rheumatology (Oxford)*, 39 (9), 1027-1030.
- Covic, T., Adamson, B., Spencer, D., & Howe, G. (2003). A biopsychosocial model of pain and depression in rheumatoid arthritis: A 12-month longitudinal study. *Rheumatology (Oxford)*, 39(9), 1287-1294.
- Elliott, A. M., Burton, C. D., & Hannaford, P. C. (2014). Resilience does matter: Evidence from a 10-year cohort record linkage study. *British Medical Journal Open*, 4, e003917.
- Evers, A. W., Kraaimaat, F. W., Geenen, R., Jacobs, J. W., & Bijlsma, J. W. (2003). Stress-vulnerability factors as long-term predictors of disease activity in early rheumatoid arthritis. *Journal of Psychosomatic Research*, 55 (4), 293-302.
- Fitzpatrick, K. E., & Vacha-Haase, T. (2010). Marital satisfaction and resilience in caregivers of spouses with dementia. *Clinical Gerontologist*, 33 (3), 165-180.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology. The Broaden-and-build theory of positive emotions. *American Psychologist*, 56, 218-226.
- Geisser, M. E., Roth, R. S., Theisen, M. E., Robinson, M. E., and Riley, J. L. (2000). Negative affect, self-report of depressive symptoms, and clinical depression: relation to the experience of chronic pain. *Clinical Journal of Pain*, 16, 110-120.
- Harris, M. L. (2016). Psychological Factors in Arthritis: Cause or Consequences? In P. M. Nicassio, (Ed.). *Psychosocial Factors in Arthritis*. Springer International Publishing.
- Holzberg, A. D., Robinson, M. E., Geisser, M. E., and Gremillion, H. A. (1996). The effects of depression and chronic pain on psychosocial and physical functioning. *Clinical Journal of Pain*, 12, 118-125.
- Keefe, F. J., Lefebvre, J. C., Egert, J. R., Affleck, G., Sullivan, M. J., and Caldwell, D. S. (2000). The relationship of gender to pain, pain behavior, and disability in osteoarthritis patients. The role of catastrophizing. *Pain*, 87, 325-334.
- Keogh, E and Asmundson, G. J. (2007). Negative affectivity, catastrophizing, and anxiety sensitivity. In Asmundson Gordon, J. G., Vlaeyen, Johan, W. S. & Crombez, G. (Eds.), *Understanding and treating fear of pain* (Pp, 91-105). New York: Oxford Press.
- Keogh, E. (2001). Psychology, gender, and pain. Newsletter of the International Association for the Study of Pain Special Interest Group on Sex. *Gender and Pain*, 3, 3-5.

- McCracken, L. M., and Dhingra, L. (2002). A short version of the pain anxiety symptoms scale PASS-20): Preliminary development and validity. *Pain Research and Management*, 7 (1), 45-50.
- Melanson, P. M., & Downe-Wamboldt, B. (2003). Confronting life with rheumatoid arthritis. *Journal of Advanced Nursing*, 42 (2), 125-133.
- Moskowitz, J. T. (2010). Positive Affect at the Onset of Chronic Illness: Planting a Seed of Resilience. In Reich, J. W., Zautra, A. J., & Hall J. S. (Eds.), *Handbook of Adult Resilience*. The Guildford Press: London.
- Murphy, L. B., Sacks, J. J., Brady, T. J., Hootman, J. M., & Chapman, D. P. (2012). Anxiety and depression among US adults with arthritis: Prevalence and correlates. *Arthritis Care & Research*, 647 (7), 968-976.
- Pincus, T., Griffith, J., Pearce, S., & Isenberg, D. (1996). Prevalence of self-reported depression in patients with rheumatoid arthritis. *British Journal of Rheumatology*, 35, 879-883.
- Qiu, X. J., Zang, X. L., Cai, L. S., Yan, L., Fan, J., Zang, R. W., Huang, J. W., & Duan, X. W. (2019). Rheumatoid arthritis and risk of anxiety: A meta-analysis of cohort studies. *Clinical Rheumatology*, 38 (8), 2053-2061.
- Rippentrop, A. E. (2005). A Review of the Role of Religion and Spirituality in Chronic Pain Population. *Rehabilitation Psychology*, 5 (3), 278-284.
- Rutter, M., (1985). Resilience in the face of adversity, protective factors and resistance to psychiatric disorders. *The British Journal of Psychiatry*, 147 (6), 598-611.
- Salathe, C. R., Melloh, M., Kalin, W., Semmer, N., Roth, M., Muller, U., & Elfering, A. (2013). Comparison of pain-resilient working individuals to population-based case controls with/without momentary low back pain. *European Journal of Pain*, 17, 1411-14221.
- Sangha, O. (2000). Epidemiology of rheumatic disease. *Rheumatology*, 39(2), 3-12.
- Smith, B. W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P., & Bernard, J. (2008). The brief resilience scale: assessing the ability to bounce back. *International Journal of Behavioral Medicine*, 15 (3), 194-200.
- Southwick, S. M., Vythilingam, M., & Charney, D. S. (2005). The psychobiology of depression and resilience to stress: Implications for prevention and treatment. *Annual Review of Clinical Psychology*, 1, 255-291.
- Strugeon, J. A., & Zautra, A. J. (2010). Resilience: A new paradigm for adaption to chronic pain. *Current Pain and Headache Report*, 14, 105-112.
- Strugeon, J. A., & Zautra, A. J. (2013b). State and trait pain catastrophizing and emotional health in rheumatoid arthritis. *Analysis of Behavioral Medicine*, 45, 69-77.
- Taenzer, P., Melzack, R., and Jeans, M. E. (1986). Influence of psychological factors on postoperative pain, mood and analgesic requirements. *Pain*, 24, 331-342.
- Torma, L. M., Houck, G. M., Wagnild, G. M., Messecar, D., & Jones, K. D. (2013). Growing old with fibromyalgia: Factors that predict physical function. *Nursing Research*, 62, 16-24.
- Tugade, M. M., and Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional experiences. *Journal of Personality and Social Psychology*, 86, 20-33.
- United Nation World Population Database (2005 R). In, Sumner, L. A., & Nicassio, P. M. (Eds.). *The Importance of the Biopsychosocial Model for Understanding the Adjustment to Arthritis*. P. M. Nicassio (ed.), *Psychosocial Factors in Arthritis (2016)*. Springer International Publication: Switzerland.
- Van Lankveld, W., Naring, G., Van't Pad Bosch, P., & van de Putte, L. (2000). The negative effect of decreasing the level of activity in coping with pain in rheumatoid arthritis: An increase in psychological distress and disease impact. *Journal of Behavioral Medicine*, 23 (4), 377-391.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, 54 (6), 1063.
- Zautra, A. J., & Smith, B. W. (2001). Depression and reactivity to stress in older women with rheumatoid arthritis and osteoarthritis. *Psychosomatic Medicine*, 63, 687-697.
- Zautra, A. J., Burleson, M. H., Smith, C. A., Blalock, S. J., Wallston, K. A., DeVellis, R. F., Devellis, B. M., & Smith, T. W. (1995). Arthritis and perceptions of quality of life: An examination of positive and negative affect in rheumatoid arthritis patients. *Health Psychology*, 5, 399-408.

## CREATIVE MINDSETS IS IT POSSIBLE TO HAVE BOTH FIXED AND GROWTH MINDSETS?

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### Abstract

A creative mindset reflects people's views on whether creativity is a malleable (i.e., growth mindset) or an innate, unmalleable (i.e., fixed mindset). Recently, there have been discussions about the nature of these two creative mindset structures. While some researchers argue that the two mindsets are different and alternative to each other, some researchers argue that the two creative mindsets are independent of each other but not opposite each other. This research aims to contribute to this discussion with two studies from Turkey. We adapted the Creative Mindsets Scale (Karwowski, 2014) to Turkish and explored its psychometric properties in the Turkish context. A total of 741 (n=198 for Study 1; n=543 for Study 2) adults (Mage= 25,889; SD= 5,992) participated in the study. Among all participants, 529 were female (71.39%). The results of Confirmatory Factor Analysis from both studies verified the two-factor structure (Growth Mindset and Fixed Mindset) of the Creative Mindsets construct. In both studies, the correlation between Growth Mindset and Fixed Mindset Scales was negative and moderate. These results indicated that fixed and growth creative mindsets were related but independent constructs. These results showed that Growth and Fixed mindsets are not two ends of the same continuum and it's possible that individuals can endorse both fixed and growth creative mindsets at the same time, as well as have neither mindset nor a combination of fixed and growth. The Creative Mindset Scale has been adapted to a wide variety of languages. Studies conducted in different cultures have revealed similar factor structures and item properties as in our study. The findings will be discussed comparatively with studies conducted in different cultures.

**Keywords:** *Creative mindsets, growth mindset, fixed mindset, creativity, scale adaptation.*

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### 1. Introduction

Dweck (1999), starting from well-known attribution theories in social perception and social cognition studies, states that people have systematic beliefs or belief systems about themselves or certain characteristics such as intelligence and that this implicit theory reflects their social perceptions and affects their motivations and goal-oriented behaviors. According to Dweck (2016), people have one of two basic mindsets about their characteristics such as intelligence, namely fixed or growth mindset. If a person has the opinion that mental abilities such as intelligence can be developed over time, that is a growth mindset, then she/he has a higher motivation for success than people who believe that these abilities are innate and will never change, that is, people with a fixed mindset. Because people with a growth mindset believe that they can achieve success by working and using the right strategies, since their current mental skills do not create an insurmountable limit for them, and they make more efforts (Dweck & Yeager, 2019). On the other hand, those who have a fixed mindset believe that hard work and effort are peculiar to non-intelligent people, and if they act like this, others will conclude that they are not smart enough (Dweck, 2016). Karwowski (2014), inspired by Dweck's view, introduced the concept of a creative mindset. According to the creative mindset conceptualization, people have beliefs about the malleability of creativity. These beliefs affect their self-definition and revelation of their creative potential. While people who believe that creativity is innate and difficult to change are defined as having a fixed mindset. Those with a growth mindset believe that creativity can be improved by effort. Studies have shown that those with a growth creative mindset have a greater sense of creative self-efficacy and creative personal identity (eg: Karwowski, 2014; Karwowski, Royston, & Reiter-Palmon, 2019; O'Connor, Nemeth, & Akutsu, 2013; Pretz & Nelson, 2017). Those with a fixed mindset also scores on divergent thinking (Warren et al., 2018).

This study aimed to investigate the psychometric properties of the Turkish version of the Creative Mindsets Scale. The scale, developed by Karwowski (2014), has been adapted to several languages (e.g., Hass et al., 2016; Karwowski et al., 2019; Tang et al., 2016; Zhou et al., 2020). Findings from those studies show that the scale shows similar factor structure and item characteristics, and that people can be separated as having a growth or fixed creative mindset in different cultures. Hence within the scope of this study, the scale adapted to Turkish, and data were obtained from Turkish adults to find out whether the same factor structures translate to the Turkish context.

## 2. Method

### 2.1. Study samples

For this study, data were obtained from two samples (N=741). The first sample of the study consisted of 198 people aged between 19 and 41 (M= 25.889; Sd=5.92). 173 of the participants were women (66.2%). In the second sample of the study, there were a total of 543 participants aged between 18 and 74 (M=30.996; Sd=11.11). 356 of the participants were women (65.6%).

### 2.2. Instrument

#### *The Creative Mindsets Scale*

It is a 10-item scale developed by Karwowski (2014) to assess the creative mindsets of adolescents and adults. There are two subscales in the scale, namely the Growth Creative Mindset and the Fixed Creative Mindset. In each of the subscales, there are 5 items answered by marking them on a 5-point Likert scale (1=definitely no; 5=definitely yes). This two-factor structure has been validated in all the Polish, German, Chinese, and English versions of the scale (Hass et al., 2016; Karwowski et al., 2019; Tang et al., 2016; Zhou et al., 2020). In the original study conducted by Karwowski (2014), the internal consistency coefficients of the scale were found .76 and .78 for the Fixed Creative Mindset subscale and .65 and .73 for the Developing Creative Mindset subscale for two different samples. The items of the Creative Mindset Scale were independently translated into Turkish by an English and Turkish speaker (an academic in the field of English Education). After the independent translations, these three experts met with the researchers to compare and discuss the translations. After the discussions, the final version was prepared by the researchers. Since the items were written in plain language, back-translation was not required.

### 2.3. Data gathering

After the Ethics Committee Approval was obtained, an electronic form of the Turkish version of the scale along with the demographic information form was prepared for online use and shared on social media. All the participants participated voluntarily. Before starting the scale, informed consent was obtained from all participants with a yes/no screen question.

## 3. Results

### 3.1. Validity of the scale

#### *Confirmatory Factor Analysis*

To examine whether this two-independent factorial structure of the scale could be confirmed in the Turkish sample, two different Confirmatory Factor Analyses (CFA) were conducted in two separate samples. For both samples, the scale was analyzed both with one-factor and two-factors.

For the first sample, the results of CFA showed that fit indices for both one-factor solution ( $\chi^2 = 107, 344$ ;  $p = .000$ ,  $df=35$ ,  $\chi^2/df= 3.067$ ,  $CFI = .825$ ,  $TLI = .774$ ,  $RMSEA = .102$  and  $SRMR= .086$ ) and two-factor solution ( $\chi^2 = 57,706$ ;  $p = .014$ ,  $df=34$ ,  $\chi^2/df= 1, 697$ ,  $CFI = .796$ ,  $TLI = .730$ ,  $RMSEA = .056$  and  $SRMR= .068$ ) were not acceptable. In a one-factor solution, 5 items had factor loadings lower than .40, showing that this solution was not acceptable for this dataset. When standardized factor loadings and standardized residues were examined in the two-factor model, it was seen that there was a problem only in the 3rd item. This item loaded on the relevant factor (Growth Creative Mindset) below .40 and was not statistically significant ( $p= .612$ ). Accordingly, item 3 was excluded from the analysis and Confirmatory Factor Analysis was repeated. Analysis results showed that the fit indices improved and reached an acceptable level ( $\chi^2 = 35.367$ ;  $p = .082$ ,  $df=25$ ,  $\chi^2/df= 1.414$ ,  $CFI = .900$ ,  $RMSEA = .046$  and  $SRMR= .058$ ). In several studies, item 3 had low factor loadings, too (e.g., Karwowski, 2014; Zhou et al., 2020). However, even though the factor loading was low, the factor significantly loaded on its designated factor, which is Growth Mindset. In this vein, it was decided not to exclude the item. Expert opinion was sought, and the wording of the item was changed. Data were

collected from a new sample with the new version of the item, and Confirmatory Factor Analysis was repeated for this sample.

For the second sample, again, one-factor solution yielded unacceptable fit indices ( $\chi^2 = 189,614$ ;  $p = .000$ ,  $df=35$ ,  $\chi^2/df= 5,418$ ,  $CFI = .882$ ,  $RMSEA = .090$  and  $SRMR= .0653$ ). On the other hand, the two-factor solution yielded acceptable fit with the data ( $\chi^2 = 69,750$ ;  $p = .000$ ,  $df=34$ ,  $\chi^2/df= 1.934$ ,  $CFI = .973$ ,  $RMSEA = .044$  and  $SRMR= .035$ ). These results confirmed the two-factor structure of the Turkish version of the scale.

For discriminative validity of the scale, mean scores of the upper group (27%) and the lower group (27%) were compared via t-test. A statistically significant difference was found between the upper group and lower group averages for both growth mindset,  $t(292) = -34.13$ ,  $p < .001$  and for fixed mindset,  $t(291) = -42.21$ ,  $p < .001$ .

#### *Reliability*

The internal consistency coefficient was calculated as .67 for the Growth Creative Mindset and .80 for the Fixed Creative Mindset. These values show both scales were reliable. Further, to examine whether the items exemplify similar characteristics, item-total score correlations were examined for both sub-scales. All correlation values are above .30. This result shows that all the items were compatible with each other within the subscales (Büyüköztürk, 2012).

Pearson Product Moments Correlation Coefficients were calculated to examine the relationship between the two sub-scales. A negative and moderately significant relationship was found between two mindsets ( $r = -.48$ ,  $t = 25.59$ ,  $p < 0.001$ ) showing that these dimensions are related but independent of each other.

## **4. Discussion**

With this study, the two-factor solution of the Creative Mindset Scale was confirmed in the Turkish sample has been confirmed. This result is compatible with the results for the Polish samples (Karwowski, 2014; Karwowski et al., 2019), Chinese samples (Zhou et al., 2020), USA samples (Hass et al., 2016; Paek and Sumners, 2019), and the German sample (Tang et al., 2019). At the same time, like the Polish, Chinese, English, and German versions of the measurement tool, a negative and moderately significant relationship was found between the developing and fixed creative mindset factors in this study. At the same time, the reliability coefficients are compatible with the original study and other adaptation studies. Both the presence of the 2-factor structure and the negative correlation between them show that these two features are related to each other. However, the fact that this negative relationship is lower than expected ( $r=-.48$ ) indicates that the dimensions of growth and fixed creative mindset are also independent of each other. These results showed that Growth and Fixed mindsets are not two ends of the same continuum and it's possible that individuals can endorse both fixed and growth creative mindsets at the same time, as well as have neither mindset nor a combination of fixed and growth.

## *References*

- Dweck, C. (1999). *Self-Theories: Their Role in motivation, personality, and development*. Hove, UK: Psychology Press.
- Dweck, C. (2016). What having a “growth mindset” actually means. *Harvard Business Review*, 13, 213-226.
- Dweck, C. S., & Yeager, D. S. (2019). Mindsets: A view from two eras. *Perspectives on Psychological Science*, 14(3), 481-496.
- Hass, R. W., Katz-Buonincontro, J., & Reiter-Palmon, R. (2016). Disentangling creative mindsets from creative self-efficacy and creative identity: Do people hold fixed and growth theories of creativity? *Psychology of Aesthetics, Creativity, and the Arts*, 10(4), 436–446.
- Karwowski, M. (2014). Creative mindsets: Measurement, correlates, consequences. *Psychology of Aesthetics, Creativity, and the Arts*, 8(1), 62-70.
- Karwowski, M., Royston, R. P., & Reiter-Palmon, R. (2019). Exploring creative mindsets: Variable and person-centered approaches. *Psychology of Aesthetics, Creativity, and the Arts*, 13(1), 36–48.
- O'Connor, A. J., Nemeth, C. J., & Akutsu, S. (2013). Consequences of beliefs about the malleability of creativity. *Creativity Research Journal*, 25(2), 155-162.

- Paek, S. H., & Sumners, S. E. (2019). The indirect effect of teachers' creative mindsets on teaching creativity. *The Journal of Creative Behavior*, 53(3), 298-311.
- Pretz, J.E., & Nelson, D.N. (2017). Creativity is influenced by domain, creative self-efficacy, mindset, self-efficacy, and self-esteem. In M. Karwowski & J.C. Kaufman (Eds.), *The creative self: Effect of beliefs, self-efficacy, mindset, and identity* (pp. 155–170). London: Academic Press.
- Tang, M., Werner, C., & Karwowski, M. (2016). Differences in creative mindset between Germany and Poland: The mediating effect of individualism and collectivism. *Thinking skills and creativity*, 21, 31-40.
- Warren, F., Mason-Apps, E., Hoskins, S., Azmi, Z., & Boyce, J. (2018). The role of implicit theories, age, and gender in the creative performance of children and adults. *Thinking Skills and Creativity*, 28, 98-109.
- Zhou Y, Yang W and Bai X (2020) Creative Mindsets: Scale Validation in the Chinese Setting and Generalization to the Real Workplace. *Frontiers in Psychology*, 11, 463.

# ASSESSMENT OF DIFFERENCES IN AGGRESSIVE POTENTIAL AND ANTISOCIAL TRAITS IN HOSPITALIZED FORENSIC PATIENTS USING PERSONALITY ASSESSMENT INVENTORY (PAI)

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## Abstract

The clinical retrospective study of 120 subjects involved in the process of assessment during psychological evaluation and hospital treatment of severe mental disorder will be presented. Violent criminal act is a direct manifestation of release of aggressive potential, but it can be triggered also by psychotic symptoms like delusions and hallucinations. A sample of 60 subjects hospitalized at the forensic unit of psychiatric department were assessed using Personality Assessment Inventory (PAI) and compared to 60 subjects from general psychiatric wards. Beside descriptive statistical methods univariate and multivariate analysis of variance was performed to test hypothesis of significant differences in PAI aggression scale (AGG) and antisocial clinical scale (ANT) and subscales (aggressive attitude AGG-A, verbal aggression AGG-V, physical aggression AGG-P, Egocentricity ANT-E, Antisocial Behaviors ANT-A and Stimulus Seeking ANT-S) as well as VPI index between groups. Higher scores on the ANT scale were found in the group of forensic in-patients compared to patients from general psychiatric wards and a negative correlation between age and ANT score.

**Keywords:** *Personality assessment inventory (PAI), aggression, antisocial behavior, criminal offenders, forensic patients.*

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## 1. Introduction

Assessment of aggressive potential and antisocial personality traits is one of the major components in the assessment process at different forensic and non-forensic settings. The use of psychometric assessment has seen widespread development within forensic settings, particularly with regard to risk assessment (Walters, 2002) and treatment outcome (Beech, Fisher & Becket, 1999; Blud, Travers, Nugent, & Thornton, 2003). Personality assessments have also been of value in areas such as criminal responsibility (Melton, Petrila, Poythress & Slobogin, 1997), risk of harm to self and others (Otto, 2002), and validity of response style, especially in relation to malingering (Rice, Harris, & Quinsley, 1996).

Among different assessment tools Personality Assessment Inventory (Morey, 1991) is a measure of clinical characteristics and psychopathology. A large survey of psychological test use in forensic assessment found that multiscale personality inventories were most commonly used measures by forensic psychologists, with the MMPI-2 and the PAI being the most commonly used multiscale inventories (Archer et al., 2006). The efficacy of the PAI in forensic settings has been empirically investigated, and results have been favorable (Jung, Toop, & Ennis, 2017).

The PAI provides information that can aid in offender classification, treatment planning, and risk assessment, and can be used to assess for potential risk of aggression towards self and others, to classify offenders, and even to predict the likelihood of disciplinary action being taken against an inmate during incarceration or recidivism once an inmate is released from custody (Matlasz et al., 2017). Douglas, Hart, and Kropp (2001), in their investigation of the validity of the PAI for forensic assessment, concluded that the tool has utility in measuring key forensic related domains, including violence, personality disorder, and psychosis.

The AGG scale has been subjected to a considerable amount of research in terms of the prediction of antisocial behavior. In sample of 129 forensic patients, Douglas, Hart and Kropp (2001) reported that AGG and ANT moderately discriminated between violent and nonviolent patients, with AGG-P being the most critical AGG subscale in terms of differentiating these patients. The Aggression (AGG) scales and subscales of the PAI have also been found to possess structural validity and to be significantly related to institutional misconduct and recidivism (Newberry, & Shuker, 2012).

Concerning ANT scale of PAI, several studies have evaluated the relationship between the PAI and antisocial behavior (Douglas et al., 2007). Edens, Buffington-Vollum, Colwell, Johnson, and Johnson (2002) reported that ANT postdicted institutional infractions among sample of sex offenders, even after controlling for the PCL-R. A subsequent prospective analysis of a subset of this sample reported that the ANT scale possessed some unique predictive validity vis-à-vis the PCL-R for the prediction of certain types of institutional infractions (Buffington-Vollum, Edens, Johnson, & Johnson, 2002).

## 2. Objectives

The goal of the present study was to identify differences in aggressive potential and antisocial traits between forensic psychiatric patients and patients from general psychiatric wards. Diagnostic categories representing psychopathology, demographic variables (age) and type of criminal act were examined as well. Further, we explored whether any of variables could discriminate between subjects with diminished legal responsibility for reason of insanity and subjects with full legal responsibility for their criminal act. We hypothesized subjects from the group of forensic psychiatric patients will score significantly higher on the AGG and ANT scale and AGG-A, AGG-V, AGG-P, ANT-E, ANT-A, ANT-S subscales and VPI index of PAI compared to subjects from general psychiatric wards.

## 3. Methods

### 3.1. Setting and assessment model

The study was designed as retrospective and clinical including data from assessment procedures performed during hospital treatment of forensic psychiatric in-patients and in-patients from general psychiatric wards.

### 3.2. Sample

Participants included were 120 in-patients (all males) with average age 33,8 years (SD=12,1), among them 60 in-patients from forensic psychiatric ward (34 with court order – group 1 and 26 incarcerated – group 2) and 60 in-patients from general psychiatric wards. They were admitted to Psychiatric Department of University Medical Centre in the period from March 2013 to January 2020. The inclusion criterion for the study was the availability of psychological report including PAI with valid record of responses. Among 60 subjects from forensic psychiatric ward as showing in table 1, 21 committed murder, attempted murder, manslaughter or attempted manslaughter (criminal act type 1), 19 other, less severe type of violent crime (type 2) and 20 non-violent criminal act (type 3). 34 subjects were sent to hospital treatment by court order after committing a violent crime and found not guilty by reason of insanity caused by severe mental illness at the time of offense and 26 represented prison inmates who were hospitalized at the forensic unit due to various mental disorders.

Diagnosis and demographic details and were obtained from hospital computer data base and psychological assessment reports with PAI records from hospital archives.

### 3.3. Measures

Personality Assessment Inventory (PAI) is a 344-item self-report questionnaire made up of 22 nonoverlapping scales (4 validity, 11 clinical, 5 treatment and 2 interpersonal style scales (Morey, 1991). The ANT scale of the PAI purports to measure affective, interpersonal, and behavior features commonly associated with psychopathy and antisocial personality. It is comprised of three subscales and each subscale is purported to assess a conceptually distinct aspects of the larger construct: Egocentricity (ANT-E) interpersonal style that is self-centered, remorseless and emotionally callous, Antisocial Behaviors (ANT-A) or conduct problems and antisocial behavior and Stimulus Seeking (ANT-S), a proneness for boredom and a penchant for thrill-seeking. The AGG scale was constructed to measure attitudes and behaviors that are relevant to hostility, anger and aggression. AGG also has three subscales, namely Aggressive Attitude (AGG-A, poor management and frustration tolerance), Verbal Aggression (AGG-V, lack of limitation when faced with confrontation, insulting with little or no provocation) and Physical Aggression (AGG-P, physical outburst, fights, damage to property and threats of violence). Violence Potential Index (VPI) scores are based on the presence (1 point) or absence (0 point) of 20 different PAI profile features, including scores on ANT and AGG subscales.

### 3.4. Data analysis

All analyses were carried out on SPSS 23 statistical software package for Windows 10. Beside descriptive statistical methods univariate and multivariate analysis of variance were used.



### 3.5. Results

Table 1. Comparison between two groups of forensic in-patients.

|                               | Group of forensic in-patients |              | total |
|-------------------------------|-------------------------------|--------------|-------|
|                               | Court ordered to treatment    | incarcerated |       |
| Type of criminal act – type 1 | 16                            | 5            | 21    |
| type 2                        | 10                            | 9            | 19    |
| type 3                        | 8                             | 12           | 20    |
| <b>total</b>                  | 34                            | 26           | 60    |

Table 2. Chi-Square Test.

|                    | Value | Df | Asymptotic Significance (2-sided) |
|--------------------|-------|----|-----------------------------------|
| Pearson Chi-Square | 5,648 | 2  | ,059                              |

Table 3. Multivariate analysis of variance – dependent variables ANT, AGG and VPI.

| dependent variable                                  | Type III Sum of squares                            | Df | Mean Square                   | F                      | Sig.                   | Partial Eta Squared  |
|---|--|----|-------------------------------|------------------------|------------------------|----------------------|
| Forensic inpatients/ general psychiatric inpatients | ANT<br>589,003<br>AGG<br>159,584<br>VPI<br>354,696 | 1  | 589,003<br>159,584<br>354,696 | 4,934<br>,904<br>1,361 | ,028**<br>,344<br>,246 | ,041<br>,008<br>,012 |
| Type of criminal act                                | ANT<br>108,206<br>AGG<br>86,641<br>VPI<br>17,840   | 1  | 108,206<br>86,641<br>17,840   | ,907<br>,490<br>,680   | ,343<br>,485<br>,794   | ,008<br>,004<br>,001 |
| Diagnosis of ICD-10                                 | ANT<br>205,048<br>AGG<br>17,847<br>VPI<br>126,440  | 1  | 205,048<br>17,847<br>126,440  | 1,718<br>,101<br>,485  | ,193<br>,751<br>,488   | ,015<br>,001<br>,004 |

\*p<,01 \*\*p<,05

Table 4. Univariate analysis of variance – dependent variable ANT.

|  | df | Mean Square | F     | Sig.   | Partial Eta Squared |
|--|----|-------------|-------|--------|---------------------|
| Forensic inpatients/general psychiatric inpatients | 1  | 836,840     | 7,183 | ,008*  | ,059                |
| Age  | 1  | 651,051     | 5,588 | ,020** | ,046                |
| Type of criminal act                               | 1  | 148,026     | 1,271 | ,262   | ,011                |
| Diagnosis of ICD-10                                | 1  | 11,069      | 0,095 | ,758   | ,001                |

\*p<,01 \*\*p<,05

Table 5. Multivariate analysis of variance.

| dependent variable                                  | Type III Sum of squares                                  | Df          | Mean Square                   | F                       | Sig.                   | Partial Eta Squared  |
|---|--|-------------|-------------------------------|-------------------------|------------------------|----------------------|
| Forensic inpatients/ general psychiatric inpatients | ANT-A<br>1104,753<br>ANT-E<br>876,186<br>ANT-S<br>59,138 | 1<br>1<br>1 | 1104,753<br>876,186<br>59,138 | 8,392<br>8,412<br>,427  | ,005*<br>,004*<br>,515 | ,068<br>,068<br>,004 |
| Age   | ANT-A<br>596,151<br>ANT-E<br>231,626<br>ANT-S<br>476,794 | 1<br>1<br>1 | 596,151<br>231,626<br>476,794 | 4,528<br>2,051<br>3,441 | ,035**<br>,155<br>,066 | ,038<br>,018<br>,029 |
| Type of criminal act                                | ANT-A<br>183,908<br>ANT-E<br>204,160<br>ANT-S<br>14,957  | 1<br>1<br>1 | 183,908<br>204,160<br>14,957  | 1,397<br>1,960<br>,108  | ,240<br>,164<br>,743   | ,012<br>,017<br>,001 |
| Diagnosis of ICD-10                                 | ANT-A<br>220,994<br>ANT-E<br>277,032<br>ANT-S<br>22,214  | 1<br>1<br>1 | 220,994<br>277,032<br>22,214  | 1,679<br>2,660<br>,160  | ,198<br>,106<br>,690   | ,014<br>,023<br>,001 |

\*p<,01 \*\*p<,05

### 4. Discussion

Present study was an empirical attempt to examine differences in antisocial traits and aggressive potential between forensic in-patient and general psychiatric in-patients. Among forensic in-patients two different groups were compared in terms of type of criminal act, aggression and antisocial traits, namely patients court ordered to treatment and incarcerated patients. Also other factors (age, diagnosis of ICD-10) that could contribute to aggressive potential and antisocial traits were investigated. We

hypothesized forensic in-patients will show significantly higher level of aggressive potential and antisocial traits compared to general psychiatric in-patients measured by PAI scales and subscales. Our hypotheses were partially confirmed.

First, the type of criminal act and possible differences were defined in both group of forensic patients. All criminal acts were divided into three groups according to the level of violence type 1 having the highest level of violence and type 3 lowest. Frequencies of the types of criminal act were then compared between the groups of forensic in-patients and differences were tested by chi square test (table 1 and table 2). Although the level of significance was not fully reached ( $p=,059$ ), the trend of court-ordered-to-treatment patients being prone to more violent criminal acts than incarcerated patients is clearly recognizable.

Multivariate analysis of variance in table 4 shows three main PAI measures (clinical scale ANT, treatment scale AGG and VPI index) applied to the group of forensic in-patients and general psychiatric in-patients. The two groups of inpatients differ significantly only on the ANT scale, where forensic in-patients scored significantly higher on ANT scale compared to general psychiatric in-patients (table 6). There were no significant differences in AGG and VPI between forensic in-patients and general psychiatric in-patients. No significant correlation was found between the level of violence of criminal act and any of PAI measures nor between diagnosis and PAI measures.

In following univariate anal we explored further the ANT in different groups of patients. In table 5 correlation between age and ANT score can be found and comparison between different types of criminal act and different diagnosis considering ANT score. There is a significant negative correlation between patients' age and ANT score, which means the level of antisocial traits decline with aging and older patients have less prominent antisocial traits than younger. No significant correlation was found between type of criminal act and ANT score, nor between diagnostic categories and ANT score.

To investigate the nature of antisocial traits in both groups of patients more precisely another multivariate analysis was performed. As showed in table 6, there is a significant difference in both ANT-A and ANT-E scores between forensic and general psychiatric in-patient, where forensic in-patients obtained significantly higher scores on ANT-A and ANT-E scales than general psychiatric in-patients. On the third ANT subscale, the ANT-V there was no significant difference between the two groups. ANT-A subscale incorporates various patterns of antisocial behaviors or conduct problems and it is not surprising to expect higher level of antisocial behavior among forensic in-patients considering the fact that each of them has been involved in some type of criminal activity. ANT-E subscale, on the other hand, measures egocentricity, which is an interpersonal style that is self-centered, remorseless and emotionally callous. Therefore we are able to assume forensic in-patients will express more egocentric interpersonal style than other psychiatric in-patients. Table 5 also indicates negative correlation between ANT-A score and age meaning higher level of antisocial behavior patterns is expected in younger patients and the level of antisocial acting declines with higher age.

Present study partly confirms the results of previous investigation. PAI can play an important part of a comprehensive assessment for purposes of treatment planning and decision making in forensic settings. A growing body of literature supports the utility of the instrument for examining distorted responding, psychiatric diagnosis, character pathology, substance abuse, risk assessment and treatment consideration (Morey, & Quigley, 2002).

However, the present clinical study has a number of limitations, therefore its conclusions should be interpreted with some caution. From the aspect of methodological shortcomings it should be pointed out that the sample was relatively small and among PAI protocols (especially those from forensic in-patients group) a substantial number had scores on validity scales close to limit of being invalid.

## 5. Conclusion

Aggressive and antisocial behavior can be highly disrupted to treatment programming and threaten the physical safety of staff and other patients/inmates. A comprehensive assessment of personality structure of in-patients is a source of useful information which can help predicting and managing the risk of aggressive behavior in hospital setting and later after release from either hospital or prison. Nevertheless, psychological assessment process should incorporate a multimethod approach in the evaluation of an individual's personality, so personality inventories should be combined with projective techniques, structured interviews and rating scales.

## References

- Archer, R. P., Buffington-Vollum, J. K., Stredny, R. V., & Handel, R. W. (2006). A survey of Psychological tests use patterns in forensic psychologists. *Journal of Personality Assessment, 87*, 84-94.
- Beech, A. R., Fisher, D. D., & Becket, R. (1999). *Step 3: An evaluation of the prison sex offender treatment programme*. London, England: Home Office.
- Blud, L., Travers, R., Nugent, F., & Thornton, D. (2003). Accreditation of offending behavior Programmes in HM Prison Service: What works in practice. *Legal and Criminological Psychology, 8*, 69-81.
- Buffington-Vollum, J. K., Edens, J. F., Johnson, D. W., & Johnson, J. K. (2002). Psychopathy as predictor of institutional misbehavior among sex offenders: A prospective replication. *Criminal Justice and Behavior, 29*, 497-511.
- Caperton, J. D., Edens, J. F., & Johnson, J. K. (2004). Predicting sex offender institutional adjustment and treatment compliance using the Personality Assessment Inventory. *Psychological Assessment, 16*, 187-191.
- Douglas, K. S., Guy, L. S., Edens, J. F., Boer, D. P., Hamilton, J. (2007). The Personality Assessment Inventory as a Proxy for the Psychopathy Checklist-Revised. *Assessment, 14*, 255-269.
- Douglas, K. S., Hart, S. D., & Kropp, P. R. (2001). Validity of the Personality Assessment Inventory for Forensic assessments. *International Journal of Offender Therapy and Comparative Criminology, 45*, 183-197.
- Edens, J. F., Buffington-Vollum, J. K., Colwell, K. W., Johnson, D. W., & Johnson, J. K. (2002). Psychopathy and institutional misbehavior among incarcerated sex offenders: A comparison of The Psychopathy Checklist-Revised and the Personality Assessment Inventory. *International Journal of Forensic Mental Health, 1*, 49-58.
- Hastings, M. E., Stuewig, J., & Tagney, J. (2006). *Relative efficacy of the PAI, PCL:SV, and VRAG in Predicting institutional misconduct and short-term recidivism*. Paper presented at the annual meeting of the American Psychology-Law Society, St. Petersburg, FL.
- Jung, S., Toop, C., & Ennis, L. (2017). Identifying Criminogenic Needs Using the Personality Assessment Inventory With Males Who Have Sexually Offended. *Sexual Abuse: A Journal of Research and Treatment, 1*-18.
- Matlasz, T. M., Brylski, J. L., Leidenfrost, C. M., Scalco, M., Sinclair, S. J., Schoelerman, R. M., Tsang, V., Antonius, D. (2017). Cognitive status and profile validity on the Personality Assessment Inventory (PAI) in offenders with serious mental illness. *International Journal of Law and Psychiatry 50*, 38-44.
- Melton, G. B., Petrila, J., Poythress, N. G., & Slobogin, C. (1997). *Psychological evaluations for the courts: A handbook for mental health professionals and lawyers* (2<sup>nd</sup> ed.). New York, NY: Guilford.
- Morey, L. C. (1991). *Personality Assessment Inventory: Professional manual*. Odessa, FL: Psychological Assessment Resources.
- Morey, L. C. (1996). *An interpretive guide to the Personality Assessment Inventory*. Odessa, FL: Psychological Assessment Resources.
- Morey, L. C., & Quigley, B. D. (2002). The Use of the Personality Assessment Inventory (PAI) in Assessing Offenders. *International Journal of Offender Therapy and Comparative Criminology, 46* (3), 333-349.
- Otto, R. K. (2002). Use of the MMPI in forensic settings. *Journal of Forensic Psychology, 2*, 71-91.
- Rice, M. E., Harris, G. T., & Quinsley V. L., (1996). Treatment for forensic patients. In B. Sales & S. Shah (Eds.), *Mental health and law: Research, policy and services* (pp. 141-189). Durham, NC: Carolina Academic Press.
- Skopp, N. A., Edens, J. F., & Ruiz, M. A. (2007). Risk factors for institutional misconduct among Incarcerated women: An examination of the criterion-related validity of the Personality Assessment Inventory. *Journal of Personality Assessment, 88*, 106-117.
- Walters, G. D. (2002). The psychological Inventory of Criminal Thinking Styles (PICTS): a review and meta-analyses. *Assessment, 9*, 278-291.

# AN EXPLORATORY INVESTIGATION OF USING SANDTRAY IN COUPLES THERAPY

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## Abstract

Sandtray therapy is a form of expressive therapy that allows a person to construct their own microcosm using miniature toys and sand. The scene created acts as a reflection of the person's own life and allows them the opportunity to resolve conflicts, remove obstacles, and gain acceptance of self. This non-verbal method of therapy is often used with children, but can be applied to adults, teens, couples, families, and groups as well. Couples may find the sandtray a good way to let out feelings, share inner thoughts and fears, and work through conflict. When couples enter therapy together, it is often precisely because they are having difficulty communicating with one another. They may have feelings that they feel are not appropriate to share with their partner, or they may feel like they don't have the support from their partner to be safe when expressing their feelings. Primarily, sandtray therapy aids in communication. Because communication is a cornerstone of relationships, any therapy that can help people understand each other more clearly is beneficial to couples and other family relationships. This paper shares qualitative results from an exploratory investigation of the use of sandtray as an intervention within regular couples talk-therapy, and the experiences of three couples participating in the intervention. How sandtray was utilized within sessions is discussed as well as qualitative feedback from couples participating in the therapy over a 3-month period. Further research opportunities using sandtray with couples are also identified.

**Keywords:** *Sandtray, couples, relationships, communication, expressive therapy.*

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## 1. Introduction

Couples counseling can be a challenge, especially when there are engagement and communication barriers. It is common to have one or both partners nervous and reluctant to fully participate in the counseling process. By the time couples present for counseling, patterns of communication and metacommunication can be difficult to assess and process (Sweeney, 2002). Then counselors must seek out-of-the-box ways to assess relationship dynamics, and also to break through the couple's communication barriers. Experiential interventions, like sandtray therapy, that do not fully rely on verbal means of communication may offer one avenue counselors can take.

Sandtray therapy is an experiential, client-centered, psychodynamic method developed by Dora Kalff; and is rooted in Margaret Lowenfeld's world technique, Jung's analytical psychology, and Eastern contemplative practices (Kalff, 2020/1966). The core of sandtray therapy is that it makes the client's unconscious material accessible and provides a nonverbal and symbolic expression of a client's inner world (Kalff, 2007). Research in the past twenty years has primarily focused on outcomes of using sandtray in different settings and analysis of content. Few studies were found that focused on client experience. Those include exploring the experiences of individual clients including adolescents (Freedle et al., 2015), emerging adults (Freedle et al., 2020), and adults (Stanescu, 2021). Research focused on the experience of couples who had participated in sandtray is minimal. In a case study by Domenico and Schubach (2002) the use of sandtray in a couple's session transformed the ways in which the couple saw each other and the issues in their relationship. Carmichael, Echols, and Warren (1997) described using sandtray as a successful intervention in one session with a couple experiencing communication barriers and inability to negotiate issues.

Fishbane (2013) discussed encouraging couples to see multiple realities which can be challenging if confined to a cognitive, verbal level. Yet, the inability to see each other's realities, or point of view, is often the crux of couples therapy. Sandtray provides couples (in either individual or conjoint trays) a non-verbal way to express a visual depiction of their world or reality. This also gives the counselor an opportunity to assess the dynamics of the relationship, especially when verbal means of

expression has been a barrier. Additionally, and even more importantly, it gives the couples a novel way of viewing their relationship and communication dynamics. Since both partners are creating at the same time, this also gives an additional benefit of putting the focus on both partners instead of only one.

## **2. How Sandtray was used in session**

The couples in this exploratory study had all reached an impasse regarding their progress in counseling. Each couple had engaged in at least six consecutive weekly sessions where talk-therapy strategies had been applied. Although the couples did show improvement in practicing basic listening and communication skills, when it came to discussing conflicts which had initially brought them into therapy, they resorted to arguing and ineffective engagement patterns. Homeyer and Sweeney (2017) proposed guidelines for utilizing sandtray with couples which were followed in the sessions where this intervention was utilized. The focus during the initial stage of sandtray with the three couples was on intrapersonal and interpersonal discovery. Setting the tone for discovery, as opposed to direct conflict resolution, created a safer environment to pave the way for future work in communication and couples' issues.

The sandtray process was introduced to the couples as a novel way to create and share their personal worlds by choosing any miniatures they liked to place in the sand however they liked. Although there was some initial discomfort due to "feeling silly" as one participant stated, couples' overall response welcomed the intervention. Once begun, each couple showed a great deal of care when choosing their miniatures and placing them in the sand. Directions from the therapist can be either nondirected or directed, and partners can use conjoint or individual trays (Homeyer & Sweeney, 2017). Each partner in this study initially used an individual tray in order to decrease any anxiety or conflict that collaborating on a conjoint tray may have caused. This served to allow each partner to be fully in control of their world picture. It is common for one or both partners to feel unheard in the relationship. Individual trays provide partners the opportunity to openly express their pain, fears, and hopes through the creation of the tray (Homeyer & Sweeney, 2017).

To begin, each couple received the prompt to, "Create a picture of what your relationship was like when you first began, and a picture of how your relationship is now." There was no time limit imposed and talking was discouraged during the creation of their worlds. After the trays were completed, partners were invited to share the story of their world. The partner not actively sharing was encouraged to engage in active listening (a skill each had practiced in the previous weeks) and interruptions were not allowed. After each partner shared their world, the listening partner and the counselor were free to ask questions about the picture and story. Some partner's explanations of their world required no additional clarification, while others called for gentle open-ended questions or reflections to elicit further information. This was especially true when one or both partners had trouble expressing themselves verbally.

Eliciting further information also served to ease the sharer into the process of telling their story and modeled for the listener how to ask respectful questions about their partner's world. For example, "I see this figure is turned away. What could these figures be talking about? I see this figure buried deep in the sand. Is this figure leaning slightly towards the other? What might this gate or wall signify?" It was important, when eliciting further information, to not jump to conclusions or assumptions. After each partner had shared, it was also important for each to reflect on the process of sharing. This was prompted with the question, "What was it like for you to create your world and share it with us?" At the end of each sandtray session, a photo was taken of each tray. That way, if something further needed to be processed at the next session, the photo could be referred back to. The photos also served as a visual depiction of the journey and progress made through the experience.

The next sandtray created by each couple was prompted by asking them to create their picture for what they want their relationship to be going forward. These creations in particular served the purpose of instilling hope in the couple's successful future together. When the couple demonstrated movement towards more effective communication through discussing their own sandtray, they were given the direction to create a world using a conjoint tray. The prompt given was simply to construct a scene from the past week. The couple was then asked to jointly tell the story depicted in their tray. Again, the counselor asked clarifying questions and statements as needed to elicit further information. This was followed by processing how the joint creation and explanation felt for them as a couple. It was important to give each partner a chance to share equally. Other prompts given as sessions progressed included, "How would you like to be shown care/love from your partner? What are the hurdles that need to be overcome for the relationship to be happier? What is a great memory from the past?" It was evident as sessions progressed that each couple was experiencing increased skill in effective communication evidenced by their cooperative creations in the sand, and their conjoint story telling capability as they took turns describing their scenes and adding to their stories.

### 3. Methods

Research is limited on the viability of using sandtray as an intervention within regular talk-therapy sessions with couples, particularly on the experiences of participating couples. This interest was summarized into two research questions: What were couples' experiences with sandtray as part of their counseling sessions? Is sandtray a viable option as an intervention used during regular talk-therapy with couples?

This study was exploratory in nature, investigating using sandtray as an intervention during regular talk-therapy. Convenience sampling was used as all participants had previously participated in couples counseling with the investigator over a 5-month period. All couples identified as Caucasian, between the ages of 30-45, and completing some college or trade-school to advanced academic degrees. The sand-tray intervention was employed with each couple over a 3-month period between 5-7 times.

The phenomenological analysis used to explore the couples experience was derived from the guidelines of Moustakas (1994) and involved (a) audio recorded and transcribed interviews, (b) reading transcripts to gain a sense of the whole, (c) extracting significant statements, (d) eliminating irrelevant repetition, (e) identifying central themes, and (f) integrating meanings into a single description of a phenomenon (Creswell, 1998). Semi-structured, open-ended interviews were conducted approximately 6-months after sessions had terminated. It was explained to each couple that the purpose of the interview was to share their experience participating in sandtray and the impact, if any, on their relationship. Follow-up questions were asked to obtain more detail and to provide clarity, such as, "Tell me more about that?" or "Is there anything else you would like to say about that?" For each question, the interviewer sought responses from both partners to allow both parties to be heard. If only one partner responded to a question, the interviewer would ask for the other's input. The investigator also clarified non-verbal cues, such as, "You are nodding, could you say more about your thoughts?" or "You appeared to react when your partner said this, could you say more about what you are thinking?"

For the three participating couples, five distinct themes emerged in their responses: increased effective communication, new creative problem-solving, increased hope and engagement in the relationship, relief of tension, and increased emotional attunement.

### 4. Themes

*Increased effective communication:* Each couple demonstrated enthusiastic agreement that their communication was improved. This was shown by non-verbal body language such as head-nodding while the other partner was speaking on the subject, smiles, and physical leaning towards each other while discussing their increase in successful communication.

"We communicate much easier now because I think it increased our empathy for what each other is trying to say, instead of jumping to conclusions. We also ask questions differently now, like how we did when explaining our worlds in the sand; in a more non-judgmental way."

"We take the time to intentionally listen to each other which is something I think we definitely lacked before. I think we made a lot of assumptions and reactions before, instead of taking time to really listen and step into the other's worlds."

"We actually talk more often than we did before, and I think that using the sand really made a big impact on that. I don't know if we would have ever stopped to listen to each other; but when you see it visually it just makes a difference. It also made it easier for me to communicate how I was feeling and what I wanted because I don't always have the words which was frustrating. Now we also check in with each other which is brand new for us."

*New creative problem-solving:* Each couple discussed creative ways in which they communicate post-intervention that they believed would not have been discovered if they had not participated in sandtray. One couple even commented that they were gathering their own sandtray materials "in case they get stuck again".

"I know we are not experts at doing this, but we have been gathering small items to use in our own sand tray of sorts; something to help us when we are stuck with verbally communicating."

Another couple commented on exploring even more unique ways to foster communication in their relationship.

“Since this (using sand tray) went so well for us, we are interested to explore what other experiential techniques might be useful in our relationship as well.”

One couple spoke about their ongoing use of words and phrases from the sandtray sessions.

“We find ourselves using the words or metaphors that we used when describing our sand trays in session, like- I am feeling like my words are getting buried in the sand again. This seems to really help us understand each other in that moment and get on the same page again.”

*Increased hope and engagement in the relationship:* Hope for the future and continued engagement with each other was apparent in each couple’s description of their current life together. One couple, who during the intervention buried a pair of lips in the sand depicting their suffocated voices, discussed finding their voices again.

“It made me realize that I do have thoughts, and that verbalizing them was just a barrier for me in sharing them. So, this helped me to get engaged again rather than giving up on sharing my thoughts.”

Couples shared their renewed hope that even in the tough times, they can keep communicating; something they reported that they had given up on before.

“It gave us hope that we can communicate, and that we can keep getting even better at it. I think we needed the door unstuck by engaging in something non-verbal, talking in a different way, so that we could be receptive to learning how to communicate effectively again.”

“It definitely made us feel more motivated to make changes for the better in our relationship. We were so stuck and really needed to feel a success, and that we were on the same page again. Even though we might have hesitated about using the sandtray at first, I really think it broke down a wall for us. We don’t want to lose that again.”

*Relief of tension:* All couples discussed the relief they felt after successfully participating in the intervention and the breakthrough experienced when having their stories genuinely heard. This relief was also evident in couples’ body language as several partners audibly sighed and relaxed their bodies when discussing.

“I am so so relieved that there was a different way to share and work through things that were difficult to talk about. The tension that had built up between us was nearly unbearable. A huge weight has been lifted off of this relationship.”

“I think we were both pretty nervous coming into counseling because you’re taught growing up to handle things within the family. I know I was nervous about how to even begin talking about things or sharing feelings- like that it would feel awkward. And I won’t lie, when sand tray was introduced, I was pretty hesitant because it might have felt silly. But it turned out to be a pretty amazing tool that broke through the barriers when I am not sure just talking would have gotten to where we needed to go. Just talking does not seem like it would have worked as effectively anyway. There was too much tension already built up.”

“The fighting had just gotten to a point where we could not really talk about anything anymore. There was so much resentment and negative energy. It was like we could breathe again when we could finally get talking; like a huge sigh of relief that opened those doors between us again. This really happened for me when I saw him (husband) really listening to me explain my world after creating the tray.”

*Increased emotional attunement:* All couples alluded to diminishing closeness and compassion with their partners due to built up hostility and negative feelings. Couples reported a lack of being understood and emotional connection prior to therapy. Gottman defines emotional attunement as the desire and the ability to understand and respect your partner's inner world (Gottman, 2011). When couples discussed how their initial feelings changed as a result of the sandtray intervention, all partners demonstrated increased connection and renewed interest in their partners. They leaned towards each other, touched their partners affectionately, and two couples paused to share a kiss. One couple got tearful when discussing the new perspective they now share.

“It is like I can see him more clearly now. It helped me get a new perspective on what he is thinking and feeling. I don’t think I really even believed that he put any time into considering us at all in the past. After him explaining his sand tray- his vision of our relationship now and what he would like it to be- I have a totally different viewpoint.”

“Having to stop and visually see a representation of what your partner feels is so much more impactful than just hearing the words, I think. It really made me understand where she is coming from in a whole different way. I see her now. I don’t know if we would have gotten there using just words since words weren’t getting us too far up until that point.”

“Somehow playing in the sand, and communicating that way, helped us connect with each other’s inner child if you will. And that helped us see each other in a new way and filled with more tenderness and love; like falling in love again- remembering.”

## 5. Discussion

Regular talk-therapy is not always the most effective option when couples are stuck in ineffective communication patterns. Counselors working with couples must seek creative methods to engage couples in therapy. Breaking through communication barriers and helping couples enter the reality of their partners is a crucial element of successful outcomes. This exploratory study demonstrates that sandtray therapy may be a creative and viable intervention counselors can employ to meet this need. The limitations of this study should be considered. Qualitative analysis lends itself to subjective interpretation by the interviewer. This subjectivity is enhanced when there is only one interviewer without the benefit of the checks and balances made possible by more interviewers. This study also had a small number of participants, three couples, so results cannot be generalized to the larger population. The interviewer also worked directly with the couples in counseling, so there may have been a desire to please the interviewer with answers confirming the helpfulness of the sandtray intervention. However, as this is an initial exploration of the couples’ experience with this intervention these limitations do not weigh as heavily as with a larger scale, more formalized investigation. It appears clear that sandtray is a viable and promising option to use in couples counseling, especially where one or both members are stuck in their communication styles or when there is a lack of verbal comfort and/or ability. Therefore, larger scale investigations into using sand tray with diverse populations would be beneficial to the field going forward. It would also be beneficial to use quantitative measures to explore the impact on communication, intimacy, hopefulness, cohesion, cooperation, etc. Also, of interest would be interviewing participants at various points in time after therapy concludes to determine the effectiveness of the intervention long-term.

## References

- Domenico, D., Schubach, G. (2002). Weaving Together Dream, Image and Relationship: Moving from Anger, to Fear, to Love. *International Journal of Play Therapy* 11(1), 1-18.
- Fishbane, M. (2013). *Loving with the brain in mind: Neurobiology and couple therapy*. New York: W.W. Norton & Company.
- Freedle, L., Altschul, D., Freedle, A. (2015). The Role of Sandplay Therapy in the Treatment of Adolescents and Young Adults with Co-occurring Substance Use Disorders and Trauma. *Journal of Sandplay Therapy*, 24(2), 127-145.
- Freedle, F. R., Goodwin-Downs, D., Souza, Jr, J., & Cippononeri, A. (2020). The Added Value of Sandplay Therapy with Emerging Adults in an Outdoor Behavioral Healthcare Program. *Journal of Sandplay Therapy*, 29(1), 129-144.
- Gottman, J. M. (2011). *The science of trust: Emotional attunement for couples*. New York, NY: W. W. Norton & Co.
- Homeyer & Sweeney (2017). *Sandtray Therapy: A Practical Manual*. New York, NY: Routledge.
- Kalff, D. M. (2007). The Sandplay. A Contribution from C. G. Jung’s Point of View on Child Therapy. *Journal of Sandplay Therapy*, 16(2), 49-72.
- Kalff, D. M. (1966/2020). *Sandplay: A psychotherapeutic approach to the psyche*. Translated by Boris L. Matthews. Edited by Dyane N. Sherwood. Oberlin, Ohio. Analytical Psychology Press: Sandplay Editions.
- Moustakas, C. E. (1994). *Phenomenological research methods*. Thousand Oaks, Calif.: Sage.
- Stanescu, D. F. (2021). How Do Adults Experience Sandplay Therapy? And Interpretive Phenomenological Analysis. *Journal of Sandplay Therapy*, (30)1, 131-145.
- Sweeney, D. (2002). Sandplay with couples. In R. Watts (Ed.), *Techniques in marriage and family counseling*, Volume 2 (pp. 95–104). Alexandria, VA: American Counseling Association.



# COVID-19 IMPACT ON MEANINGFULNESS OF LIFE, QUALITY OF LIFE AND PSYCHOLOGICAL IMMUNITY

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## Abstract

The pandemic period of covid-19 has been a time marked by serious declines in quality of life, affecting pervasively not only physical health but also psychological well-being. The purpose of the study was to examine the state and interrelations of the three following variables – quality of life, meaningfulness of life and the psychologically-based physical immunity. It was hypothesized that all three variables will be positively interrelated and that quality of life will fulfill a focal role in this triad of variables. The sample included 230 individuals who responded to an unanimously administered which included the following three questionnaires (all with confirmed satisfactory reliability and validity): the multidimensional quality of life inventory, the meaning-based meaningfulness of life questionnaire, and the cognitive orientation of health questionnaire. The result showed that all three variables were intercorrelated positively. The highest correlations were obtained for quality of life and meaningfulness of life. The cognitive orientation of health appears to be affected more directly by quality of life, and by meaningfulness of life more indirectly through the relation of the latter with quality of life. The impact of covid-19 on the findings was relatively limited. A major conclusion is that the basic structure of the three variables was maintained preserving their supportive role in the psychological system.

**Keywords:** *Covid-19, meaningfulness of life, quality of life, cognitive orientation of health, emotion.*

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## 1. Introduction

The pandemic of covid-19 has resulted already in 5,555,737 cases and 350,212 deaths worldwide (European Centre for Disease Prevention and Control, January 20, 2022). Evidence from previous large-scale health outbreaks shows that a physical health event of these proportions also impacts the mental health and quality of life (QOL) of the population (Sim & Chua, 2004). Recently published studies show that the pandemic affects seriously the well-being and QOL of populations in different countries (El Keshky, Basyouni, & Al Sabban, 2020), both healthy people and those considered as vulnerable groups (Holmes et al, 2020). Unanimous internet surveys conducted in Israel three times, during the three sequential pandemic waves, with altogether 560 participants (300, 160 100 in the different waves, respectively) showed an increase in despair assessed on a 0-10 scale, from 4.2 to 5.3 to 5.9. Major mentioned causes were fear of disease, need to keep social distance from others, withdrawal from the workplace and uncertainty (Kreitler, 2021). These observations indicate the severity of the impact of the pandemic on QOL. The lockdowns and other restrictions imposed on the population during the outbreak may have been contributing factors. It is likely that reactions of this kind will not disappear fast after the pandemic weakens and will require increased attention of psychological experts. The cited reactions served as basis for the major study that was carried out in the fourth wave of the pandemic in Israel.

## 2. Objectives

The present study was based on the assumptions that the effects manifested in the QOL are related to two further correlates reflecting one's meaningfulness of life and one's psychologically-based disease immunity. The objectives were to examine the interrelations between these three major variables: QOL, meaningfulness of life, and the psychologically-based physical-health immunity. It was expected that all three variables will be related positively to each other. Hence, the hypotheses were first that QOL will be related positively to meaningfulness of life (Kreitler, 2016a, 2016b); secondly, that QOL will be related positively to psychologically-based physical immunity; thirdly, that meaningfulness of life will be related to immunity. Additionally, it was assumed that QOL is likely to fulfil the role of a dominant variable relatively to the other two due to its broad theoretical basis (Kreitler & Kreitler, 2006; Kreitler, Peleg & Ehrenfeld, 2006; Niv & Kreitler, 2001).

### 3. Methods

The design was of a quantitative study with three variables assessed by questionnaires.

#### 3.1. Participants

The sample included 230 participants of both genders, in the age range 27-54 years, who responded to the online address in the period between the first and fourth weeks of the fourth wave. The sample included 130 women and 100 men. The majority were married (75%), lived in urban areas (72%) and when responding to the questionnaires were physically healthy by self reports.

#### 3.2. Tools

Three tools were administered. (a) The Meaning-based questionnaire of the meaningfulness of life (MMOL) (Kreitler, 2016b, c). In contrast to most of the other tools assessing meaningfulness of life which are based on a holistic evaluation of the authenticity, creativity and meaningfulness of life as a whole, the MMOL is based on assessing the specific contribution of particular domains, defined in terms of a comprehensive meaning system (Kreitler, 2022), to the overall meaningfulness of life. It includes 38 items, e.g., to be active, to have many friends, to have a lot of possession. The respondent is asked to rate on a 4-point scale the degree to which the specific item exists in one's life as a contributing element to one's MMOL. The items contribute together one overall score as well as four scores representing the four following clusters of items: those focused on dynamic-actional aspects (actions, functions, manner of operation), perceptual-sensory aspects (colors, forms, weight, material, parts, location, state), experiential aspects (thoughts, beliefs, emotions, experiences) and contextual aspects (causes, results, contexts of belonging, possessions). The reliability was in the range of .78-.85 in different samples. The validity was checked in terms of predicted outcomes, (e.g., Kreitler, 2016a) (b) The multidimensional quality of life (QOL) inventory (Kreitler & Kreitler, 2006) that consists of 53 items referring to one's functioning and state in different domains, e.g., social, cognitive and emotional. Responses were given on a Likert scale of our degrees referring to the degree to which one had the stated property (a lot or a little). The scale provided in addition to one total summative score also scores on 15 scales, defined on the bases of factor analyses and cluster analyses (Table 3 presents the list). The reliability coefficients were in the range of .81-.88 and validity was determined in terms of correlations with other scales and behavior predictions. (c) The Cognitive Orientation of Health (COH) that provided scores on four types of beliefs – about oneself, about others and reality, about goals and wishes and about rules and norms, with 30 items in each, assessing themes underlying one's psychological immunity, e.g., coping with stress. relations with others, attitudes to oneself. The questionnaire's validity was supported by studies which showed that the scores of COH predicted significantly disease occurrence, course of disease, recovery from disease, and reactions to treatments and side-effects for example in regard to cardiological diseases, breast cancer, lymphoma, and the flu (Kreitler, 1997, 1999, 2016b; Kreitler & Richkov, 2015).

#### 3.3. Procedure

The three questionnaires MMOL, QOL and COH were administered anonymously together in the social media, in a random order. It was decided beforehand that the data collection will continue only for four weeks in order to keep the conditions in view of the evolving pandemic approximately without change.

### 4. Results

#### 4.1. Defining the variables

First, each of the three major variables (QOL, MMOL and COH) was submitted to a statistical procedure for testing the structure of the variables themselves. In regard to QOL factor analysis was performed in two stages. First, the items were submitted to a factor analysis which yielded 15 scales, as in previous applications of the QOL (see list in Table 3). In the next stage, when these 15 scales were further factor analyzed they yielded the following three factors labelled as 'positive emotions', 'functioning in everyday life' and 'negative emotions', accounting for 34.51%, 23.50%, and 10.21%, respectively (see Table 3 for the scales of QOL defining each of the three factors). In regard to MMOL the correlations between the four clusters of actional, perceptual, experiential and contextual aspects were at best of borderline significance. Hence, they were maintained as separate variables in addition to the score based on the total sum. The four variables representing the four belief types of COH were kept as separate variables due to theoretical considerations and low intercorrelations between the variables.

#### 4.2. Descriptive data of the variables

Means and standard deviations (Sd) of the variables: for QOL, M=39.8 (Sd=13.5), for the three factors positive emotions M=17.3 (Sd=4.8), functioning in everyday life, M=11.8 (Sd=4.6), negative emotions M=10.1 (Sd=2.2). For MMOL M=20.3 (Sd=5.1), for actional M=11.4 (Sd=2.5), for perceptual M=11.8 (Sd=1.9), for experiential M= 12.6 (Sd=3.4), for contextual M=14.5 (Sd=3.3). For COH Beliefs about self M=16.4 (Sd=3.5), General beliefs M=14.9 (Sd=3.7), Norm beliefs M=15.2 (Sd=5.5), Beliefs about goals M=13.3, (Sd=4.4).

#### 4.3. Correlations between the variables and their components

Table 1 presents the Pearson correlation coefficients between QOL scores and the MMOL scores. Table 2 complements the information in presenting the Pearson correlation coefficients of QOL with MMOL variables, on the one hand, and with the COH variables, on the other hand. The major findings in Table 1 indicate relations between the total score on MMOL and the QOL scores, both the total score and the scores on the three factors of positive emotions, functioning in everyday life and negative emotions. Notably, the highest correlation was obtained between the total scores of MMOL and QOL. A closer examination of the findings shows that the total score of QOL is related significantly not only to the total score of MMOL but also to the four clusters of MMOL variables, in particular to the contextual and experiential clusters.

Table 1. Correlation coefficients between Quality of Life (QOL) and Meaning-based Meaningfulness of Life (MMOL).

| Variables             | MMOL total | MMOL action | MMOL perceptual | MMOL experiential | MMOL contextual |
|-----------------------|------------|-------------|-----------------|-------------------|-----------------|
| QOL total             | .39***     | .26***      | .13*            | .31***            | .45***          |
| QOL positive emotions | .31***     | .17         | .15*            | .28***            | .14*            |
| QOL functioning       | .24***     | .26***      | .19**           | .13               | .19**           |
| QOL negative emotions | .28***     | .14         | .22**           | .24***            | .21**           |

\*p<.05 \*\*p<.01 \*\*\*p<.001; Quality of Life is represented by the three major factors.

Concerning the intercorrelations between QOL and the COH, Table 2 shows that the two sets of variables are related first, in regard to beliefs about self (with the total score of QOL, and the factors of positive emotions and functioning in everyday life), secondly in regard to general beliefs and norm beliefs (the factors of functioning in everyday life and negative emotions), and thirdly, in regard to goal beliefs (QOL total score).

There are fewer intercorrelations between MMOL and COH. The most notable ones are between beliefs about self and MMOL total and the experiential cluster, as well as between the cluster of actions and goal beliefs.

Table 2. Correlation coefficients between Quality of Life (QOL) and Cognitive Orientation of Health (COH) and Meaning-based Meaningfulness of Life (MMOL).

| Variables             | COH Beliefs about self | COH beliefs General | COH Beliefs about norms | COH Beliefs about goals |
|-----------------------|------------------------|---------------------|-------------------------|-------------------------|
| QOL total             | .39***                 | .16                 | .13                     | .31***                  |
| QOL positive emotions | .25***                 | .12                 | .15*                    | .17*                    |
| QOL functioning       | .29***                 | .23**               | .21**                   | .13*                    |
| QOL negative emotions | .10                    | .28***              | .35***                  | .11                     |
| MMOL total            | .25***                 | .08                 | .13*                    | .14*                    |
| MMOL action           | .13*                   | .13*                | .10                     | .37***                  |
| MMOL perceptual       | .11                    | .15*                | .17*                    | .12                     |
| MMOL experiential     | .34**                  | .11                 | .16*                    | .21**                   |
| MMOL contextual       | .19**                  | .18**               | .16*                    | .11                     |

\*p<.05 \*\*p<.01 \*\*\*p<.001; Quality of Life is represented by the three major factors.

#### 4.4. Analyzing the interrelations between QOL, MMOL and COH variables by factor analysis

Factor analyzing all the variables in the study, including their components, was undertaken in order to examine in depth their mutual interrelations. The factor analysis yielded the following three factors, accounting together for 68.22%. The major factor is based on two foci: positive emotions

including their contributing scales and the self-including its experiential and sensory aspects, joined by beliefs about self of the COH. The second factor represents negative emotions, including bewilderment and confusion, stress, health worries, supported by two important belief types (general beliefs and norms) of COH. The third factor represents hard-core reality, with emphases on work, action, social relations and contextual aspects of one's life (place, time, possessions).

Table 3. Factor analysis of the variables of QOL, MMOL and COH.

| Variables                      | Factor 1 | Factor 2 | Factor 3 |
|--------------------------------|----------|----------|----------|
| QOL positive emotions          | .875     |          |          |
| QOL sense of mastery           | .682     |          |          |
| QOL cognitive functioning      | .655     |          |          |
| QOL functioning in the family  | .528     |          |          |
| COH Beliefs about self         | .491     |          |          |
| MMOL experiential              | .463     |          |          |
| MMOL sensory                   | .459     |          |          |
| QOL sexuality                  | .382     |          |          |
| COH beliefs about self         | .366     |          |          |
| QOL self-image                 | .312     |          |          |
| QOL confusion and bewilderment |          | .794     |          |
| QOL negative emotions          |          | .672     |          |
| QOL physical functioning       |          | .581     |          |
| COH general beliefs            |          | .570     |          |
| QOL stress                     |          | .566     |          |
| COH norm beliefs               |          | .563     |          |
| QOL Health worries             |          | .472     |          |
| QOL body image                 |          | .319     |          |
| QOL work and profession        |          |          | .522     |
| QOL social Functioning         |          |          | .481     |
| MMOL action                    |          |          | .437     |
| QOL entertainment              |          |          | -.406    |
| COH beliefs about goals        |          |          | .399     |
| MMOL contextual                |          |          | .384     |
| Eigenvalue                     | 7.92     | 5.42     | 2.35     |
| % of variance                  | 34.51    | 23.50    | 10.21    |

Note. The numbers represent communalities based on rotated varimax with Kaiser normalization. A communality of .300 was considered as the threshold beyond which no further variables were considered in defining the factor.

## 5. Discussion

The study dealt with three sets of variables: QOL, MMOL and COH. These sets represent specific aspects of three major realms of psychological functioning which are emotions, cognition and health. The findings show that all three sets are interrelated, thereby supporting the three hypotheses of the study. The obtained interrelations were in different degrees and different aspects. The closest interrelations were found between QOL and MMOL. Further, QOL was related to more aspects of COH than MMOL was. However, when considering the close relations of COH with QOL and the close relation of QOL with MMOL, it seems likely to conclude that COH is directly impacted by QOL and only indirectly by MMOL, through the relations of MMOL with QOL.

As was expected, concerning QOL it is of importance to emphasize that it affects both MMOL and COH through its triadic structures of positive emotions, negative emotions and its involvement in the functioning of everyday life.

The findings were also examined for possible effects of covid-19. The search for signs of the impact of covid-19 was undertaken by comparing the results with those of former studies that were available. The major detected effects were the following: the third factor included components that usually did not appear together, such as the actional cluster, social relations, and entertainment which may have been affected negatively in a similar way by covid-19. Other signs were the prominence of bewilderment and confusion that appeared in the second factor in a higher place than negative emotions; the inclusion of body image under the second factor of negative emotions, possibly due to weight issues promoted by the lockdowns; and the lower means of a the actional and perceptual clusters of the MMOL that may have been reduced by the lockdowns relative to the increase in the means of the experiential and contextual clusters that were favored by the different covid-19 restrictions. However, the noted signs are relatively small, while the basic structure of the three variables, especially of the QOL and COH remains

stable. This is in accordance with the expectation that factors that fulfill basic functions in the psychological system are maintained as supportive vectors homeostatically regardless of or in particular when environmental conditions shift (Kreitler, 2005; Kreitler et al., 2005).

## 6. Conclusions

The major conclusions are that QOL, COH and MMOL are positively related variables, with QOL filling a major and focal role in this triad. All the components of the three variables are involved in the interrelations, which indicates that any attempt at intervention should consider the whole compositional structure of the variables. An important conclusion concerns COH. The findings show that it is related directly by QOL and to MMOL through QOL. The findings show relatively small changes attributable to the impact of Covid-19 while the basic structure and properties of the variables remain stable, maintaining their supportive role and functioning in the psychological system.

## References

- El Keshky, M. E. S., Basyouni, S. S., & Al Sabban, A. M. (2020). Getting Through COVID-19: The Pandemic's Impact on the Psychology of Sustainability, Quality of Life, and the Global Economy – A Systematic Review. *Frontiers in Psychology*, 11, 585897.
- European Centre for Disease Prevention and Control. (n.d.). COVID-19 situation update worldwide. Retrieved January 20, 2022, from: <https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases>. Last [Accessed 28th May 2020].
- Holmes, E. A., O'Connor, R., Perry, V., Tracey, I., Wessely, S., Arseneault, L., Ballard, C., Christensen, H., Cohen Silver, R., Everall, I., Ford, T., John, A., Kabir, T., King, K., Madan, I. Michie, S., Przybylski, A. K., Shafran, R., Sweeney, A., Worthman, C. M., Yardley, L., Cowan, K., Cope, C., Hotopf, M. & Bullmore, E. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *Lancet Psychiatry*, 7, 547-560.
- Kreitler, S. (1997). The cognitive orientation for health: A general measure of motivation for health. Paper presented at the 11th Conference of the European Health Psychology Society, Bordeaux, France. Retrieved from <https://chps.net/>.
- Kreitler, S. (1999). The cognitive orientation for health: A tool for assessing health-proneness. In R. Schwarzer (Ed.), *Advances in Health Psychology Research* (CD-ROM). Berlin: Freie Universitaet Berlin.
- Kreitler, S. (2005). Coping and quality of life in the context of physical diseases. In A. V. Lee (Ed.), *Coping with Disease* (pp. 81-120). New York: Nova Biomedical Books.
- Kreitler, S. (2016a). Meanings of meaningfulness of life. In A. Batthyany (Ed.), *Logotherapy and existential analysis* (pp. 95-106). Vienna, Austria: Springer.
- Kreitler, S. (2016b). The motivation for health: What is it and how to assess it. Paper presented at International Psychological Applications Conference and Trends (InPact), Lisbon, Portugal. Retrieved from <http://inpact-psychologyconference.org/2016/>
- Kreitler, S. (2021). Hope and despair in Israel: Meaningfulness of life and quality of Life. IMEC conference 2021 October 24
- Kreitler, S. (2022). *The construct of meaning*. Hauppauge, NY: Nova Publishers.
- Kreitler, S., & Kreitler, M. (2006). Multidimensional quality of life: A new measure of quality of life in adults. *Social Indicators Research*, 76, 5-33.
- Kreitler, S., Peleg, D., & Ehrenfeld, M. (2005). Stress, self-efficacy and quality of life in cancer patients. *Psycho-Oncology*, 16, 1-13.
- Kreitler, S., & Richkov, V. (2015). Cognitive orientation of health as a moderator of side effects of chemotherapeutic treatment. *Psycho-Oncology*, 24, 267.
- Niv, D., & Kreitler, S. (2001). Pain and quality of life. *Pain Practice*, 1, 150-161.
- Sim, K., & Chua, H. C. (2004). The psychological impact of SARS: a matter of heart and mind. *Canadian Medical Association Journal*, 170, 811-812.

## THE PERCEIVED IMPACT OF SOCIETAL CODES OF SHAME ON MALTESE PSYCHOTHERAPISTS

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### Abstract

Anthropological literature indicates that Malta, by virtue of its central position in the Mediterranean, is somewhat structured by codes of honour and shame (Bradford & Clark, 2012; Schneider, 1971; O'Reilly Mizzi, 1994). Honour refers to claimed status by an individual and necessitates that the social group affirms that claim. It holds a positive social value. Shame may be understood in either positive or negative terms. When construed in a positive sense it indicates consideration of one's reputation and standing in the community's eyes. On the other hand, negatively, shame refers to loss of position and consequent mortification. Shame is also construed as an emotion involving an evaluation of the self as one that is inherently imperfect. Despite the awareness of the potential negative effects of shame on the psychotherapeutic relationship (Gilbert & Procter, 2006; Rustonjee, 2009), shame in psychotherapy has been largely under-researched. The current study is based on the results of a doctoral thesis which explored how Maltese psychotherapists understand and manage feelings of shame in a particular social context. A qualitative approach was taken to explore the individual perspectives of ten Maltese psychotherapists whose years of professional experience ranged between 6 and 28. Semi-structured interviews were conducted and the data gathered from the interviews was analysed by means of Interpretative Phenomenological Analysis (IPA). Four super-ordinate themes emerged: *The Therapist's World of Shame*, *Beholding Patients' Shame*, *A Shared Experience* and *The Island of Shame*. Participants described themselves as having a high propensity for feelings of shame and inadequacy, and referred to their cultural context as "a breeding ground for shame". Multiple roles in the Maltese professional arena were perceived to augment these difficulties. The findings indicate that feelings of shame and inadequacy were frequently experienced by Maltese psychotherapists in various professional contexts, including clinical supervision. They also emphasise the importance of helping psychotherapists deconstruct and normalise feelings of shame and inadequacy by linking them to social and cultural dynamics. The lived experiences of shame emanating from these contexts are examined and the perceived impact of these dominant societal codes on the therapist's self and professional practice are considered. Implications for training and supervisory needs of trainee psychotherapists are discussed.

**Keywords:** *Shame, lived experience, psychotherapists, cultural context.*

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### 1. Introduction

The current paper is an outgrowth of a PhD Thesis, completed at Regent's University, UK, in 2017, exploring how Maltese therapists understand and manage the experience of shame. It aims to explore the impact of societal codes of shame on the development and perpetuation of shame in therapists' lives, as well as how it affects therapists' personhood, sense of self and therapeutic work. For the purpose of the current study the focus has been narrowed to consider mostly the data pertaining to the participants' reflections on the broader context in which they live and practice psychotherapy, which culminated in a super-ordinate theme *The Island of Shame*. For the purpose of the discussion, the subordinate theme entitled *A Breeding ground for Shame* has been further subdivided into three sections.

Shame may be examined from a multitude of perspectives. From a social perspective it may be conceptualised as a process of social control whereby participants in a community exert pressure on members of that community to conform (Braithewaite, 1989). While the process of shaming presents itself in all societies, micro-state dynamics such as gossip, social visibility and multiple roles operate in the Maltese context to allow it to become a dominant societal value (Clark, 2012). While shame emerges in the social sphere, it is also experienced personally, as 'exposure of a flawed self' (Wiechelt, 2007, p.400) by those subjected to the process of shaming. It differs from guilt which is a reaction to a deviant act performed by the self, while shame is a reaction to a perceived deviant self. Shame may be considered as a 'a perceived discrepancy between one's actual and one's ideal self' (Miceli &, Castelfranchia, 2018,

p.711) that emanates from the person's perceived fit of the self within the community (Rozin, Lowery, Imada, & Haidt, 1999). Given the above, a micro-social perspective on shame is adopted in this paper.

A series of historical events and traditions have culminated in a social reality which, as in most Mediterranean cultures, according to Kaufman (1992), is more overtly organised around shame and honour. Clark (2012), described Maltese society as communitarian and claimed that honour and shame are an important means for managing individual and group reputation. The maintenance of one's social identity is therefore fundamental and depends largely on public opinion. Like most Mediterranean societies Malta is characterised by social, sexual and economic stratification, family solidarity and reliance on kin. According to Clark (2012) this impacts the dominant values in society. Therefore shaming is more likely to occur in societies such as Malta, characterised by specific cultural mechanisms which promote it. Malta appears to possess the characteristics mentioned by Clark (2012) that render inhabitants most vulnerable to labelling, namely small size, communitarianism, interdependence, social values which promote shaming, effective gossip networks and multiple role relationships. O'Reilly Mizzi (1994) also mentioned specific social and environmental conditions, which are peculiar to Malta, yet are common to most Mediterranean cultures. These are: the code of honour and shame; the predominant role of the Catholic Church; gender divisions and the role of women; the physical layout and architectural style of Maltese communities. Dearing and Tangney (2014) asserted that in spite of 20 years of research on shame, comparatively little has been written on the role of shame in psychotherapy. Mahoney (2000) claimed that although the therapist is nowadays increasingly being "acknowledged as an active ingredient in the change process" (p. 9), very little research exists on the perceptions of therapists regarding their patients' and their own shame in psychotherapy. Although there is growing awareness of shame dynamics amongst therapists in Malta, yet there is still a paucity of information regarding the effects of shame on the therapist. This area remains largely under-researched in spite of the relevance of this emotion to Maltese culture. This points to the relevance of researching shame in psychotherapy against a cultural backdrop.

## **2. Methodology**

A qualitative method of inquiry was deployed to elicit rich detail about the participants' subjective experience. As Creswell (2007) asserted, it is only possible to gain "a complex, detailed understanding of the issue" (p.40) through a qualitative design which generates knowledge gleaned from asking participants about the meaning they attribute to their experience. Semi-structured interviews were conducted with ten Maltese psychotherapists whose years of experience ranged between 6 and 28. Data was analysed by means of Interpretative Phenomenological Analysis (IPA), following the procedure proposed by Smith, Flowers and Larkin (2009). IPA is grounded in a phenomenological approach, which in turn takes a constructionist approach, specifically, according to Willig (2009), a contextual constructionist approach, which espouses that all knowledge is contextual, and posits that different perspectives give rise to different insights into the same phenomenon. The epistemological position of the authors resonates with the tenets of contextual constructionism, namely that reality and meaning emerge from the interaction of human beings and the world they are interpreting. Contextual constructionism supports a relativist epistemology whilst at the same time a belief that external reality exists. This is in line with Maxwell's (2008) argument that the combination of ontological realism and epistemological constructionism may offer valid contributions to qualitative research. Four super-ordinate themes emerged: *The Therapist's World of Shame*, *Beholding Patients' Shame*; *A Shared Experience* and *The Island of Shame*. For the purpose of the discussion one of the sub-themes, *A Breeding ground for Shame*, has been further subdivided into three sections. In the following discussion participants are referred to by pseudonyms in order to ensure anonymity.

## **3. Findings and discussion**

### **3.1. The power of religious beliefs**

Participants portrayed themselves as highly prone to feelings of shame and inadequacy. Their descriptions of their shame as frequently occurring, intense and durable can be compared to what Claesson & Sohlberg (2002) referred to as 'trait shame', or what Cook (1992) termed 'internalised shame', which are considered distinct from situational shame. Participants attributed the development of their shame-proneness to the cultural context in which they had been brought up. Robert referred to his propensity to feel shame as a 'shame personality': "I'm not sure, kind of, about personality or, or, or a shame personality, I think it's something that personally I was brought up into in a way, so it became like part of me" (Robert: 30.943-947). Manifestations of shame-proneness were identified as a pervasive sense of inadequacy, the tendency to judge themselves and their work very harshly, self-criticism, and excessive striving for perfection. Participants described their perfectionistic strivings and claimed that their sense of professional inadequacy would immediately elicit a sense of a flawed self. They are extremely distressed by professional blunders and tend to attribute their therapeutic failures to their own

inadequacy: Robert doubted his competence: “I also felt not just afraid, inadequate afterwards, I felt very inadequate, I said “my God am I really cut out for such a job?” (Robert: 4.120-123) and Jack referred to his sense of inadequacy “...it’s also got to do with my own personal issue of the fear of not being good enough in my work...” (Jack: 6.164-166). Nial also claimed that he tends to judge his work harshly: “The idea also as a therapist that I might have contributed to her suffering also creates a bit of shame in me now” (Nial: 22.653-655).

Participants described their social context as ‘shame-based’: “I think that our culture, and particularly my up-bringing was very much related to shame” (Melanie 12.358-360). And Alana stated: “...that I began realising that the Maltese culture is very shame-based, our upbringing” (Alana 21.611-612). Gans (1962) referred to the Maltese people as ‘urban villagers’ and claimed that life in Malta revolves around the church and the local community. Religious rituals and traditions portray the theme of original human defectiveness and the need for atonement. Participants, who mostly attended schools which were church-run, attributed an element of their shame to their own and their parents’ strict religious upbringing. Melanie attributed her shame to her rigid Catholic upbringing: “Mmmm it’s as if I don’t feel I’m good enough, I think it all boils down to that. And so I feel very...even with my upbringing and the school I went to, religion and sexuality” (Melanie: 6-7.188-191). Jack referred to shame as directly emerging from religious beliefs. He also opined that the influence of centuries of a religion based on the expiation of guilt still lingers albeit on a deep unconscious level. Jack also referred to “a parlance of good or bad, right and wrong”, which lingers despite the process of secularisation that has been underway during the last two decades (Deguara, 2020). Despite the fact that the Maltese voted in favour of legalising divorce in 2011, and same-sex marriage in 2014, this does not appear to have reduced the stigma attached to them (Bradford & Clark, 2012). This may indicate that shame, the tendency to judge the self and others harshly and the fear of a wrathful god, still lurk on a deeper, unconscious level. In spite of appearances, Jack claimed, the church may still constitute a very influential form of social control: “I’m not sure about the dominance of the church anymore, I think it’s still there, there are still residues of it, I mean it’s been challenged and all that...you still see strands of conservative thought around (Jack: 23.709-715). He asserted:

“...it’s almost shameful to be either gay or lesbian or co-habiting...so what I’m saying is are we really out of shame or guilt induced by the past? I question it, because I’m sure if things are changing now, unconsciously we carry a past, so it’s not easy to say... outside it might be liberating but I’m sure internally it’s a different matter.” (Jack: 23.709-721)

It is not uncommon to hear psychotherapists in Malta refer to their profession as a ‘calling’ or ‘vocation’. Gerlinde, who referred to herself as “a very religious person...” (Gerlinde: 2.43-46), described her work as ‘sacred’ and claimed she is driven by her conscience. Repeated references to her self-sacrificial attitude and the importance of not giving in to “temptations” evokes a religious theme and conjures a sense of the need for expiation and self-sacrifice. Sussman (2007) claimed that therapists may have a need to feel benevolent, selfless and loving. He asserted, however, that messianic feelings of saintliness and spirituality also play a role in the aspiration of the perfected self, and fantasies of benevolence, together with omniscient and omnipotent fantasies of the therapist, are the components of a broader aspiration – that of attaining perfection. If these aspirations are not in the therapists’ awareness they may identify with their patients’ idealisations, which may be counter-therapeutic in that it may foster patients’ dependence, and result in therapists’ inability to bear negative transference, or to challenge their patients (Di Caccavo, 2006). Similarly, Sussman (2007) claimed that if therapists derive satisfaction from the patient’s idealisation, especially if they have chosen their career to compensate for feelings of unworthiness, they might attempt to engender a positive transference by being overly supportive and reassuring.

### 3.2. Keeping up appearances

According to Abela and Sammut Scerri (2010) the population density has a huge impact on the Maltese psyche, which leads the Maltese to guard their personal lives fiercely. It is virtually impossible to be anonymous in Malta, where inhabitants are raised within an interdependent network. Islanders form part of each other’s lives in multiple contexts and relationships are more durable and emotionally charged than in larger societies (Sultana & Baldacchino, 1994). Participants referred to their upbringing in a small, tightly-knit community, where one of the consequences is, as Clark (2012) stated, an elevated degree of social visibility: “In Malta you cannot hide who you are, if we were somewhere else you can have this enigma of your personal...but in Malta it’s very difficult...” (Alana: 49.1515-1518). Christa opined: “...the fact that we are very well informed about each other decreases the chances of keeping something you are ashamed of secret, so that is an added burden...” (Christa: 28.912-915). According to participants it seems there is a cultural tendency to attempt to ward off one’s shame by shaming or feeling superior to others. Alana stated: “If we’ve lived feeling I’m not good, when we’re growing up with that, to cover it up,



then I would say 'no it's not me who's not good, I'm ok it's you who's not ok'" (Alana: 21.614-617). She continued: "...a lot of people who go into the church, erm work in the church, erm police and places of authority...now I'm in a position to...throw the shame onto others to preserve my own pride, my own shame..." (Alana: 21-22.620-624)

The small size of the island, coupled with psychology and psychotherapy being young professions, leads to the development of multiple roles, which serves to augment shame and heighten exposure. Participants highlighted the problem with dual or multiple relationships and expressed frustration at the difficulties in finding their own personal therapists and supervisors. Even once they have secured a therapist/supervisor, it is difficult for professionals to disclose their innermost secrets/work difficulties, despite the confidential nature of the therapeutic or supervisory context. This is deemed by Jack as another reason why shame goes underground and is not worked through, although it continues to leak out and wreak havoc from its hiding place: "...You're known, you know them all, that's what I'm saying, so the shame remains...It's not worked through." (Jack: 30.907-1004). Jack wonders whether therapy or supervision is safe in Malta: "That's what I question, is it actually safe enough in Malta...where therapists know each other, where the chances of having dual relationships are so sky-high, where the same therapist who you go to may be in the same committee or the same conference or the same CPD...it is so difficult to really open up about the worst." (Jack: 28.863-871). It is not surprising that the heightened exposure described by participants leads to excessive concern with keeping up appearances. The need to be perceived positively at all times might serve to strengthen participants' defences even in the context of a safe, supportive environment, such as their own psychotherapy and supervision: "Probably at the time...I felt ashamed...to take it to supervision for instance because this is a must not, this should not, you know, this is a you know such...such a stupid mistake" (Alex: 16.505-510)

### 3.3. The ideal therapist

The problem of multiple roles in the professional arena was believed to augment the pressure participants felt to conform to the image of the ideal therapist which might also interfere with their willingness to discuss shaming issues in their own therapy and professional dilemmas in clinical supervision. Participants, who have sustained narcissistic wounds in childhood claimed to take on the role of ideal therapist, which is mirrored, perpetuated and inflated by the idealisations of patients and the public. Alex stated "...it's like I was still not acceptant of this human side" (Alex: 8.248) and Alana referred to her lack of humility: "I'm obsessed, you know this word *hubris*, this word *hubris* ... Where you feel nobody's managed with the client but I will" (Alana 29-30.884-888). Neri and Rossetti (2012) put forward the notion of a 'psy complex' which they believed can act as a salve for therapists' narcissistic wounds. This serves to ward off shame by gaining recognition from the status of their profession, yet hinders their authentic self: "But that is the tyranny of the ideal, what the ideal therapist should be ... What is an ideal therapist? There isn't. ... I mean we all are envious; we are all competitive..." (Jack: 31.943-950). The myth of the ideal therapist, which, as one participant contended, only serves to strengthen the therapist's defences and to drive his authentic self further underground, is fuelled by the warranting bodies and psychological associations. Ethical guidelines may inadvertently reinforce the therapist's social veneer of the perfect professional. According to Jack, therapists' dark sides are driven underground and they are forced to present a professional front, a public false-self in order to appease the professional body, which to Jack, renders therapists akin to children trying to please their parents: "...sort of the authority, usually we are shamed when we are children by a parent and now it's like as professionals there's some entity or body which is helping to keep us in this inferior position..."(Jack: 32. 976-979) He asserted: It's the same this idea of having an ideal child, an ideal therapist, is a bit dangerous" (Jack: 32. 979-987).

## 4. Conclusion

The results of this study underscore the relevance of considering shame against the cultural backdrop, given that this emotion is a defining feature of Maltese culture. They also broaden understanding on how the cultural dynamics serve to augment shame and fear of exposure, leading to a loss of the psychotherapist's authentic self and engendering excessive conformity to the veneer upheld by society. Additionally, this study has implications for the training and supervisory needs of trainee therapists. It emphasises the relevance of therapists' ability to link their wish to become psychotherapists to early wounds sustained, and to learn empathy for their shamed identity. This will ensure that therapists' own relationships, including those with their clients, will cease to revolve around submission or superiority and can, instead, be based on equality and mutual respect (Di Caccavo, 2006). Awareness of how Maltese cultural dynamics fuel therapists' need to strive to maintain the image of the ideal therapist is key. In their own psychotherapy therapists can be encouraged to deconstruct and normalise their feelings of shame by linking their own personal experiences to social and cultural issues.

## References

- Abela, A., & Sammut Scerri, C. (2010). Managing multiple relationships in supervision: Dealing with the complexity. In C. Burck & G. Daniel (Eds.), *Mirrors and reflections Processes of systemic supervision* (pp. 289-308). London: Karnac.
- Bradford, S., & Clark, M. (2012). Stigma Narratives: LGBT Transitions and Identities in Malta. *International Journal of Adolescence and Youth* 16(2), 179-200  
<https://doi.org/10.1080/02673843.2011.9748054>
- Braithwaite, J (1989). *Crime, shame and reintegration*. Cambridge: Cambridge University Press.
- Claesson, K., & Sohlberg, S. (2002). Internalized shame and early interactions characterized by indifference, abandonment and rejection: Replicated findings. *Clinical Psychology & Psychotherapy*, 9(4), 277-284. doi: 10.1002/cpp.331
- Clark, M. (2012). Shaming and community reactions to offending in a Mediterranean society: A Maltese case study. *Journal of Mediterranean Studies*, 21(1), 1-25.
- Cook, D. R., (1994). *ISS Internalized Shame Scale: Professional manual*. Menomonie, Wisconsin: Channel Press.
- Creswell, J.W. (2007). *Qualitative inquiry & research design: Choosing Among Five Approaches*. London: SAGE Publications.
- Dearing, R.L. & Tangney, J.P. (2011). Working with shame in the therapy hour: Summary and integration. In R.L. Dearing and J.P. Tangney (Eds.), *Shame in the therapy hour* (pp. 375-404). Washington, DC: American Psychological Association.
- Deguara, A. (2020). Secularisation and intimate relationships in a Catholic community: Is Malta a resistant niche? *Social Compass* 67(3), 372-388 <https://journals.sagepub.com/ejournals.um.edu.mt/doi/10.1177/0037768620920173>
- DiCaccavo, A. (2006). Working with parentification: Implications for clients and counselling psychologists. *Psychology and Psychotherapy: Theory, Research and Practice*, 79(3), 469-478.
- Gans, H. J. (1962). *The urban villagers; group and class in the life of Italian-Americans*. New York: Free Press of Glencoe.
- Gilbert, P., & Procter, S. (2006). Compassionate mind training for people with high shame and self-criticism: Overview and pilot study of a group therapy approach. *Clinical Psychology & Psychotherapy*, 13(6), 353-379. doi: 10.1002/cpp.507
- Kaufman, G. (1992). *Shame: The power of caring*. USA: Schenkman books, Inc.
- Mahoney, M. J. (2000). A changing history of efforts to understand and control change: The case of psychotherapy. In C.R. Snyder and R.E. Ingram (Eds.), *Handbook of psychological change: psychotherapy processes and practices for the 21<sup>st</sup> century* (pp. 2-12). New York: John Wiley & Sons, Inc.
- Maxwell, J. A. (2008). Evidence: A critical realist perspective for qualitative research in N.K. Denzin and M.D Giardina (Eds.), *Qualitative research and social justice* (pp. 108-121). California: Left Coast Press.
- Miceli, M., & Castelfranchi, C. (2018). Reconsidering the Differences Between Shame and Guilt. *Europe's journal of psychology* 14(3), 710–733. <https://doi.org/10.5964/ejop.v14i3.1564>
- Neri, C., & Rossetti, M. (2012). Feelings of guilt, shame, and unworthiness: From the viewpoint of a psychotherapy group of psychiatrists, psychologists, and psychotherapists. *European Journal of Psychotherapy & Counselling*, 14(2), 189-200. doi:10.1080/13642537.2012.682391
- O'Reilly Mizzi, S. (1994). Gossip: A means of social control. In R.G. Sultana & G. Baldacchino (Eds.). *Maltese Society: A sociological inquiry* (pp. 369-382). Malta: Mireva Publications.
- Rozin, P., Lowery, L., Imada, S., & Haidt, J. (1999). The CAD triad hypothesis: A mapping between three moral emotions (contempt, anger, disgust) and three moral codes (community, autonomy, divinity). *Journal of Personality and Social Psychology*, 76, 574-586. doi:10.1037/0022-3514.76.4.574
- Rustomjee, S. (2009). The Solitude and Agony of Unbearable Shame. *Group Analysis*, 42(2), 143-155.
- Schneider, J. (1971). Of Vigilance and Virgins: honour, shame and access to resources in Mediterranean Societies. *Ethnology* 9, 1–24.
- Smith, J.A., Flowers, P., & Larkin, M. (2009). *Interpretative phenomenological analysis. Theory, method and research*. London: SAGE Publications.
- Sultana, R., & Baldacchino, G. (1994). Sociology and Maltese Society: The field and its context. In R.G. Sultana and G. Baldacchino (Eds.), *Maltese Society: A sociological inquiry* (pp. 1-24). Malta: Mireva Publications.
- Sussman, M. B. (2007). *A curious calling: Unconscious motivations for practicing psychotherapy*. Northvale, NJ: J. Aronson.
- Wiechelt, S. (2007). The Specter of Shame in Substance Misuse, *Substance Use & Misuse*, 42(2-3), 399-409.
- Willig, C. (2009). *Introducing qualitative research in psychology*. UK: Open University Press.5

# DANCE MOVEMENT THERAPY PROCESSES AND INTERVENTIONS IN THE TREATMENT OF CHILDREN WITH ANXIETY DISORDERS DERIVED FROM TREATMENT THERAPY LOGS

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## Abstract

Dance movement therapy (DMT) offers children a space to encounter strengths and experience a sense of vitality in order to increase their sense of confidence and self-awareness, thereby easing their anxiety and/or helping them achieve more adaptive emotion regulation. While previous studies indicate that DMT effectively reduces anxiety symptoms, such as stress, scant research focuses on the nature of the therapeutic interventions and how they assist in treating anxiety.

This study examined DMT techniques and interventions through their documentation in therapy logs tracking eight long-term treatments of children aged 8–11 coping with anxiety symptoms. Four intervention axes were identified: (1) action-promoting interventions (2) separation-promoting interventions; (3) interventions for strengthening the sense of self; and (4) integration-promoting interventions.

Based on the findings, a therapeutic model is proposed drawing on various “mirroring” interventions as the basis for forming the therapeutic relationship and additional therapeutic interventions involving movement. The model enables the child to explore their experience of the relationship, understand themselves in a new way, and create meaning.

This manuscript is part of manuscripts submitted for publication.

**Keywords:** *Processes and therapeutic interventions in dance and movement therapy, dance and movement therapy for children, anxiety disorders in children, treatment therapy logs, movement mirroring, the paper chase intervention model.*

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## 1. Introduction

Anxiety disorders affect one-quarter of the population, with general and social anxiety disorder being among its the most common forms (American Psychiatric Association, 2013), and during the past year while the pandemic enters our life the numbers are raising. Anxiety disorders can develop in early childhood, and without treatment, they may impair social, emotional and cognitive development in adult life (Taylor et al., 2019). In addition to cognitive, behavioral and psychodynamic therapy methods, arts therapies, including dance movement therapy, invite the child to encounter vital forces and emotions designed to enhance their confidence and self-awareness, thereby relieving the sense of anxiety. Although, previous findings do indicate the effectiveness of DMT for reducing symptoms of anxiety (e.g., stress reduction), there is a dearth of focused research on the nature and process of therapeutic interventions and how they help treat anxiety.

DMT combines movement and attention to physical sensations using a dynamic approach (Chaiklin & Wengrower, 2015) in order to improve emotional and social functioning by integrating body movements, emotional responses, and self-expression (Pylvanainen, 2010). In DMT for children, the therapist uses guided or spontaneous relaxation, imagery, play, and dance, using their body to reflect the patient’s movements and adapt themselves to the child (e.g., by referring to the child’s facial expressions, muscle tension, posture, breathing, and voice) (Weitz & Opre, 2019). DMT, then, is unique in integrating the body’s movements and sensations, emotions, and thoughts. It creates a space for expression, regulation, and empowerment, thus assisting patients in situations of anxiety.

## 2. Design

DMT integrates various therapeutic disciplines and makes use of multiple therapeutic techniques and interventions throughout the therapeutic process. This calls for qualitative research based on a methodology that facilitates a broad and holistic perspective of the nature of these interventions and their effects (Koch et al., 2014).

The current study is a participant observation study (Spradley, 1979) in which the therapist is also one of the researchers. The study examined actions taken by the therapist and her patients as well as reciprocal actions that took place within the shared space, as documented in treatment therapy logs during 2013–2018. Combined with the phenomenological hermeneutics qualitative paradigm, which refers to written text, dance, and art as expressing the wealth of human experience (Tzabar-Ben Yehoshua, 2016), it is commonly used in studies dealing with consulting psychology and psychotherapy (Hill & Hess, 2012) and is based on phenomenological elements from multiple case studies (Yin, 2013). Data analysis in the current study is based on the consensual qualitative research (CQR) method (Hill et al., 1997).

## 3. Objectives

This study's goal is to identify and map DMT therapeutic interventions and processes for children with anxiety disorders upon which to propose an initial model for using DMT in treating children coping with anxiety disorders.

## 4. Methods

### 4.1. Participants

For the purpose of the study, we examined eight therapy logs tracking the treatment of eight (three boys and five girls) children aged eight to 11 coping with typical symptoms of anxiety. At the recommendation of the school psychologist, the children were referred to and treated by the first author during 2013–2018 for a minimum of 25 therapeutic sessions, with the average course of treatment lasting 25–40 sessions. At the time of the study, the researcher, a certified DMT therapist, had over ten years of experience and was being guided by a senior instructor with over 30 years of experience as a DMT therapist and psychotherapist. The therapeutic processes documented included 45-minute one-on-one sessions with the children and parent training once a month. The sessions took place in the school in a space that was adapted for DMT, with mattresses, balls of different sizes and textures, fabrics, veils, elastic bands, hoops, sticks, and balancing beams.

### 4.2. Research Tools

The treatment therapy logs were analyzed based on the Milner Method (Halton-Hernandez, 2020) for subjective autobiographical writing and psychoanalytical self-exploration. In her diary, among other things, Milner documented four decades of children's case studies and her training sessions with Melanie Klein (Haughton, 2014). With the help of Winnicott, Milner established the study of personal therapy logs as a reflective tool that assists in methodical construction (Halton-Hernandez, 2020). A large-scale study (n=120) found that writing a diary enhanced self-reflection processes (Yu & Chiu, 2019). This is a reflective process to examine the significance of the action taken and its implications for the various people involved (Shlesky, 2006) in order to produce methodological knowledge that supports and improves the clinical work (Yin, 2013). The therapy logs document verbal and physical dialogues, the patient's physical expressions and how they moved, as well as the therapist's primal sensations, emotions, and physical sensations emerging during the sessions as part of transference and countertransference processes. The materials appearing in the therapy logs were written immediately after the sessions and were expanded upon throughout the week, as part of the reflective processes of observing the sessions. The therapy logs document verbal and physical dialogues, the patient's physical expressions and how they moved, as well as the therapist's primal sensations, emotions, and physical sensations emerging during the sessions as part of transference and countertransference processes. The materials appearing in the therapy logs were written immediately after the sessions and were expanded upon throughout the week, as part of the reflective processes of observing the sessions.

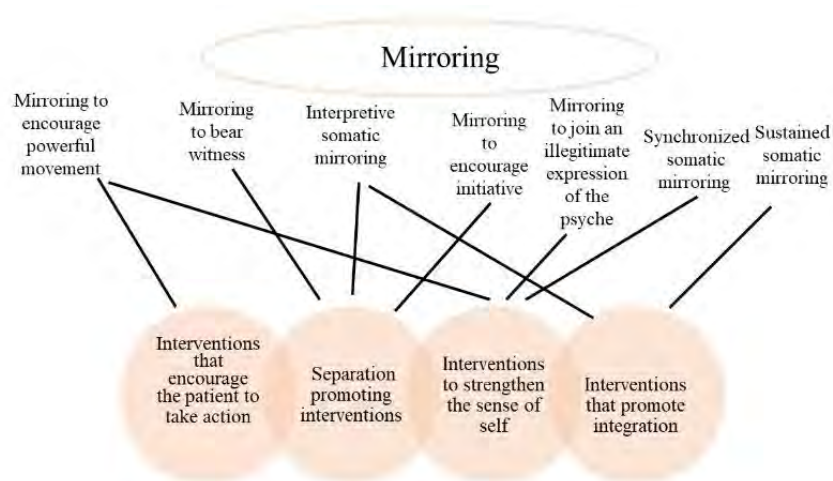
## 5. Findings

In the current study, which focused on therapeutic interventions, four main axes were identified: (1) interventions that encourage the patient to take action (n=8), designed to help the patient move from avoidance patterns toward self-efficacy; (2) separation promoting interventions (n=7) to encourage the

construction of an identity and the establishment of the self around content related to closeness/distance relations and dependency patterns; (3) interventions to strengthen the sense of self (n=7), intended to build a sense of confidence and autonomy; and (4) interventions that promote self integration (n=7), which emphasize the connection between various aspects of the self. For each of these axes we identified the following four clinical interventions: “mirroring”; “witnessing”; “movement sequences between poles”; and “focusing to heighten awareness.”

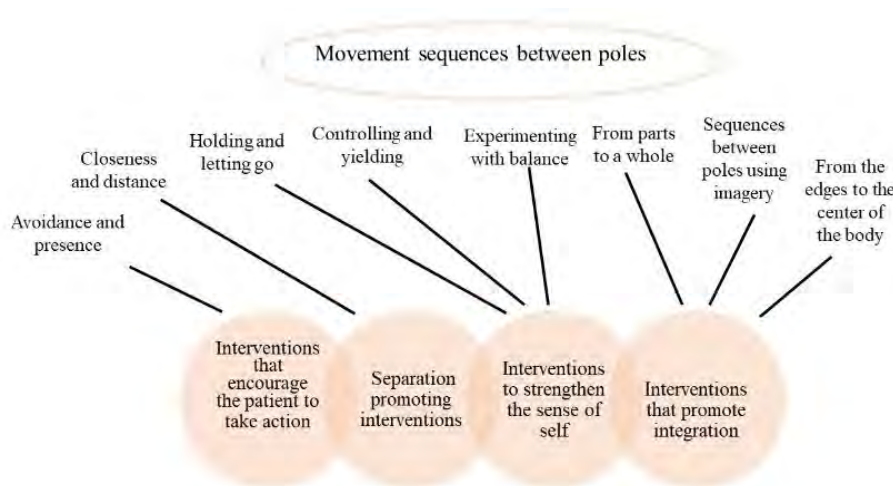
The interventions identified were classified in reference to the therapeutic axes. We identified seven types of “mirroring” interventions: (1) synchronized somatic mirroring; (2) lingering somatic mirroring; (3) interpretive somatic mirroring; (4) mirroring to encourage initiative; (5) mirroring to bear witness; (6) mirroring to join an illegitimate expression of the psyche; and (7) mirroring to encourage powerful movement (see Diagram 1).

Diagram 1.



We identified eight types of “movement sequences between poles” interventions: (1) from parts to a whole; (2) sequences between poles using imagery; (3) from the edges to the center of the body; (4) avoidance and presence; (5) closeness and distance; (6) holding and letting go; (7) control and surrender; and (8) experimenting with balance. The choice of using any one of these depends on identifying the content the patient brings to the session and their needs (see Diagram 2).

Diagram 2.



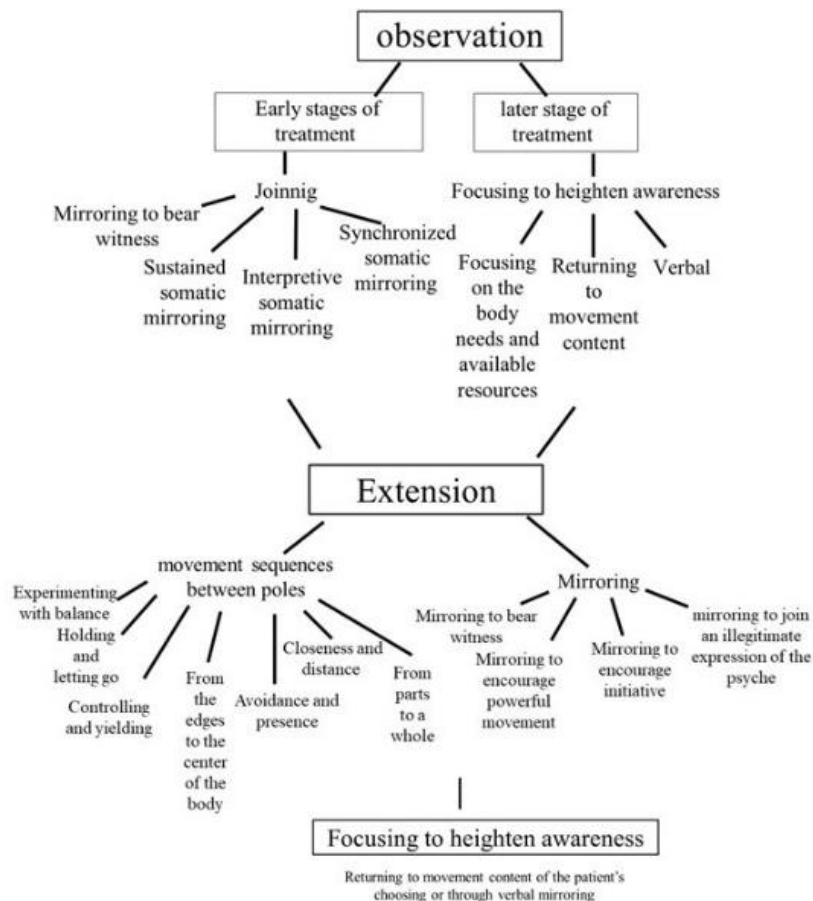
## 6. Discussion

The goal of the current research was to identify and map methods of DMT intervention for treating children with anxiety disorders and ultimately identify a therapeutic model, based on the analysis of therapy logs tracking the treatment of eight children aged 8–11 coping with various symptoms of anxiety.

The possibility of encountering and experiencing the emotional patterns described in the study corresponds with the principle of immediacy, which encourages a focus on the experience as it occurs during the therapeutic encounter, allowing the patient and therapist to experience and explore patterns that arise in the relationship (Clemence et al., 2012). Theories of self refer to sensations and experiences as change agents in the therapeutic process. These include attention to physical sensations, visual imagery, the choice of words used in conversation during the session, and nonverbal aspects of the relationship, based on the assumption that the creation of a new experience within a relationship is a therapeutic process (Curtis, 2012). In this sense, the “movement sequences between poles” technique appears to combine the two main approaches to treating anxiety in children, dynamic play therapy (Baggerly, 2009) and CBT, which includes gradual exposure to anxiety-inducing situations and sensations (Matweychuk, 2014). This indicates that DMT combines various therapeutic disciplines, as it involves thinking about anxiety patterns and motivations, leading the therapist to use symbolic and play-related interventions characteristic of the dynamic approach, in addition to focusing on the unfolding experience and the therapeutic relationship as change agents that promote awareness. In addition, DMT interventions allow patients to experience anxiety-inducing content in a safe environment, which is a type of intervention characteristic of CBT.

Based on an examination of the study’s findings in reference to the timeline, we designed an intervention model that can serve as a referential anchor for the therapeutic process. At the core of the interventions are identification, joining the content brought by the patient through various types of mirroring, expanding it through “witnessing” or by using “movement sequences between poles,” and by using colors, sounds, and conversation to promote “focusing to increase awareness.” All of these are used and adapted based on the patient’s needs and stage of treatment. In the early stages of treatment, various types of mirroring are required in order to establish the relationship and the language of movement as a therapeutic language used in the room. These constitute the basis for deepening the therapeutic interventions through “movement sequences between poles” at a later stage of the treatment. The course of treatment develops in a spiral, nonlinear progression, as space is created for the therapist and patient’s creativity to emerge. Between primal levels of sensory expressions through movement and higher levels of perceptual or cognitive-symbolic emotional expressions, this type of movement can facilitate an integrative experience of the self (see Diagram 3).

Diagram 3.



The model we propose corresponds with the “Expressive Therapies Continuum” model (Kagin & Lusebrink, 1978; Lusebrink, 2004), an intervention model from the field of art therapy that proposes working at various levels of processing while moving along axes. Thus, for example, working with materials that encourage sensory movement can help patients connect with unconscious parts of the self and expand their ability to tolerate and observe difficult sensations and emotions. This movement toward formalistic work that concretizes the emotional experience can help patients gain awareness, a deeper understanding of their inner world, and a connection to themselves (Hinz, 2015).

## References

- Baggerly, J., & Jenkins, W. W. (2009). The effectiveness of child-centered play therapy on developmental and diagnostic factors in children who are homeless. *International Journal of Play Therapy, 18*(1), 45–55. <https://doi.org/10.1037/a0013878>
- Chaiklin, S., & Wengrower, H. (Eds.). (2015). *The art and science of dance/ movement therapy: Life is dance*. Routledge.
- Clemence, A. J., Fowler, J. C., Gottdiener, W. H., Krikorian, S., Charles, M., Damsky, L., & Johnson, B. (2012). Microprocess examination of therapeutic immediacy during a dynamic research interview. *Psychotherapy 49*(3), 317–329. <https://doi.org/10.1037/a0026090>.
- Curtis, R. C. (2012). New experiences and meanings: A model of change for psychoanalysis. *Psychoanalytic Psychology 29*(1), 81–98. <https://doi.org/10.1037/a0025086>.
- Halton-Hernandez, E. (2020). The Milner Method: Marion Milner and Alison Bechtel’s autobiographical cures. *Life Writing, 18*(2), 243–260. <https://doi.org/10.1080/14484528.2020.1717912>.
- Haughton, H. (2014). The Milner experiment: Psychoanalysis and the diary. *British Journal of Psychotherapy, 30*(3), 349–362. <https://doi.org/10.1111/bjp.12097>.
- Hill, C. E., Thompson, B. J., & Williams, E. N. (1997). A guide to conducting consensual qualitative research. *The Counseling Psychologist, 25*(4) 517–572. <https://doi.org/10.1177/0011000097254001>.
- Hill, C. E., Knox, S., & Hess, S. A. (2012). Qualitative meta-analyses of consensual qualitative research studies. In C. E. Hill (Ed.), *Consensual qualitative research: A practical resource for investigating social science phenomena* (pp. 159–171). American Psychological Association.
- Hinz, L. D. (2015). Expressive therapies continuum: Use and value demonstrated with case study (Le continuum des thérapies par l’expression : étude de cas démontrant leur utilité et valeur). *Canadian Art Therapy Association Journal, 28*(1–2), 43–50. <https://doi.org/10.1080/08322473.2015.1100581>.
- Kagin, S. L., & Lusebrink, V. B. (1978). The expressive therapies continuum. *Art Psychotherapy, 5*, 171-180.
- Lusebrink, V. B. (2004). Art therapy and the brain: An attempt to understand the underlying processes of art expression in therapy, *Art Therapy, 21*, 125-135.
- Matweychuk, W. J. (2014). Raymond A. Digiuseppe, Kristene A. Doyle, Windy Dryden, Wouter Backx: A practitioner’s guide to rational emotive behavior therapy: 3rd Edition, Oxford University Press. *Journal of Rational - Emotive and Cognitive - Behavior Therapy, 32*(2), 181–182. <https://doi.org/10.1007/s10942-014-0188-1>
- Pylvanainen, P. (2010). The dance/movement therapy group in a psychiatric outpatient clinic: Explorations in body image and interaction. *Body, Movement and Dance in Psychotherapy, 5*(3), 219–230. <https://doi.org/10.1080/17432979.2010.518016>
- Tzabar-Ben Yehoshua, B. (2016). Traditions and currents in qualitative research, concepts, strategies and advanced tools. Mofet Institute, Raanana.
- Weitz, N., & Opre, N. A. (2019). Therapists’ perceptions: Added values of DMT and CBT for children with ADs’. *Studia Universitatis Babeş-Bolyai Psychologia-Paedagogia, 64*(1), 5–22. <https://doi.org/10.24193/subbyped.2019.1.01>.
- Yin, R. K. (2013). Validity and generalization in future case study evaluations. *Evaluation, 19*(3), 321-332. <https://doi.org/10.1177/1356389013497081>.
- Yu, W. M., & Chiu, M. M. (2019). Influences on the reflection quality of journal writing: An exploratory study. *Reflective Practice, 20*(5), 584–603. <https://doi.org/10.1080/14623943.2019.1651712>.

## THE IMPORTANCE OF A SYNCHRONY BETWEEN EMOTION AND MEMORY – CASES WITH DISSOCIATIVE AMNESIA

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### Abstract

Episodic or episodic-autobiographical memory is considered to be a significant attribute of human cognition, depending on auto-noetic consciousness and allowing mental time travel into past and future. Furthermore, episodic memory is embedded in an appraisal system, in which individual episodes are evaluated. We used patients with a condition of ‘dissociative amnesia’ in order to study interdependencies between emotion and memory. Dissociative amnesia leads to a blockade of retrieving episodic memories, while the retrieval of general knowledge (“semantic memory”) is still possible usually. Forty-one patients with a diagnosis of dissociative amnesia were investigated neuropsychologically. Sixteen of them were subjected to fluor-positron-emission-tomography to study possible changes in their brain. Main questions were (a) in what ways their old – “forgotten” – memories differ from newly acquired ones, and (b) what are possible brain mechanisms leading to the dichotomy between emotional and non-emotional memory retrieval, respectively failure of retrieval. Results indicate that the forgotten or blocked personal memories are much more complex and self-centered than the semantic ones and require more effort for retrieval. Furthermore, blocked memories seem to remain in a subconscious, disconnected state, hindering the proper association between cognition and emotion. It was found that the failure of episodic retrieval is accompanied by a dysfunction or desynchronization between emotion- and fact-processing regions of the brain.

**Keywords:** *Consciousness, brain, affect, self.*

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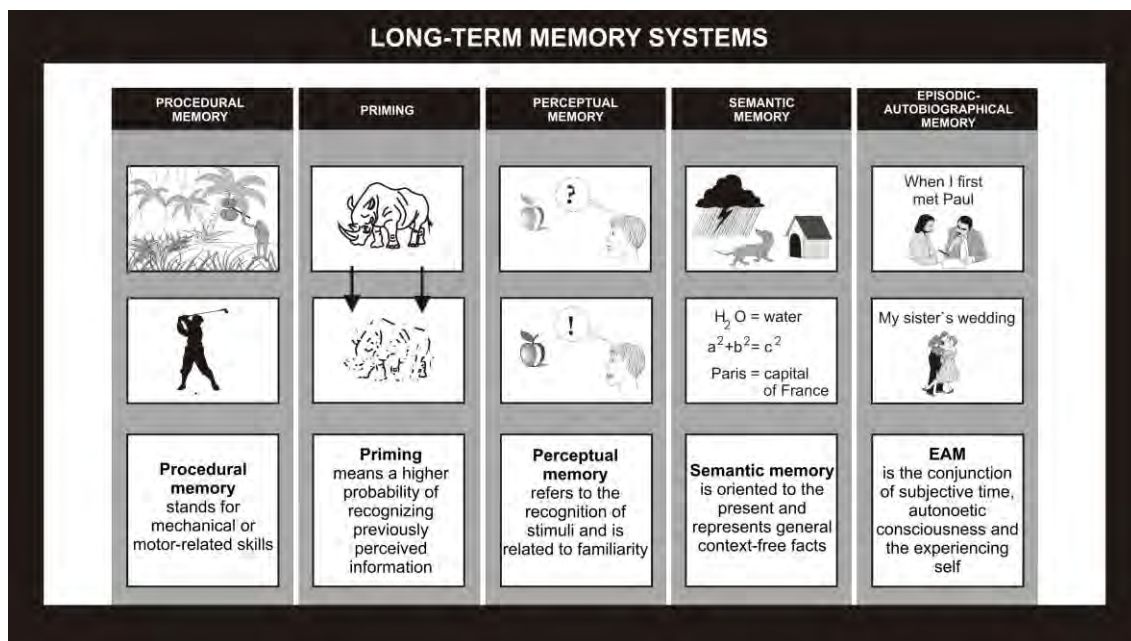
### 1. Introduction

Long-term memory nowadays is divided into several systems which act independently of each other at encoding, but build-up hierarchically during ontogenesis and phylogenesis (Figure 1). Furthermore, they manifest different levels of complexity with respect to their conscious representation. These start in Figure 1 on the left with the two anoetic (“unconscious”) systems, termed ‘procedural memory’ and ‘priming’; then come two noetic (“conscious”) systems, namely ‘perceptual memory’ and ‘semantic memory’, and finally there is an auto-noetic (“self-conscious”) system, which nowadays is named ‘episodic-autobiographical memory’. It is assumed that the first four memory systems exist in animals and man, while the fifth – the episodic-autobiographic one – is reserved for human beings (Tulving, 2005; Tulving & Markowitsch, 1998). This memory system, on the other hand, is usually the main or principal one which is impaired both in patients with neurological (Markowitsch & Staniloiu, 2012) and psychiatric disturbances (Staniloiu & Markowitsch, 2014; Markowitsch & Staniloiu, 2016).

Reasons for the selective impairment of episodic-autobiographic memory in patients with neurological or psychiatric illnesses probably lie in the complexity of this memory system, compared to the other four. Acquiring as well as retrieving episodic events requires a complex neuronal network which includes brain regions involved in imagery (Fletcher et al., 1995), in monitoring (Fletcher & Henson, 2001; Kühnel et al., 2008), mental time travel (Tulving, 2002, 2005) and in emotional colorization (Markowitsch & Staniloiu, 2011). Furthermore, the retrieval of episodes occurs state-dependent, that is, in the specific mood of the individual at the time point of retrieval and within the environmental circumstances and conditions, existing at retrieval. This specific retrieval form has therefore been named ‘ecphory’ (Calabrese et al., 1996; Markowitsch et al., 2003; Tulving, 2002). Ecphorizing old memory therefore may lead to scenarios congruent with the past ones – and thereby leading to further integration – or to disrudent scenarios, dissolving the old memories and consequently leading to new images, deviating from the consolidating ones.



Figure 1. The five long-term memory systems. It is assumed that they evolve from left to right and that only the last one is coupled to affect and is – in Tulving’s (2005) definition – reserved to human beings.



We will investigate these mechanisms by employing patients with dissociative amnesia. It is known that dissociative amnesia is a disease condition which leads to a blockade of old episodic-autobiographical memories, while in general leaving semantic memories intact. Patients with dissociative amnesia are unable to retrieve episodes from their past. They do not remember even their closest relatives and any information about their past existence (Staniloiu & Markowitsch, 2014; Markowitsch & Staniloiu, 2016). Consequently, patients with dissociative amnesia no longer possess the principal features necessary for a successful reinstatement of past memories, namely ‘autooetic consciousness’ (Markowitsch, 2003) and an ‘experiencing self’ (cf. the respective definition in Figure 1).

## 2. Methods

Altogether, 41 patients with a diagnosis of dissociative amnesia according to DSM-5 (APA, 2013) were employed. These patients had been recruited over a number of years and included a few with an additional so-called fugue condition. ‘Dissociative amnesia’ has been defined as a condition where patients are unable to retrieve episodes from their personal past. This even includes an inability to retrieve information about the closest relatives (partner, children), while usually general facts about the world are preserved – including the abilities to read, write and calculate. In DSM-5, the condition also includes patients who have left their usual home area and traveled to other places, named ‘fugue’ condition, and diagnosed separately in previous editions of the DSM (see, e.g., Markowitsch et al., 1997; Markowitsch & Staniloiu, 2013)

The patients were thoroughly investigated with neuropsychological tests and questionnaires. Furthermore, a subgroup of them (altogether 16 patients) were studied with brain imaging techniques. These were (a) fluor-positron-emission-tomography (FDG-PET), (b) magnetic resonance imaging, and (c) diffusion-tensor-imaging.

The neuropsychological tests and questionnaire were the following: All patients received screening instruments measuring their general intellectual status and estimating their intelligence with the *Mehrfach-Wahl-Wortschatz-Test (MWT-B)* (Lehrl, 2005). Furthermore, attention and concentration, problem solving abilities, visuo-constructive abilities, executive functions, and processing of emotions were measured. With respect to memory, the Rey-Osterrieth Figure, the Doors Tests (Baddeley et al., 1994) and the revised version of the Wechsler-Memory-Test (Härting et al., 2002) were usually applied. Furthermore, additional tests for semantic and autobiographical retrograde memory (German language versions of a Famous Faces Test and of an Autobiographical Memory Interview; see Fujiwara et al., 2008; Staniloiu & Markowitsch, 2014) were given. For testing emotions, we used the ‘Reading the Mind in the Eyes Test’ of Baron-Cohen et al. (2001) (24 items version), the visual subtests (subtests 1-5) of the Florida-Affect-Battery (Bowers et al., 1991; German language translation by Breitenstein et al., 1996) and a recognition set of emotional versus neutral photographs (Cramon et al., 1993). Furthermore, this group

received as questionnaires the Structured Clinical Interview for Dissociative Disorders (Wittchen et al., 1997), the Dissociative Experiences Scale (DES-II) (Gast and Rodewald, 2004), the revised Symptom-Check-List-90 (SCL-90-R; Hessel et al., 2001), and the Freiburg Personality Inventory (Fahrenberg et al., 2001).

### 3. Results

The 41 patients were nearly equally distributed between sexes. Their mean age was 33 years and they had diverse socio-economic backgrounds. All of them had nine or more years of schooling. The events triggering the dissociative amnesic condition can be grouped into (1) accidents with vehicles, sometimes leading to minor head concussions, (2) injuries of the body (e.g., breast, bone fracture) (3) life threatening events or other threats or subjectively dangerous situations, (4) police accusations, (5) major stress, (6) family problems, (7) ideas of being or becoming severely ill (e.g., becoming an Alzheimer's patient), (8) unknown causes.

#### 3.1. Neuropsychological results

The patients generally had average to good average intelligence. Their executive functions, problem solving abilities, visuo-constructive abilities, and attention-concentration rates were within normal limits. With respect to memory, all patients failed to retrieve any or nearly any episode or event from their personal as tested by the Autobiographical Memory Interview (which requests one or two episodes from all decades or half-decades of their past). When asking them informally in conversation, they still remained unable to retrieve past personal memories. Several of the patients furthermore showed problems in retrieving old semantic memories. While these deficits were seen especially during the first month or two after amnesia onset, they remained for a few patients even after more than half a year. We noted, however, that these semantic memories had a personal connotation to the individual. For example, one patient had changed his university studies several times and still had not finished them. So, he still could not work as a teacher to provide an income for his young family. It seemed that he disliked his present study of Latin, which he, however, did in order to become a teacher of Latin in high school, and to satisfy his father, who no longer wanted to support his family. Apparently, as a consequence, after becoming amnesic, he even was unable to translate the simplest Latin proverbs (like "plenus venter non studet libenter") or common Latin sayings from Catholic church services (though he was Catholic).

The majority of the patients was deficient in at least one or two of the three tests on emotions applied. This finding corresponded with their everyday appearance that showed some bluntness in affect and unconcern about their personal situation. Especially, with respect to their family and relatives, most of the patients seemed to show no empathy and even no interest. (This might be understandable, as they anyway did not recognize them as their partners, parents, or children.) However, in general social life conditions, this lack of concern and of emotional engagement was observed as well. On the other hand, they could be guided and directed much more easily than normal individuals, that is, they were suggestible to influences from others.

#### 3.2. Brain imaging results

More than half of the 41 patients were subjected to brain imaging. Magnetic resonance imaging was done in those patients where brain damage due to concussions, car accidents, or because of other reasons had to be excluded. FDG-PET was done in 17 of the patients (see also Brand et al., 2009; Staniloiu & Markowitsch, 2010; Staniloiu et al., 2011). Consistent finding was a hypometabolic regional combination of inferolateral prefrontal and anterior temporal cortex of the right hemisphere. This region includes the amygdala and is interconnected bidirectionally by a prominent fiber system, the uncinate fascicle, which has prominent roles in mnemonic processing – especially episodic memory (Von der Heide et al., 2013) – and in social cognition and emotional valence (Von der Heide et al., 2013).

One patient received diffusion-tensor-imaging of his brain which resulted in a reduced connectivity between fibers of the thalamus and the visual cortex, a finding which suggests problems with imagery.

### 4. Discussion and conclusions

Dissociative amnesia is understood as a disconnection syndrome, that is normally integrated functions diverge or break up. These normally integrated or synchronized functions can be defined as (episodic) memory, affect, and self-consciousness. In a healthy individual, there is a unity of the self which enables it to integrate events or episodes with the subjective feeling about them and by reflecting

that oneself is the owner of the respective episode (Markowitsch, 2003). In a patient with dissociative amnesia, this synchrony breaks down which is reflected on the brain level by the hypometabolic state in regions necessary for monitoring and retrieval (prefrontal cortex) and by those adding the emotional colorization (and therefore personal intimacy) (anterior temporal cortex and amygdala). The synchronizing fiber bundle of the uncinate fascicle is more expanded in the right than in the left hemisphere (Highley et al., 2002) and seems to grow with advancing age (Lebel et al., 2008). Our finding of a right hemispheric hypometabolism and consequently malfunctioning is in line with our prefrontal findings that damage to the right frontotemporal region leads to retrograde amnesia in the episodic-autobiographical domain (Calabrese et al., 1996; Kroll et al., 1997) and that successful retrieval of autobiographical memories leads to activation in this right-hemispheric area (Fink et al., 1996). The right hemisphere is considered in general to be the “emotional hemisphere” (Phillips et al., 2003), which is also involved in representing the own self and self-regulatory processes (Schmitz et al., 2004; Marsh et al., 2006), while the left is seen as the “rational hemisphere”.

The emotional flattening seen in patients with dissociative amnesia is a phenomenon, which already Janet (1893) described as “belle indifférence” and which is found quite regularly in patients with dissociative amnesia (e.g., Reinhold & Markowitsch, 2009). Together with the retrograde amnesia, it may be interpreted as a protective factor against an otherwise “unbearable” past.

## References

- APA (American Psychiatric Association), 2013. *Diagnostic and Statistical Manual of Mental Disorders* (5th ed). Arlington, VA: American Psychiatric Publishing.
- Baddeley, A., Emslie, H., & Nimmo-Smith, I. (1994). *Doors and People Test*. Bury St. Edmunds, UK: Thames Valley Test Company.
- Bowers, D., Blonder, L. X., & Heilman, K. M. (1991). *The Florida Affect Battery*. Miami, FL: Florida University Press.
- Brand, M., Eggers, C., Reinhold, N., Fujiwara, E., Kessler, J., Heiss, W.-D., & Markowitsch, H. J. (2009). Functional brain imaging in fourteen patients with dissociative amnesia reveals right inferolateral prefrontal hypometabolism. *Psychiatry Research: Neuroimaging Section*, *174*, 32-39.
- Breitenstein, C., Daum, I., Ackermann, H., Lütgehetmann, R., & Müller, E. (1996). Erfassung der Emotionswahrnehmung bei zentral-nervösen Läsionen und Erkrankungen: psychometrische Gütekriterien der “Tübinger Affekt Batterie.” [Capturing the perception of emotion in central nervous lesions and diseases: psychometric quality criteria of the “Tübingen Affect Battery”] *Journal of Neurological Rehabilitation*, *2*, 93-101.
- Calabrese, P., Markowitsch, H. J., Durwen, H. F., Widlitzek, B., Haupts, M., Holinka, B., & Gehlen, W. (1996). Right temporofrontal cortex as critical locus for the ephory of old episodic memories. *Journal of Neurology, Neurosurgery, and Psychiatry*, *61*, 304-310.
- Cramon, D. Y von, Markowitsch, H. J. & Schuri, U. (1993). The possible contribution of the septal region to memory. *Neuropsychologia*, *31*, 1159-1180.
- Fahrenberg, J., Hampel, R., & Selg, H. (2001). *Freiburger Persönlichkeitsinventar* [Freiburg Personality Inventory] (7th ed.). Göttingen: Hogrefe.
- Fink, G.R., Markowitsch, H.J., Reinkemeier, M., Bruckbauer, T., Kessler, J. & Heiss, W.-D. (1996). Cerebral representation of one’s own past: neural networks involved in autobiographical memory. *Journal of Neuroscience*, *16*, 4275-4282.
- Fletcher, P. C., Frith, C. D., Baker, S. C., Shallice, T., Frackowiak, R. S. J., & Dolan, R. J. (1995). The mind’s eye – Precuneus activation in memory-related imagery. *Neuroimage*, *2*, 195-200.
- Fletcher, P. C., & Henson, R. N. A. (2001). Frontal lobes and human memory: Insights from functional neuroimaging. *Brain*, *124*, 849-881.
- Fujiwara, E., Brand, M., Kracht, L., Kessler, J., Diebel, A., Netz, J., & Markowitsch, H. J. (2008). Functional retrograde amnesia: a multiple case study. *Cortex*, *44*, 29-45.
- Gast, U., & Rodewald, F. (2004). *Strukturiertes Klinisches Interview für Dissoziative Störungen (Kurzfassung)* [Structured Clinical Interview of Dissociative Disturbances (Short version)]. Göttingen: Hogrefe.
- Härtig, C., Markowitsch, H. J., Neufeld, H., Calabrese, P., Deisinger, K., & Kessler, J. (2000). *Die Wechsler-Memory-Scale Revised. Deutschsprachige Adaptation* [Wechsler-Memory Scale Revised. German language adaptation]. Bern: Huber.
- Revisiting the human uncinate fasciculus, its subcomponents and asymmetries with stem-based tractography and microdissection validation.

- Hessel, A., Schumacher, J., Geyer, M., & Brähler, E. (2001). Symptom-Checkliste SCL-90-R: testtheoretische Überprüfung und Normierung an einer bevölkerungsrepräsentativen Stichprobe [Symptom-Check List SCL-90-R: test-theoretical validation and standardization using a population representative sample]. *Diagnostica*, *47*, 27-39.
- Highley, J. R., Walker, M. A., Esiri, M. M., Crow, T. J., & Harrison, P. J. (2002). Asymmetry of the uncinate fasciculus: a post-mortem study of normal subjects and patients with schizophrenia. *Cerebral Cortex* *12*, 1218-1224.
- Kroll, N., Markowitsch, H. J., Knight, R., & Cramon, D.Y. von (1997). Retrieval of old memories – the temporo-frontal hypothesis. *Brain*, *120*, 1377-1399.
- Kühnel, S., Woermann, F. G., Mertens, M., & Markowitsch, H. J. (2008). Involvement of the orbitofrontal cortex during correct and false recognitions of visual stimuli. Implications for eyewitness decisions on an fMRI study using a film paradigm. *Brain Imaging and Behavior*, *2*, 163-176.
- Lebel, C. W., Leemans, L., Phillips, L., & Beaulieu, C. (2008). Microstructural maturation of the human brain from childhood to adulthood. *Neuroimage*, *40*, 1044-1055.
- Lehrl, S. (2005). *Mehrfachwahl-Wortschatz-Intelligenztest (MWT-B)* [Multiple Choice-active Word Vocabulary Intelligence Test]. Spitta Verlag, Balingen.
- Markowitsch, H. J. (2003). Autozoetic consciousness. In A.S. David & T. Kircher (Eds.), *The self in neuroscience and psychiatry* (pp. 180-196). Cambridge: Cambridge University Press.
- Markowitsch, H. J., Fink, G. R., Thöne, A. I. M., Kessler, J., & Heiss, W.-D. (1997). Persistent psychogenic amnesia with a PET-proven organic basis. *Cognitive Neuropsychiatry*, *2*, 135-158.
- Markowitsch, H. J., & Staniloiu, A. (2011). Amygdala in action: Relaying biological and social significance to autobiographic memory. *Neuropsychologia*, *49*, 718-733.
- Markowitsch, H. J., & Staniloiu, S. (2012). Amnesic disorders. *Lancet*, *380*, 1429-1440.
- Markowitsch, H. J. & Staniloiu, A. (2013). The impairment of recollection in functional amnesic states. *Cortex*, *49*(6), 1494-1510.
- Markowitsch, H. J., & Staniloiu, A. (2016). Functional (dissociative) retrograde amnesia. In M. Hallett, J. Stone & A. Carson (Eds.) *Handbook of clinical neurology (3<sup>rd</sup> series): Functional neurological disorders* (pp. 419-445). Amsterdam: Elsevier.
- Markowitsch, H. J., Vandekerckhove, M. M. P., Lanfermann, H., & Russ, M. O. (2003). Engagement of lateral and medial prefrontal areas in the ephory of sad and happy autobiographical memories. *Cortex*, *39*, 643-665.
- Marsh, R., Zhu, H., Schultz, R. T., Quackenbush, G., Royal, J., Skudlarski, P., Peterson, B.S. (2006). A developmental fMRI study of self-regulatory control. *Human Brain Mapping*, *27*, 848-863.
- Phillips, M. L., Drevets, W. C., Rauch, S. L., & Lane, R. (2003). Neurobiology of emotion perception. I: The neural basis of normal emotion perception. *Biological Psychiatry*, *54*, 504-514.
- Schmitz, T. W., Kawahara-Baccus, T. N., & Johnson, S. C. (2004). Metacognitive evaluation, self-relevance, and the right prefrontal cortex. *Neuroimage*, *22*, 941-947.
- Staniloiu, A. & Markowitsch, H. J. (2010). Searching for the anatomy of dissociative amnesia. *Journal of Psychology*, *218*, 96-108.
- Staniloiu, A., & Markowitsch, H. J. (2014). Dissociative amnesia. *Lancet Psychiatry*, *1*, 226-241.
- Staniloiu, A., Vitcu, I., & Markowitsch, H. J. (2011). Neuroimaging and dissociative disorders. In V. Chaudhary (Ed.), *Advances in brain imaging* (pp. 11-34). INTECH – Open Access Publ.
- Tulving, E. (2002). Episodic memory: from mind to brain. *Annual Reviews of Psychology*, *53*, 1-25.
- Tulving, E. (2005). Episodic memory and autozoesis: uniquely human? In H. S. Terrace & J. Metcalfe (Eds.), *The missing link in cognition: Self-knowing consciousness in man and animals* (pp. 3-56). New York: Oxford University Press.
- Tulving, E., & Markowitsch, H. J. (1998). Episodic and declarative memory: role of the hippocampus. *Hippocampus* *8*, 198-204.
- Von Der Heide, R. J., Skipper, L. M., Klobusicky, E., & Olson, I. R. (2013). Dissecting the uncinate fasciculus: disorders, controversies and a hypothesis. *Brain: a journal of neurology*, *136*(Pt 6), 1692-1707.
- Wittchen, H.-U., Zaudig, M., & Fydrich, T. (1997). *Strukturiertes Klinisches Interview für DSM-IV* [Structured Clinical Interview for DSM-IV]. Göttingen: Hogrefe.

# SELF-DESTRUCTIVE BEHAVIORS, SELF-ESTEEM, ANXIETY, AND SOCIAL DESIRABILITY IN PEOPLE WITH PERSONALITY AND MOOD DISORDERS

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## Abstract

Personality and mood disorders impede everyday functioning, cause serious problems with relationships and work. They interfere with everyday situations generating problems with adaptive ways of coping with stress. The rigid and unhealthy way of thinking and behaving characteristic for personality or mood disorders creates many problems relating to situations and people. It also provokes many difficult reactions in response to stress, such as self-destructive behaviors. As it is stated in the literature, self-destructive behaviors are related to self-esteem, social approval, and anxiety level. In the presented study the analysis of relations between data on self-destruction, self-esteem, social desirability, and anxiety level was conducted. A group of 100 respondents, including 79 women, and 21 men age 18-60 ( $M=31.91$ ;  $SD=8.22$ ) were asked to fill in set of questionnaires. Among all subjects there were 43 persons without any diagnosis, 22 people with mood disorder diagnosis, and 35 respondents with personality disorders. All diagnosis were conducted by psychiatrists based on ICD-10 diagnostic criteria. The test battery filled in by each subject consisted of Self-Destruction Questionnaire, Self-Esteem Scale, State Trait Anxiety Inventory, and Social Desirability Questionnaire. It was discovered that there is a positive correlation between self-destructive behaviors and anxiety. Negative relationship was found between self-destructive behaviors, self-esteem, and social desirability. Additional analysis concerning the link between personality disorder, repression and/ or sensitization of emotional stimuli uncovered that people diagnosed with personality disorders are more prone to high anxiety level and sensitization of emotional stimuli than are the people without such diagnosis. On the other hand, many people without any clinical diagnosis recruit themselves from repressors group.

**Keywords:** *Self-destructive behaviors, self-esteem, anxiety, social desirability, personality disorders.*

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## 1. Introduction

Personality disorders and mood disorders affect almost every aspect of everyday life of people afflicted with them (Cramer, Torgersen, & Kringlen, 2006). Among many other important issues taken into account special attention is given to self-destructive behaviors. A tendency for self-destructive behaviors is strictly connected to self-esteem, anxiety, and social desirability (Cislaghi, 2020; Forrester, Slater, Jomar, Mitzman, & Taylor, 2017). Data shows that self-harming behaviors are especially frequent in young people (Cipriano, Cella, & Cotrufo, 2017). There are many possible ways to interpret the role this type of behavior plays for an individual (Klonsky, et al., 2015), but large number of questions still stays unanswered. Self-destructive behaviors endanger not only physical well-being, health, and life of a person but also serve as a threat for mental functioning.

Another important aspect that needs to be addressed in studies concerning clinical samples is repression and sensitization of emotional stimuli. As it was presented in historical work of Postman, Bruner, and McGinnies (1948), and other clinically oriented scientists (for the review see: Kleszczewska-Albińska, 2008) sometimes it is extremely difficult to work with patients since they do not recognize their true level of arousal. Based on many studies researchers proposed a typology helping to identify four groups of people: (1) repressors, (2) truly low anxious, (3) truly high anxious, and (4) defensive high anxious (sensitizers), that differ among themselves in the level of anxiety and social desirability (Kleszczewska-Albińska, 2008). Repressors are described as people with low level of anxiety, and high level of social desirability. Truly low anxious score low both on anxiety measures, and social desirability questionnaires. Truly high anxious are described as having high anxiety level, and low social

desirability level. People described as defensive high anxious score high on both measures (Weinberger, Schwartz, & Davidson, 1979).

The work presented in the article aims at describing the connections between self-destructive behaviors, self-esteem, anxiety, and social desirability. Also, some data concerning the relationship between repression and sensitization of emotional stimuli and self-harming behaviors is presented. The main focus in the study was to analyze the most popular factor perceived as a threat to people diagnosed with personality disorders or mood disorders, i.e., widely understood self-destructive behaviors. Another important issue was connected with a scientific discussion on the role of repression and sensitization in functioning of people with personality and mood disorders.

## 2. Method

### 2.1. Participants

Hundred voluntary respondents (including 79 women, and 21 men) aged 18-60 ( $M=31.91$ ;  $SD=8.22$ ) participated in the study. The number of women who completed the study was significantly greater than the number of men  $\chi^2_{(1)}=33.63$ ;  $p<.001$ . Among all participants there were respondents without any clinical diagnosis (43 people), persons diagnosed with mood disorders (22 respondents), and people diagnosed with personality disorders. The number of people without a clinical diagnosis who completed the study was significantly greater than the number of people with mood disorders and personality disorders accounted separately  $\chi^2_{(2)}=6.740$ ;  $p=.034$ . When the comparison was done for people without a clinical diagnosis and people with clinical diagnosis (including both mood disorders and personality disorders) there were no differences in the number of respondents in each group  $\chi^2_{(1)}=1.960$ ;  $p=.162$ . The clinical recognition was carried out by psychiatrists based on ICD-10 diagnostic criteria (WHO, 1998). All of the respondents were additionally classified to one of the four groups: (1) not engaged in the therapy (23 respondents), (2) attending therapy before the study for no longer than 6 months (26 people), (3) attending therapy before the study for over six months (22 persons), and (4) currently attending the therapy (29 participants). There were no significant differences in the number of people in each group  $\chi^2_{(3)}=1.2$ ;  $p=.753$ . Detailed information concerning participants is given in the table 1. below.

Table 1. Detailed description of groups participating in the study.

|                  |                                      | Type of disorder  |                |                       | Total |
|------------------|--------------------------------------|-------------------|----------------|-----------------------|-------|
|                  |                                      | without diagnosis | mood disorders | personality disorders |       |
| Therapy duration | not participating                    | 23                | 0              | 0                     | 23    |
|                  | finished and no longer than 6 months | 14                | 4              | 8                     | 26    |
|                  | finished and lasting over 6 months   | 5                 | 8              | 9                     | 22    |
|                  | currently under therapy              | 1                 | 10             | 18                    | 29    |
| <b>Total</b>     |                                      | 43                | 22             | 35                    | 100   |

### 2.2. Materials

In the study four tests were included: Self-Destruction Questionnaire (Gerymski, Filipkowski, & Walczak, 2016), Rosenberg Self-Esteem Scale (Dzwonkowska, Lachowicz-Tabaczek, & Łaguna, 2008), State Trait Anxiety Inventory (Wrześniewski, Sosnowski, Jaworowska, & Fecenec, 2011), and Social Desirability Questionnaire (Drwal, & Wilczyńska, 1980). Self-Destruction Questionnaire aims at measuring the tendency for self-destructive behaviors. It includes 45 items with 5 point response scale (1-fully agree, 2-agree, 3-hard to say, 4-disagree, 5-fully disagree). It consists questions such as "I do not look round at pedestrian crossing", "I think I smoke a lot", "Purposely I was cutting my veins". The reliability of the test in conducted study equals  $\alpha=.956$ . Polish adaptation of Rosenberg Self-Esteem Scale consists of 10 questions with four point response scale (1-fully agree, 2-agree, 3-disagree, 4-fully disagree). The reliability of the test in conducted study equals  $\alpha=.918$ . Polish adaptation of State Trait Anxiety Inventory includes 20 questions with four point response scale assessing anxiety perceived as a state, and 20 other questions for measuring anxiety understood as a trait. In the described study only the scale assessing trait anxiety was used. The reliability of the scale in described study equals  $\alpha=.949$ . Social

Desirability Questionnaire aims at assessing the intensity of social desirability. It consists of 29 questions with true/false response scale. It includes items such as „*I am never late for my work*”, „*I have never intensely said anything to hurt someone's feelings*”. The reliability of the test in conducted study equals  $\alpha=.84$ .

### 3. Results

In order to verify the relationships between self-destructive behaviors, level of anxiety, self-esteem, and social desirability correlational analyses were conducted. All the results are given in the table 2.

Table 2. Results of correlational analysis is for self-destructive behaviors, anxiety, self-esteem, and social desirability in the whole group.

|                            |                 | anxiety | self-esteem | social desirability |
|----------------------------|-----------------|---------|-------------|---------------------|
| Self-destructive behaviors | Pearson r value | .732    | -.701       | -.485               |
|                            | significance    | <.001   | <.001       | <.001               |
| N = 100                    |                 |         |             |                     |

Corresponding analyses were conducted separately for non-clinical, mood disorders, and personality disorders group. All those results are presented in the table 3.

Table 3. Results of correlational analysis for self-destructive behaviors, anxiety, self-esteem, and social desirability separately for the non-clinical, mood disorders, and personality disorders group.

|                            |                       |                 | anxiety | self-esteem | social desirability |
|----------------------------|-----------------------|-----------------|---------|-------------|---------------------|
| self-destructive behaviors | non-clinical sample   | Pearson r value | .637    | -.625       | -.214               |
|                            |                       | significance    | <.001   | <.001       | .168                |
|                            |                       | N = 43          |         |             |                     |
|                            | mood disorders        | Pearson r value | .702    | -.485       | -.528               |
|                            |                       | significance    | <.001   | .022        | .012                |
|                            |                       | N = 22          |         |             |                     |
|                            | personality disorders | Pearson r value | .284    | -.353       | -.276               |
|                            |                       | significance    | .099    | .037        | .109                |
|                            |                       | N = 35          |         |             |                     |

Additionally, with ANOVA analyses, it was proved, that the mean number of self-destructive behaviors is the highest for people with personality disorders, medium for patients with mood disorders, and the lowest for non-clinical group  $F_{(2,97)}=27.292$ ;  $p<.001$ . There were also significant differences in the number of self-destructive behaviors according to the duration of the therapy:  $F_{(3,96)}=9.181$ ;  $p<.001$ , with statistically highest amount of them in the group still participating in therapy. There were significant differences in self-esteem of respondents according to the group they belonged to  $F_{(2,97)}=45.506$ ;  $p<.001$ , with the highest level of self-esteem for non-clinical group, medium for mood disorders, and lowest level for personality disorders. The highest differences in self-esteem according to the duration of time of therapy was observed between group not participating in therapy, and group still participating in therapy  $F_{(3,96)}=13.567$ ;  $p<.001$ , with highest results for persons not attending therapy. Also the differences in the level of self-destructive behaviors between repressors, highly-anxious, and sensitizers were observed  $F_{(3,96)}=28.704$ ;  $p<.001$ . Similar pattern of differences was also noticed in the level of self-esteem between repressors, highly-anxious and sensitizers  $F_{(3,96)}=35.271$ ;  $p<.001$ .

Additionally, the information concerning the number of people described as low-anxious, high-anxious, repressors, and sensitizers presented in non-clinical, mood disorders, and personality disorders group was obtained. The results are given in the table 4.

Table 4. Number of people from low-anxious, high-anxious, repressors, and sensitizers types in the non-clinical, mood disorders, and personality disorders group.

|              | non-clinical | mood disorders | personality disorders |
|--------------|--------------|----------------|-----------------------|
| low-anxious  | 14           | 6              | 3                     |
| high-anxious | 3            | 4              | 24                    |
| repressors   | 23           | 4              | 0                     |
| sensitizers  | 3            | 5              | 8                     |

#### 4. Discussion

The results presented above are consistent with previous data on functioning of clinical samples, especially people with mood disorders and personality disorders. It is worth to mention some differences observed in the level and significance of positive correlations for the whole group of respondents and separate groups of non-clinical, mood disorders, and personality disorders samples. Surprisingly there was only a statistical tendency of results obtained in the group of persons with personality disorders, whereas the results for the non-clinical, and mood disorders groups were statistically significant. As it is stated in the literature, self-harming behaviors play two major roles – intrapersonal function connected to affect regulation, and social function connected to bonding with others (Klonsky, et al., 2015). Results obtained in the study described above may suggest that self-destructive behaviors characteristic for non-clinical, and mood disorders groups may be connected more with the first function, whereas in personality disorders group both functions play crucial role (Cipriano, et al., 2017). As for the differences observed in the significance of measured correlations it is possible, that they are connected to the engagement in the therapy. It is conceivable that patients with personality disorders engaged in therapy are undergoing changes concerning the perception of self-destructive behaviors. Further studies are needed in order to verify this aspect.

Significant, negative correlations between self-destructive behaviors and self-esteem obtained in all analyses stay in agreement with previous studies (Forrester, et al., 2017). Therefore, it is important to pay close attention to this aspect of life of patients seeking for psychotherapy. It is possible that therapeutic methods directed toward improvement of self-esteem may help to reduce self-harming behaviors. However, more explicit studies in that field are needed.

Negative connection between self-destructive behaviors and social desirability obtained especially for the mood disorders group is similar to the results described by Cislaghi (2020). The negative attitudes toward self-harming behaviors may result in therapy dropout among people engaged in such activities (Brophy, & Holmstrom, 2006). Thus, it is important to work with patients towards their understanding of the problem. It could be also helpful to join people with history of self-harming behaviors in helping others with the same problem. This way social acceptance for people with self-destructive tendencies could be enlarged resulting in their improvement in therapy.

It is also important to underline the result showing that most of the group of non-clinical sample consists of repressors. As it is stated in the literature, this type of people usually underestimates their own feelings and difficulties (Myers, 2009). Closer look and further studies on that group are needed. Especially, that they quite often complain about their physical health problems.

There are certain limitations to the presented study, that need to be addressed. The sample taken into account was relatively small, and mostly women. Most of the described results are based on correlational analyses. More complex, experimental studies are needed, especially in the face of analysis of functioning of repressors and defensive high-anxious persons, who present lots of discrepancies between declared, self-descriptive information, and other type of data.

#### References

- Brophy, M., & Holmstrom, R. (2006). *Truth hurts: Report of the National Inquiry into Self-Harm Among Young People: Fact or Fiction?* Mental Health Foundation. Retrieved from <https://www.mentalhealth.org.uk/publications/truth-hurts-report1>.
- Cipriano, A., Cella, S., & Cotrufo, P. (2017). Nonsuicidal self-injury: A systematic review. *Frontiers in Psychology*, 8. doi: 10.3389/fpsyg.2017.01946.
- Cislaghi, B. (2020). *Attitudes toward self-harm* (Murray State Theses and Dissertations. 178). Retrieved from: <https://digitalcommons.murraystate.edu/etd/178>.
- Cramer, V., Torgersen, S., Kringlen, E. (2006). Personality disorders and quality of life. A population study. *Comprehensive Psychiatry*, 47, 178-184. doi: 10.1016/j.comppsy.2005.06.002.
- Drwal, R.Ł., & Wilczyńska, J.T. (1980). Opracowanie kwestionariusza aprobaty społecznej [Development of social desirability questionnaire]. *Przegląd Psychologiczny*, 23, 569-583.
- Dzwonkowska, I., Lachowicz-Tabaczek, K., & Łaguna, M. (2008). *Samoocena i jej pomiar. Polska adaptacja skali SES M. Rosenberga* [Self-esteem and its measurement. Polish adaptation of M. Rosenberg's SES scale]. Warszawa, Poland: Pracownia Testów Psychologicznych.
- Forrester, R.L., Slater, H., Jomar, K., Mitzman, S., & Taylor P.J. (2017). Self-esteem and non-suicidal self-injury in adulthood: A systematic review. *Journal of Affective Disorders*, 221, 172-183. doi: 10.1016/j.jad.2017.06.027.



- Gerymski, R., Filipkowski, J., & Walczak, R. (2016). *Kwestionariusz KAPiBara* [Questionnaire KAPiBara]. Opole, Poland: Uniwersytet Opolski.
- Kleszczewska-Albińska, A. (2008). Tłumienie i wyolbrzymianie bodźców emocjonalnych - próba systematyzacji badań [Repression and sensitization of emotional stimuli – systematical review]. *Studia Psychologiczne*, 46, 5-16.
- Klonsky, E.D., Glenn, C.R., Styer, D.M., Olino, T.M., & Washburn, J.J. (2015). The functions of nonsuicidal self-injury: converging evidence for a two-factor structure. *Child and Adolescent Psychiatry and Mental Health* 9, 44. doi: 10.1186/s13034-015-0073-4.
- Myers, L.B.(2009). The importance of the repressive coping style: findings from 30 years of research. *Anxiety, Stress & Coping*, 23, 3-17. doi: 10.1080/10615800903366945.
- Postman, L., Bruner, J.S., & McGinnies, E. (1948). Personal values as selective factors in perception. *The Journal of Abnormal and Social Psychology*, 43, 142-154. doi: 10.1037/h0059765.
- Weinberger, D.A., Schwartz, G.E., & Davidson, R.J. (1979). Low-anxious, high-anxious, and repressive coping styles: psychometric patterns and behavioral and physiological responses to stress. *Journal of Abnormal Psychology*, 88, 369-380. doi: 10.1037//0021-843x.88.4.369.
- WHO. (1998). *ICD-10. Klasyfikacja zaburzeń psychicznych i zaburzeń zachowania w ICD-10. Badawcze kryteria diagnostyczne* [International Statistical Classification of Diseases and Health Related Problems – Tenth revision]. Kraków-Warszawa, Poland: Uniwersyteckie Wydawnictwo Medyczne “Vesalius”. Instytut Psychiatrii i Neurologii.
- Wrześniewski, K., Sosnowski, T., Jaworowska, A., & Fecenec, D. (2011). *Inwentarz Stanu i Cechy Lęku. Polska adaptacja STAI* [State Trait Inventory. Polish adaptation of STAI]. Warszawa, Poland: Pracownia Testów Psychologicznych.

# ORGANISATIONAL READINESS FOR IMPLEMENTING INTERNET-BASED COGNITIVE BEHAVIOURAL INTERVENTIONS FOR DEPRESSION ACROSS COMMUNITY MENTAL HEALTH SERVICES IN ALBANIA AND KOSOVO

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## Abstract

**Background:** The use of digital mental health (MH) programs such as internet-based cognitive behavioural therapy (iCBT) hold promise in increasing the quality and access of MH services. However very little research has been conducted in understanding the feasibility of implementing iCBT in Eastern Europe.

**Methods:** We used qualitative semi-structured focus group discussions (FGDs) that were guided by Bryan Weiner's model of organisational readiness for implementing change. The questions broadly explored shared determination to implement change, (change commitment), and shared belief in their collective capability to do so (change efficacy). Data were collected between November and December 2017. A range of healthcare professionals working in and in association with the CMHCs were recruited from three CMHCs in Albania, and four CMHCs in Kosovo, which are participating in a large multinational trial on the implementation of iCBT across nine countries (Horizon 2020 ImpleMentAll project). Data were analysed using a directed approach to qualitative content analysis, which used a combination of both inductive and deductive approaches.

**Results:** Six FGDs involving 69 MH care professionals were conducted. Participants from Kosovo (n=36, 52%) and Albania (n=33, 48%) were mostly female (n=48, 69.9%) and nurses (n=26, 37.7%), with an average age of 41.3 years. A qualitative directed content analysis revealed several barriers and facilitators potentially affecting the implementation of digital CBT interventions for depression in community MH settings. While commitment for change was high, change efficacy was limited due to a range of situational factors. Barriers impacting 'change efficacy' included lack of clinical fit for iCBT, high stigma affecting help-seeking behaviours, lack of human resources, poor technological infrastructure, and high caseload. Facilitators included having a high interest and capability in receiving training for iCBT. For 'change commitment', participants largely expressed welcoming innovation and that iCBT could increase access to treatments for geographically isolated people, and reduce the stigma associated with MH care.

**Conclusions:** In all, participants perceived iCBT positively in relation to promoting innovation in MH care, increasing access to services and reducing stigma. On the other hand, a range of barriers were also highlighted in relation to accessing the target treatment population, a culture of MH stigma, underdeveloped ICT infrastructure and limited appropriately trained healthcare workforce, that reduce organisational readiness for implementing iCBT for depression. Such barriers may be addressed through, (a) a public facing campaign that addresses MH stigma, (b) service-level adjustments that permit staff with the time, resources and clinical supervision to deliver iCBT, and (c) establishment of suitable clinical training curriculum for healthcare professionals.

**Keywords:** *Digital mental health, internet-based cognitive behavioural therapy, implementation science, MENTUPP, organisational readiness for implementing change.*

## 1. Introduction

Albania and Kosovo are middle income countries in the Southeast of Europe, that have populations of 2.9 million and 1.8 million, respectively (1–3). The burden of mental illness in Albania and Kosovo is reportedly high with disproportionately lower human resources available. In Albania there are 1 psychiatrist, 1 psychologist and 7 nurses, per 100,000 population (4). In Kosovo there are 2.6 psychiatrists, 0.49 psychologists, and 14.91 nurses per 100,000 population. Limited human resources are however not the only barrier to accessing mental healthcare. A review of mental healthcare systems in the region for people with severe mental illness found that Central and Eastern Europe experienced higher reports of public stigma associated with mental health, compared to other EU countries (5). Poppleton and Gire (6) proposed that optimisation of mental health care systems, should include the use of innovative digital technologies, which have been lauded to hold significant potential, including: increased access to mental health services, reduced stigma, increased access to evidenced-based interventions, convenient access in relation to location and time, allowing for independent self-directed use, and enabling interventions to be tailored for relevant linguistic and cultural adaptations of interventions (6). However, little to nothing is known about the readiness of mental health services in implementing digital mental health interventions. The aim of this study was to undertake a qualitative assessment of the organisational readiness for implementing internet based cognitive behavioural therapy (iCBT) interventions for people with depression, in seven community mental health centres (CMHCs) across Albania and Kosovo. To our knowledge, this report will be the first to explore organisational readiness for implementing iCBT, and a mental health service in general, in Albania and Kosovo.

## 2. Methods

Qualitative focus group discussions (FGDs) were conducted with community mental health staff in Albania and Kosovo. Participants were recruited from seven community mental health centre (CMHCs) across Albania (located in Tirana, Shkoder and Korce) and Kosovo (Prizren, Gjilan, Prishtine, and Mitrovice). A purposive sampling method for data collection was used to facilitate access to key informants and maximum variations within an organisation (Elo & Kyngäs, 2008; Green & Thorogood, 2014). Participants were selected in relation to diversity considering factors such as age, gender, job role, the level of experience of working with people with depression (Green & Thorogood, 2014).

Interviews were guided by Weiner's (7) concept of organizational readiness for implementing change (ORIC), a topic guide with 'directed questions' (8) that related to the categories outlined in Weiner's (7) theory. The interviews were conducted in Albanian by ACP, GQ and AM in Albania and by ACP, NF and SM in Kosovo. In Albania, interviews were audio-recorded with a digital voice recorder. In Kosovo, the participants declined to be recorded, therefore special efforts were made to capture the interviews verbatim, in real-time. After each FGD, the recordings of the interviews were transcribed verbatim in Albanian and subsequently translated into English.

### 2.1. Analytical framework

Our study employed a qualitative methodology to explore ORIC as theorised by Bryan Weiner (7). ORIC (7,9) is a multi-level and multi-faceted construct that refers to the organizational members' shared determination to implement a change (change commitment) and shared belief in their collective capability to do so (change efficacy). The categories outlined in Weiner's (7) theory were reviewed by the research team to ensure that they align with the pre-implementation context that the FGDs took place in. The team made a decision to exclude all categories under the 'change-related effect', as efforts to initiate change were not experienced at the time in which the FGDs were conducted.

### 2.2. Data analysis

Data was analysed at two levels, (a) at a manifest content analysis which refers to the use of only transcribed interview text, and (b) latent content analysis which relies on the reflections and interpretations (10). Thomas and Magilvy (11) suggest that using both types of analysis is important for developing a deep understanding of the data. The unit of analysis for assessing ORIC within the qualitative interview was the CMHC (12).

The directed content analysis commenced with immersion in the data by all authors of this paper. In order to enhance reliability, the analysis and coding was carried out independently and simultaneously in Albanian (ACP, GQ, AM, NF, SM) and in English by AD as well as independent researchers CV, JG (13). The involvement of independent researchers attempted to include and integrate a different subjective perspective in the process of data analysis and in its reflection. Transcripts were analysed in the original

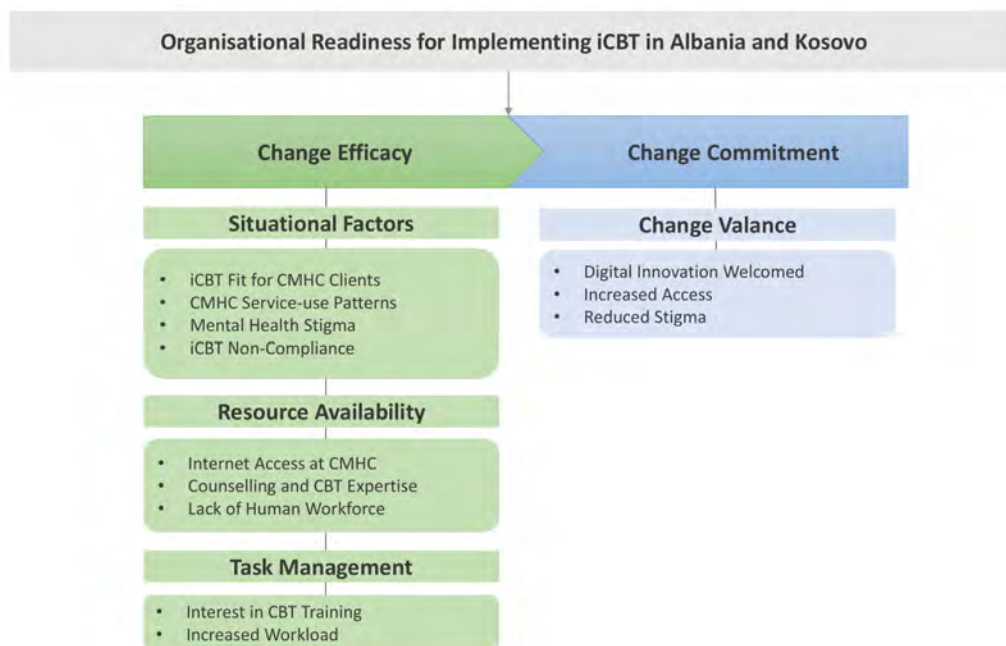
language by Albanian speaking researchers to enable cultural interpretations that may be diluted during translation. Data that could not be coded into an ORIC theory category but was relevant to organisational readiness was re-examined to described different types of organisational readiness. Key emerging themes were mapping into a framework that was reviewed and confirmed by all authors (8,10).

### 3. Findings

Six FGDs were conducted between November and December 2017: 3 in Albania and 3 in Kosovo. Focus groups included between 9 to 12 participants, with a total of 69 professionals taking part. Participants represented the whole spectrum of health professionals working at and in association with CMHCs with the largest group being nurses ( $n=25$ , 37.7%), followed by social workers ( $n=13$ , 18.8%), psychiatrists ( $n=13$ , 18.8%), psychologists ( $n=11$ , 15.9%), general practitioners ( $n=4$ , 5.8%), occupational therapist ( $n=1$ , 1.5%) and speech and language therapist ( $n=1$ , 1.5%). In order to explore referral routes to CMHCs, general practitioners, who are external to CMHCs were also invited to take part. Across all sites, 48 (69.6%) of participants were female. The average age of participants was 41.3 years of age (ranging between 25 – 64 years of age). Managerial positions were held by around 20% of participants ( $n=14$ ). On average years of work experience in mental health was 8 years in Albania, and above 15 years in Kosovo (see Table 1, for participant characteristics). On average each FGD took 60 minutes in Albania and 80 minutes in Kosovo. Ahead of the FGDs, participants were asked to rate the following question on a scale of 1-10, “Do you feel the iCBT service delivery will become a normal part of your work?”, (a single question that was integrated into their sociodemographic form). On average both the Albanian and Kosovan sites rated the implementation of iCBT highly, with average scores of 8.42 and 7.48, respectively<sup>1</sup>.

#### 3.1. Qualitative framework

Figure 1. Conceptual framework of factors that influence organisational readiness for implementing iCBT in community mental health teams across Albania and Kosovo.



A directed content analysis based on six focus group discussions (FGDs) revealed a multifaceted and multilevel conceptual framework of organisational readiness for implementing iCBT across seven CMHCs in Albania and Kosovo. Figure 1 outlines a description of the key themes that impact change efficacy (the belief in the services' collective/individual capabilities to implement iCBT based on existing 'situational factors', 'resource management', and 'task management' of services), and change commitment (individual and shared resolve to implement iCBT based on the perceived value to the service) of implementing iCBT in Albania and Kosovo.

<sup>1</sup>All participants responded to this question with the exception of four participants from Prishtine-Mitrovice ( $n=1$ ) and Gjilan ( $n=3$ ) FGDs.

## **4. Discussion**

We conducted a qualitative examination of organisational readiness for implementing an iCBT intervention for people with mild to moderate depression, with healthcare professionals from seven CMHCs across Albania and Kosovo. Our qualitative directed content analysis revealed two overarching themes of organisational readiness for implementing iCBT that aligned with Weiner's (7) ORIC model, that we used to interpret the data heuristically. The first was 'change efficacy', referring to the perception of how possible it would be to implement iCBT, in relation to three themes, 'situational factors', 'resource availability' and 'task management' which were largely perceived as barriers. The second theme was 'change commitment' which included one sub-theme, 'change valance' in which participants largely expressed that iCBT could result in benefits to their organisation and the communities they serve.

### **4.1. Limitations and strengths**

Our study had several limitations. While Albania and Kosovo are in the same region with the same language, cultures and values, they are two distinct countries with different health care systems, that are presented with different challenges and demands. However, data for both settings were merged because there was not enough data to conduct a separate analysis for each country. As a result, contextual or nuanced interpretation of the data could not always be generated. We attempted to address this limitation by indicating which sites endorsed different themes. Moreover, the qualitative data analysis did not reveal any conspicuous differences between the sites. However, many commonalities were discovered, allowing for greater generalisability to be made about our findings. The CMHCs that implemented iCBT mainly provided mental health services for people with severe mental illness because there are little-to-no publicly available psychological services. The mismatch between people who access CMHC services and the target population for iCBT may have negatively impacted perceptions around the feasibility of implementation of iCBT, even though participants reported that they would value the use of digital innovations in their service. Nonetheless, implementing iCBT within CMHCs was the most feasible option, in settings that have limited mental health resources.

The study also had several strengths. Our study is the first to examine organisational readiness for implementing digital mental health intervention in both Albania and Kosovo. A wide range of professionals were involved in the qualitative interviews, representing all professions working at and in association with a CMHC. There was also a good geographical representation of services, across both Albania and Kosovo. The findings of our study provide a unique contribution to the literature in relation to the barriers and facilitators for implementing iCBT in these regions, and which can be used to develop context-specific solutions for implementing iCBT (14).

## **5. Conclusion**

In all, participants perceived iCBT positively in relation to promoting innovation in mental health care, increasing access to services, reducing stigma and high perceived availability of expertise within the team to deliver the intervention. On the other hand, a range of barriers were also highlighted in relation to accessing the target treatment population, a culture of mental health stigma, underdeveloped ICT infrastructure and a limited healthcare workforce. We propose that such barriers can be addressed through, (a) a public facing campaign that addresses mental health stigma, (b) service-level adjustments that permit staff with the time, resources and clinical supervision to deliver iCBT, in order to increase organisational readiness, and facilitate the effective implementation of iCBT in Albania and Kosovo, and (c) establishment of suitable clinical training curriculum for healthcare professionals to enable them to provide evidence based treatments for mental health conditions.

Three directions for future research are proposed. Studies should aim to corroborate findings from our study in relation to stigma and perceived patient barriers to accessing the service, with clients using iCBT. Second, a larger sample size should be employed across different regions of Eastern Europe to enable both in-country, and cross-country analyses to be conducted. Third, in-depth face-to-face qualitative interviews could also be used to develop a more detailed account of organisational readiness at an individual level (15).

*References*

- Assarroudi A, Heshmati Nabavi F, Armat MR, Ebadi A, Vaismoradi M. Directed qualitative content analysis: the description and elaboration of its underpinning methods and data analysis process. *J Res Nurs*. 2018 Feb;23(1):42–55.
- Bühmann L, Schuurmans J, Ruwaard J, Fleuren M, Etzelmüller A, Piera-Jiménez J, et al. Tailored implementation of internet-based cognitive behavioural therapy in the multinational context of the ImpleMentAll project: a study protocol for a stepped wedge cluster randomized trial. *Trials* [Internet]. 2020 Dec 1 [cited 2021 Feb 24];21(1):1–15. Available from: <https://link.springer.com/articles/10.1186/s13063-020-04686-4>
- Graneheim U., Lundman B. Qualitative content analysis in nursing research: concepts, procedures and measures to achieve trustworthiness. *Nurse Educ Today*. 2004 Feb;24(2):105–12.
- Hsieh H-F, Shannon SE. Three Approaches to Qualitative Content Analysis. 2005 [cited 2019 May 23]; Available from: <https://journals.sagepub.com/doi/pdf/10.1177/1049732305276687>
- Mays N, Pope C. Qualitative Research: Rigour and qualitative research. *BMJ* [Internet]. 1995 Jul 8 [cited 2015 Jan 5];311(6997):109–12. Available from: <http://www.bmj.com/content/311/6997/109>
- Poppleton A, Gire N. mHealth: bridging the mental health gap in central and eastern Europe. Vol. 4, *The Lancet Psychiatry*. Elsevier Ltd; 2017. p. 743–4.
- Shea CM, Jacobs SR, Esserman DA, Bruce K, Weiner BJ. Organizational readiness for implementing change: a psychometric assessment of a new measure. *Implement Sci*. 2014 Dec;9(1):7
- The World Bank. Albania Overview. 2020.
- The World Bank. Kosovo Overview. 2020.
- Thomas E, Magilvy JK. Qualitative Rigor or Research Validity in Qualitative Research. *J Spec Pediatr Nurs*. 2011 Apr;16(2):151–5.
- Weiner BJ, Lewis MA, Linnan LA. Using organization theory to understand the determinants of effective implementation of worksite health promotion programs. *Health Educ Res*. 2008 Mar; 24(2): 292–305.
- Weiner BJ. A theory of organizational readiness for change. *Implement Sci*. 2009 Dec;4(1):67.
- Winkler P, Krupchanka D, Roberts T, Kondratova L, Machů V, Höschl C, et al. A blind spot on the global mental health map: a scoping review of 25 years' development of mental health care for people with severe mental illnesses in central and eastern Europe. Vol. 4, *The Lancet Psychiatry*. Elsevier Ltd; 2017. p. 634–42.
- World Health Organization. Mental health ATLAS 2017 Member State Profile: Albania. Geneva; 2017.
- World Health Organization. Mental health atlas 2017. Geneva; 2018.

## SOCIAL EMOTIONAL LEARNING: DEVELOPING THE ADOLESCENT

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### Abstract

During the latter part of the 21st century, social emotional learning (SEL) started being incorporated into the classroom in a meaningful way. While SEL has garnered enough attention to be included in school curricula throughout the United States as well as several other countries worldwide, research about the import and effect of SEL is relatively new (America Succeeds, 2019). The worldwide COVID pandemic has brought about challenges beyond the obvious serious health concerns. Byproducts of the pandemic include the increased need for coping mechanisms and problem solving, interpersonal interaction skills, as well as an understanding of identity development to help children handle emotional distress resulting from the numerous significant changes in their daily lives. However, many current SEL programs do not address these key areas of concern. It is the authors' contention that an SEL curriculum which focuses on resilience as well as key indicators of identity development, coping mechanisms, and personal de-escalation techniques are necessary to effectively aid adolescents with navigating their current lives and building a positive future.

This research proposes a new SEL program that fits the needs of adolescents and preteens as administered in the school system. Building on a previous program shown to significantly improve self-esteem and school cohesion and trust (Cipra & Hall, 2019), Gr<sup>2</sup>IT focuses on several key principles to help children develop social and emotional skills and resiliency in the classroom and beyond. A unique component of the program is the principle of identity. Because identity formation is a significant developmental task, understanding the reinforcing and bidirectional relation between behavior and identity is beneficial to adolescents. Gr<sup>2</sup>IT incorporates principles of identity development throughout the curriculum. In conjunction with emotional regulatory practices, problem-solving strategies, and a social equity perspective, Gr<sup>2</sup>IT introduces a holistic approach to social and emotional learning to support the positive development of youth. While Gr<sup>2</sup>IT is currently being developed for American schools, many of the principles are universal to child development and may be adapted cross culturally.

**Keywords:** *Adolescent development, resilience, identity, curriculum.*

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### 1. Introduction

Schools throughout much of the world, including the United States, have realized the usefulness of social emotional learning (SEL). While not a traditional academic subject, SEL is crucial for student well-being, and SEL curriculum taught within the confines of the school is associated with improved academic performance (Panayiotou et al., 2019), decreased aggression (Smith & Low, 2013), positive peer relationships and school cohesion (Cipra & Hall, 2019), and reduced depression (Corrieri et al., 2014; Taylor et al., 2017). The authors contend that the need for effective SEL in a school-based system has significantly increased since the start of the COVID-19 global pandemic. Although youth have been less susceptible to the severe physical health problems of the pandemic, they are at greater risk of the negative psychosocial impacts (Holmes et al., 2020), including depression and anxiety due to their developmental phases (Samji et al., 2021). Therefore, a social and emotional learning curriculum that fully integrates an understanding of developmental stages and identity development should better support youth. Recent research in the area of SEL has begun to focus on social emotional and behavior learning curriculum. This slight pivot includes behavior models within a traditional SEL program. The Gr<sup>2</sup>IT curriculum has been developed to address all of these needs in a 10-principle model.

## 2. Objectives

The curriculum adheres to research guidelines about the efficacy of short lessons. Each lesson focuses on one of ten principles to teach and reinforce the goals of SEL/SEBL and general well-being in accordance with CASEL, ASCA, and Restorative Practices competencies. *Gratitude* centers on promoting a realistic view of personal lives, finding and appreciating the positive aspects as well as recognizing the lessons to be learned from the negative circumstances. *Resilience* helps youth learn about grit, overcoming obstacles, and practice resiliency skills. The *Identity* principle helps youth understand the developmental steps of identity formation as understood from a developmental psychology perspective while imparting the importance of building a positive and healthy identity. This is achieved through a bidirectional relationship between habit and identity. *Teamwork* emphasizes the importance of cooperation in daily life beyond school. *Personal Regulation* teaches children and youth strategies to physically calm down when faced with difficult situations that could lead to anger, aggression, or anxiety. The principle of *Responsibility* helps children learn about personal responsibility in various aspects of daily life, including taking ownership of one's actions and consequences. *Critical Thinking* emphasizes the necessity of learning critical thinking skills and reasoning, particularly in the current digital age. *Coping Mechanisms* teaches youth the difference between emotion-centered and problem-centered coping as well as decision-making strategies. *Perspective Taking & Empathy* focus on demonstrating the importance of listening to and learning from the perspectives of others and developing empathy toward others. Lastly the *Social Justice* principle helps youth reflect on their role in promoting well-being in various context with the underlying core of equity for and of all persons.

While the Gr<sup>2</sup>IT program's primary focus is SEL, this program takes a unique approach by incorporating physical exercise. This addition is based on research about the brain-body (sometimes referred to as mind-body) connection. "Brain breaks" and physical activity are associated with improved academic performance (Raspberry et al., 2011) and student behavior (Carlson et al., 2015). Connections between physical activity and academic achievement and cognitive tasks has been established in several studies (see Bass et al., 2013; Wassenaar et al., 2019). A recent study on the impact of COVID-19 on youth observed that was also linked to better mental health outcomes (Samji et al., 2021). Gr<sup>2</sup>IT includes three physical activity options. The Classic Sport option utilizes traditional exercises such as push-ups, sit-ups, squats, lunges, and more to promote movement, increase attention, and mindfulness. The Yoga option emphasizes strength and breathing as energy management through a slow progression of standard yoga poses. The Tae Kwon Do option highlights attention and focus in a nonaggressive series of movements and power stances.

Another distinctive option of the Gr<sup>2</sup>IT program is called *Community*. This option is presented for school systems that wish to incorporate their school resource officers (SRO) into the curriculum and instruction. Research demonstrates that integrating SROs in school programming can increase school cohesion and trust as well as improve school climate (Cipra & Hall, 2019).

## 3. Discussion

Although mental health of youth is a commonly studied area, the COVID-19 pandemic has exacerbated mental health concerns. For students already struggling with mental health issues, the closures of schools and uncertainty of instructional modality in addition to social isolation or distancing creates more obstacles because school routines may serve as an anchor for coping mechanisms (Lee, 2020). School closures, while necessary, hinder student access to a host of mental health and coping resources. As schools have begun to reopen over the last year, more resources are needed to address the increase of mental health issues, particularly depressive and anxiety symptoms. An effective SEL program can help mitigate the impact of COVID-19 on youth mental health and provide lasting skills and resilience to address anxiety, depression, and a host of other concerns for developing youth. While this research focuses on school-based programs, Gr<sup>2</sup>IT contends that social and emotional learning extends beyond the school, beyond the student, and into the community to create and foster a better environment for all.



## References

- America Succeeds (2019). *The Case for Social-Emotional Learning*. <https://americasucceeds.org/wp-content/uploads/2019/10/America-Succeeds-The-Case-for-Social-Emotional-Learning.pdf>
- Cipra, A. & Hall, L. (2019). COREMatters: A bullying intervention pilot study. *Research in Middle Level Education*, 42(4), 1-13. DOI: 10.1080/19404476.2019.1599244
- Corrieri, S., Heider, D., Conrad, I., Blume, A., Konig, H. H., & Riedel-Heller, S. G. (2014). School-based prevention programs for depression and anxiety in adolescence: a systematic review. *Health Promotion International*, 29(3), 427-441. Doi: 10.1093/heapro/dat001
- Holmes, E. A., O'Connor, R. C., Perry, V. H., Tracey, I., Wesseley, M. D., Arseneault, L., Ballard, C., Christensen, H., Silver, R. C., Everall, I., Ford, T., John, A., Kabir, T., King, K., Madan, I., Michie, S., Przybyski, A. K., Shafran, R., Sweeney, A., Worthman, C. M., et al. (2020). Multidisciplinary research priorities for the COVID-19 pandemic: a call for action for mental health science. *The Lancet Psychiatry*, 7, 547-560. Doi: 10.1016/S2215-0366(20)30168-1
- Lee, J. (2020). Mental health effects of school closures during COVID-19. *Lancet Child & Adolescent Health*, 4(6), 421. Doi: 10.1016/S2352-4642(20)30109-7
- Panayiotou, M., Humphrey, N., & Wigelsworth, M. (2019). An empirical basis for linking social and emotional learning to academic performance. *Contemporary Educational Psychology*, 56, 193-204. <http://dx.doi.org/10.1016/j.cedpsych.2019.01.009>
- Raspberry, C. N., Lee, S. M., Robin, L., Laris, B. A., Russell, L. A., Coyle, K. I., & Nihiser, A. J. (2011). The association between school-based physical activity, including physical education, and academic performance: a systematic review of the literature. *Preventative Medicine*, 52(S1), 10-20. <https://doi.org/10.1016/j.jpmed.2011.01.027>
- Samji, H., Wu, J., Ladak, A., Vossen, C., Stewart, E. Dove, N., Long, D., Snell, G. (2021). Review: Mental health impacts of the COVID-19 pandemic on children and youth – a systematic review. *Child and Adolescent Mental Health*. <https://doi.org/10.1111.camh.1250>
- Smith, B. H., & Low, S. (2013). The role of social emotional learning in bullying prevention efforts. *Theory Into Practice*, 52(4), 280-287. Doi:10.1080/00405841.2013.829731
- Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: a meta-analysis of follow-up effects. *Child Development*, 88(4), 1156-1171.

# EDUCATIONAL ADVANCES ACROSS ALL LANGUAGE DOMAINS: RESULTS AND EXTENSIONS FROM THE DYNAMIC TRICKY MIX MODEL

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## Abstract

This paper demonstrates how Dynamic Systems Theory (DST) can generate powerful educational interventions. Our multiple well-controlled studies include typically-developing children between 2 and 8 years of age as well as children with variations of language disorders and with ages between 4 and 12 years. Despite the wide variation in participant characteristics, we argue that our results demonstrate again and again a core conclusion: Rapid progress in language, literacy, and narrative skills only occurs when there is a favorable dynamic convergence of cognitive readiness, scaffolding partner strategies, positive emotional engagement by child and by partner, high attention, and freedom from distraction or anxiety. We term such favorable dynamic convergences Dynamic Tricky Mixes. Under such Dynamic Tricky Mix conditions children displayed significant advances in literacy, oral language, narrative, and sign language. Other labs have shown similar advances for second language learning. Moreover, and quite surprising, under rigorous equation of Learning Condition Mixes during intervention, children with prior histories of very poor learning learned at rates matching that of children with *no* prior learning disabilities. This result held for deaf, autistic, dyslexic, and language-delayed children. These excellent learning rates by the children with severe learning disabilities will aid in planning more ambitious reforms in the language-and literacy-facilitating procedures of educators, special educators, and speech language pathologists. In addition, across all educational domains Dynamic Tricky Mix strategies are powerful catalysts for moving any child from a "stuck" position toward truly rapid learning. We draw further implications from our rapid vocabulary acquisition intervention work with ordinary 4-year-olds. In this case we demonstrated that with twice-weekly sessions vocabulary growth across 5 months leaped forward compared with matched control children. Many children learned at the astonishing rate of 20 new lexical items per hour. By the use of pretest/posttest comparison data on cognitive processes we further demonstrate that the experimentally-caused leap in vocabulary had cascading effects on improved memory and related cognitive skills. Thus, rapid gains by the intervention children dynamically fed into their becoming better prepared for further rapid gains in language acquisition. In turn, this set of findings enriches accounts at the theoretical level of how so much language learning usually can be achieved in the preschool years. Likewise, in evolutionary terms these kinds of mutual enhancements between language progress and cognitive processing power may help elucidate periods when there are explosive rates of changes in *Hominin* cultures and in brain size and capacity.

**Keywords:** *Children's language advances, dynamic systems, educational interventions, language.*

## 1. Introduction

Dynamic Tricky Mix theory generated a rich set of empirical studies on advancing children's skills. That research is organized below by the targeted language skills for particular domains. Then our Conclusions section integrates across studies and extrapolates into possible powerful future projects/interventions to aid children's learning.

## 2. Children's joint advances in literacy and oral language

If we look to create new learning episodes that reflect insights from Dynamic Systems, there are clues from surprising gains made by school-age children with Autism Spectrum Disorder. In the studies briefly reviewed here the children were Swedish children who objectively had a history of slow to zero rates of gain over many preschool and early grade years in two communication modes—speech and text.

Fundamentally new Mixes were created in which the individual child again and again took the lead in using computer software to create messages. By selecting on-screen from text words, the child made text sentences and then the computer displayed sentence meaning through both visual animations and oral Swedish. In these new mixes the teacher's role shifted toward more close observation of the child's interests and communication, along with timely responsive recasts of what the child created along with emotional and social positivity. The children's monthly rates of gain in literacy accelerated over baseline (control) rates by more than 5 times. In Swedish speech, the children also made strong gains. The bottom line for these children with Autism Spectrum Disorder is that after years of extremely slow progress, when new Dynamic Mixes differed dramatically from what children were already receiving, their high potential for progressing at normative rates in both literacy and spoken language was demonstrated (Nelson, 2022; Nelson, Welsh, Camarata, Heimann, & Tjus, 1997).

### **3. Syntax intervention**

In my lab, and in collaborative efforts with multiple other universities, we have often studied children who are about six years of age but whose language levels are delayed by three years—they are talking like typical three-year-olds. The first simplified conclusion that guided most earlier attempts to help these children is that they need special simplistic, didactic input. In language therapy, they were usually given imitation drills that are designed to be repetitive and make obvious to these “slow learners” that sentences have grammatical structure. So, for example, a child might try to imitate twenty sentences in a row that all call attention to -ed and the past tense. The dogs played with the bones. The girls talked on their phones. The boys walked across the grass. And so on.

A second simplifying assumption is that children who have been slow in learning language need their input to be only very slightly challenging. Therefore, the above imitation drill procedures focus only on structures that the child has already begun to use. Past tense examples in a treatment drill would be considered appropriate for any child who—in ordinary conversations—used played, opened, etc. but only 5% to 30% of the times where past tense would always be used by adults.

Surprise! When my colleague Stephen Camarata and I, along with talented graduate students, did a total re-mix of treatment procedures, plus appropriate experimental controls, we found that all of the above assumptions were wrong. Our research was supported by the National Institutes of Health. Moreover, the results of our series of causal experiments have been confirmed in new experiments by independent colleagues all over the globe.

One key to our research was that we knew ordinary conversations vary tremendously. So we borrowed clues from the richest and most challenging examples that we found parents using. We innovated by making rigorous procedures with three different kinds of experimental controls which looked promising for rich conversations. We theorized from Dynamic Systems thinking that re-mixed conversations would trigger rapid syntax/grammar growth by providing high challenges, high supportive conditions, and deep engagement by a child.

And that's exactly what we found! Children with poor histories of language progress now learned rapidly. These children were not learning from their ordinary environments, and even though they were two or three years behind, they Soared in language levels because of the new intervention. We labeled this new approach conversational recasting (Nelson, 2000, 2022; Nelson & Camarata, 1996).

### **4. Children's vocabulary growth**

In one important controlled intervention study two groups of ten 4-year-olds were matched on vocabulary knowledge, awareness of print concepts, working memory, phonological awareness, attention, and ability to generalize. A control group experienced usual play conditions. The second group of children participated in a 12-week word-learning intervention where they were exposed to 450 unfamiliar animal names. In accordance with Dynamic Tricky Mix theory children were exposed to these new words under highly engaging, child-directed sessions in which the investigator followed the lead of the child by allowing the child to dictate the next animal to be learned and by building into playful discussions at least eight tokens of each the new lexical items. This scenario translated into a Mix we would expect to create high rates of learning. Launching conditions included children's interest in the material and the goal learning was presented within the context of free play that they child directed, Enhancers such as numerous and varied visual and verbal tokens of the to-be-learned items were provided. Further, children were rewarded with praise for remembering the animal names, and were never provided with discouraging remarks if they did not, providing opportunity for increasingly positive Adjustments, Children's Readiness for the material was determined through the use of multiple cognitive assessments prior to the intervention. Finally, children's growing knowledge was assessed regularly through tailored interactions in order to gauge children's Network conditions.

Results from the intervention portion of the experiment showed that when children were taught new lexical items during these intensive, rich, positive, and highly engaging episodes they showed exceptionally high rates of gain of up to 20 words per hour. That such a high rate of acquisition can occur suggests children certainly have the capability to learn many new words when the conditions for learning are favorable. In addition, it appears that multiple cognitive gains contributed to these findings. Because we assessed cognitive ability in the two groups of children prior to the intervention, halfway through the intervention, and at the end of the intervention, we were able to compare changes in working memory, phonological awareness, attention, and generalization abilities for children who did and did not participate in the intervention. While children in both groups were well matched on these cognitive abilities prior to the intervention, we saw significant cognitive gains across time only for children in the intervention group (Nelson, 2022; Nelson & Arkenberg, 2008). Thus, rapid gains by the intervention children dynamically fed into their becoming better prepared for further rapid gains in language acquisition because of their newly enhanced cognitive processes.

Highly controlled experimental procedures with human infants and toddlers are of special importance to the conclusions about early symbols and their precursors in behavioural evolution. These procedures reveal whether the infants and toddlers have the capability despite brain immaturity to acquire symbols when given limited, specific sets of learning opportunities. When particular studies have used totally invented concepts (e.g. Blicket, Fiffin, Bloop, Bandock, Weedle) with records of all contexts/durations of exposure to concepts and their symbolic labels, if a child does learn symbol production and comprehension then the entire experiential base for that learning is well documented. Surprisingly, many children by 15 mos. or before are able to learn a new concept from a single labelled exemplar (object, picture) in an episode lasting just 5-to-15 minutes and then able to show knowledge of the concept and its symbolic label when a second or third example is presented for the very first time many days later. Accordingly, children as young as 15 mos. of age are able from a single brief occasion to abstract the characteristics of a concept along with its spoken lexical name, carry this information in long-term memory across 4 days to 2 weeks, and then appropriately apply the vocabulary item to other, newly-encountered examples (Nelson, 1982, 2022; Nelson et al., 2004).

## 5. Children's narrative learning

According to our review of the literature and our detailed stage account of narrative development, it is evident that for children at 3 to 6 years of age we should expect that very few children will have learned to produce or comprehend narratives of high complexity. This holds true for most children in different cultures studied thus far.

Yet, at the same time we must consider the possibility that if children were given dramatically different learning opportunities in the preschool period most children would be able to handle fairly high-complexity narratives. Our dynamic-systems stage account provides many clues to how newly-effective mixes of learning conditions could be arranged for narrative.

When our lab pioneered such Dynamic-Tricky-Mix causative intervention studies we indeed found that focused dialogues with 3-to-6-year-olds created rapid advances in their narrative complexity. Similar to our findings in other language domains, what was required was a dynamic combination of very high challenge, fun, engagement, and emotional positivity (Nelson & Khan, 2019). This basic outcome on how narrative skills can be accelerated has been replicated and extended by multiple other researchers as well.

## 6. Conclusions

Overall, we find very parallel conclusions about language learning by typical children and by a variety of children in special education or with preschool language delays. In all studies where we have provided rigorous and controlled intervention procedures which combine high language challenges with multiple enhancing, engaging properties, quite remarkable jumps forward in language skills occurred. Because we involved the children in learning contexts that were far richer dynamically than their usual home or classroom interactions, the children deeply focused their learning mechanisms on language skills they had not yet acquired.

A broader conclusion is that as teachers, researchers, clinicians, and parents, it is not uncommon to underestimate a child's learning potential. So, it wise, and both practical and ethical, to find ways for each child to explore new and especially rich learning contexts which allow an empirical determination of whether a child is prepared cognitively to demonstrate far more rapid learning rates than they have so far shown us (Clarke, Soto, & Nelson, 2017, Nelson, 2022; Nelson & Welsh, 2011; Nelson et al., 2004).

## References

- Clarke, M. T., Gloria Soto, G. & Nelson, K. (2017). Language learning, recasts, and interaction involving AAC: background and potential for intervention, *Augmentative and Alternative Communication*, DOI: 10.1080/07434618.2016.1278130 URL: <http://dx.doi.org/10.1080/07434618.2016.1278130>
- Nelson, K.E. (1989). Strategies for first language teaching. In M. Rice & R. Schiefelbusch (Eds.), *The teachability of language*. Baltimore: Brookes.
- Nelson, K.E. (2000). Methods for stimulating and measuring lexical and syntactic advances: Why Fiffins and lobsters can tag along with other recast friends. In L. Menn & N.B. Ratner (Eds.), *Methods for studying language production* (pp. 115–148). Hillsdale, NJ: Erlbaum.
- Nelson, K.E. (2022). *Breakthroughs: Realizing Our Potentials Through Dynamic Tricky Mixes*. New York, NY: Morgan James Publishing.
- Nelson, K. E. & Arkenberg, M. E. (2008). Language and reading development reflect dynamic mixes of learning conditions. In M. Moody & E. R. Silliman (Eds.). *Brain, Behavior, and Learning in Language and Reading Disorders*. New York: The Guilford Press.
- Nelson, K.E., Camarata, S.M., & Camarata, M. (1996). Effects of imitative and conversational recasting treatment on the acquisition of grammar in children with specific language impairment and younger language normal children. *Journal of Speech, Language, and Hearing Research*, 39, 850–859. doi:10.1044/jshr.3904.850
- Nelson, K. E., Craven, P. L., Xuan, Y., & Arkenberg, M. (2004). Acquiring art, spoken language, sign language, text, and other symbolic systems: Developmental and evolutionary observations from a dynamic systems perspective. In J. M. Lucariello, J. A. Hudson, R. Fivush, & P. J. Bauer (Eds.), *The Development of the Mediated Mind: Sociocultural Context and Cognitive Development*, (pp. 175-222). Mahwah, NJ: Lawrence Erlbaum Associates.
- Nelson, K.E. & Khan, K.S. (2019). New frontiers in facilitating narrative skills in children and adolescents: A dynamic systems account. In E. Veneziano & A. Nicolopoulou (Eds.) *Narrative, literacy and other skills: Studies in intervention* (Vol. 25), pp. 173-200. John Benjamins Publishing Company.
- Nelson, K. E., Welsh, J. A., Vance Trup, E. M., & Greenberg, M. T. (2011). Language delays of impoverished preschool children in relation to early academic and emotion recognition skills. *First Language*, 31, 164-194.

# CORRELATIONAL ANALYSIS BETWEEN APPROXIMATE NUMERICAL ESTIMATE AND MATH ABILITIES: A STUDY WITH FIRST-GRADE SCHOOL STUDENTS

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## Abstract

The number sense has two characteristics: subitizing – the immediate and error-free recognition of numbers from one to three, without counting – and the ability to discriminate between numbers with values greater than the subitizable ones. Without counting, this type of discrimination is done by approximate estimate, from which a numerical approximation system is inferred. Although the approximate numerical estimate is considered innate, it is influenced by factors such as the ratio between the sets to be compared, external factors, in addition to its increasing accuracy with age. This cognitive ability has been identified as a “predictor” for academic achievement in mathematics. The presented research aimed to investigate the existence of a correlation between the approximate number estimate and math skills in first-grade school children. The study was carried out with 34 children aged between six and seven years old. Their math skills were measured using the Test of Early Mathematical Abilities (TEMA-3), which was administered following the protocol, designed to measure general formal and non-formal math skills of children from 3 to 8 years-old. The approximate number estimate was measured using *Panamath* – a software that managed the discrimination task –, consisting of comparisons of several pairs of sets, indicating the largest. The exposure time of the stimuli was set at 1200 ms and the ratio of the difference between the sets was systematically varied. The results showed an ease of distinction based on the proportions of the sets in the numerical approximation system test. This study investigated the possibility of a correlation between performance in the number sense activity with those of mathematical skills, as it is assumed that the greater the child's sensitivity to differentiating the proportions between sets, the better his performance in solving the mathematical problems addressed, accordingly to previous studies. Even though the Pearson's correlation coefficient was 0.31 ( $p = 0.07$ , a little higher than accepted), the value indicates a moderate to weak correlation and a possible prediction in mathematical abilities based on performance in the numerical discrimination task, although there are other variables to consider in the mathematical development. The approximate number system test can be used as a tool to do and initial track of children who might experience problems in developing math skills.

**Keywords:** *Numerical estimation, number sense, math abilities, counting.*

## 1. Introduction

Number sense has two defining characteristics. One of them is the prompt and error-free recognition of numbers from one to three, without the use of counting or other linguistic resources. Given the fact that this recognition occurs in fractions of a second – that is, suddenly – it is designated by the term “subitization” (Mandler; Shebo, 1982). The other signature of the number sense is the ability to discriminate between numbers with values greater than the subitizable ones (four or more).

For Corso and Dorneles (2010), it is estimated that the number sense is understood through the child's ability to relate to numbers and understand ideas related to them. The number sense, as well as the mathematical skills that the child develops throughout his life, is composed of a set of factors, such as awareness, intuition, recognition, process, conceptual structure, mental number line, counting, comparison and ordering, composition/decomposition and addition/subtraction (Berch, 2005; Sarama & Clemens, 2009). For Nunes and Bryant (1997), this concept about number sense can be related to numeralization, which brings the individual closer to numbers and their abilities to develop daily activities, in addition to using mathematics as a form of communication.

Although Feigenson, Dehaene and Spelke (2004) define a concept of number sense, it is stated that the representation of non-symbolic numbers can help in the resolution of more complex mathematical

expressions as the school years progress. When this type of discrimination is done without counting, it is a so-called rough estimation skill, which allows the individual to differentiate between two sets, identifying the "larger", that is, the one with more items. However, there are other factors involved in the comparison between sets, such as the total area occupied by their elements, the way they are distributed in space and others (Leibovich et al., 2017; Mix; Huttenlocher; Levine, 2002).

The Approximate Numerical System (ANS), unlike counting, is a form of non-symbolic numerical representation and, therefore, more imprecise. However, it is a feature that allows for set discrimination. Some factors that influence it were identified, for example, the ratio between the sets to be compared (Moyer & Landauer, 1967). The greater the difference between them, the easier the discrimination. The ANS has been identified by some researchers as a "predictor" for school performance in mathematics (Mazzocco; Feigenson; Halberda, 2011). However, it is not the only predictor. Studies show other factors, such as the mother's education (Koponen, 2007), preschool education (Arnold, Fisher, Doctoroff & Dobbs, 2002), the student's socioeconomic level (Verdine, et al. 2014), motivation (Middleton & Spanias, 1999), etc. Based on this hypothesis, the intention of this study was to verify the existence of a correlation between numerical discrimination and mathematical skills in first-year schoolchildren.

## 2. Methods

The project of this research was approved by the Ethics Committee of the São Paulo State University (Unesp). All participants had their consent terms signed by their parents and/or guardians. As pointed out in the project description and the target audience to be measured by the test, there was a need to exclude participants who had reports of neurological and cognitive problems.

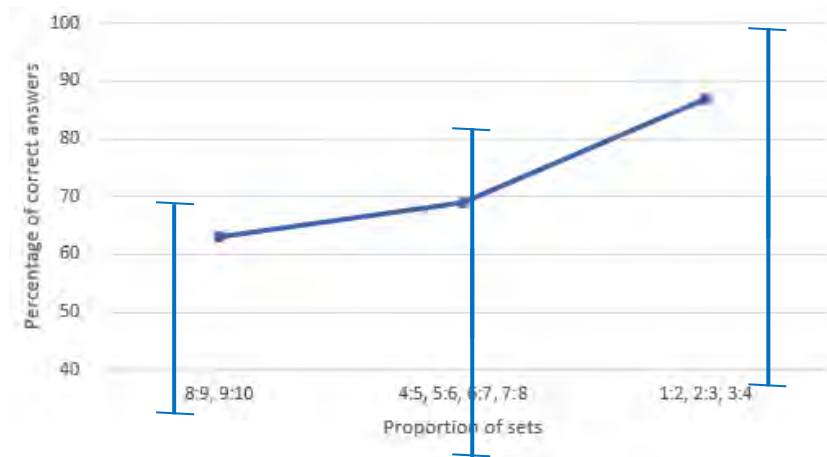
Two standardized tests were used. The first evaluated numerical discrimination by means the Panamath program (<https://panamath.org>). On the computer screen, at each trial, two sets of circles within juxtaposed rectangles are shown, each with a different number of elements. In each test trial, stimuli were exposed for 1200 ms and the participant was required to press one of two keys with yellow and blue discs stickers on the computer keyboard. The proportion of sets in each trial was established according to the parameters used in the study by Halberda and Feigenson (2008), namely: 1:2 - 2 trials, 2:3 - 2, 3:4 - 2, 4:5 - 2, 5:6 - 10, 6:7 - 10, 7:8 - 10, 8:9 - 14, 9:10 - 14, while the variation in the number of items was established between 1 and 14 points (Mazzocco et al., 2011). As a way of controlling non-numeric variables that could interfere with the children's responses, such as the size of the area occupied by the stimuli, the size of the "balls" was adjusted in 33% increments from the smallest size. The duration of this test was between 7 and 10 minutes.

The second test used was the Test of Early Mathematics Ability (TEMA 3), applied according to the protocol contained in the respective instructions. Each item presents the learning focus thematic, such as writing numerals, additions/subtracts, part-whole, mental number line, counting, enumeration, etc. In addition, each item has its own application instruction and which answer will be considered correct, which must be recorded on the answer sheet. The application took approximately 45 minutes, varying as the child progressed through each step of the procedure. The test starts with the entry point corresponding to the child's age (e.g., 3 - question 1; 4 - question 7; 5 - question 15; 6 - question 22; 7 - question 32; 8 - question 43). Ceiling represents an upper limit of performance and occurs when a child answers five consecutive items incorrectly. When a ceiling is reached, the examiner must stop testing. Likewise, the base represents a lower bound on the examinee's performance and consists of the five consecutive items that are answered correctly. Once the ceiling has been reached, a base must be established if the child has not made five consecutive mistakes. To establish a base in these cases, the examiner returns to the entry point and applies the previous items backwards until the child reaches their base or until item 1.

## 3. Results and discussion

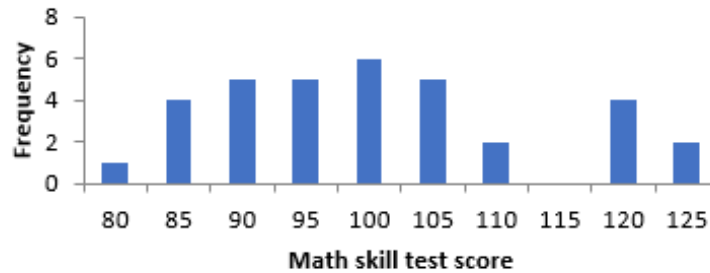
The first analysis to be carried out is the performance of children in the Approximate Numerical System activity. The results present that it was easier to discriminate smaller ratio sets, described by the 1:2, 2:3 and 3:4 ratios. The average presented from the children's answers on the test is given by 66.4% of correct answers, with a minimum of 45.5% and a maximum of 83.3%.

Figure 1. Relation between average percentage of correct answers in the numerical discrimination activity and its ratio sets with minimum and maximum margins.



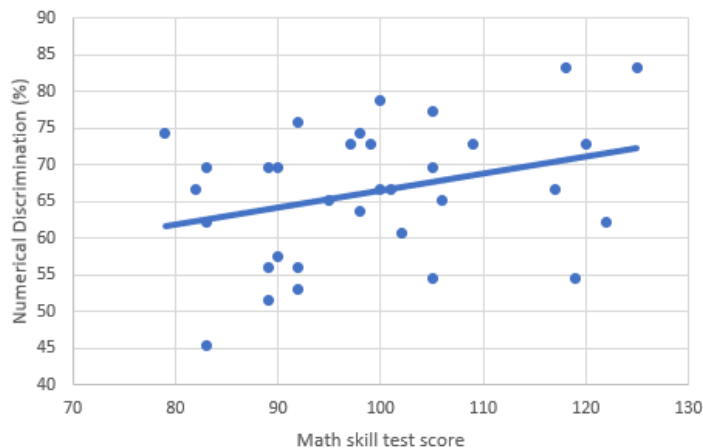
In this first moment, the possibility of a correlation between performance in the number sense activity and mathematical skills was considered, taking into account that the greater the child's sensitivity to differentiating the proportions between the sets, the better his performance in the solving mathematical problems addressed by TEMA-3. The test offers the score based on the total number of correct answers for each student. For the value of the math skills score to be correctly determined, it is necessary to relate the score to the age expressed in years and months of each child, as shown in the table in the TEMA-3 material.

Figure 2. Representation of results in the math skills test.



The histogram distribution shows that the highest frequency of responses is distributed between 95 to 105, showing a normal distribution of the collected data. With the results presented, it was a need to compare them both to analyze the hypothesis of the correlation among these two tests. The next figure shows the correlation between the percentage of correct answers in the numerical discrimination test and the math skills score. This correlation is in the margin of statistical significance, considering that the value of  $p = 0.07$  and Pearson's correlation index at 0.31.

Figure 3. Representation of results in the math skills test.





The average of 63% (8:9, 9:10), 69% (4:5, 5:6, 6:7, 7:8) and 87% (1:2, 2:3, 3:4), presented in the activity performance of the approximate numerical system (Figure 1) shows a similarity with the data found in the literature (see Mazzocco et al., 2011). At first, it was considered the possibility of a correlation between the performance in the numerical discrimination test and the mathematical skills, taking into account that the greater the child's sensitivity to differentiate the proportions between the sets, the better their performance in the resolution of mathematical problems addressed by TEMA-3 would be.

The value found for this coefficient was 0.31, indicating a positive correlation between the variables, although not of great magnitude. However, other studies presented point to other factors that are related to the performance of the child's math skills, such as the mother's education, preschool education, the student's socioeconomic level and motivation (Koponen, 2007; Arnold, et al. 2002; Verdine, et al. 2014; Middleton & Spanias, 1999).

With the correlation value of 0.31 and  $P = 0.07$  in the relationship between the percentage of correct answers in the numerical discrimination test and the total score of mathematical skills, it is believed that there is a possibility to predict the mathematical skills based on the performance in the task of numerical discrimination. This prediction is given above, considering that, as the value found in the percentage of correct answers increases, the higher the math skill score would be.

Although motivation, the student-teacher relationship, the social environment, among other factors influence the development of mathematical skills, numerical discrimination is essential for understanding the mechanisms underlying mathematical learning. Studies developed by Mazzocco et al. (2011) point to the relationship between numerical discrimination and mathematical results present during children's school development, as individual differences in cognitive abilities contribute to children's mathematical learning – and not only in mathematical performance at a given time, but also the growth trajectories in formal education. Therefore, conducting research such as the one presented here can contribute to the development of mechanisms for teachers to work with so that these difficulties are addressed.

Analyzing the predictive value – even if it is small – of the numerical discrimination test, it can be considered as an initial screening tool for identifying children at risk for math learning difficulties. In this way, the educator is able to identify this possible difficulty early and develop a reinforcement of these concepts before new knowledge is introduced.

It is necessary to consider these notes so that there is a continuity of these studies, so that we can relate this performance to other variables, such as social development and family background, response time and Weber fraction. Even though the conclusions of this article show possible relationships, important future investigations are still carried out so that this mathematical process can be considered clear and allow interventions aimed at improving the educational quality of children.

#### 4. Conclusions

This study presents a moderate to low strength correlation between number sense and the development of math skills in first-grade children. The observed statistical significance did not reach the value established conventionally, but it is not negligible. As for the predictive power of one variable over the other, considering that the results show that numerical discrimination explains 7% of the assessed mathematical skills, this value does not seem sufficient to justify investments in the teaching of numerical discrimination, at least not as a single resource. It must be considered that several factors influence school performance in mathematics and that, in children with dyscalculia, the numerical approximation system has low accuracy (Bull & Johnston, 1997; Geary, 1993; Koontz & Berch, 1996). Studies on external influences, such as the child's social environment, are extremely important so that, from this point onwards, practices and the development of this knowledge in the beginning of the school years are reconsidered.

#### References

- Arnold, D. H., Fisher, P., Doctoroff, G., Dobbs, J. (2002) *Accelerating Math Development in Head Start Classrooms*. Journal of Educational Psychology, vol. 94, no 4, p. 762–70.
- Berch, D. *Making sense of number sense: implications for children with mathematical disabilities*. (2005) Journal of Learning Disabilities, vol. 38, no 4, p. 333–39.
- Bull, R., Johnston, R. S. (1997) *Children's Arithmetical Difficulties: Contributions from Processing Speed, Item Identification, and Short-Term Memory*. Journal of Experimental Child Psychology, vol. 65, no 1, p. 1–24.

- Corso, L. V., Dorneles, B. V. (2010) *Senso numérico e dificuldades de aprendizagem na matemática*. Rev. Psicopedagogia, v. 27, p. 298-309
- Geary, D. C. (1993) *Mathematical Disabilities: Cognitive, Neuropsychological, and Genetic Components*. Psychological Bulletin, vol. 114, no 2, p. 345–62.
- Halberda, J., Feigenson, L. (2008) *Developmental Change in the Acuity of the “Number Sense”: The Approximate Number System in 3-, 4-, 5-, and 6-Year-Olds and Adults*. Developmental Psychology, vol. 44, no 5, p. 1457–65
- Koontz, K. L. (1996) *Identifying Simple Numerical Stimuli: Processing Inefficiencies Exhibited by Arithmetic Learning Disabled Children*. Mathematical Cognition, vol. 2, no 1, p. 1–24.
- Koponen, T. et al. (2007) *Cognitive Predictors of Single-Digit and Procedural Calculation Skills and Their Covariation with Reading Skill*. Journal of Experimental Child Psychology, vol. 97, no 3, p. 220–41.
- Leibovich, T. et al. (2017) *From ‘Sense of Number’ to ‘Sense of Magnitude’: The Role of Continuous Magnitudes in Numerical Cognition*. Behavioral and Brain Sciences, vol. 40, p. e164.
- Mandler, G., Shebo, B. J. (1982) *Subitizing: An Analysis of Its Component Processes*. Journal of Experimental Psychology: General, vol. 111, no 1, p. 1–22
- Mazzocco, M. M. M., Feigenson, L., Halberda, J. (2011) *Preschoolers’ Precision of the Approximate Number System Predicts Later School Mathematics Performance*. PLoS ONE, vol. 6, no 9, p. e23749
- Middleton, J. A., Spanias, P. (1999) *A Motivation for Achievement in Mathematics: Findings, Generalizations, and Criticisms of the Research*. Journal for Research in Mathematics Education, vol. 30, no 1, p. 65.
- Mix, K. S., Huttenlocher, J., Levine, S. C. (2002) *Quantitative development in infancy and early childhood*. Oxford University Press.
- Moyer, R. S., Landauer, T. K. (1967) *Time Required for Judgements of Numerical Inequality*. Nature, vol. 215, no 5109, p. 1519–20
- Nunes, T., Bryant P. (1997) *Crianças fazendo matemática*. Porto Alegre: Artes Médicas.
- Sarama, J., Clements, D. H. (2009) *Early childhood mathematics education research: Learning trajectories for young children*. Routledge.
- Verdine, B. N. et al. (2014) *Deconstructing Building Blocks: Preschoolers’ Spatial Assembly Performance Relates to Early Mathematics Skills*. Child Development, vol. 85, no 3, p. 1062–76.
- Xu, F., Spelke, E. S. (2000) *Large Number Discrimination in 6-Month-Old Infants*. Cognition, vol. 74, no 1, p. B1–11.

# **SOCIO-EMOTIONAL COMPETENCES AND THEIR RELATIONSHIPS WITH SCHOOL ENGAGEMENT AND FUTURE ORIENTATION IN PRIMARY SCHOOL CHILDREN**

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## **Abstract**

Research studies suggest the importance of some developmental assets in promoting positive youth development: studies on Social and Emotional Learning have shown the benefits of acquiring these competencies on academic performance and well-being. In addition, future orientation emerged as a dimension that impacts on nonadaptive behaviors and educational performance but also on the agency they recognize themselves over their life trajectory and goals, reach greater academic achievement. Limited evidence is available on the role of and relationships between the developmental assets mentioned in primary school children.

The study aims to deepen our understanding on how do these developmental assets vary in primary school children and what are the relationships between Social Emotional Competences that primary school children recognize themselves and both school engagement and future orientation.

Data collected in a psychoeducational action promoted by the PSSmile project (Social-Emotional Capacity Building in Primary Education, <http://smile.emundus.it/>) were used to address these questions.

A hundred and fifty four, 8 to 11 years old, primary school students participated in the study.

Direct and indirect, qualitative and quantitative tools have been used to address the study issues.

The analyses confirm the specific patterns that characterize the two age groups. Specific relationships and patterns of association emerge between main dimensions of Social Emotional Competences, Positive Experiences and belonging at school, and Future Orientation.

The need to address these issues early in primary school and understand the variability that may lead to vulnerability in the development emerge, and, stemming also from current societal challenges and consequences of the global pandemic, to promote educational and prevention actions.

**Keywords:** *Socioemotional competences, school engagement and future orientation, primary school.*

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## **1. Introduction**

Over the last two decades, Social-Emotional Learning (SEL) has been recognized as a formal component of educational experience in schools and in informal learning environments (Newman, & Moroney, 2019). Proximal goal of SEL is to foster social and emotional competencies (SECs) including the abilities to understand and manage emotions, set and achieve positive goals, feel and show caring and concern for others, establish and maintain positive relationships, and make responsible decisions (Weissberg, Durlak, Domitrovich, & Gullotta, 2015).

Studies on Social and Emotional Learning (CASEL; Collaboration for Academic, 2010) have shown the benefits of acquiring these competencies on academic performance and well-being (Taylor, et al. 2017) as well as impacts on nonadaptive behaviors and educational performance (Jones, Barnes, Bailey, & Doolittle, 2017). Additionally, studies suggest that nurturing social and emotional learning is vital to lifelong successes: children with greater social emotional competence not only have positive relationships and better mental health, but they are also more likely to be ready for college, succeed in their careers, and become engaged citizens (Greenberg, Domitrovich, Weissberg, & Durlak, 2017).

A *developmental perspective* to SEL considers stability and change in different domains over time (Denham, 2018). Broad SECs can apply to different ages and grade levels. However, SECs change over time and allow students to succeed at important age-differentiated developmental tasks from elementary to middle and high school.

Additionally, according to research studies, Future Time Perspective (FTP) and a positive future orientation impact a variety of important factors of our lives. Individuals with a perspective directed rather into the future perform better on self-regulated learning tasks (Bembenutty & Karabenick, 2004), exhibit more successful learning behavior (e.g., Husman & Lens, 1999) as well as better financial behavior (Jacobs-Lawson & Hershey, 2005) and show more motivation in studying and achieving future goals (Shell & Husman, 2001). It emerges then important to focus on the development of a positive future oriented perspective and on factors influencing the development of these resources and attitudes. Extended evidence is provided on the relevance of these assets throughout adolescence, but less is known about the role of and relationships between the developmental assets mentioned in primary school children although this period of life is central in the development of basic cognitive and relational executive processes (Zelazo et al., 2003).

## 2. Objectives

To deepen our understanding the following research questions have been addressed: Do and how do these developmental assets vary in primary school students of different ages? What are the relations between SEL competences that primary school children recognize themselves and both current wellbeing experienced at school and their attitudes towards their future?

The first aim aims to delineate possible age differences in SEC in primary school students. We predicted significant differences based on the developmental meaning recognized to this period in the development of basic cognitive and relational executive processes.

The second aim was to investigate the relationships between SEC components and indices of school engagement, that is with current wellbeing experience. Finally, the third aim was to investigate the relationships between SEC components and both expectations about future relationships and future goals, that is two components of positive future orientation. We predicted significant correlations between dimensions investigated and expected a predictive value of SEC components.

## 3. Methods

Data collected in a psychoeducational action promoted by the PSSmile project (Social-Emotional Capacity Building in Primary Education, <http://smile.emundus.lt/>) have been used to address research questions.

All study procedures were also approved by the board of the schools involved in the program. Additionally, a Certificate of Confidentiality was issued by the study proponents, to protect the privacy of the study participants.

### 3.1. Participants

A hundred and fifty eight primary school students, 85 boys and 73 girls, living in the North East area of Italy participated in the study. Their age ranges from 8 to 11 years old. According to their age, for the study presented here they were grouped as younger group (up to 9 y.o.) and older one (older than 9 y.o.). The first group included 40 boys and 33 girls and the second one, 45 boys and 40 girls.

### 3.2. Tools

Several tools were provided to participants. Answers to the following tools have been analysed in this study:

*My Emotions and Feelings*, based on a tool developed within Erasmus+ Learning to Be project, it addresses knowledge and experience about a series of emotions. It requires children to describe diverse emotions and feelings and recall situations in which they experienced both positive and negative emotions. The score is based on the appropriate descriptions and situations provided.

*My Personal Learning Log*, from the Learning to Be project, with quantitative and qualitative questions it addresses social and emotional experience, focusing on self-awareness and self-management skills and their use to establish and maintain positive relationships; decision making skills and responsible behaviors in personal, school and community contexts. Children are asked to rate their experience on a three-point scale ranging from never (1) to always (3).

*My Positive Experiences at School*, based on the tool developed by Furlong, You, Renshaw, O'Malley & Rebelez (2013), it is a brief, self-report, developmentally appropriate assessment of wellbeing and school engagement. The questions ask students about what they think, feel, and do at school. They are asked to read each sentence and choose the response that tells how true the sentence is for them. The answers are scored on a four-point scale from strongly disagree (1) to strongly agree (4)

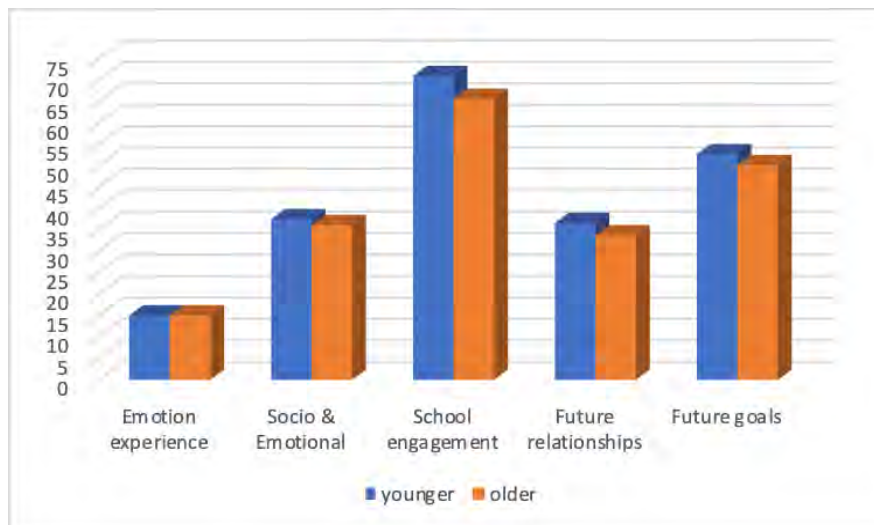
and then summed to form a total score. Higher levels of a positive engagement are indicated by higher total scores.

*My Future Orientation* (from Saigh, 1995) examines the person orientation towards his/her future. It consists of 8 items covering *Future Interpersonal relationships* and *Expectations about future plans and goals*. The participant is asked to rate the extent to which he/she agrees with each item on a 5-point Likert-type scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). High positive orientation towards future is indicated by the higher scores in the two components investigated.

#### 4. Results

Age group differences were investigated to highlight specific patterns in main study variables through Analysis of Variance. Data analysis was realized using IBM SPSS Statistics, version 27. Data screening showed that most of the reviewed variables were not normally distributed and that there were no differences in mean scores as related to gender. Age related patterns are reported in Figure 1.

Figure 1. Mean based patterns emerged in the two groups of primary school students on the dimensions investigated.



No statistically significant differences emerged in knowledge and experience about emotions between the two groups [ $F(1, 157) = .151, p = .698$ ]. The analysis revealed a statistically significant difference in mean score reported on the social-emotional experience [ $F(1, 156) = 3.967, p = .049; \eta^2_p = .25$ ]. The two groups also differed significantly with respect to school engagement [ $F(1, 157) = 11.930, p = .001; \eta^2_p = .71$ ]. Similarly, as regards future the two groups differed significantly both in expectations about future relationships [ $F(1, 157) = 10.459, p = .001; \eta^2_p = .63$ ] and expectations about future goals [ $F(1, 157) = 5.684, p = .018, \eta^2_p = .35$ ].

Based on preliminary correlations, specific regression analyses were conducted to highlight predictive relationships amongst dimensions investigated.

As regards the relationship between respectively knowledge and experience about emotions and social-emotional experience, and engagement in school life, the overall regression was statistically significant [ $R^2 = .089, F(2, 155) = 7.611, p = .001$ ]. It was found that *social-emotional experience significantly predicted engagement in school life* ( $\beta = .258, p = .001$ ), moreover, knowledge about and experience with emotions did not significantly predict school engagement ( $\beta = -.133, p = .084$ ).

When addressing the relationship between respectively knowledge and experience about emotions and socio-emotional experience with future orientation in relationships, the overall regression was statistically significant [ $R^2 = .060, F(2, 155) = 4.960, p = .01$ ]. Social-emotional experience significantly predicted positive orientation towards future relationships ( $\beta = .245, p = .002$ ) while knowledge about and experience with emotions did not predict positive orientation towards future relationships ( $\beta = -.041, p = .599$ ).

Finally, when addressing the relationship between knowledge about and experience with emotions and social-emotional experience, and positive future expectations, the overall regression was statistically significant [ $R^2 = .041, F(2, 155) = 3.281, p = .04$ ]. Again, it was found that social-emotional experience significantly predicted positive future expectations ( $\beta = .196, p = .01$ ) while knowledge about and experience with emotions did not significantly predict positive future expectations ( $\beta = -.041, p = .599$ ).

## 5. Discussion

The analyses conducted on this first study confirm the emerging of specific patterns that characterize primary school students of different ages in SECs. While knowledge and experience about emotions they activate during the tasks do not seem to differ, differences emerge in 8-9 when compared with 9-11 years old children both on SE competencies, school engagement and future orientation.

A closer look to the patterns emerged show a general trend towards older children being less confident in their Social-Emotional Competencies as well as their Orientation towards the Future. It is possible that two different factors come into play. The first calls for developmental differences in cognitive resources used for addressing the tasks proposed, namely in the ability to plan, organize, initiate, and hold information in mind for future-oriented problem solving. The second is related to the increased requests from the educational context that often characterise the experience of 9 to 11 years old students. In both cases it may result in making them more cautious in their opening to context and future. More attention and deeper study should be devoted to explore their meaning and impact on development.

The study provides evidence for specific relationships emerge between social-emotional competencies and respectively school wellbeing and engagement, and dimensions of future orientation. The predictive relationships identified between social-emotional experience and engagement in school life confirm results in the literature and more specifically the contribution of positive social-emotional relationships on school wellbeing (Jones, Barnes, Bailey, & Doolittle, 2017). Children with strong social skills are more likely to make and sustain friendships, initiate positive relationships with teachers, participate in classroom activities, and be positively engaged in learning. Additionally, the study provides evidence for a role of SECs on the development of a rich and positive future orientation already in primary school students. And interestingly, these relationships hold both when focusing on aspects related more to intraindividual aspects and when orienting the attention to social future life thus underlining the relevance of these competences for the development of active and socially responsible future adults.

The limited percentage of variance explained that characterizes some of the relationships addressed, may again resonate the meaning of the age specific intervals considered. The study, in fact, involved 9-10 years old students, that is boys and girls currently in transition to a new and more complex organization of their knowledge and use of their Socio-Emotional Competences but also attitudes towards future. It may nonetheless reveal important to address these issues as prerequisite for further positive development in larger studies that may allow grouping participants into even more circumscribed age ranges to highlight more steps in the development of competences and relationships between them.

## 6. Conclusions

The current study explored two possible pathways (i.e., through school engagement and future orientation) by which SECs influence psychological development for primary school students of different ages. Evidence provided should inform the SEL programming insofar it can help all students acquire and apply the knowledge, skills, and attitudes to deal effectively with daily tasks and challenges and achieve success in current and future school, work, and life.

The education systems have not primarily been organized around the social and emotional aspects of learning (Elias, 2019). However, increasingly Social-Emotional Competences are currently seen as “part of a comprehensive strategy to strengthen students’ academic performance, improve school and classroom climate, and lessen conduct problems” (Herrenkohl, Lea, Jones, & Malorni, 2019).

Evidence of changes in the developmental tasks underlines the need to address these issues early in primary school and understand the variability that may lead to vulnerability in the development emerge, and, stemming also from current societal challenges and consequences of the global pandemic, to promote educational and prevention actions.

## References

- Bembentuy, H., & Karabenick, S. A. (2004). Inherent association between academic delay of gratification, future time perspective, and self-regulated learning. *Educational psychology review*, 16(1), 35-57 <https://link.springer.com/article/10.1023/B:EDPR.0000012344.34008.5c>
- CASEL (Collaborative for Academic, Social, and Emotional Learning). <https://casel.org/casel-sel-framework-11-2020>
- Denham, S. A. (2018). Keeping SEL developmental: The importance of a developmental lens for fostering and assessing SEL competencies. *Measuring SEL*. Retrieved November, 20, 2018. <https://casel.s3.us-east-2.amazonaws.com/CASEL-Resources-Keeping-SEL-Developmental.pdf>

- Elias, M. J. (2019). What if the doors of every schoolhouse opened to social-emotional learning tomorrow: Reflections on how to feasibly scale up high-quality SEL. *Educational Psychologist*, 54(3),233-245 <https://www.tandfonline.com/doi/abs/10.1080/00461520.2019.1636655>
- Furlong, M. J., You, S., Renshaw, T. L., O'Malley, M. D., & Rebelez, J. (2013). Preliminary development of the Positive Experiences at School Scale for elementary school children. *Child Indicators Research*, 6(4), 753-775. <https://link.springer.com/content/pdf/10.1007/s12187-013-9193-7.pdf>
- Greenberg, M. T., Domitrovich, C. E., Weissberg, R. P., & Durlak, J. A. (2017). Social and emotional learning as a public health approach to education. *The future of children*, 13-32. <https://www.jstor.org/stable/44219019>
- Herrenkohl, T., Lea, C., Jones, T. & Malorni, A. (2019). *Leading with Data: Using an impact-driven research consortium model for the advancement of social emotional learning and youth development programs*. Society of Social Work Research (SSWR). San Francisco, CA.
- Husman, J., & Lens, W. (1999). The role of the future in student motivation. *Educational psychologist*, 34(2), 113-125. [https://www.tandfonline.com/doi/abs/10.1207/s15326985ep3402\\_4](https://www.tandfonline.com/doi/abs/10.1207/s15326985ep3402_4)
- Jacobs-Lawson, J. M., & Hershey, D. A. (2005). Influence of future time perspective, financial knowledge, and financial risk tolerance on retirement saving behaviors. *Financial Services Review-greenwich*, 14(4), 331. <https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.392.5839&rep=rep1&type=pdf>
- Jones, S. M., Barnes, S. P., Bailey, R., & Doolittle, E. J. (2017). Promoting social and emotional competencies in elementary school. *The future of children*, 49-72. <https://www.jstor.org/stable/44219021>
- Newman, J., & Moroney, D. (2019). Reading Between the Lines of Social and Emotional Learning: Discover what SEL is all about and why it's important to consider when designing and implementing teen services. *Young Adult Library Services*, 17(2), 16-21.
- Saigh, P. A. (1995). *The Children's Future Orientation Scale*. Princeton, NJ: Trauma Resources.
- Socio-Emotional Capacity Building in Primary Education: <http://smile.emundus.lt/>
- Shell, D. F., & Husman, J. (2001). The multivariate dimensionality of personal control and future time perspective beliefs in achievement and self-regulation. *Contemporary educational psychology*, 26(4), 481-506 <https://www.sciencedirect.com/science/article/abs/pii/S0361476X00910737>
- The Learning to Be Project (2021). <https://learningtobe.net/>
- Taylor, R. D., Oberle, E., Durlak, J. A., & Weissberg, R. P. (2017). Promoting positive youth development through school-based social and emotional learning interventions: A meta-analysis of follow-up effects. *Child development*, 88(4), 1156-1171. <https://pubmed.ncbi.nlm.nih.gov/28685826/>
- Weissberg, R. P., Durlak, J. A., Domitrovich, C. E., & Gullotta, T. P. (Eds.). (2015). Social and emotional learning: Past, present, and future. In J. A. Durlak, C. E. Domitrovich, R. P. Weissberg, & T. P. Gullotta (Eds.), *Handbook of social and emotional learning: Research and practice* (pp. 3–19). New York City: The Guilford Press
- Zelazo, P. D., Müller, U., Frye, D., Marcovitch, S., Argitis, G., Boseovski, J., ... & Carlson, S. M. (2003). The development of executive function in early childhood. *Monographs of the society for research in child development*, i-151. <https://www.jstor.org/stable/1166202>

## PROMOTING MENTAL HEALTH AT SCHOOL: IMPLICATIONS FOR TEACHERS' PERSONAL DEVELOPMENT

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### Abstract

The paper presents the results of an experimental study developed in order to test the efficiency of a mental health curriculum, especially the impact on the teachers' personal development. The curriculum is developed under an Erasmus project and it was validated in trials in six countries. The present study intends to measure the effects of program implementation on teachers' personal development. The experimental design involved 104 teachers, 61 in experimental group and 43 in control group. The experimental group received a training in mental health promotion at school and they implemented approximately 12 activities at class, during the second semester of the academic year 2020 – 2021. The variables measured are teacher self-efficacy (efficacy for student engagement, efficacy for instruction strategies and efficacy for classroom management), resilience and teachers' social-emotional competence. The results indicate a raising of competencies of teachers in experimental group comparing with control group, considering two moments of measurement, pre and posttest.

**Keywords:** *Social-emotional competence, resilience, teachers' self-efficacy, mental health.*

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### 1. Introduction

The paper examines the effects of a mental health program implementation on teachers' outcomes. It presents the results of an experiment developed within a European partnership for educational policies innovation regarding implementing a curriculum for mental health promotion at school. PROMEHS is a curriculum created by 7 European teams of researchers from different universities in Italy, Portugal, Greece, Latvia, Croatia, Malta and Romania. The curriculum is based on three dimension and it is provided along with a whole school approach, so that all the teachers, parents community and other community policy makers are reached. The main branches of the curriculum are focused on social-emotional learning, resilience and prevention the difficulties, internalizing and externalizing problems. (Cavioni, C., Grazzani, I., & Ornaghi, V., 2020). Our study presents the effects of implementation of the mental health curriculum on personal development of the teachers, such as on the self-efficacy, resilience and social-emotional competence. Many studies demonstrated the importance of social-emotional skills of teachers as having a strong impact on students' results, both academically and personally and also emphasize the importance of promoting teachers' own wellbeing and social-emotional competence (Schonert-Reichl, 2017). Teachers' social and emotional competence has an important impact on professional activities (Collie, 2017; Hen & Goroshit, 2016) and the personal competence of the teachers impacts the quality of educational process (Ransford et al, 2009) and furthermore the children's competencies ((Lam & Wong, 2017). Social-emotional competence of teachers comprises both personal and interpersonal dimensions, such as student-teacher relationship, interpersonal relationships, emotional regulation, social awareness. (Tom, 2012). Jennings (2011) showed that teachers' SEC are the base for providing supportive relationships in their professional contexts, to be more effective in managing classrooms and better equipped to deliver social-emotional curriculum. A social-emotional competent teacher means to have not only some good skills but also to have the capacity of being aware of themselves and of others so that the best relationships with students could be outperformed. (Elias, 2009)

Teachers resilience as the capacity to bounce back in front of adversities being capable to navigate through the internal and environmental resources (Liebenberg et al., 2016) is an important asset for teaching profession, being related to self-efficacy, motivation and achievement (Gu & Day, 2007)

Teachers' self-efficacy is a concept which appear in the light of many researches, showing a good correlation both with important psychological outcomes and with professional performance quality



(Duffin et al., 2012). According to Bandura's social cognitive theory (1997) the teacher's self-efficacy comprises the beliefs related to teachers' capacities to carry out instructional strategies in the educational context and this affects in a positive way the motivation and achievement.

## **2. Methodology**

### **2.1. Participants**

The sample comprised 104 teachers, 61 from experimental group and 43 from control group. In terms of school level 35 (19 experimental group, 16 control group) were from kindergarten, 27 (16 experimental group, 11 control) from primary school, 26 teachers (13 experimental, 13 control) from secondary school and 16 (13 experimental group, 3 control group) from high school.

### **2.2. Objectives**

The main goal of the present study was to test the impact of a mental health promotion curriculum on the personal development of the teachers who implemented it. The objectives intend to identify the differences related to teachers' sense of self-efficacy, teachers' resilience and teachers' social and emotional competence between pre and posttest phases in experimental group comparing with a control group.

### **2.3. Procedure**

The data collection took place in two moments, in December 2020 and in June 2021. In between the two moments the experimental group of teachers implemented the PROMEHS curriculum, an educational approach to promote mental health at school. The experimental group pursued a 25 hours training course on mental health promotion at school and it implemented in average 12,46 activities for mental health promotion. The Ethics Committee for Humanities and Social Sciences Research Involving Human Participants of the Stefan cel Mare University from Suceava granted permission for the research on 21/07/2022.

### **2.4. Hypothesis**

The following hypothesis were tested in order to fulfill the expected objectives.

H1: There is a positive correlation between teachers' self-efficacy, teachers' resilience and their social-emotional competence after the curriculum implementation

H2: there is a positive impact of PROMEHS program implementation on personal variables such as: teacher's self-efficacy and its dimensions, teachers' resilience and teachers' social – emotional competence and its dimensions

H2a: there is a significant difference between pre and post test related to teachers' sense of self-efficacy and its dimension (efficacy of student engagement, efficacy of instruction strategies, efficacy of classroom management) in experimental group

H2b: there is a significant difference between pre and post test related to teachers' resilience in experimental group

H2c: there is a significant difference between pre and post test related to teachers' social - emotional competence and its dimensions (teacher – student relationship, emotional regulation, social awareness, interpersonal relationships) in experimental group

### **2.5. Measures**

Teachers were asked to fill in the Teacher Sense of Self-efficacy Scale (Tschannen-Moran & Hoy, 2001), Connor Davidson Resilience Scale (CD 10)(Connor & Davidson, 2003) and Social and Emotional Competence of Teachers (SECTRS) (Tom, 2012).

We used the short version of The Teachers' Sense of Efficacy Scale, containing 12 items, and distributed in three sub-scales: efficacy in student engagement, efficacy in instructional strategies and efficacy in classroom management. It has good psychometric properties: alpha Cronbach for TSES – 0.934, and subscales: engagement – 0.849, instruction - 0.874, classroom management – 0.866. Efficacy in student engagement, efficacy in instructional strategies and efficacy in classroom management range from 1 to 9, where the larger the mean score the higher is the teacher's self-efficacy.

CD-10 has ten items, described through a Likert scale from 1- not true at all to 5 - true nearly all the time. It had a good reliability for our sample, alpha Cronbach – 0.913. Resilience ranges from 1 to 5, where the larger the mean score the higher is the teacher's capacity to recover quickly from difficulties.

The Social and Emotional Competence of teachers had a very good reliability: alpha Cronbach-0.948. Teacher-student relationship (alpha Cronbach – 0.757), emotion regulation (alpha Cronbach – 0.773), social awareness (alpha Cronbach – 0.698), interpersonal relationships (alpha Cronbach – 0.748), and SEC range from 1 to 6, where the larger the mean score the higher is the social emotional competence.

### 3. Data Analysis

Several statistical tests were used to analyze the data. The coefficient alpha Cronbach was computed to assess the internal consistency of the items for each used scale. For our study all the values of alpha Cronbach exceeded 0,7, so we consider a good reliability for all the scales.

Correlation analysis was used to determine the relations between variables, and t-test for paired samples in terms of phase (pre and posttest) were used in order to determine the differences of the dependent variables (teachers' self-efficacy, teachers' resilience and teachers' social – emotional competence) for each group: experimental and control.

### 4. Results

To test the H1 hypothesis we used Pearson correlation analysis and the results are presented in the table below. There are high positive and significantly correlations between all the tested variables (see Table 1 for correlations between Efficacy for Student Engagement (ESE), efficacy for instruction strategies (EIS), Efficacy for classroom management (ECM), teacher self-efficacy (FSE), resilience, teacher student relationship (TSREL), emotional regulation, social awareness, interpersonal relationship, social-emotional competence (SEC).

*Table 1. Correlations measuring association between teachers' self-efficacy, resilience and social – emotional competence (n=208) (Correlation is significant at the 0.01 level (2-tailed)).*

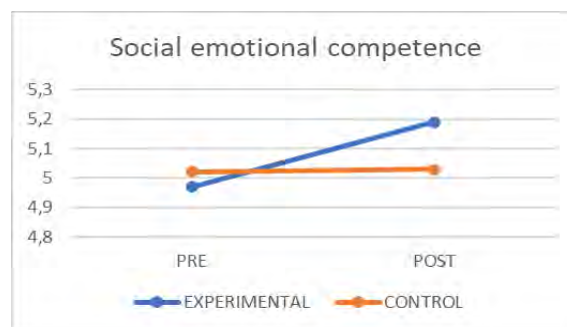
|                    | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10 |
|--------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|----|
| 1.ESE              | --     |        |        |        |        |        |        |        |        |    |
| 2 EIS              | ,719** | --     |        |        |        |        |        |        |        |    |
| 3 ECM              | ,754** | ,715** | --     |        |        |        |        |        |        |    |
| 4TSE               | ,923** | ,883** | ,908** | --     |        |        |        |        |        |    |
| 5 Resilience       | ,600** | ,631** | ,563** | ,657** | --     |        |        |        |        |    |
| 6. TSREL           | ,628** | ,603** | ,605** | ,675** | ,590** | --     |        |        |        |    |
| 7. EmoRegulation   | ,535** | ,514** | ,541** | ,584** | ,641** | ,708** | --     |        |        |    |
| 8. SAwareness      | ,414** | ,479** | ,460** | ,495** | ,329** | ,600** | ,443** | --     |        |    |
| 9.Intrelationships | ,626** | ,541** | ,600** | ,651** | ,678** | ,692** | ,659** | ,529** | --     |    |
| 10 SEC             | ,674** | ,667** | ,670** | ,739** | ,717** | ,878** | ,820** | ,730** | ,843** | -- |

To test H2 we used t-test for paired samples having as dependent variables teachers' self-efficacy, resilience and social-emotional competence, and as independent variable the phase with two categories: pretest and posttest. We did this analysis for each group, separately. The results indicates that experimental group experienced an increasing of some variables such as self-efficacy for student engagement, self-efficacy for instruction strategies, self-efficacy for classroom management, resilience, social-emotional competence, teacher-student relationship and interpersonal relationships. T test for paired samples bring out some promising results, showing that implementation of a mental health promotion curriculum could positively impact the personal development of the teachers. According to our study, the teachers experienced increased values of self-efficacy for student engagement ( $t(120) = -3.907$ ,  $p=0.00$ ) (pretest  $M=7.12$ , posttest  $M=7.80$ ), self-efficacy for instruction strategies ( $t(120) = -4.291$ ,  $p=0.000$ ) (pretest  $M=7.64$ , posttest  $M = 8.30$ ), self-efficacy in classroom management ( $t(120) = -3.616$ ,  $p=0.000$ ,  $M_{pretest}=7.45$ ,  $M_{posttest}=8.02$ ), resilience ( $t(120) = -3.178$ ,  $p=0.002$ ,  $M_{pretest} = 4.04$ ,  $M_{posttest} = 4.35$ ), social – emotional competence ( $t(120) = -2.672$ ,  $p=0.009$ ),  $M_{pretest} = 4.97$ ,  $M_{posttest}=5.19$ ), teacher – student relationship ( $t(120) = -2.494$ ,  $p=0.014$ ,  $M_{pretest} = 5.11$ ,  $M_{posttest}=5.35$ ), and interpersonal relationships ( $t(120) = - 2.743$ ,  $p=0.007$ ,  $M_{pretest}=4.84$ ,  $M_{posttest}=5.14$ ). Two of the variables tested did not have significant differences: emotional regulation and social awareness. On the other hand, the results for the control group have no significance in the differences between the pretest and posttest phases. The figures below present the way of variance of the two main variables measured: resilience and social-emotional competence, for the two groups (experimental and control).

Figure 1. The resilience means differences between pre and post test for the experimental and control group, pretest and posttest.



Figure 2. The Social-emotional competence means differences for the experimental and control group, pretest and posttest.



## 5. Discussion

Testing the impact of a mental health promotion curriculum on the teachers’ personal outcomes we obtained improved values for teachers’ self-efficacy, teachers’ resilience and their social – emotional competence. These results are consistent with other findings from different studies (Blewitt et al., 2020, Langley et al., 2010) showing that the evidence-based intervention make a difference both at students’ outcomes and teachers’ efficiency. According to Blewitt et. Al, (2020) SEL programs may strengthen teaching quality, particularly the provision of responsive and nurturing teacher-child interactions and effective classroom management. In the same line the results of our study indicate that mental health promotion program contributes to the enhancing the classroom management efficacy, teacher student relationships, efficacy related to instruction strategies. This study provides evidence for efficiency of a mental health curriculum on personal development of teachers, consistently with other research results (Blewitt et al., 2020; Collie & Perry, 2019; Oliveira et al., 2021; Tyson et al., 2009, Unterbrink, T et al., 2010) The results could have implications on teachers training policies.

## 6. Conclusions

Our study indicates that a student-centered intervention could have impact on teachers as well, contributing to the enhancing of personal outcomes such as resilience, self-efficacy related to professional contexts and social-emotional competence. These valuable results explain the importance of delivering mental health promotion programs at schools, having a positive impact on teachers’ personal life, as well.

### Acknowledgments

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## References

- Bandura, A. (1997). *Self-efficacy: The exercise of control* (1st ed.). New Jersey: W.H. Freeman.
- Blewitt, C., O'Connor, A., Morris, H., Mousa, A., Bergmeier, H., Nolan, A., Jackson, K., Barrett, H., & Skouteris, H. (2020). Do Curriculum-Based Social and Emotional Learning Programs in Early Childhood Education and Care Strengthen Teacher Outcomes? A Systematic Literature Review. *International Journal of Environmental Research and Public Health*, 17(3), 1049.
- Cavioni, C., Grazzani, I., & Ornaghi, V. (2020). Mental health promotion in schools: A comprehensive theoretical framework. *International Journal of Emotional Education*, 12(1), 65-82.
- Collie, R. J. (2017). Teachers' Social and Emotional Competence: Links with Social and Emotional Learning and Positive Workplace Outcomes. In E. Frydenberg, A. J. Martin, & R. J. Collie (Eds.), *Social and Emotional Learning in Australia and the Asia-Pacific* (pp. 167–184). Springer Singapore.
- Collie, R. J., & Perry, N. E. (2019). Cultivating teacher thriving through social-emotional competence and its development. *The Australian Educational Researcher*, 46(4), 699–714.
- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82.
- Duffin, L. C., French, B. F., & Patrick, H. (2012). The Teachers' Sense of Efficacy Scale: Confirming the factor structure with beginning pre-service teachers. *Teaching and Teacher Education*, 28(6), 827–834.
- Elias, M. J. (2009). Social-Emotional and Character Development and Academics as a Dual Focus of Educational Policy. *Educational Policy*, 23(6), 831–846.
- Gu, Q., & Day, C. (2007). Teachers resilience: A necessary condition for effectiveness. *Teaching and Teacher Education*, 23(8), 1302–1316. <https://doi.org/10.1016/j.tate.2006.06.006>
- Hen, M., & Goroshit, M. (2016). Social-emotional competencies among teachers: An examination of interrelationships. *Cogent Education*, 3(1), 1151996.
- Jennings, P. A. (2011). Promoting teachers' social and emotional competencies to support performance and reduce burnout. In A. Cohan & A. Honigsfeld (Eds.), *Breaking the mold of preservice and in service teacher education: Innovative and successful practices for the 21<sup>st</sup> century* (pp. 133–143). Lanham, MD: Rowman & Littlefield Education.
- Lam, L. T., & Wong, E. M. Y. (2017). Enhancing social-emotional well-being in young children through improving teachers' social-emotional competence and curriculum design in Hong Kong. *International Journal of Child Care and Education Policy*, 11(1), 5.
- Langley, A. K., Nadeem, E., Kataoka, S. H., Stein, B. D., & Jaycox, L. H. (2010). Evidence-Based Mental Health Programs in Schools: Barriers and Facilitators of Successful Implementation. *School Mental Health*, 2(3), 105–113. <https://doi.org/10.1007/s12310-010-9038-1>
- Liebenberg, L., Theron, L., Sanders, J., Munford, R., van Rensburg, A., Rothmann, S., & Ungar, M. (2016). Bolstering resilience through teacher-student interaction: Lessons for school psychologists. *School Psychology International*, 37(2), 140–154.
- Oliveira, S., Roberto, M. S., Pereira, N. S., Marques-Pinto, A., & Veiga-Simão, A. M. (2021). Impacts of Social and Emotional Learning Interventions for Teachers on Teachers' Outcomes: A Systematic Review with Meta-Analysis. *Frontiers in Psychology*, 12, 677217.
- Ransford, C. R., Greenberg, M. T., Domitrovich, C. E., Small, M., & Jacobson, L. (2009). The Role of Teachers' Psychological Experiences and Perceptions of Curriculum Supports on the Implementation of a Social and Emotional Learning Curriculum. *School Psychology Review*, 38(4).
- Schonert-Reichl, K. A. (2017). Social and Emotional Learning and Teachers. *The Future of Children*, 27(1), 137–155. <http://www.jstor.org/stable/44219025>
- Tschannen-Moran, M., & Hoy, A. W. (2001). Teacher efficacy: Capturing an elusive construct. *Teaching and Teacher Education*, 17(7), 783–805.
- Tyson, O., Roberts, C., & Kane, R. (2009). Can Implementation of a Resilience Program for Primary School Children Enhance the Mental Health of Teachers? *Australian Journal of Guidance and Counselling*, 19(2), 116-130. doi:10.1375/ajgc.19.2.116
- Unterbrink, T., Zimmermann, L., Pfeifer, R., Rose, U., Joos, A., Hartmann, A., Wirsching, M., & Bauer, J. (2010). Improvement in School Teachers' Mental Health by a Manual-Based Psychological Group Program. *Psychotherapy and Psychosomatics*, 79(4), 262–264.

# STUDENTS PERCEIVED ACADEMIC STRESS, SENSE OF BELONGING, ADAPTABILITY, SPORTS AND DEPRESSION IN THE SECOND YEAR OF THE PANDEMIC

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## Abstract

The COVID-19 pandemic has been challenging for academia. Educators and students hopes for a short duration of the pandemic were disappointed soon and in 2021, one year after the onset of the pandemic, most universities were still restricted to online teaching. At the same time, ensuing restrictions due to COVID-19 coupled with uncertainty about the duration of these adverse circumstances, brought high pressure for many students.

Within this background, the present study focuses on the question, to which degree students could develop and use coping mechanisms in these adverse circumstances and draw on personal resources such as sense of belonging, adaptability, and stress-outbalancing behaviors like sports. The aim of this study was to evaluate Austrian students perceived academic stress and was conducted from May to July 2021. Altogether, 202 students, 71 males (35.1%) and 131 females (64.9%) between 18 to 52 years old ( $M=23.74$ ,  $SD=5.26$ ) participated. Statistical analyses found significant correlations between perceived academic stress and sense of belonging (socially and organizationally), adaptability, depression, but no significant correlation with sports. In the regression, three variables significantly contributed to the assessment of academic stress. Adaptability and sense of belonging to a peer-group as well as adaptability decreased perceived academic stress. In contrast, depressive symptoms were positively related to academic stress. Altogether, 34.0% of the variance could be explained by the regression equation. Higher levels of perceived academic stress could mostly be explained by a lack of adaptability to the actual situation and sense of belonging to a peer group but a higher amount of perceived depression.

These results point at measures that can be taken to alleviate students' stress. Perceived academic stress and mental-health problems like depressive symptoms should not be taken too lightly, as they do not only concern only individual students, but have consequences for the university as a whole.

**Keywords:** *University students, sense of belonging, perceived academic stress, adaptability, sports.*

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## 1. Introduction

The Coronavirus disease outbreak (COVID-19) has affected lives all over the world. Universities with all its members – educators, researchers, students, academic and non-academic staff – have been hit in specific ways. This meant for educators in the first year of the pandemic to suddenly switch to remote teaching forms, often within one or only a few days and to adapt teaching, learning and testing to completely new circumstances (Procentese et al., 2020). Hopes that learning and teaching could switch to normal were disappointed again and again in the various pandemic waves. These circumstances put enormous stress on all members of academia. However, stress has not always negative consequences. According to Joseph et al. (2021) a certain amount of academic stress can be beneficial (e.g. promoting learning), but excessive academic stress impairs performance and well-being of students and may even lead to severe symptoms of strain like depressive symptoms, anxiety and other health-related problems. Studies in Asia as well as in Europe found a negative impact of the pandemic on mental well-being like severe anxiety (Cao et al., 2020) and depression (Essadek & Rabeyron, 2020); the lack of interpersonal communication of students is regarded to be one reason for this.

Insecurity and unpredictability of learning circumstances, e.g. not knowing about dates and formats of the next classes or even exams, added further pressure on students with implications for their perception of academic stress and academic performance (c.f. Bedewy & Gabriel, 2015).

However, there are also factors that may cushion strain. In an academic context, sense of belonging to a social group or to the organization, in this case the student peers and the university, may

help to reduce academic stress (c.f. Procentese et al., 2020). Students with a higher sense of belonging also show better adaptability and adjustment to challenges (c.f. Arslan, 2021; Besser et al., 2020). Previous studies point at the positive and strain-protective effects of sense of belonging to the university. Higher perceived belonging to the university was associated with lower self-reported academic stress (Capone et al., 2020). Previous studies showed that organizational identification is an even better predictor for achievement than social identification (Wilkins et al., 2016).

In 2012 Décamps and colleagues conducted a study with French students which indicated that students with intensive sport practice (more than 8 hours per week) reported lower scores of general stress and academic stress than those with rare practice. Recent studies with large international samples found that individuals performing physical activity during lockdown reported better mood than their colleagues (e.g. Brand et al., 2020). These results were replicated in 2021 by Fernandez-Rio et al. (2021) who found a potential positive connection between physical activity and well-being. Individuals with significantly lower depressive symptoms performed more physical activity during isolation than beforehand. Therefore, in the present study students' sports activities were also regarded as a cushioning factor.

The study aimed to evaluate, how the students' situation during the third lockdown and the weeks after and to find protective factors, which could be used to make recommendations to the universities. We hypothesized that students perceived academic stress is negatively associated with their sense of belonging (social and organizational), adaptability to the new situation and physical activity, but positively associated with the perceived depressive symptoms.

## 2. Methods and materials

### 2.1. Participants

A total of 215 participants took part in the study, conducted from May to July 2021. They were recruited via advertisements on the mailing list of the university and on social media (Facebook and Instagram). All participants gave their informed consent, through a generated participant code individual data was anonymized. Participants were asked to provide demographics including sex, age, academic semester, academic level, native language and diagnosed clinical illnesses (e.g. depression). Ten participants had to be excluded because they indicated, that they were diagnosed with a clinical illness. Further three participants made inconclusive statements e.g. studying 100 semesters. Finally, data of 202 students, 71 males (35.1%) and 131 females (64.9%) between 18 to 52 years old ( $M=23.74$ ,  $SD=5.26$ ) were used for the analysis. In the sample, 158 students (78.2%) were at Bachelor level, 39 (19.3%) at Master and five (2.5%) studying at doctoral level. The majority reported German to be their native language ( $n=197$ ; 97.5%). Students reported physical activity (sports) of  $M=2.43$  ( $SD=1.71$ ) hours per week in the last weeks ( $Min=0$ ,  $Max=10$ ) during the third lockdown in Austria.

### 2.2. Material and variables

*Perception of Academic Stress.* Participants were asked to rate their perceived academic stress level using the German version of the Perception of Academic Stress Scale (PAS; Bedewy & Gabriel, 2015). This instrument consists of eighteen items which are answered on a five-point Likert scale, ranging from "strongly disagree" to "strongly agree". The internal consistency reliability (Cronbach's Alpha) of the scale was  $\alpha=.814$ , and for the dimensions students' academic self-perceptions ( $k=6$ )  $\alpha=.675$ , academic expectations ( $k=4$ )  $\alpha=.303$  and faculty work and examinations ( $k=6$ )  $\alpha=.780$ .

*Adaptability.* Self-perceived adaptability to the COVID-19 situation was measured by an adapted German version of the Adaptability Scale (Martin et al., 2012). This scale comprises nine items in the format of a seven-point Likert scale, ranging from "strongly disagree" to "strongly agree". The internal consistency reliability (Cronbach's Alpha) of the scale ( $k=9$ ) was  $\alpha=.843$ . The first order factors 'cognitive-behavioral' ( $k=6$ ;  $\alpha=.793$ ) and 'affective' ( $k=6$ ;  $\alpha=.787$ ) were highly correlated ( $r=.564$ ), as recommended by the authors the high order factor was used for the analysis (Martin et al., 2013).

*Sense of Belonging Scales (peers and university).* Hoffmans' adapted German version of the Sense of Belonging Scale was used. It comprises twenty-six statements (e.g. "I have developed personal relationships with other students who I met in class.") in the format of a five-point Likert scale, ranging from "completely untrue" to "completely true". The internal consistency reliability (Cronbach's Alpha) of the primary scale ( $k=26$ ) was  $\alpha=.896$ . For sense of belonging to the university an adapted subscale of Wilkins et al. (2016) questionnaire was used with an internal consistency of  $\alpha=.875$ . It comprises four statements (e.g. "I feel strong ties with my university".) in the format of a seven-point Likert scale, ranging from "strongly disagree" to "strongly agree".

*Depressive symptoms.* Depressive symptoms were measured by the German version of the Beck Depression Inventory (BDI-II, Hautzinger et al., 2006), a 21-item self-report scale. All items of the scale are scored based on a four point Likert scale, each individually adjusted to the specific symptoms (e.g. energy loss). The internal consistency reliability (Cronbach’s Alpha) of the scale ( $k=21$ ) was  $\alpha=.872$ .

### 3. Results

Pearson correlations were calculated to explore relationships between relevant variables. Table 1 shows descriptive statistics and correlations of the variables. Sports activities did not significantly correlate with perceived academic stress, adaptability, sense of belonging to the university and depressive symptoms, but showed a small, yet significant correlation with sense of belonging. Taking a closer look, the dimensions of sense of belonging peer support ( $M=18.83$ ,  $SD=8.66$ ;  $r=.188$ ) and classroom support ( $M=7.14$ ,  $SD=4.96$ ,  $r=.144$ ) showed a significant relationship, but no significant results were found for faculty support ( $M=10.99$ ,  $SD=5.29$ ,  $r=.040$ ) or empathetic faculty understanding ( $M=8.90$ ,  $SD=3.13$ ,  $r=.086$ ).

Table 1. Descriptive statistics and Correlations of Main Study Variables.

| Variables                       | N   | Mean<br>M | SD    | PAS | Adaptability | SoB to<br>peers | SoB to<br>university | Depressive<br>symptoms | Sport |
|---------------------------------|-----|-----------|-------|-----|--------------|-----------------|----------------------|------------------------|-------|
| Perceived academic stress (PAS) | 202 | 28.04     | 9.89  |     | -.368**      | -.300**         | -.150*               | .550**                 | -.054 |
| Adaptability                    | 202 | 37.20     | 7.99  |     |              | .190**          | .242**               | -.360**                | .042  |
| SoB to peers                    | 202 | 45.85     | 15.95 |     |              |                 | .327**               | -.309**                | .117* |
| SoB to university               | 202 | 8.57      | 4.23  |     |              |                 |                      | -.256**                | .081  |
| Depressive symptoms             | 202 | 11.65     | 8.98  |     |              |                 |                      |                        | .041  |
| Sport                           | 202 | 2.43      | 1.71  |     |              |                 |                      |                        |       |

Note: \* $p < .05$ ; \*\* $p < .01$ ; SoB Sense of belonging

A multiple regression with four criterion variables was carried out to investigate which aspects contributed to students perceived academic stress. Predictor variables were the students’ adaptability, sense of belonging, perceived university belonging and depressive symptoms. We assumed a linear relation between the independent (predictor) and dependent (criterion) variables, meaning we would expect that increases in one variable would be related to an increase or decrease in another. Earlier analysis showed no significant differences in the perceived academic stress between males ( $M=26.51$ ,  $SD=10.02$ ) and females ( $M=28.88$ ,  $SD=9.76$ ) ( $t(200)=-1.633$ ,  $p=.379$ ), thus further analysis were conducted without considering gender. Prior analysis showed that the assumptions were fulfilled, physical activity (sport) did not show a relationship with perceived academic stress and therefore was not included in the regression analysis to predict perceived academic stress.

Three variables significantly contributed to perceived academic stress during the third lockdown and the following weeks. Adaptability and the social component of sense of belonging (the organizational component “the perceived belonging to the university” did not significantly contribute) obtained a negative  $\beta$ -weight. Higher values were related to decreased perceived academic stress. The variable depression obtained a positive  $\beta$ -weight; higher values in depression come in line with a higher amount of academic stress. Altogether, 34.0% of the variance could be explained by the regression equation (see Table 2).

Table 2. Summary of the multiple regression analysis (regression coefficients, significance).

|                     | Perceived academic stress |      |         |              |
|---------------------|---------------------------|------|---------|--------------|
| R                   | B                         | SE B | $\beta$ | Significance |
| Adaptability        | -.239                     | .077 | -.193   | **           |
| SoB to peers        | -.089                     | .039 | -.143   | *            |
| SoB to university   | .139                      | .146 | .059    |              |
| Depressive symptoms | .497                      | .071 | .451    | **           |
|                     | R <sup>2</sup>            | .340 |         |              |

Note: B = unstandardized regression coefficient  $\beta$ . SE B = standard error of B.  $\beta$  = standardized regression coefficient. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ . Sample size  $n = 202$ . SoB = Sense of belonging.

Of the sample, 43 students experienced a minimal (21.3%) (9-13 points), 27 a mild (13.4%) (14-19 points), 29 a moderate (14.4%) (20-28 points) and 13 a severe (6.4%) (29-63 points) depression using the classification system of the German BDI-II version (Hautzinger et al., 2006), although participants with diagnosed clinical disorders were excluded. There was no significant difference between males ( $M=11.46$ ,  $SD=8.32$ ) and females ( $M=11.75$ ,  $SD=9.35$ ) ( $t(200)=-.213$ ,  $p=.825$ ) regarding the BDI-II score.

#### 4. Discussion

Previous studies paid attention to several protective factors, but all focused either on sense of belonging or sports. We wanted to present strategies for universities where to expand their offers for students (e.g. peer systems, sports programs, mental health programs). The initial assumptions were that higher self-reported adaptability (c.f. Besser et al., 2020) and social aspects of sense of belonging (e.g. peer support, empathetic faculty understanding) (c.f. Procentese et al., 2020), sense of belonging to the university (Capone et al., 2020), and sports activities (e.g. Décamps et al., 2012) would decrease the perception of academic stress. Furthermore, depressive symptoms were assumed to increase the perception of stress. In the statistical analyses not all of these variables contributed to the perception of stress. Three variables proved to be important for the perception of stress: adaptability, sense of belonging to the peer group, and depressive symptoms.

*Adaptability to the COVID-19 situation.* In the first year of the pandemic the relationship between adaptability to the COVID-19 situation and sense of belonging had already been found (Besser et al., 2020). The results of the present study also point at the importance of this variable.

*Social sense of belonging.* It was especially interesting to investigate the impact of this variable in the second year of the pandemic in which students had suffered from an ongoing period of reduced social contacts. Yet, still feeling of being part of a social group and receiving emotional support contributed positively to the adjustment to the COVID situation and decreased the perception of stress. These results speak for designing support strategies at universities for students which can be individually offered, e.g. tutorials, mentoring programs through peers (c.f. Lee et al., 2021).

*Depressive symptoms.* A further important result concerns the incidence of depressive symptoms since almost 21 percent of the students reported moderate or severe depression symptoms. The present data gathered in a cross-sectional design allow no interpretation of causal relationships. Nevertheless, these results are of concern and the high proportion of students reporting moderate or even severe symptoms seems alarming. It would be worth to conduct further studies, e.g. qualitative studies to obtain a better insight.

Contrary to initial expectations, two variables were not able to explain the perception of stress.

*Sports activities.* With a mean of 146 minutes per week, the majority of the participants did not follow the WHO recommendations on physical activity (Fernandez-Rio et al., 2021) during the home isolation 150 minutes/week of moderate physical activity: 122 students (60.4%) reported sports engagement of two hours or less per week, 75 (37.1%) three to six hours per week and only five students (2.5%) eight hours or more per week. However, contrary to previous studies (Décamps et al., 2012) the length of sports activities was not related to perceived stress levels. There are different explanations for this result. Overall, the length of students' sport activities was not overly high and contrary to other studies there were only few participants with intensive training.

*Sense of belonging to the university.* Contrary to expectations this variable was not significant in the regression equation. It might be that in the pandemic the reduced contacts with the university (e.g., using services, visiting the building, having personal contact with staff, etc.) over more than one year impaired a sense of belonging and thus the variable could not unfold its assumed effect (Capone et al., 2020; Procentese et al., 2020). Some students at this point may have hardly ever entered the university in person in the COVID pandemic. Also, the construct was measured with the questionnaire of Wilkins et al. (2016) a different tool than in previous mentioned COVID-19 related studies.

Altogether, the results point at important factors that cushion students against feelings of stress and to measures that universities can take to support students' well-being. The latter mainly concern increasing students' social sense of belonging. Therefore, designing support strategies at universities for students which can be individually offered, e.g. tutorials, mentoring programs through peers is recommended (c.f. Lee et al., 2021).

*Limitations.* Limitations of the study mainly concern the cross-sectional design. However, due to the organizational circumstances and accessibility of the sample, it was not possible to include different points in time. Further limitations concern the generalizability of the results as mainly psychology students took part in the study. Nevertheless, the results give a further insight into factors that influence students' well-being and point at important measures that universities can take.



## References

- Bedewy, D. & Gabriel, A. (2015). Examining perceptions of academic stress and its sources among university students: The Perception of Academic Stress Scale. *Health Psychology Open*, 1-9. <https://doi.org/10.1177/2055102915596714>
- Besser, A., Flett, G. L., & Zeigler-Hill, V. (2020). Adaptability to a Sudden Transition to Online Learning During the COVID-19 Pandemic: Understanding the Challenges for Students. *Scholarship of Teaching and Learning in Psychology*. Advance online publication. <https://doi.org/10.1037/stl0000198>
- Brand, R., Timme, S., & Nosrat, S. (2020). When pandemic hits: Exercise frequency and subjective well-being during COVID-19 pandemic. *Frontiers in Psychology*, 11:570567, 1-10. <https://doi.org/10.3389/fpsyg.2020.570567>
- Cao, W., Fang, Z., Hou, G., Han, M., Xu, X., Dong, J., & Zheng, J. (2020). The psychological impact of the COVID-19 epidemic on college students in China. *Psychiatry Research*, 287:112934, <https://doi.org/10.1016/j.psychres.2020.112934>
- Capone, V., Caso, D., Donizzetti, A.R., & Procentese, F. (2020). University Student Mental Well-Being during COVID-19 Outbreak: What Are the Relationships between Information Seeking, Perceived Risk and Personal Resources Related to the Academic Context? *Sustainability*, 12:7039, 1-17. <https://doi.org/10.3390/su12177039>
- Décamps, G., Boujut, E., & Brisset, C. (2012). French college students' sports practice and its relations with stress, coping strategies and academic success. *Frontiers in Psychology*, 3(104), 1-6. <https://doi.org/10.3389/fpsyg.2012.00104>
- Essadek, A. & Rabeyron, T. (2020). Mental health of French students during the Covid.19 pandemic. Correspondance. *Journal of Affective Disorders*, 277, 392-393. <https://doi.org/10.1016/j.jad.2020.08.042>
- Fernandez-Rio, J., Cecchini, J. A., Mendez-Gimenez, A., & Carriedo, A. (2021). Mental well-being profiles and physical activity in times of social isolation by the COVID-19: a latent class analysis. *International Journal of Sport and Exercise Psychology*, <https://doi.org/10.1080/1612197X.2021.1877328>
- Hautzinger M., Keller F., & Kühner C. (2006). Manual: Beck Depressions Inventar (BDI 2). Frankfurt a.M, Germany: Harcourt Test Service.
- Joseph, N., Nallapati, A., Machado, M.X., Nair, V., Matele, S., Muthusamy, N. & Sinha, A. (2021). Assessment of academic stress and its coping mechanisms among medical undergraduate students in a large Midwestern university. *Current Psychology*, 40, 2599–2609. <https://doi.org/10.1007/s12144-020-00963-2>
- Lee, J., Hyun Ju Jeong, H.J., & Kim, S. (2021). Stress, Anxiety, and Depression Among Undergraduate Students during the COVID-19 Pandemic and their Use of Mental Health Services. *Innovative Higher Education*, 46, 519–538. <https://doi.org/10.1007/s10755-021-09552-y>
- Martin, A.J., Nejad, H., Colmar, S., & Liem, G.A.D. (2012). Adaptability: Conceptual and empirical perspectives on responses to change, novelty and uncertainty. *Journal of Psychologists and Counsellors in Schools*, 22(1), 58-81. <https://doi.org/10.1017/jgc.2012.8>
- Martin, A.J., Nejad, H.G., Colmar, S., & Liem, G.A.D. (2013). Adaptability: How students' responses to uncertainty and novelty predict their academic and non-academic outcomes. *Journal of Educational Psychology*, 105(3), 728-746. <https://doi.org/10.1037/a0032794>
- Procentese, F., Capone, V., Caso, D., Donizzetti, A., & Gatti, F. (2020). Academic Community in the Face of Emergency Situations: Sense of Responsible Togetherness and Sense of Belonging as Protective Factors against Academic Stress during COVID-19 Outbreak. *Sustainability*, 12(22), 9718.
- Wilkins, S., Butt, M.M., Kratochvil, D., & Stephens Balakrishnan, M. (2016). The effects of social identification and organizational identification on student commitment, achievement and satisfaction in higher education. *Studies in Higher Education*, 41(12), 2232-2252.

# DOES PHYSICAL IMMERSION HELP ADULT VISITORS PROCESSING WORKS OF ART EXHIBITED IN A MUSEUM?

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## Abstract

Given the popularity of spectacular events that produce physical immersion, museums are tempted to exhibit their collections in rooms where visitors are plunged in such immersion. A comparison of three rooms displaying works of art in the traditional manner, but one of which having an installation that induces physical immersion, showed that such immersion does not lead to an increase in the rate of treatment of the works, nor does it increase the fascination for them, i.e. psychological immersion.

**Keywords:** Museums, works of art, adults, physical immersion, psychological immersion.

## 1. Introduction

Over the last twenty years or so, most Western countries have seen a decrease in the funding that the State grants them (Bell, 2012; Bordonaba, 2011; Hervé, Mencarelli and Puhl, 2019 \*<sup>1</sup>). They must therefore at all costs improve their revenues, particularly by a marked increase in attendance (Brouillette, 2013; Mairesse, Tobelem and Vessely, 2018\*). Given the current popularity of grandiose immersive shows produced through new technologies (Hansen and Mossberg, 2013; Jancert, 2015; Montpetit, 1996\*), museums are tempted to introduce immersive environments into their exhibition rooms (Belaën, 2002; Belaën, 2003; Msica, 2019\*). However, because of the high cost of these environments, they are hesitant and want to ensure their effectiveness (Casula, 2016; Lemarchand, 2016; Swaboda, 2019; Venuat, 2019\*).

In 2017, we undertook a research program to test this effectiveness<sup>2</sup>, specifically to identify the potential effects of physical immersion on an adult's visiting experience. We were particularly interested in two of these effects: the enrichment of the visitor experience and its intensification.

## 2. Experience enrichment

The greater the number of works a visitor pays attention to and is interested in, the richer the visitor's experience potentially is (Black, 2005; Dufresne-Tassé, O'Neill, Sauvé and Marin, 2014; Hein, 1998; Hooper-Greenhill, 1994). Enrichment can take at least the two following forms. The information gathered by the visitor is added to the knowledge and experiences of her/ his personal universe; it broadens or modifies its meaning. The information may also appear new to the visitor and may be the starting point for curiosity and discovery, which may lead to the development of a dynamic interest.

## 3. Experience intensification

Intensification usually means that the visitor's relationship with the work of art is strong. It takes the form of fascination, also called psychological immersion (Carr, 2003; Dufresne-Tassé, 2014; Jantzen, 2013). The visitor is captivated by the work, she/he observes it, accepts the sensations, emotions, and desire that are born in him, but also the memories, ideas, or reflection it evokes. In other words, the treatment given to the work is complex and requires the intervention of the visitor's cognitive, imaginary and affective functioning in several of their forms.

<sup>1</sup>References marked with an (\*) are only examples, as the subject has been treated on many more publications.

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#### **4. Hypotheses**

1. In an exhibition room that plunges the works of art and the visitors in a physical immersion, a greater number of works of art is dealt with than in conventional rooms (enrichment of the experience).

2. Visitors more often develop psychological immersion (fascination) in a room with physical immersion than in a conventional room (intensification of the experience).

Only quantitative data corresponding to these hypotheses will be presented here. This choice is justified, as they provide a backdrop against which the fine information offered by the qualitative research could be inserted.

#### **5. Research context**

Three rooms in a fine arts museum of a major North American city. These rooms display respectively 31, 30 and 29 works - European paintings and sculptures - from the same period, 1850-1900. The first one contains works from the Impressionist movement, the second, works from the Romantic movement, and the third, works from the Academic one. The display, which is similar in all three rooms, is roughly of the "white cube" type, the paintings being hung on the walls, while the sculptures, placed on pedestals, are distributed in the center or around the space. The second room (the immersive one) plunges paintings and sculptures, but also visitors, into the context of a summer night. This effect is produced by an "installation" projected onto the ceiling and the walls, though saving the works of art.

#### **6. Sample**

Thirty-five adults of both sexes, aged 25 and 64, with at least a bachelor's degree or the equivalent, who attend museums an average of five times a year. This last characteristic is important, since the attention of adults who do not visit museums often is for a good part of their visit divided between discovering the museum, how it works, and discovering what is exhibited.

#### **7. Ways of collecting information from visitors**

1. Information regarding Experience enrichment (hypothesis 1). The researcher notes in each of the three rooms the works in front of which the visitor stops for at least 10 seconds. Such a stop is sufficient to make a first observation of a work of art exhibited in a museum room, or to read a few lines of the accompanying label.

2. Information on experience intensification (hypothesis 2). Once the visit has ended in the three rooms, the researcher tells the visitor what he means by psychological immersion and asks her/him to repeat in his company the journey he made in each room and to indicate, if it is appropriate, the works of art in front of which he felt immersion.

#### **8. Results**

Neither hypothesis is confirmed.

1. The immersive room, i.e. the one which physically immerses works and visitors in the context of a summer night, does not elicit a higher number of treatments of the works than the other two rooms. Indeed:

a) The average number of treatments carried out by the 35 visitors about the works on display is no eater in the immersive room than in the other two rooms (see Table 1). On the contrary, it is smaller, but the differences between Room 2 and Rooms 1 and 3, evaluated by means of T-tests, are not significant at the .05 level;

b) Similarly, the average number of treatments related to the paintings is not greater in the immersive room than in the other two ones (see table 2). On the contrary, it is smaller, but the differences between room 2 and the other two rooms are not significant at the .05 level;

c) However, the average number of treatments awarded to the sculptures is significantly smaller in the immersive room than in the other two rooms (see Table 3) as in this case the results of the T-tests are significant at the .05 level.

2. What was seen to occur with the treatment of the works of art is repeated with the psychological immersion, that is to say with fascination, which ensures a complex and beneficial treatment for the visitor of the works that she/he is looking at. Indeed:

a) The average number of psychological immersions experienced by the 35 visitors is no greater in the room where there is physical immersion than in the other two rooms (see Table 4). On the contrary, it is smaller, but the differences between the immersive room and the others, evaluated by means of T-tests, are not significant at the .05 level;

b) In the same sense, the average number of psychological immersions experienced in contact with the paintings is not greater in the physical immersion room than in the other two ones (see Table 5). On the contrary, it is smaller, but the differences between room 2 and the others are not significant at the .05 level;

c) However, the average number of psychological immersions experienced in contact with the sculptures is significantly lower in the physical immersion room than in the other two rooms (see Table 6). Indeed, in this case, the results of the T-tests indicate differences significant at the .05 level.

**9. Discussion**

It is clear that a museum room that immerses adult visitors in a physical immersion, specifically in the atmosphere of a summer night, does not generate a higher rate of treatments of the works of arts than similar rooms without an immersive device.

It is also clear that such a room does not particularly favor psychological immersion, i.e. a complex relationship with the works which strongly involves the cognitive, affective and imaginary functioning of the visitors.

It is finally obvious that such a room can even hinder contact with a particular type of work, sculptures for instance, as well as the psychological immersion that visitors may experience while observing them.

We see two possible explanations for these observations: 1) The physical immersion is felt so strongly, i.e. the impression to wander in a summer night, that the visitors are completely inhabited by it, the sensations, emotions, pleasure, memories and even ideas it induces, that this is enough for them and the works of art lose their importance; 2) The more or less strong impression of living a summer night moment conflicts with the works on display, either with their characteristics, such as their colors or shapes, which the visitors perceive at first sight, or with the meaning that their subject takes on for them, and the affective reactions that this meaning provokes.

The accuracy of these explanations could probably be verified by analyzing the "Thinking Aloud" of the visitors, i.e. their production of meaning as they wander through the rooms of a museum and take an interest in the works on display.

*Table 1. Comparison of the total number of treatments of works produced in an immersive room and in two other rooms.*

| <b>Room 1 : Impressionist works</b>                             | <b>Room 2 : (immersive) Romantic works</b> | <b>Room 3 : Academic works</b> |
|---|--|--------------------------------|
| N. of works : 31  | N. of works : 30                           | N. of works : 29               |
| Mean : 18.38  | Mean : 15.33                               | Mean : 16.44                   |
| $\sigma$ : 5.71   | $\sigma$ : 5.45                            | $\sigma$ : 5.30                |
| T room 2 / room 1 : 0.018                                       |  |                                |
| T room 2 / room 3 : 0.451                                       |  |                                |
| (critical value of T .05 for 59 df = 2.003 ; for 57 df = 2.004) |  |                                |

*Table 2. Comparison of the paintings treatments in the immersive room and in the two other rooms.*

| <b>Room 1 : Impressionist works</b>                             | <b>Room 2 : (immersive) Romantic works</b> | <b>Room 3 : Academic works</b> |
|---|--|--------------------------------|
| N. of paintings : 25  | N. of paintings : 23                       | N. of paintings : 22           |
| Mean : 18.76  | Mean : 16.60                               | Mean : 16.81                   |
| $\sigma$ : 5.79   | $\sigma$ : 5.50                            | $\sigma$ : 5.90                |
| T room 2 / room 1 : 0.097                                       |  |                                |
| T room 2 / room 3 : 0.451                                       |  |                                |
| (critical value of T .05 for 46 df = 2.012 ; for 43 df = 2.016) |  |                                |

*Table 3. Comparison of the sculptures treatments in the immersive room and in the two other rooms.*

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| <b>Room 1 : Impressionist works</b>                            | <b>Room 2 : (immersive) Romantic works</b> | <b>Room 3 : Academic works</b> |
|--|--|--------------------------------|
| N. of sculptures : 6   | N. of sculptures : 7                       | N. of sculptures : 7           |
| Mean : 16.83   | Mean : 11.14                               | Mean : 15.28                   |
| $\sigma$ : 5.56  | $\sigma$ : 2.41                            | $\sigma$ : 2.69                |
| T room 2 / room 1 : 2.332                                      |  |                                |
| T room 2 / room 3 : 2.948                                      |  |                                |
| (critical value of T .05 for 11df = 2.201 ; for 12 df = 2.179) |  |                                |

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*Table 4. Comparison of the total number of immersions produced in an immersive room and in two other rooms.*

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| <b>Room 1 : Impressionist works</b>                             | <b>Room 2 : (immersive) Romantic works</b> | <b>Room 3 : Academic works</b> |
|---|--|--------------------------------|
| N. of works : 31  | N. of works : 30                           | N. of works : 29               |
| Mean : 4.03   | Mean : 2.60                                | Mean : 3.93                    |
| $\sigma$ : 4.07   | $\sigma$ : 3.48                            | $\sigma$ : 3.31                |
| T room 2 / room 1 : 1.537                                       |  |                                |
| T room 2 / room 3 : 0.528                                       |  |                                |
| (critical value of T .05 for 58 df = 2.003 ; for 57 df = 2.004) |  |                                |

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*Table 5. Comparison of the number of immersions produced in front of the paintings exhibited in the immersive room and in two other rooms.*

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| <b>Room 1 : Impressionist works</b>                             | <b>Room 2 : (immersive) Romantic works</b> | <b>Room 3 : Academic works</b> |
|---|--|--------------------------------|
| N. of paintings : 25  | N. of paintings : 23                       | N. of paintings : 22           |
| Mean : 4.00   | Mean: 3.21                                 | Mean : 4.59                    |
| $\sigma$ : 4.38   | $\sigma$ : 3.68                            | $\sigma$ : 3.49                |
| T room 2 / room 1 : 0.140                                       |  |                                |
| T room 2 / room 3 : 0.683                                       |  |                                |
| (critical value of T .05 for 46 df = 2.012 ; for 43 df = 2.013) |  |                                |

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*Table 6. Comparison of the number of immersions in front of the sculptures exhibited in the immersive room and in two other rooms.*

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| <b>Room 1 : Impressionist works</b>                            | <b>Room 2 : (immersive) Romantic works</b> | <b>Room 3 : Academic works</b> |
|--|--|--------------------------------|
| N. sculptures : 6  | N. sculptures : 7                          | N. sculptures : 7              |
| Mean : 4.16  | Mean : 0.08                                | Mean : 1.85                    |
| $\sigma$ : 2.72  | $\sigma$ : 0.17                            | $\sigma$ : 0.89                |
| T room 2 / room 1 : 3.66                                       |  |                                |
| T room 2 / room 3 : 5.145                                      |  |                                |
| (critical value of T .05 for 11 df = 2.201; for 12 df = 2.179) |  |                                |

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## References

- Belaën, F. (2002). *L'expérience dans les expositions scientifiques et techniques à scénographie d'immersion*. Dijon: Thèse doctorale en Sciences de l'information et de la communication déposée à l'Université de Bourgogne.
- Belaën, F. (2003). Les expositions d'immersion. *La Lettre de l'OCIM, No 86*, 27-31.
- Bell, F.W. (2012). *How Are Museums Supported Financially in the U.S.?* Washington: United States Department of State Bureau of International Information Programs.
- Black, G. (2005). *The Engaging Museum. Developing Museums for Visitor Engagement*. Abingdon: Routledge.
- Bordonaba, L. (2011). Les musées et l'argent. Entretien avec Hervé Barbaret, administrateur général de l'établissement public du musée du Louvre. *Cahiers philosophiques, No 124*, p. 107-122.
- Brouillette, A. (2013). *Exposition immersive: son effet sur l'implication et la fidélisation du visiteur de musée*. Trois-Rivières, QC: Mémoire de maîtrise en loisir, culture et tourisme déposé à l'Université du Québec à Trois-Rivières.
- Carr, D. (2003). *The Promise of Cultural Institutions*. Walnut Creek: AltaMira Press.
- Casula, F. (2016). *Quels sont les éléments immersifs d'une exposition? Étude de la réception de l'exposition Osiris, mystères engloutis d'Égypte à l'Institut du monde arabe*. Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.
- Dufresne-Tassé, C. (2014). Experiencia intensa e experiencia de imersão: Relatório de observações diretas. *Museion, Revista do Museu e Arquivo Histórico La Sallem, 19*, 27-42.
- Dufresne-Tassé, C., O'Neill, M.C., Sauvé, M. et Marin, D. (2014). Un outil pour connaître de minute en minute l'expérience d'un visiteur adulte. *Revista Musologia & Interdisciplinaridade, 3*, 6, 187-204.
- Hansen, A.H. and Mossberg, L. (2013). Consumer Immersion: A Key to Extraordinary Experiences. In J. Sundbo and F. Sorensen (Eds.), *Handbook on the Experience Economy* (p. 209-228). Cheltenham, UK: Edward Elgar Publishing.
- Hein, G. (1998). *Learning in the Museum*. London: Routledge.
- Hervé, F., Mencarelli, R. et Puhl, M. (2019). L'évolution de la structure de financement des organisations muséales: éclairage sur les rôles des *endowment funds*. *Management international, vol. 15*, 3, p. 45-55.
- Hooper-Greenhill, E. (1991). *Museum and Gallery Education*. Leicester: Leicester University Press.
- Hooper-Greenhill, E. (1994). *Museums and their Visitors*. London: Routledge.
- Jancert, C. (2015). *La réalité virtuelle au service d'une meilleure immersion des visiteurs d'exposition?* Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.
- Jantzen, C. (2013). Experiencing and Experiences: A Psychological Framework. In J. Sundbo and F. Sorensen (Eds.), *Handbook on the Experience Economy* (p. 146-171). Cheltenham, UK: Edward Elgar Publishing.
- Lemarchand, A. (2016). *Dispositifs multimédias au sein d'une exposition: la scénographie virtuelle favorise-t-elle l'immersion? Effets et limites d'une expérience muséale*. Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.
- Mairesse, F., Tobelem, J.M. et Vessely, P. (2018). Musées et bibliothèques : vers de nouveaux modèles économiques et de gestion. Dans N. Yan (Ed.), *Modèles économiques des musées et bibliothèques* (p. 51-86). Paris: La Documentation française.
- Montpetit, R. (1996). Une logique d'exposition populaire : Les images de la muséographie analogique. *Public et Musées, 9*, 1, 55-103.
- Msica, I. (2019). *L'immersion par les odeurs au sein des monuments historiques. Révolution ou préjugé?* Paris: Mémoire de recherche en muséologie présenté à l'École du Louvre.
- Swaboda, C. (2019). *Le rôle du contexte d'exposition dans l'appréciation des œuvres par les visiteurs*. Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.
- Venuat, C. (2019). *Au son de l'immersion, résonne le bien-être. Étude de l'expérience intense, sonore, visuelle au Musée des Musiques populaires de Montluçon (MuPop)*. Paris: Mémoire d'étude de 2<sup>e</sup> cycle présenté à l'École du Louvre.

## THE SATISFACTION OF BEING A REBEL

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### Abstract

Several researches in organizational environment have shown that there is a norm of allegiance; it consists in valuing positively employees who not only obey the orders of their hierarchical superiors but who also avoid any criticism of them. Here is questioned the degree of satisfaction and dissatisfaction with adopting or refusing to adopt such behavior.

120 employees of the Argentinian private sector (60 men and 60 women) were contacted using the snowball technique and, on a voluntary basis, answered anonymously to two questionnaires.

The first one was an allegiance questionnaire of 24 items from the questionnaires of Gangloff & Caboux (2003) and Gangloff & Duchon (2008): 12 items of general allegiance and 12 items differentiating the reasons for allegiance (ideological vs. opportunist). Examples: "With my boss, I rarely try to defend my ideas" (general allegiance item); "When my boss takes a decision, I rarely challenge it. Whatever the decision: you should not challenge your boss" (ideological allegiance); "Even if my boss's orders sometimes seem absurd to me, as I want to have quick promotions, I generally obey" (opportunistic allegiance). The subjects answered each item by indicating whether, usually, they adopted rather allegiant or rather rebellious conduct, and they specified, in each of the two cases, if this adoption satisfied or dissatisfied them.

Considering that satisfaction is a constituent element of well-being, a second questionnaire was used the Scale for Measuring Manifestations of Psychological Well-Being (EMMDEP) by Massé et al. (1998), made up of 25 items in which subjects ticked off as "somewhat agree" (rated 1) vs. "somewhat disagree" (rated 0).

The results show that 1) allegiant conducts are more frequent than rebellious ones, but only among women (among men, the difference is not significant); 2) dissatisfaction is more frequent with adopting allegiant conducts than with adopting rebellious ones, whatever the gender; 3) satisfaction is more frequent than dissatisfaction, both for the allegiant conducts and for the rebels; 4) Satisfied participants express more well-being than unsatisfied participants.

The limits and practical consequences of these results will be discussed.

**Keywords:** *Allegiance, rebellion, hierarchical superior, satisfaction.*

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### 1. Introduction

More than 20 centuries ago, Aristotle (ed. 1991) underlined that the first reason for which Diomedes chose Ulysses responded to the desire "to have a companion inferior to himself" (p278); so much we appreciate "those who humiliate themselves in front of us and who do not contradict us, because they make us see that they consider themselves as our inferiors" (p193). In terms of governance, Plato (ed. 1966, p230) considered that "for some people it is by nature [...] to govern the city, for others [...] to obey the leaders". However, it seems that in two millennia the situation has hardly changed. Bourdieu and Passeron underlined in 1970 (p252-253) that it is important for "each social subject to remain in the place which is incumbent upon him by nature, to stick to it and to hold on to it". It is the same if we refer to the functioning of companies.

Thus Dubost (1979, p171-172) indicates that the main criteria for evaluating workers is "obedience to orders, even the most absurd [...]: not responding to leaders, not say what you think". Similarly, Kramer observes (1994, p3 and 4) that "individual performance and its valuation are rarely priorities [...]. Flexibility with respect to authority, [...] loyalty to the hierarchy [...] constitute] all elements of the assessment of merit, the weighting of which seems to outweigh the results obtained".

Similarly, Grignon (1971, p164) defines the good worker as being "one who respects order and hierarchies, who knows how to obey without kicking back, and who behaves at all times like someone reasonable, that is to say [...] like someone harmless", having acquired "the good spirit, [...] the spirit of deference and submission". Onfray (1997, p38) also underlines that the good employee is characterized "by his submissive understanding, made to consent to obedience".

Concretely speaking, the behavior expected of a good employee is characterized by the absence of any dispute, any criticism of the leader whose point of view must systematically prevail; by the proscription of any personal initiative on the part of subordinates; by a control that extends to the psyche of individuals. Enriquez (1976) underlines that "the leader is not criticized [...], is not subject to any rule [...], is accountable to no one [...], has full authority over his subordinates" (p86). "When the order arrives, we must obey without trying to understand" (Dubost, 1979, p171). As Aubert and Gaulejac (1991, p110) relate, the extent of this control has no limit and encompasses the totality of the being: "Michel Foucault had shown that the hierarchical order was intended to render docile and helpful individuals. But this order was mainly based on the control of the body [...]. Now it is the control of the psyche that becomes essential". The examples could be multiplied: they all highlight a valuation of obedient employees, to such an extent that we are now talking about a norm of allegiance. This norm is defined as "the social valuation of explanations and behaviors preserving the 'social environment of any questioning [...] that is to say like] the valuation of explanations and behaviors ensuring the sustainability [...] of the hierarchy of powers inherent in this social order" (Gangloff, 2002). As is true that the questioning of the chef's authority, bastion of the hierarchical structure, can only weaken this structure.

Several researches are consistent in highlighting the positive valuation of allegiant people (for a review see Gangloff, 2011). Respect for this norm was also measured. Thus Guedes Gondim et al. (2008) asked Brazilian and Spanish workers and unemployed to judge on an altercation, presented in a scenario, between a boss and his subordinate. It was observed that if the Spaniards, especially the employees, criticized the rebellious employee less than the Brazilians did, on the other hand the majority of the participants, both Spanish and Brazilian, agreed with the leader. However, this respect is not systematic. For example, Gangloff (2012) asked employees to indicate whether they usually behave towards their boss in an allegiance or rebellious manner, and the results showed rebellious behavior more frequent than the allegiance ones. This result was all the more interesting as this study included a second question: the participants were also asked whether they would have liked to adopt even more such rebellious behavior, and the answers obtained were overwhelmingly in the affirmative. This meant that, had the circumstances been more favorable, the rate of rebellion would have been even higher. But it also meant that these participants said they were hindered in carrying out the behaviors they would have liked to adopt. This second result then prompted us to ask ourselves on the one hand whether the employees were satisfied with the behaviors they adopted, whether these behaviors were of allegiance or protest, on the other hand, knowing that satisfaction is a constitutive element of well-being, to consider that if variations in satisfaction were to appear, they should also be reflected in the level of well-being experienced.

So, we established the following 4 hypotheses:

H1: rebellious conducts will be more frequent than allegiant ones.

H2: dissatisfaction will be more frequent with allegiant conducts than with rebellious ones (H2.1) and satisfaction more frequent with rebellious conducts than with allegiant ones (H2.2),

H3: for allegiant conducts, dissatisfaction will be more important than satisfaction (H3.1) while for rebellious conducts satisfaction will dominate (H3.2).

H4: satisfied respondents will show more well-being than unsatisfied ones.

## 2. Method

120 employees of the Argentinian private sector without hierarchical responsibility (60 men and 60 women) were contacted using the snowball technique and, on a voluntary basis, answered two questionnaires in a face-to-face situation.

The first one was a 24 items allegiance questionnaire previously adapted to Hispanic populations (Gangloff, Mayoral & Auzoult, 2016): 12 of them used the general allegiance questionnaire established by Gangloff and Caboux (2003), the other 12, taken from Gangloff and Duchon (2008), were also made up of allegiance / non-allegiance conducts but with precision of the reason (ideological vs opportunistic) of these conducts. Examples: "With my boss, I rarely try to defend my ideas" (general allegiance item); "When my leader takes a decision, I rarely challenge it. Whatever the decision: we must not challenge our leader" (ideological allegiance); "Even if my boss's orders sometimes seem absurd to me, as I want to have quick promotions, I usually obey" (opportunist allegiance). These 24 items were mixed up.

Four columns were arranged next to these items, the participants being instructed to respond to each item by checking one of it (see Table 1).



Table 1. Presentation of the satisfaction questionnaire (example).

|   | This is my usual behavior and I am |                      | This is not my usual behavior and I am |                      |
|---|------------------------------------|----------------------|--|----------------------|
|   | satisfied with it                  | dissatisfied with it | dissatisfied with it                   | dissatisfied with it |
| When my boss makes a decision, I rarely challenge it. Whatever the decision: we must not challenge our boss |                                    |                      |  |                      |

The second questionnaire was the Psychological Well-Being Manifestations Measurement Scale (EMMDEP) developed by Massé et al. (1998a; 1998b for the English version). This scale, made up of 25 items, has excellent validity (Cronbach's alpha = .93). Exploratory factor analyses have shown that it measures six dimensions: self-esteem (4 items), psychological balance (4 items), social engagement (4 items), sociability (4 items), self-control (4 items), happiness (5 items)<sup>1</sup>. Its adaptation to Hispanic populations (cf. Mayoral, Rezrazi & Gangloff, 2020) has been used. Respondents checked off each item according to a dichotomous principle (somewhat agree, rated 1, vs. somewhat disagree, rated 0). Items example: “I have confidence in myself” (self-esteem), “I feel emotionally balanced” (psychological balance), etc.

### 3. Results

Table 2. Results for satisfaction.

|                                 | Allegiant conducts                 |                      |       | Rebellious conducts                    |                      |       |
|---------------------------------|------------------------------------|----------------------|-------|--|----------------------|-------|
|                                 | This is my usual behavior and I am |                      |       | This is not my usual behavior and I am |                      |       |
|                                 | satisfied with it                  | dissatisfied with it | Total | satisfied with it                      | dissatisfied with it | Total |
| allegiance items<br>Women + Men | 1045                               | 442                  | 1487  | 1037                                   | 298                  | 1335  |
| allegiance items<br>Women       | 530                                | 196                  | 726   | 496                                    | 147                  | 643   |
| allegiance items<br>Men         | 515                                | 246                  | 761   | 548                                    | 141                  | 689   |

Our first hypothesis was that rebellious conducts would be more frequent than allegiants. This hypothesis is invalidated. In fact, it is the allegiant conducts that dominate, both globally, that is to say men and women together (1487 against 1335,  $X^2_1 = 8.19, p = .004$ ) and among women (726 against 643,  $X^2_1 = 5.03, p = .025$ ); but in men, the difference is not significant (761 vs. 689,  $X^2_1 = 3.58, p = .058$ ).

We also thought (H2.1) that the participants would be more dissatisfied when they adopt allegiant conducts than when they adopt rebellious ones. It is the case, both men and women together (442 against 298,  $X^2_1 = 28.02, p \approx .00$ ) as among women (196 against 147,  $X^2_1 = 7.00, p = .008$ ) and among men (246 against 141,  $X^2_1 = 28.49, p \approx .00$ ).

We also expected (H2.2) to find more satisfaction with rebellious conducts than with allegiant ones. This hypothesis is not confirmed. The participants experience as much satisfaction when they adopt allegiance conducts and when they adopt rebellious ones, both men and women grouped together (1037 for the rebellious conducts against 1045 for the allegiances,  $X^2_1 = .31, p = .86$ ) as among women (496 against 530,  $X^2_1 = 1.13, p = .29$ ) and among men (548 against 515,  $X^2_1 = 1.02, p = .31$ ).

Finally, we considered that with the adoption of allegiant conducts, dissatisfaction would dominate satisfaction (H3.1), while with the adoption of rebellious conducts, satisfaction would dominate (H3.2). Regarding allegiance, our hypothesis is invalidated: satisfaction dominates dissatisfaction both globally (1045 against 442,  $X^2_1 = 224.53, p \approx .00$ ) as among women (530 against 196,  $X^2_1 = 153.66, p \approx .00$ ) and men (515 against 246,  $X^2_1 = 95.09, p \approx .00$ ). On the other hand, for rebellious conducts,

<sup>1</sup>Note that, compared to the initial scale, two items were transformed: "I easily have a beautiful smile" has become "I easily smile" (sociability item); and "I feel healthy, in great shape" became "I feel in good health, in great shape" (happiness item). In addition, all the items, initially formulated in the past tense, have been put in the present tense.

satisfaction dominates dissatisfaction both globally (1037 against 298,  $X^2_1 = 409.07$ ,  $p \approx .00$ ) as among women (496 against 147,  $X^2_1 = 189.42$ ,  $p \approx .00$ ) and men (548 against 141,  $X^2_1 = 240.42$ ,  $p \approx .00$ ).

Finally, concerning the level of well-being, the comparison of means indicates that it varies according to satisfaction ( $F(1, 118) = 8.68$ ,  $p = .004$ ), with more well-being for satisfied participants ( $M = .80$ ,  $SD = .13$ ) than for the unsatisfied ( $M = .71$ ,  $SD = .16$ ). This result corroborates our hypothesis H4.

#### 4. Discussion-conclusion

Based on the study by Gangloff (2012), conducted in France, rather than that of Guedes Gondim et al. (2008) conducted on Brazilian and Spanish populations, we formulated the H1 hypothesis according to which rebellious conducts would be more frequent than allegiance conducts. This hypothesis is invalidated. Undoubtedly many variables are likely to intervene in the conducts adopted in an organizational environment. For example, with regard to the allegiant conducts, we could cite the national or company culture, the organizational mode of management (liberal vs autocratic), the status of the respondents (fixed or indefinite contract), etc. The fact that we did not take such data into account constitutes a first limit to the generalization of our results.

On the other hand, we find, as expected (H2.1), that the adoption of allegiant conducts leads to more dissatisfaction than the fact of behaving rebelliously. However, this does not mean more satisfaction with rebellious conducts than with allegiant ones (H2.2 is invalidated): the satisfaction is identical. In other words, our participants are more dissatisfied by being allegiant than by being rebellious, but they are not more satisfied by being rebellious than by being allegiant.

By differentiating between the two possible types of conducts, we also considered that for allegiant conducts, dissatisfaction would dominate satisfaction (H3.1), while for rebellious conducts, satisfaction would be preponderant (H3.2). If the first hypothesis is invalidated, on the other hand, for the second, we observe effectively that rebellious conducts provide more satisfaction than dissatisfaction.

Finally, we notice, as expected (H4), that well-being is higher among satisfied participants than among unsatisfied ones.

Thus, these results provide new knowledge. But on a practical level, we would also like them to encourage managers to think about the freedom they agree to allow their subordinates. For a long time, the literature has shown that job satisfaction is a guarantee of efficiency, commitment to the company, and organizational citizenship behaviors (Castel, 2011; Francès, 1981). We also know for a long time that performance goes hand in hand with a certain latitude for protest. Thus, drawing a portrait of the best North American companies, Peters and Austin (1985) clearly demonstrated that performance can only be obtained through the establishment of a climate of freedom, which means in particular by acceptance and even encouragement of deviant behavior. In innovative companies, indicate these authors, "the semi-licit is a norm celebrated, openly accepted by all and that each one cherishes" (p206); "Instead of emphasizing formalisms [... these companies] insist on non-conformist behavior [... and demand] disrespect towards the central authority and the institution" (p208). Peters and Austin provide numerous illustrations confirming their analyzes. They indicate for example that one of the first principles of the Dana company is a protest slogan: "Discourage conformism" (p363); that at IBM, "the first task of the units is not to follow the planning of the headquarters [... and] to bypass the system" (p218); that at Raychem, successful managers are those who "show a constant disrespect for their own procedures and regulations, and regularly encourage others to circumvent the regulations" (p229). In fact, these successful managers have become aware that they are fallible, that "unlike the God of Philosophers, the boss does not know everything" (Landier, 1991, p120), that "no man is infallible [... and that] everything is debatable" (Alain, 1956, p545). Thus, it is time to promote those who have "the insolent audacity to say I" (Adorno, 1983, p47).

#### References

- Adorno, T.W. (éd. 1983). *Minima moralia*. Paris: Payot.  
 Alain (1956). *Propos*. Paris: N.R.F., La Pléiade.  
 Aristote (éd. 1991). *La rhétorique*. Paris: Le Livre de Poche.  
 Aubert, N., & Gaulejac, V. de (1991). *Le coût de l'excellence*. Paris: Seuil.  
 Bourdieu, P., & Passeron, J.-C. (1970). *La reproduction*. Paris: Ed. de Minuit.  
 Castel, D. (2011). *La satisfaction au travail: comprendre, mesurer, prédire le point de vue de l'individu*. Thèse de doctorat, Université Lille 3.  
 Dubost, N. (1979). *Flins sans fin*. Paris: Maspéro.

- Enriquez, E. (1976). Evaluation des hommes et structures d'organisation des entreprises. *Connexions*, 19, 79-110.
- Francès, R. (1981). *La satisfaction dans le travail et l'emploi*. Paris: PUF
- Gangloff, B. (2002). L'internalité et l'allégeance considérées comme des normes: une revue. *Les Cahiers de Psychologie Politique*, n°2. [<http://www.cahierspsypol.fr>].
- Gangloff, B. (2011). La norme d'allégeance. In S. Laberon (Ed.). *Psychologie et recrutement*. Bruxelles: De Boeck. 177-197.
- Gangloff B. (2012). Niveau d'allégeance exprimé de manière spontanée et selon le paradigme du moi idéal: effets du genre et du statut. In S. Pohl, P. Desrumaux et A-M. Vonthron (Eds). *Jugement socio-professionnel, innovation et efficacité au travail*. Paris: L'Harmattan 13-23.
- Gangloff, B., & Caboux, N. (2003) Conformismo a la norma de alineación y reacciones a las injusticias profesionales. *29<sup>ème</sup> Congrès de la Société Interaméricaine de Psychologie*. Lima (Pérou).
- Gangloff, B., & Duchon, C. (2008). When an ideologist and a mercenary meet an allegiant and a rebel: A study on the estimated social desirability of their conducts. *Actes de la 5<sup>th</sup> International Conference of Applied Psychology* (Timisoara, Roumanie, 2007). Timisoara (Roumanie): Editura Eurobit, 240-249.
- Gangloff, B., Mayoral, L., & Auzoult, L. (2016). Nivel de obediencia ideologica o arribista y nivel de creencia en un mundo justo en asalariados activos o retirados hombres y mujeres. *Alternativas Cubanas en Psicología*, 4(10), 119-138.
- Grignon, C. (1971). *L'ordre des choses*. Paris: Ed. de Minuit.
- Guedes Gondim, S.M., Alvaro Estramiana, J.L., Schweiger Gallo, I., de Oliveira Sa, M., & Rios, M. (2008). O chefe tem sempre razão? Um Estudo Intercultural das Expectativas Sociais em Interações de Trabalho. *Interamerican Journal of Psychology*, 42 (2), 381-389.
- Kramer, C. (1994). Evaluation des performances individuelles en entreprise. *Communication au 8<sup>ème</sup> Congrès de l'A.I.P.T.L.F.* Neuchâtel.
- Landier, H. (1991). *Vers l'entreprise intelligente*. Paris: Calmann-Levy.
- Massé, R., Poulin, C., Dassa, C., Lambert, J., Bélaïr, S., & Battaglini, M.A. (1998). Elaboration et validation d'un outil de mesure du bien-être psychologique: l'EMMBEP. *Revue Canadienne de Santé Publique*, 89 (5), 352-357. doi : <http://dx.doi.org/10.17269/cjph.89.1014>
- Massé, R., Poulin, C., Dassa, C., Lambert, J., Bélaïr, S., & Battaglini, A. (1998c). The Structure of mental health: higher-order confirmatory factor analyses of psychological distress and well-being measures. *Social Indicators Research*, 45: 475-504.
- Mayoral, L., Rezrazi, A., & Gangloff, B. (2020). Si quiere que su jefe lo aprecie... sonriale! *Ciencias Administrativas*, 15 (revue électronique non paginée).
- Onfray, M. (1997). *Politique du rebelle*. Paris: Grasset.
- Peters, P., & Austin, N. (1985). *La passion de l'excellence*. Paris: Interéditions.
- Platon (éd. 1966). *La république*. Paris: Garnier-Flammarion.

# POSITIVE YOUTH DEVELOPMENT IN SLOVENIA: TEST OF A MODEL

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## Abstract

The PYD framework is based on Relational Developmental System Theory, which focuses on the importance of the interplay between individual characteristics and contexts (e.g., school, family, community, society) (Lerner, 2007). In the study, we will put this model through an empirical test using structural equation modelling. We will test a path leading from developmental assets (internal and external assets) to the 5Cs and further on to the positive (contribution) and negative (bullying, anxiety) outcomes. The basic assumptions are that the amount of developmental assets present is related to the PYD outcomes, the 5Cs, and these to the lower level of risky and problem behavior and to greater contribution. We will test three alternative models with variations in the 5Cs part: 5Cs model, one-factor model, two-factor model. The rationale for testing 5Cs as one factor originates in the studies (e.g., Holsen et al., 2017) showing that the associations between the 5Cs and negative outcomes appear to depend on how the 5Cs are treated in data analysis, i.e., as separate Cs or as one PYD factor. Similarly, proofs of a two-factor model can be found in the literature (Årdal et al., 2018). We will use Slovenian youth sample ( $N = 1982$ ; 57.4% female;  $M_{\text{age}} = 15.35$ ,  $SD = 1.21$ ) participating in PYD-SI-MODEL study and a selection of self-report measures: Developmental Assets Profile (Scales, 2011), PYD questionnaire (Geldof et al., 2013), LAOM Anxiety Scale (Kozina, 2012); Adolescent Peer Relationship Index Bully-Target (Parada, 2000), and Thriving and Contribution Indicators (Benson, 2003). The findings show better fit of the 5C model. The study is the first of this kind to test the model on Slovenian data therefore together with scientific added value, the study has direct implications also for practice and for the promotion of positive youth development in Slovenia.

**Keywords:** *Positive youth development, Slovenia, school, structural equation modelling.*

## 1. Introduction

The basic idea of the Positive Youth Development (PYD) framework is that youth will develop positively when their strengths (internal assets) are aligned with the resources in their environment (external assets). Thus, positive youth development outcomes (5Cs: competence, confidence, character, caring, connectedness) will be more probable, risky or problem behaviors (e.g., bullying, anxiety) less frequent and prosocial behavior and contribution more present (Lerner, 2007). In the study, we will put this model through an empirical test using structural equation modeling. We will test a path leading from developmental assets (internal and external assets) to the 5Cs and further on to the positive (contribution) and negative (bullying, anxiety) outcomes. The basic assumptions are that the amount of developmental assets present is related to the PYD outcomes, the 5Cs, and these to the lower level of risky and problem behavior and to greater contribution. We will test three alternative models with variations in the 5Cs part: the 5Cs model, one-factor model, two-factor model. The rationale for testing 5Cs as one factor originates in the studies (e.g., Holsen et al., 2017) showing that the associations between the 5Cs and negative outcomes appear to depend on how the 5Cs are treated in data analysis, i.e., as separate Cs or as one PYD factor. Similarly, proofs of a two-factor model can be found in the literature (Årdal et al., 2018; Gomez-Baya et al., 2019).

## 2. Method

### 2.1. Participants

A randomized sample consisted of 1982 students from Slovenia (57.4% female;  $M_{\text{age}} = 15.35$ ,  $SD = 1.21$ ) who participated in a study Positive Youth Development in Slovenia: Developmental pathways in the context of migration (PYD-SI Model).

## 2.2. Instruments

Developmental Assets Profile (Scales, 2011), PYD questionnaire (Geldof et al., 2013), LAOM Anxiety Scale (Kozina, 2012); Adolescent Peer Relationship Index Bully-Target (Parada, 2000), Cyber Bullying (Griezel et al., 2012) and Thriving and Contribution Indicators (Benson, 2003).

## 2.3. Procedure

The students completed a paper or online version of the questionnaire measuring indicators of positive youth development with possible connected factors and demographics. The structural equation modelling (SEM) was performed in Mplus. The study was supported by The Slovenian Research Agency as part of the project Positive Youth Development in Slovenia: Developmental Pathways in the Context of Migration (PYD-SI Model) [J5-1781].

## 3. Results

Before testing the fit of the models with structural equation models, we have tested the structure of all measured constructs using CFA and ESEM. The ESEM was used for Developmental Assets and for the rest of the measured constructs, CFA was used.

Table 1. Fit indices (ESEM and CFA) for measured constructs.

|      | $\chi^2(df)$       | RMSEA            | SRMR | CFI  | TLI  | BIC        | AIC        |
|------|--------------------|------------------|------|------|------|------------|------------|
| DA   | 5088.523 (1373)*** | .037 (.036-.038) | .035 | .905 | .889 | 228485.845 | 226601.048 |
| PYD  | 3462.426 (503)***  | .055 (.053-.056) | .063 | .909 | .898 | 159833.428 | 159129.108 |
| APRI | 5809.234 (579)***  | .068 (.066-.069) | .056 | .894 | .902 | 122816.172 | 122128.870 |
| LAOM | 974.539 (72)***    | .080 (.075-.084) | .040 | .937 | .920 | 74092.972  | 73830.608  |
| CB   | 736.205 (48)***    | .085 (.080-.091) | .037 | .964 | .950 | 23588.639  | 23487.514  |
| TC   | 55.886 (4)***      | .081 (.063-.101) | .026 | .962 | .906 | 26807.662  | 26718.428  |

Notes: DA = Developmental Assets Profile; PYD = PYD questionnaire, APRI = Adolescent Peer Relationship Index Bully-Target; LAOM = Anxiety Scale; CB = Cyber Bullying; TC = Thriving and Contribution Indicators.

We have tested three alternative models with variations in the 5Cs part: 5Cs model, one factor hierarchical model, two-factor model.

Table 2. Test of the alternative models: Fit indices.

| MODEL | $\chi^2(df)$         | RMSEA            | SRMR | CFI  | TLI  | BIC        | AIC        |
|-------|----------------------|------------------|------|------|------|------------|------------|
| 5C    | 32794,376 (11891)*** | .030 (.029-.030) | .050 | .886 | .881 | 621216.403 | 616585.506 |
| 1F    | 40089.871 (11972)*** | .034 (.034-.035) | .076 | .846 | .841 | 627196.387 | 623018.513 |
| 2F    | 37896.290 (11952)*** | .033 (.033-.033) | .057 | .858 | .853 | 625154.663 | 620864.932 |

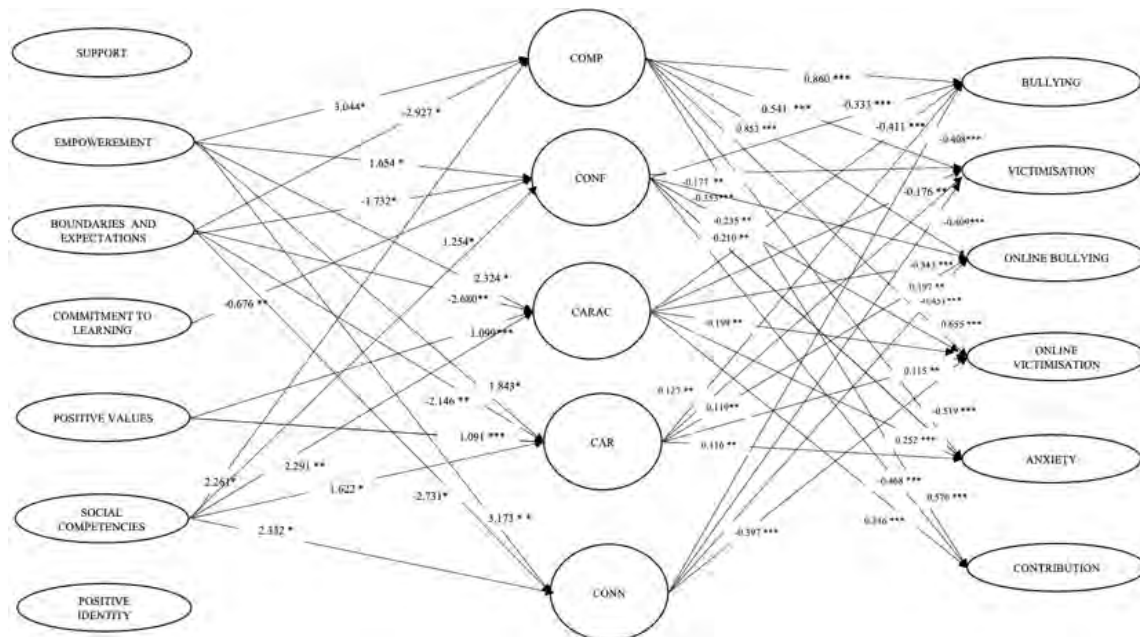
Notes. Suggested modification indices were used, allowing correlation within measured constructs.

All three models show adequate fit, with the 5C model showing better fit than others, considering all included fit indices. The paths in the 5Cs model are presented below (see Figure 1).

## 4. Conclusions

In the study, we have tested alternative PYD models: the original 5Cs (Lerner, 2007), hierarchical one-factor model (Holsen et al., 2017) and 2-factor model (Årdal et al., 2018; Gomez-Baya et al., 2019). As it turned out, the original 5Cs model. Based on the model we can see the important role of the development assets (especially *Empowerment*, *Limits and Expectations* and *Social Competencies*) for the 5Cs and the role the 5Cs further on play in Bullying (Cyber as well), Anxiety and Contribution. The study is first to test the model on Slovenian data, therefore together with scientific added value, the study has direct implications also for practice and for promotion of positive youth development in Slovenia.

Figure 1. Structural equation model (Model 1.1.): Paths between Developmental assets (Support, Empowerment, Boundaries and expectations, Commitment to learning, Positive values, Social competencies, Positive identity), the 5Cs (Competence, Confidence, Character, Caring, Connection), problematic behaviour (Bullying, Victimization, Online Bullying, Online Victimization) and Contribution. The numbers present standardised coefficient estimates. Only significant paths are presented. \*\*\* $p < .001$ , \*\* $p < .05$ ; \* $p < .10$ .



## References

- Benson, P. L. (2003). Developmental Assets and Asset-Building Community: Conceptual and Empirical Foundations. In: Lerner R.M. & Benson P.L. (Eds.) *Developmental Assets and Asset-Building Communities. The Search Institute Series on Developmentally Attentive Community and Society, vol 1.* (pp. 19–43). Springer. [https://doi.org/10.1007/978-1-4615-0091-9\\_2](https://doi.org/10.1007/978-1-4615-0091-9_2)
- Geldhof, G. J., Larsen, T., Urke, H., Holsen, I., Lewis, H., & Tyler, C. P. (2019). Indicators of positive youth development can be maladaptive: The example case of caring. *Journal of Adolescence, 71*, 1–9. <https://doi.org/10.1016/j.adolescence.2018.11.008>
- Geldhof, G. J., Bowers, E. P., Boyd, M. J., Mueller, M. K., Napolitano, C. M., Schmid, K. L., ... & Lerner, R. M. (2013). Creation of short and very short measures of the five Cs of positive youth development. *Journal of Research on Adolescence, 24*(1), 163–176. <https://doi.org/10.1111/jora.12039>
- Griezel, L., Finger, L. R., Bodkin-Andrews, G. H., Craven, R. G., & Yeung, A. S. (2012). Uncovering the structure of and gender and developmental differences in cyber bullying. *The Journal of Educational Research, 105*(6), 442–455. <https://doi.org/10.1080/00220671.2011.629692>
- Holsen, I., Geldhof, J., Larsen, T., & Aardal, E. (2017). The Five Cs of positive youth development in Norway: Assessment and associations with positive and negative outcomes. *International Journal of Behavioral Development, 41*(5), 559–569. <https://doi.org/10.1177/0165025416645668>
- Kozina, A. (2012). The LAOM Multidimensional Anxiety Scale for measuring anxiety in children and adolescents: Addressing the psychometric properties of the scale. *Journal of Psychoeducational Assessment, 30*, 264–273. <https://doi.org/10.1177/0734282911423362>
- Lerner, R. M. (2007). *The good teen.* The Stonesong Press.
- Parada, R. H. (2000). *Adolescent peer relations instrument: A theoretical and empirical basis for the measurement of participant roles in bullying and victimization of adolescence. An interim test manual and a research monograph: A test manual.* University of Western Sydney, Self-Concept Enhancement and Learning Facilitation (SELF) Research Centre, Publication Unit.
- Scales, P. C. (2011). Youth developmental assets in global perspective: Results from international adaptations of the developmental assets profile. *Child Indicators Research, 4*(4), 619–645. <https://doi.org/10.1007/s12187-011-9112-8>

## MIGRATORY GRIEF, COPING, AND PSYCHOLOGICAL DISTRESS OF VULNERABLE GROUPS IN MOBILITY IN SPAIN

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### Abstract

The present study aims to analyse migratory grief, coping (focusing on the problem, negative self-focus, positive reappraisal, open emotional expression, avoidance, search for social support, and religion), and psychological distress of people according to their main reasons for migrating. The sample consisted of 454 participants (48.7% men and 51.3% women) aged between 18 and 74 years ( $M = 35.48$ ;  $SD = 11.06$ ). The methodology used was quantitative and non-experimental design. The Migratory Grief Assessment Questionnaire, the Coping with Stress Questionnaire, and the Kessler Psychological Distress Scale K10 were used. The results indicate a significant and positive relationship between migratory grief, the passive coping styles, and psychological distress, as well as a negative relationship between migratory grief and the strategy focused on the problem. In addition, students are the group with the least migratory grief compared to groups who migrated for economic reasons, insecurity (wars, violence, threats), and sexual orientation. In addition, people fleeing because of security reasons are the ones who use less the strategy of seeking social support compared to the group of people studying. People migrating for economic reasons use religion more as a coping strategy compared to the groups motivated by sexual orientation and educational background. Regarding psychological distress, people who flee because of their sexual orientation have higher levels of psychological distress compared to those who have migrated for economic and academic reasons. The relevant and significant findings related to the variables investigated are discussed.

**Keywords:** *Migratory grief, coping, psychological distress, LGTBIQ+ community, migrants.*

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### 1. Introduction

The increase of displaced populations reflects the need to investigate mental, affective, and psychosocial health factors during the migration process of adaptation in the host country. The reasons for these populations to move may vary according to personal and contextual needs, including the search for work and improved quality of life (Luque-Ribelles, Palacios-Galvez & Morales-Marente, 2018), educational training (Ward, Bochner, & Furnham, 2001), sexual orientation (Círez, Lara, & López, 2020), insecurity (Lusk, Terrazas, Caro, Chaparro, & Puga, 2019), political ideology (Mahler, 1995), and religious beliefs (Thomas, Roberts, Luitel, Upadhaya & Tol, 2011). Thus, in order to understand the migration process from an ecological transition perspective, the significant changes that occur in the different spheres of the subjects as a result of uprooting and adaptation to the new environment must be considered (Berry, 1992; Moya & Puertas, 2008). Migratory grief is explained as the sensation and loss of ties (Arredondo-Dowd, 1981; Casado & Leung, 2002), both physical and symbolic, multiple and simultaneous (Aroian, 1990), and links with customs and cultural values (Hofstede, 2011). Various contextual and personal factors play an important role in grief processing. Therefore, coping strategies, considered as constantly changing resources to cope with situations that exceed personal resources (Lazarus & Folkman, 1986), promote alternatives that facilitate adaptation to the new environment (active) or increase the degree of emotional disturbance (passive). Problem focusing, positive restructuring, open emotional expression, problem avoidance, negative self-focus (Cano, Rodríguez & García, 2007), seeking social support (Lepore, Evan, & Schneider, 1991; Stewart et al., 2008), and religion (Sharp, 2010) are some recognised strategies. When coping resources are not sufficient and/or are maladaptive and demands exceed personal capacities, the emotional experience could lead to psychological distress (Lakatos, 1992; Prudent, 1988) understood as a direct consequence of the migration process.

Therefore, taking into consideration the study by Carta, Bernal, Hardoy, and Haro-Abad (2005), which refers that due to the existence of different migratory conditions and processes, it is impossible to homogenise the group of migrants within the mental health frameworks, and starting from the theoretical bases of cross-cultural psychology, the objectives of this study were: to assess the relationship between the variables of migratory grief, psychological distress, and coping strategy factors; and (2) to analyse the dependent variables according to the main reasons for migrating.

## 2. Methods

### 2.1. Sample

Snowball and convenience sampling (McMillan & Schumacher, 2001) were used in order to integrate a larger and more difficult to access group. The sample consisted of 454 participants (48.7% men and 51.3% women) aged between 18 and 74 years ( $M=35.48$ ;  $SD=11.06$ ). The selection criteria were to be born outside Europe and North America and to be over 18 years of age.

### 2.2. Measures

A closed sociodemographic questionnaire was developed according to three categories: personal, immigration, and religion. To assess migrant grief, the Migratory Grief Assessment Questionnaire developed by De la Revilla et al. (2011) was used. This questionnaire measures migratory grief through 17 closed-ended questions related to fear, nostalgia, concern, and loss of identity. The Cronbach's reliability coefficient obtained for the total population is 0.74. Coping strategies were measured by means of the Coping with Stress Questionnaire (CSQ) developed by Sandín and Chorot (2003). This instrument measures generalised coping through a 42-item Likert-type scale. Among the factors that it assesses are: focus on the solution of the problem, negative self-focus, positive reappraisal, open emotional expression, avoidance, seeking social support, and religion. Finally, Cronbach's reliability coefficients are between 0.58 and 0.89. To assess levels of anxiety and depression, the Spanish adaptation of the Kessler Psychological Distress Scale [K10] (1994) by Sánchez-Sosa, Villareal-González, and Musitu (2011), which scores psychological distress through 10 items and has a Cronbach's reliability coefficient of 0.88, was used.

### 2.3 Data collection procedure and data analysis

Permission was sought from managers of non-governmental organisations and public and educational institutions working with migrants and refugees, and the surveys were administered in person to each person attending the centres. The implementation period was 6 months. In order to reach a wider population, a group of native professionals translated the Spanish questionnaires into French, English, Arabic, and Russian. Participants were informed verbally and in writing about informed consent and the use of the information for scientific purposes.

The study design is non-experimental and quantitative. Reliability testing was conducted for all scales. Pearson's correlation analysis and analysis of variance (ANOVA one-way) and post hoc tests were performed using Tuckey's procedure. These analyses were carried out using the SPSS 21 statistical package.

## 3. Results

According to the main reason for migrating to Spain, 29.3% of participants migrated due to economic and life improvement reasons, 17.4% because of educational reasons, 22% migrated due to insecurity, 9.5% due to sexual orientation, 7.7% because of political reasons, and 3.3% due to religious reasons. Pearson's correlation analysis confirms that there are statistically significant correlations between the variables of migratory grief, coping factors and psychological distress. It is observed that migrant grief (MG) correlates positively with psychological distress (PD) ( $r=.381$ ,  $p<.01$ ) and negative self-focused strategies (NSA) ( $r=.235$ ,  $p<.01$ ), open emotional expression (OEE) ( $r=.135$ ,  $p<.01$ ), avoidance (AVD) ( $r=.136$ ,  $p<.05$ ), and religion (RLG) ( $r=.220$ ,  $p<.01$ ). In addition, MG correlates negatively with problem-focused strategy (FOP) ( $r=-.099$ ,  $p<.5$ ). Also, PD correlates positively with MG ( $r=.381$ ,  $p<.01$ ), NSA ( $r=.501$ ,  $p<.01$ ), OEE ( $r=.348$ ,  $p<.01$ ) and AVD ( $r=.189$ ,  $p<.01$ ).

The results of the one-way ANOVA between groups show that there are statistically significant differences between the primary reason for immigration to Spain and MG ( $F(6,438)=2.566$ ,  $p<.05$ ), social support seeking (SSS) ( $F(6,426)=2.360$ ,  $p<.05$ ), religion (RLG) ( $F(6,426)=5.063$ ,  $p<.001$ ), and PD ( $F(6,418)=3.788$ ,  $p<.01$ ). This means concretely that subjects who immigrate to Spain for study reasons ( $M=9.34$ ,  $SD=2.76$ ) show less migratory grief than those who flee for reasons of insecurity ( $M=10.96$ ,  $SD=3.23$ ), and sexual orientation ( $M=11.07$ ,  $SD=3.02$ ). Migrants motivated by insecurity ( $M=11.34$ ,  $SD=6.51$ ) use less the strategy of seeking social support compared to migrants who study ( $M=14.44$ ,  $SD=6.55$ ). People migrating for economic reasons ( $M=12.23$ ,  $SD=6.87$ ) use the religion-based coping strategy more than LGTBI populations ( $M=7.81$ ,  $SD=6.18$ ) and students ( $M=7.45$ ,  $SD=7.29$ ). Populations who flee their home countries because of their sexual orientation ( $M=19.29$ ,  $SD=8.10$ ) have higher levels of psychological distress compared to the group who immigrate to improve their quality of life ( $M=14.84$ ,  $SD=7.65$ ) and those who migrate for study ( $M=13.26$ ,  $SD=6.37$ ).



#### 4. Discussion

The first objective of this study was to analyse the relationship between migratory grief, coping strategies, and psychological distress in groups in mobility; and the second, to evaluate the dependent variables in terms of the reasons for immigrating to Spain. It is shown that there is a positive relationship between migratory grief and psychological distress, findings that confirm the results of other studies (Arredondo-Dowd, 1981; Casado & Leung 2001; Eisenbruch, 1984; Lakatos, 1992; Prudent, 1988). Moreover, the findings support the positive relationship of the use of negative self-focused, open emotional expression, and avoidance coping styles with the significant consequences of levels of migrant grief and psychological distress. In addition, migratory grief correlates negatively with problem-focused coping strategy. Thus, the greater the use of passive coping styles, the higher the levels of migrant grief and psychological distress, confirming Lazarus and Folkman's (1986) theory of passive and active coping. Religion as a coping style has a positive relationship with migratory grief, contradicting different arguments in the scientific literature, including Sharp (2010) who mentions that religion as a strategy allows coping with the grieving process.

Regarding migratory grief, students show lower levels of migratory grief compared to participants who migrate due to economic reasons, sexual orientation and insecurity. Students can be described as travellers and sojourners. This population is characterised by voluntary migration and advance planning to return home (Ward et al., 2001), as well as the availability of a range of personal and economic resources that may benefit better coping. The last result is consistent with the findings of some authors (Berry, 1992; Lusk et al., 2019) who indicate that reasons for mobility play an important role in understanding the levels of stress and the quality of proactive responses to migratory grief since, for instance, those who flee due to insecurity and sexual orientation must remain in Spain for an indefinite period of time without the opportunity to return to their countries, thus increasing the levels of nostalgia and the sense of physical and symbolic loss of their ties. On the other hand, employed people who have immigrated because of economic reasons and insecurity are subjected to oppression, discrimination, and exclusion (Luque-Ribelles et al., 2018; Moya & Puertas, 2008), aspects that increase their nostalgia for their past lifestyles, people, culture, space, etc., thus confirming the statements described in the study by Mahler (1995).

People who migrate due to insecurity make less use of the strategy of seeking social support compared to those who migrate due to study. This result is interesting because it could be understood that the objective of people seeking refuge in Spain would be to seek economic, social, and personal support, and above all to find security. However, they are the people who least use the strategy of seeking support, possibly due to other variables such as language, trust in others and the lack of information prior to their arrival in the country. For people displaced due to war and violence (Silove, Ventevogel, & Rees, 2017; Thomas et al., 2011), trust in others might be affected due to trauma and feelings of insecurity causing a significant impact on the use of social support seeking, as reflected in the study by Stewart et al. (2008). However, for foreign students, establishing interpersonal relationships and seeking social support are elementary factors in fulfilling their goals of studying, making new friends and generating cultural exchange, aspects that are confirmed by Ward et al. (2001) and Lepore et al. (1991) who report that foreign students focus more on social interaction and support as an indicator of psychological well-being.

Religion as a coping strategy is more used by people who immigrate to Spain to improve their economic situation, find a job and increase their quality of life in comparison to groups who decide to immigrate to study and those who flee due to their sexual orientation. Culturally, migrants (due to economic reasons) who come from southern regions have greater religious expressions which influence their personal development in the host country, as referred to in Mahler's (1995) study. On the other hand, historically, different sectors of society, especially churches and spiritual cults in the countries of expulsion have promoted heteronormativity, discrimination and negative stigma associated with the LGTBI community, which could possibly cause a greater rejection of religions by this community (Foster et al., 2017). At the same time, according to training and level of education, people who migrate due to educational reasons have greater personal resources to cope with the dimensions of the migration project.

Sexual orientation is the reason that produces the greatest psychological distress in comparison with people who immigrate to Spain to improve their quality of life and also those who migrate to study. The LGTBI community (mostly asylum seekers and refugees) not only experience the stress and difficulties associated with the migration project, but also experience a set of symptomatological factors that characterise the traumatic experiences of survival of this population. Specifically, and depending on the type of society of expulsion, LGTBI people experience stressful and traumatic events at school and in the family (rejection, isolation, dishonour, abuse), at work (harassment, exclusion, dismissal), in health (hormone treatment, conversion therapies) and in society (discrimination, imprisonment, persecution, murder). Both past events, as well as those occurring during and after arrival in the host country, may

have a significant negative impact. For example, incorporation into a diverse cultural and social code system within the reception centres may further increase symptoms of distress. Therefore, LGTBI people suffer from polyvictimisation in different spheres of life, thus causing negative consequences on their mental health (loneliness, depression, anxiety, and suicidal ideation), as recognised by some studies and global reports (Círez et al., 2020; European Union Agency for Fundamental Rights, 2017; Inter-American Commission on Human Rights [IACHR], 2018; International Lesbian and Gay Association [ILGA], 2021). Whereas, the characteristic features of voluntariness in other collectives and the provision of greater protective resources could provide better adaptation and management of the consequences of stress as referred to by Berry (1992). Finally, it is important to highlight that the LGTBI collective presents significant levels of psychological distress, but not in migratory grief, therefore, it is expected that there are other intervening variables that increase emotional maladjustment such as those relating to acculturation stress, contextual variables, policies and the reception system in Spain, the resources they have for survival and the same traumatic experiences that these subjects have gone through.

Regarding limitations, this study has incorporated the participation of groups with different cultures and different styles of managing cognitive and emotional processes, therefore, these results could not be generalised. Furthermore, several of the participants expressed and, in some cases, responded that they had more than one reason for migrating. The coping and psychological distress questionnaires are not adapted for foreign populations, therefore, when translating them, some words in them were modified according to the results of the pilot test applied at the beginning of the research. In the analysis of the migratory grief questionnaire, some response options had to be dichotomised in order to homogenise the scores. Due to the considerable number of items in the four questionnaires, several participants did not continue to answer the surveys.

As recommendations, it is proposed that in the future comparisons of the variables of psychological distress and coping strategies be made with the native Spanish population and other European and North American countries, as well as the incorporation of other instruments that investigate stereotypes, prejudices and the acculturation process. Finally, the needs of the most at-risk populations presented here should be specially considered in the intervention, at the level of prevention and intervention, and the public and private reception systems should direct their efforts to promote projects and social programmes that integrate all aspects, not only those of survival, but also those concerning mental health. In conclusion, this study of 454 migrants and refugees according to the main reason for migration allows us to recognise the state of mental health and the need to prevent the psychosocial maladjustment of the population in mobility.

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### *References*

- Aroian, K.J. (1990). A model of psychological adaptation to migration and resettlement. *Nurs Res*, 39(1), 5-10.
- Arredondo-Dowd, P.M. (1981). Personal loss and grief as a result of immigration. *Personnel and Guidance Journal*, 59(6), 376-378. doi.org/10.1002/j.2164-4918.1981.tb00573.x
- Berry, J.W. (1992). Acculturation and adaptation in a new society. *International Migration*, 3(1), 69-85.
- Cano, F., Rodríguez, L., & García, J. (2007). Adaptación española del Inventario de Estrategias de Afrontamiento [Spanish adaptation of the Coping Strategies Inventory]. *Actas Especializadas en Psiquiatría*. 35(1), 29-39. Retrieved from: <https://core.ac.uk/download/pdf/84870846.pdf>
- Casado, B., & Leung, P. (2002). Migratory grief and depression among elderly Chinese American immigrants. *Journal of Gerontological Social Work*, 36, 5-26.
- Círez, M.F., Lara, N., & López, V. (2020). Estudio sobre los condicionantes de salida de los países de origen y pautas de acompañamiento a personas solicitantes de protección internacional y refugiadas LGTBI [Study on the conditions for leaving the countries of origin and guidelines for accompanying people requesting international protection and LGTBI refugees]. ACCEM. Retrieved from: <https://www.accem.es/wp-content/uploads/2021/02/ESTUDIO-LGTBI-2020.pdf>
- De la Revilla, L., De los Ríos, A. M., Luna, J., Gómez, M., Valverde, C., & López, G. (2011). Estudio del duelo migratorio en pacientes inmigrantes que acuden a las consultas de atención primaria. Presentación de un cuestionario de valoración del duelo migratorio [Study of migratory grief in immigrant patients who attend primary care consultations. Presentation of a questionnaire for assessing migratory grief]. *Atención Primaria*, 43(9), 467-473. doi:10.1016/j.aprim.2010.09.013

- Eisenbruch, M. (1984). Cross-cultural aspects of bereavement. II: A conceptual framework for comparative analysis. *Culture, Medicine and Psychiatry*, 8(3), 283-309.
- European Union Agency for Fundamental Rights. (2017). *Current migration situation in the EU: Lesbian, gay, bisexual, transgender and intersex asylum seekers*. Retrieved March 9, 2019, from: [https://fra.europa.eu/sites/default/files/fra\\_uploads/fra-march-2017-monthly-migration-report-focus-lgbti\\_en.pdf](https://fra.europa.eu/sites/default/files/fra_uploads/fra-march-2017-monthly-migration-report-focus-lgbti_en.pdf)
- Foster, A., Brewster, M.E., Velez, B.L., Eklund, A., & Keum, B.T. (2017). Footprints in the sand: Personal, psychological, and relational profiles of religious, spiritual, and atheist LGB individuals. *Journal of homosexuality*, 64(4), 466-487. doi.org/10.1080/00918369.2016.1191237
- Hofstede, G. (2011). Dimensionalizing Cultures: The Hofstede Model in Context. *Online Readings in Psychology and Culture*, 2(1). doi.org/10.9707/2307-0919.1014
- Inter-american Commission on Human Rights. (2018). *Recognition of the Rights of LGBTI Persons*. Retrieved April 6, 2019, from: <http://www.oas.org/en/iachr/reports/pdfs/LGBTI-RecognitionRights2019.pdf>
- International Lesbian and Gay Association, ILGA. (2021). *Annual review of the Human Rights situation of lesbians, gay, bisexual, trans and intersexual people*. Retrieved November 4, 2021, from: [https://www.ilga-europe.org/sites/default/files/2019/full\\_annual\\_review.pdf](https://www.ilga-europe.org/sites/default/files/2019/full_annual_review.pdf)
- Lakatos, P. (1992). *The effects of migratory grief on the adjustment of the adult Hispanic immigrant* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global; ProQuest One Academic. (UMI No. 303976991)
- Lazarus, R.S. & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, U.S.A.: Springer Publishing Company.
- Lepore, S.J., Evans, G.W., & Schneider, M.L. (1991). Dynamic role of social support in the link between chronic stress and psychological distress. *Journal of Personality and Social Psychology*, 61(6), 899-909. doi.org/10.1037/0022-3514.61.6.899
- Luque-Ribelles, V., Palacios-Gálvez, M.A., & Morales-Marente, E. (2018). How women migrants cope with their Labor experience: the case of Eastern European women working on strawberry farms in Spain. *Psychological Thought*, 11(2), 174–194. doi:10.5964/psycet.v11i2.285
- Lusk, M., Terrazas, S., Caro, J., Chaparro, P., & Puga, D. (2019). Resilience, faith, and social supports among migrants and refugees from Central America and Mexico. *Journal of Spirituality in Mental Health*, 23(1), 1-22. doi.org/10.1080/19349637.2019.1620668
- Mahler, S.J. (1995). *American dreaming: Immigrant life on the margins*. New Jersey: Princeton University Press.
- McMillan, J. H., & Schumacher, S. (2001). *Research in education: a conceptual introduction* (5th ed.). Boston, U.S.A.: Addison Wesley Longman.
- Moya, M.C. & Puertas, S. (2008). Estereotipos, migración y trabajo [Stereotypes, immigration and work]. *Papeles del psicólogo*, 29(1), 6-15. Retrieved from: <http://www.papelesdelpsicologo.es/pdf/1533.pdf>
- Prudent, S. (1988). *The grief associated with immigration: An examination of Haitian immigrants' psychological adjustment to the United States* (Doctoral dissertation). Available from ProQuest Dissertations & Theses Global; ProQuest One Academic. (UMI No. 303719161)
- Sánchez-Sosa, J.C., Villareal-González, M.E., & Musitu, G. (2011). *Escala de Malestar Psicológico de Kessler K10* [Kessler Psychological Distress Scale K10]. Retrieved January 18, 2019, from: <https://www.uv.es/lisis/instrumentos13/malestar-psicologico.pdf>
- Sandín, B. & Chorot, P. (2003). Cuestionario de afrontamiento del estrés (CAE): desarrollo y validación preliminar [Stress coping questionnaire (QCS): development and preliminary validation]. *Revista de Psicopatología y Psicología Clínica*, 8(1), 39-54. doi.org/10.5944/rppc.vol.8.num.1.2003.3941
- Sharp, I.A. (2010). *Immigration as a "theologizing experience": Spiritual well-being as a moderating factor in migratory grief and acculturation* (Doctoral dissertation, Loyola University of Chicago). Retrieved from: [https://ecommons.luc.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1254&context=luc\\_diss](https://ecommons.luc.edu/cgi/viewcontent.cgi?referer=https://www.google.com/&httpsredir=1&article=1254&context=luc_diss)
- Silove, D., Ventevogel, P., & Rees, S. (2017). The contemporary refugee crisis: an overview of mental health challenges. *World psychiatry*, 16(2), 130–139. doi.org/10.1002/wps.20438
- Stewart, M., Anderson, J., Beiser, M., Mwakarimba, E., Neufeld, An., Simich, L., & Spitzer, D. (2008). Multicultural meanings of social support among immigrants and refugees. *International Migration*, 46(3), 123-159. doi.org/10.1111/j.1468-2435.2008.00464.x
- Thomas, F.C., Roberts, B., Luitel, N.P., Upadhaya, N., & Tol, W. (2011). Resilience of refugees displaced in the developing world: a qualitative analysis of strengths and struggles of urban refugees in Nepal. *Conflict & Health*, 5(20), 2-11. doi.org/10.1186/1752-1505-5-20
- Ward, C., Bochner, S., & Furnham, A. (2001). *The psychology of culture shock* (2nd ed.). Philadelphia, U.S.A.: Taylor & Francis

## THE EU PROJECT CONNECT!: FROM THE REPORTS TO THE HIGHER EDUCATION COURSE

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### Abstract

Megatrends as globalization, digitization, demographic change, skills shortage, and the pandemic challenge the working lives of millions of people across the world. Organizations experience increasing pressure to become more and more sustainable and to remain competitive taking care of their employees at all levels of skills. At the same time, employees get mobile, search for attractive, stable, and future-oriented job opportunities, and need support to access labor offers all around Europe. The European Erasmus+ project CONNECT! ([connect-erasmus.eu](http://connect-erasmus.eu)) aims to connect career guidance and counselling (CGC) with human resources (HR) in enterprises, for developing and advancing higher education and training in practice. To develop the higher education course two main phases were followed. In the first phase, the involved partners (Italy, Germany, Netherlands, Greece, Austria, and Serbia) conducted an analysis of the national situation. In the second phase, 79 HR and 77 CGC counselors were involved to answer a qualitative survey about the perceptions and best career and life designing practices. The comparative analysis of the national results allowed to identify similarities and differences and identify the main issue to be targeted. The training consists of 5 units that last 4.5 hours each and cover the following topics: *The changing world of work, Innovative concepts, and development for company-based career work/HRM, Current theoretical and methodological approaches for counsellors and coaches in the company context, Connecting Guidance, Counselling and coaching for employees and the context of company-based career work, Changing in practice the organizations*. After the evaluation of 10 experts from diverse countries, it has been piloted with higher education students. This presentation will focus on the Italian adaptation and the results of the piloting that initially involved 38 university master students in psychology. Two ad-hoc questionnaires about expectations and self-efficacy beliefs and one questionnaire about learning were used to verify its efficacy. Strengths and weaknesses will be discussed.

**Keywords:** *Career counseling and guidance, HR, training program, higher education.*

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### 1. Introduction

The world of work, near to the actual pandemic challenges that invests the working life of millions of people across the world, includes other global trends such as the demographic change, the forthcoming digitization and individualization, the economic crisis, the global competition and the skills shortage (Balliester & Elsheikhi, 2018). The increasing pressure for organizations to find and keep talented employees at all levels of skills to be competitive is accompanied by the need to become higher and higher sustainable (Lent, 2018; Neault, 2000). At the same time employees get mobile, search for attractive, stable and future-oriented job opportunities and need support to access labour offers all around Europe.

In this context finding new ways for equipping professionals who oversee the career development of employees represents a challenge that has been collected by all the partners involved in The European Erasmus+ project CONNECT! ([connecterasmus.eu](http://connecterasmus.eu)). This project aims to connect career guidance and counselling (CGC) with human resources (HR) in enterprises thanks to the development of a curriculum for higher education and a training for practitioners. The development of the higher education course followed the two first phases of the project. In the first phase, the involved partners (Italy, Germany, Netherlands, Greece, Austria, and Serbia) conducted an analysis of the national situation. In the second phase, 79 HR and 77 CGC counselors were involved to answer a qualitative survey about the perceptions and best career and life designing practices. The comparative analysis of the national results allowed to identify similarities and differences and the main issues to be targeted as topic

of the curriculum. After the curriculum development it was evaluated by two experts from each country. Their positive evaluations were encouraging for the partners that after some minor improvements, started the piloting phase.

In this paper after the presentation of the curriculum developed, some data about the reactions of Italian students that benefit of it during one of their university course will be presented. More specifically we were interested in evaluating if at the end of the course students perceived their knowledge and their self-efficacy beliefs were increased. We were also interested in knowing students' opinions about the structure and the quality of the CONNECT curriculum and if they have suggestions to improve it. Finally, we wanted to have a more objective indicator of their learning that we tested with a final quiz.

## 2. Method

### 2.1. The CONNECT curriculum for higher education

The curriculum consists of 5 units. Each unit includes 3 learning sessions for a total of 15 sessions. In each unit, the first session describes theoretical approaches and synthetize the literature, the second one introduces methods and tools, and the third one focuses on practice. Each learning session last 90 minutes, that is 4 hours and 30 minutes for each unit and a total of 22.5 hours.

The first unit focus on *The Changing world of work*. It describes and explains the current and future challenges in the world of work. Similarities and differences in the methods used to determine changes in the world of work are discussed as well as their usefulness with special attention to the career counseling and support for employers.

The second unit focus on *Innovative concepts and development for company-based career work/HRM*. Relevant methods aiming at individualized learning, coaching and counselling methods are explained with special attention to corporate social responsibility as a driver in our society. Best practice in cooperation between human resource management in enterprises and professional career guidance and counselling are also exemplified.

The third unit focus on *Current theoretical and methodological approaches for counsellors and coaches in the company context*. The Career Construction Theory and the System Theory Framework were selected as main theoretical approaches to present related career counseling tools and practical examples in the context of organization.

The fourth unit, *Connecting Guidance, Counselling and coaching for employees and the context of company-based career work*, describes intersections of CGC within HRD. Examples of good and innovative practice within enterprises common in the two fields considering advantages and disadvantages are discussed. Attention is devoted to examples and practice of CGC within HRD with diverse groups of employers who experience vulnerabilities for several reasons such as disability or migration.

The fifth unit, *Changing in practice the organizations* presents the basic theoretical underpinnings of change management and organizational development and introduce examples and practices on how new forms of CGC can be implemented within organizations, as well as how the gained knowledge can be disseminated across the career community.

### 2.2. Teaching and learning methodological choices

From a pedagogical perspective the CONNECT course was developed referring to the principles of the Universal Design for Learning (La, Dyjur & Bair, 2018). This framework is used to design course activities and define learning environment with the aim of meet the wide heterogeneity of learners. For this reason, it is recognised for valuing diversity and participation of all. As reported by Cast (Center for Applied Special Technology), the nonprofit organization for education research and development that created the Universal Design for Learning framework in 1984, the UDL follows three principles.

*The Multiple means of Engagement*, suggests providing different opportunities for participants involvement since participants have different motivations to engage in learning. Accordingly interactive activities, group discussions, online discussion boards were included in the course. *The Multiple Means of Representation*, suggests providing learners various ways to access and engage with course materials and information. The goal is to support participants in using multiple representations. Accordingly, we integrated oral explanations with visual representations and videos and textual descriptions. *The Multiple Means of Action and Expression* encourages participants to demonstrate their learning through various forms (e.g., multimedia, concept maps, papers, projects). It involves finding, creating, using, and strategically organizing information (Executive functioning). Accordingly, students were offered several opportunities to realise interviews, poster summary, reports, ppt presentations.

Each session has a start that includes a recall of the previous session and the introduction of the new learning goal. In the central moment explanation, discussions and exercises are typically proposed.

At the end of each session a reflective activity and/or a multiple-choice questionnaire are suggested as closing moments. Moreover, to facilitate a deep learning of what proposed during the learning session, students are invited to complete some homework before the subsequent session.

### 2.3. Participants

As concern the Italian assessment of the curriculum, the pre-test assessment was completed by 38 university master students, the post-test by 15.

### 2.4. Procedure

The CONNECT curriculum was delivery as part of the 42 CFU course Managing diversity in the workplace between November and December 2021 for students who were attending the master course in Social, Work and Communication Psychology at the university of Padova, Italy. Due to the pandemic restrictions, lessons were provided in dual modality, with students both in presence and synchronous online. As concern this group of attendees, since many of them already had basic knowledge in career counseling and guidance and had the opportunity to discuss actual world of work challenges, more attention was devoted to the enterprise contents and to the issues of diversity to meet the expectation of the specificity of the course where the curriculum was included.

### 2.5. Measures

Four measures were developed to assess the learning and the impact of the curriculum on attendees:

*Knowledge about the CONNECT topics.* Five items were developed to assess level of knowledge students perceived about the five topics addressed by the curriculum. Likert scale range from 1 'no knowledge' to 5 'excellent knowledge'.

*Self-efficacy about the CONNECT topics.* Five items were developed to assess perceived self-efficacy beliefs about own's ability to use the competences developed in the five curriculum topics in the future work. Likert scale range from 1 'no self-efficacy beliefs' to 5 'excellent self-efficacy beliefs'.

*Evaluation of the CONNECT curriculum.* Eight questions assess students' opinions about the quality and structure of the units using a Likert scale ranging from 1 'not agree' to 5 'completely agree'. Two other qualitative questions evaluate what could be improved and what they liked more.

*CONNECT learning.* Ten multiple choice questions were developed to assess the learning of students at the end of the program.

## 3. Results

As concern level of knowledge and the self-efficacy beliefs, means comparison using t test for independent sample shows some significant differences (Table 1). Students clearly perceive an improvement in their knowledge about the topics offered by the curriculum. Self-efficacy beliefs increased as concern corporate social responsibility.

Table 1. Comparison between the means at pre- and post-test.

|  | Pretest |      | Posttest |      | p    |
|--|---------|------|----------|------|------|
|  | M       | SD   | M        | SD   |      |
| Level of knowledge about the megatrends in the world of work and their impact on people life   | 2.58    | .758 | 3.20     | .775 | .014 |
| Level of knowledge about corporate social responsibility   | 2.32    | .933 | 3.47     | .060 | .001 |
| Level of knowledge about career counseling and guidance  | 2.71    | .694 | 3.53     | .743 | .001 |
| Level of knowledge about methodologies to supporting career development of employers into organizations                                      | 2.45    | .724 | 3.40     | .828 | .001 |
| Level of knowledge about innovative modalities to promote organizational development   | 2.45    | .724 | 3.47     | .915 | .001 |
| Self-efficacy beliefs in your abilities to use innovative modalities to promote organizational development                                   | 3.73    | .871 | 3.80     | .676 | ns   |
| Self-efficacy beliefs about your abilities in managing corporate social responsibility issues  | 3.46    | .960 | 4.07     | .884 | .037 |
| Self-efficacy beliefs about your abilities in career counseling and guidance   | 3.51    | .901 | 3.80     | .561 | ns   |
| Self-efficacy beliefs about your abilities in managing issues related to the megatrends in the world of work and their impact on people life | 3.70    | .939 | 4.07     | .799 | ns   |
| Self-efficacy beliefs about your abilities in supporting career development of employers into organizations                                  | 3.68    | .884 | 3.93     | .594 | ns   |

As concerns the evaluation of the quality and structure of the program, results are reported in Table 2 and show most of the score range between 4 and 5.

Table 2. Evaluation of the structure and quality of the CONNECT program.

|   | M    | SD   |
|---|------|------|
| “The units built upon each other and formed an integrated whole”  | 4.00 | .612 |
| “The units were well structured”  | 3.60 | .737 |
| “The learning materials used supported my learning progress”  | 4.29 | .849 |
| “I was able to enhance existing and acquire new knowledge in this course”   | 4.44 | .512 |
| “I expect the knowledge and skills acquired in this course to be of practical use in my future professional work”           | 4.50 | .730 |
| “The results of the European project Connect! have been integrated in a relevant way and made the course more interesting.” | 4.00 | .603 |
| “Lecturers managed to deliver the course within the announced timeframe”  | 4.06 | .680 |
| “Overall, I am happy with the course”   | 3.94 | .827 |

As concern the open questions, suggestions about the improvements refer mainly to make clearer the link among the diverse sessions (n=2), more space for exercises and for LGBTQ+ issues (n=1). As concern what they liked more, reflections concern mainly the space that was given to practice and interactive exercise after theory (n=5), the unit 2 on social corporate responsibility (n=2), the attention to people with vulnerability for diverse reasons (n=3).

Of the 15 students who answered the final multiple-choice questionnaire about the contents of the 5 units, 2 (13.3%) students answered correctly to 7 questions, 6 (40.0%) to 8 questions, 4 (26.7%) to 9 and 3 (20%) to all 10.

#### 4. Conclusion

The curriculum CONNECT was developed for offering university students the opportunity to learn and reflect on the need of innovating the field of HRM and CGC connecting them. Exploring new ways of working and collaborating as future professionals with a special focus on career development of employers in the context of enterprises was at the center of the proposal. The first implementation of this curriculum with Italian students shows promising. Students clearly perceived their knowledge related to the content provided increased. This perception is supported by the results of the multiple-choice questionnaire: almost 90% of the students who answered scored higher than 80%. The impact on self-efficacy beliefs increased only as concern the corporate social responsibility topic. This could be due to the fact that it involved students felt very involved in it as reported in the open questions.

In general students provided positive comments on the structure and the quality of the course. They are also aware that the pandemic situation negatively impacted the course delivery, with some students in class and other following by home: discussion was more complex as well as work group. The fluidity of the lesson itself was also impacted sometimes by technical issues and others by needs of students that should be addressed at home or in class. A higher participation in the last sessions of the curriculum is one of the aspects that we should pay more attention especially if this pandemic situation should continue. The need to make more evident the link across the topics also emerged as future need.

#### References

- Balliester, T., & Elsheikhi, A. (2018). *The future of work: a literature review*. ILO Research Department Working Paper, 29.
- La, H., Dyjur, P., & Bair, H. (2018). *Universal design for learning in higher education*. Taylor Institute for Teaching and Learning. Calgary: University of Calgary.
- Lent, R. W. (2018). Future of work in the digital world: Preparing for instability and opportunity. *The Career Development Quarterly*, 66(3), 205-219.
- Neault, R. A. (2000). Career management: The role of career counsellors in building strategic partnerships between individuals and their employers. *Canadian Journal of Counselling and Psychotherapy*, 34(3).

## DOES VACCINE SCARCITY INFLUENCE THE EFFECT OF CONSPIRACY BELIEFS ON INTENTION TO VACCINATE AGAINST COVID-19?

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### Abstract

Vaccination against Covid-19, a major public health issue, comes up against many fears that fuel strong vaccine hesitancy, when it is not rejected. The main explanation that is used to explain it is the adherence to conspiracy theories (ACT) (Keeley, 1999). However, the literature provides contradictory results about the ACT effects on compliance with health recommendations (e.g., Allington et al., 2020; D iaz and Cova, 2020; Imhoff & Lamberty, 2020). Furthermore, psychological reactance (PR) (Brehm, 1966) moderates the relationship between ACT and vaccine intentions (Bordarie & Plichon, 2021). In other words, the more individuals adhere to conspiracy theories, the less they have the intention to get vaccinated; and this effect is even stronger when they also are reactant, i.e., they feel their freedom of choice threatened. This study tries to supply a more global model by integrating the perceived scarcity of vaccines as a moderator of the relationship between PR and/or ACT and vaccine intentions.

The sample consisted of 715 participants (59.6% female and 40.4% male) with a mean age of 45.17 years (SD = 18.7). The questionnaire included 3 standardised scales, measuring respectively PR (14 items), ACT (5 items), perceived scarcity (4 items) and 2 items measuring vaccine intention.

The results confirmed the tools internal consistency. Linear regression analyses confirmed the role of both PR and ACT on vaccine intention. The scarcity does not influence the relationship between PR and intentions, neither the one between ACT and intentions. However, scarcity moderates the link between PR and ACT ( $p=.02$ ) confirming the highly complex relationship that individuals can have with conspiracy beliefs.

The intention to get vaccinated against Covid-19 is under influence of both PR and ACT and we also know that PR moderates the relationship between ACT and intention. The moderating effect of scarcity between PR and ACT testify that the ACT depends on other external variables and could be the consequence of the context, more than a disposition to ACT. Thus, in general we can say that the more reactant people are, the more they adhere to conspiracy theories; but this positive effect is less important when people perceived a higher vaccine scarcity. These results open perspectives for vaccinal strategies and information or awareness campaigns in order to convince the most hesitant participants.

**Keywords:** Covid-19, psychological reactance, conspiracy theories adherence, vaccine hesitancy, vaccine scarcity.

### 1. Introduction

While the vaccination campaign had just begun, at the end of December 2020, France was the country in the world with the most vaccine resistant. Only 40% of French people were ready to be vaccinated (Ipsos, 2020). From the fear of side effects to the antivax posture, the explanations of the rejection of vaccination have been studied by many researchers. One of the main explanations that is used to explain it is the adherence to conspiracy theories (ACT) (Keeley, 1999). Conspiracy theories are an explanation of a historical event (or events) based on the significant causal role of a relatively small group of individuals - the conspirators - acting in secret' (Keeley, 1999). They are more generally defined as 'an effort to explain an event or practice by referring to the machinations of powerful people, who attempt to conceal their role' (Sunstein & Vermeule, 2009, p. 205). The difficulty in explaining certain events leads to the credibility of conspiracy theories in the sense, we might say, that thought abhors a vacuum. Faced with the uncertainty and incomprehension generated by the crisis and/or certain decisions, conspiracy theories allow us to fill in the blanks and the gaps, especially in terms of evidence regarding its origin (Craft et al., 2017; Sunstein, 2014). By providing a causal explanation for the origins and making sense of the decisions and choices made in the face of the crisis, these theories also make it possible to identify



those responsible (Van Prooijen, 2017) and to fulfil several functions, such as regaining a form of control through explanation in the face of the feeling of powerlessness generated by uncertainty and incomprehension, or contesting a dominant political discourse (Valsecchi, 2021). The question of challenging the dominant discourse is found in the effects of adherence to conspiracy theories (ACT), which we see generally leads to less compliance with health recommendations. This is the case in general in health behaviours with a questioning of vaccination in general (Quinn et al., 2017) or of vaccination intentions (Jolley & Douglas, 2014). The Covid-19 crisis also confirms this trend (e.g., Allington et al., 2020), or sometimes leads to a simple lack of correlation between adherence to conspiracy theories and adherence to preventive measures (e.g., Díaz & Cova, 2020). However, some studies sometimes seem to contradict these results and results reveal a better compliance with government decisions (Imhoff & Lamberty, 2020), leading us to question the reasons for such variations.

Some authors then look for explanations in the very dispositions of individuals, notably through the study of certain temperamental traits, such as Bordarie and Plichon (2021, 2022) who study the role of psychological reactance (PR) (Brehm, 1966) in vaccination intentions against Covid-19. PR is then described as the tendency of individuals to react when they feel their freedom of choice threatened by a situation or a person. While PR is usually associated with a transient, situation-related state, Hong and Page (1989) have successfully demonstrated that it can also be a temperamental trait. Like ACT, PR-trait has negative consequences when looking at health behaviours (Miller & Quick, 2010), adherence to prescribed or recommended treatments (Fogarty & Youngs, 2000), particularly in the context of the Covid-19 health crisis, and adherence to health recommendations (Jordan et al, 2020) or with regard to vaccination both in terms of attitudes (Hornsey et al., 2018). This resistant reaction to the perceived pressure constitutes an unpleasant motivational arousal, generating negative cognitions and emotions, which pushes individuals to regain their freedom, the degree of which depends both on the importance of the threatened freedom and the perceived magnitude of the threat (Steindl et al., 2015).

While this research on ACT and PR is certainly interesting and explains the vaccine hesitancy at the beginning of 2021, it forgets to introduce a contextual element which, to our knowledge, has never been studied: the shortage of vaccines. Indeed, at the end of January 2021, at the European level, France was hit by a vaccine shortage, with an average of 1.89 doses injected per 100 inhabitants, compared to 3.82 for Denmark or 2.90 for Spain. The headlines were alarmist and questioned the government's strategic choices. Should a single injection be offered to the greatest number of people, as was proposed in Great Britain, or should we restrict vaccination to certain people who could then receive a complete vaccination schedule with two injections, thereby making it inaccessible to the majority? The vaccine would thus become a rare good and only a chosen few would be able to benefit from it. Researchers define scarcity as the presence of limited resources and competition on the demand side (i.e., not enough for two people) (Mittone et Savadori, 2009). It was repeatedly found that scarcity impacts the consumer's perception of products by enhancing desirability (Lynn, 1991) and attractiveness (Szybillo, 1975). The attraction for a good is increased by the merefact that this good is presented as scarce. It can act as a direct positive attractor on the consumers' preference structure, without necessarily being mediated by any social or cultural factor: the Scarcity Bias explained by Mittone and Savadori, 2009. In other words, scarcity is an attractor even when it is detached from any status symbol effect. The aim of our paper is to examine the attraction effect produced by perceived scarcity on our model.

## 2. Hypotheses

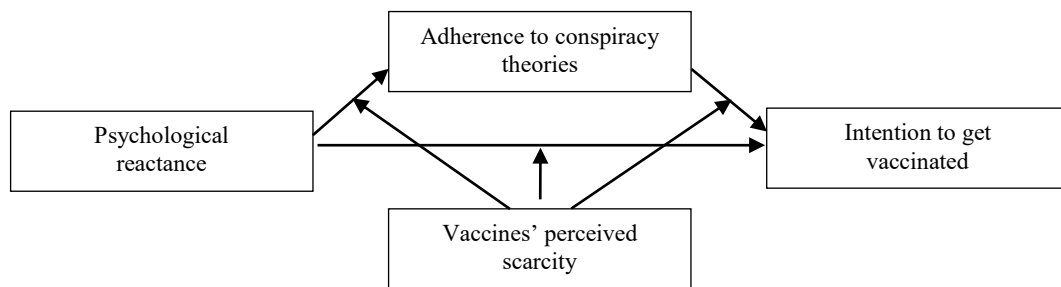
This study tries to supply a more global model by integrating the perceived scarcity of vaccines as a moderator of the relationship between psychological reactance and vaccine intentions. Previous results stated:

1. PR influences negatively the intention to get vaccinated against Covid-19.
2. ACT influences negatively the intention to get vaccinated against Covid-19.
3. ACT mediates totally the relationship between PR and the intention to get vaccinated.

However, the perceived scarcity of vaccines should moderate negatively the influence of both PR and ACT on vaccine intentions. In other words, the hypotheses are the following:

1. A higher psychological reactance should generate a lower intention to get vaccinated; but this influence should be reduced for the ones who perceived a high vaccines scarcity.
2. A higher adherence to conspiracy theories should generate a lower intention to get vaccinated; but this influence should be reduced for the ones who perceived a high vaccines scarcity.
3. A higher psychological reactance should generate a higher adherence to conspiracy theories; but this influence should be reduced for the ones who perceived a high vaccines scarcity.

Figure 1. Tested model.



### 3. Method

#### 3.1. Sample and measures

The sample consisted of 714 participants, divided into 59.7% women and 40.3% men. The mean age was 45.16 (SD=18.75), ranging from 18 to 88 years. The only two criteria for inclusion were those of being French and being at least 18 years old. The questionnaire was posted on Facebook and made available via publication on the walls of users with a Facebook account, between 13th February 2021 and 14th April 2021. Three publicity campaigns were conducted.

The questionnaire consisted of 25 items with the aim of testing the model (Figure 1). It included three standardised scales, measuring respectively PR (Hong & Faedda, 1996; 14 items) ( $\alpha=.87$ ), ACT (Bruder et al., 2013; 5 items) ( $\alpha=.94$ ), perceived scarcity (adapted from Park et al., 2017; 4 items) ( $\alpha=.79$ ) and 2 items measuring vaccine intentions:

- I personally intend to get vaccinated against COVID-19
- I will get vaccinated against COVID-19 as soon as the government allows me to

#### 3.2. Statistical analysis

The analyses were performed using SPSS version 28. The results confirmed the tools internal consistency. The means and Pearson correlation coefficients were calculated. Linear regressions were used to measure the predictive dimension of the independent variables (PR on the one hand and ACT on the other) on the dependent variable (intention to be vaccinated against COVID-19). Complementary analyses were conducted to measure the moderating effect of vaccines' perceived scarcity on the relationships between PR and ACT on the one hand and between ACT and the intention to be vaccinated against COVID-19 on the other hand.

### 4. Results

Intention to get vaccinated against COVID-19 is significantly and negatively correlated to PR and ACT ( $p < .001$ ) and positively correlated to vaccines' perceived scarcity ( $p < .001$ ). The three latter variables are positively correlated the one with the other ( $p < .001$ ). The intention to get vaccinated is influenced by both PR ( $\beta = -.169$ ;  $p < .001$ ) and ACT ( $\beta = -.388$ ;  $p < .001$ ) (Bordarie, 2021, 2022). Here, perceived scarcity of vaccines does not influence the relationship between PR and intentions, neither the one between ACT and intentions. However, perceived scarcity moderates the relationship between PR and ACT ( $p = .02$ ). Indeed, we can see that perceived scarcity moderated the relationship between PR and ACT. This effect was assessed using the interaction term devised by multiplying the PR predictor variable with the perceived scarcity score. Results obtained with the PROCESS macro for SPSS (Hayes, 2018) are reported in Table 1. The interaction term PR  $\times$  perceived scarcity was significantly related to the degree of adherence to conspiracy theories, indicating that perceived scarcity moderated the effect of PR on ACT. More precisely, the positive association between PR and ACT was stronger for individuals who reported low levels of perceived scarcity ( $b = 1.80$ ,  $p < .001$ ), compared to those who reported high levels of perceived scarcity ( $b = 1.37$ ,  $p < .001$ ).

Table 1. Summary data for the mediation model with vaccines' perceived scarcity as moderator between PR and ACT.

| Models  | Output  |
|---|---------|
| <b>Model 1: PR → ACT</b>                                |         |
| Psychological reactance                                 | 2.29*** |
| Vaccines' perceived scarcity                            | .61**   |
| Psychological reactance × Vaccines' perceived scarcity  | -.15*   |
| Effect for low vaccines' perceived scarcity (3.31)      | 1.80*** |
| Effect for moderate vaccines' perceived scarcity (4.77) | 1.59*** |
| Effect for high vaccines' perceived scarcity (6.23)     | 1.37*** |

Note: Unstandardized coefficients are reported.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

Effects are evaluated for different levels of vaccines' perceived scarcity that correspond to the mean  $\pm 1$  SD.

## 5. Discussion

The literature already attested that vaccine intentions were influenced by both the adherence to conspiracy theories (Jolley & Douglas, 2014) and the psychological reactance (Hornsey et al., 2018). The case of COVID-19 is no exception and it has been demonstrated that both ACT and PR played a role in vaccine intentions (Bordarie & Plichon, 2021, 2022). In this study, results showed that perceived scarcity also influenced vaccine intention, but it did not moderate the influence of neither of both variables on intention; except by considering the indirect effect of perceived scarcity on the relationship between PR and intention through ACT, which is not exploited here. We thus only confirm our third hypothesis. However, perceived scarcity moderated negatively the influence of PR on ACT; that is to say that the more reactant people generally have higher scores on ACT but this influence of PR is reduced when people perceive a high vaccines scarcity. This result confirms the highly complex relationship that individuals can have with conspiracy beliefs. Indeed, our results testify that the ACT depends on other variables that can be internal or external. On the one hand, the influence of a temperament trait like psychological reactance showed the role of internal and dispositional variables. On the other hand, the perceived scarcity testified that degrees of ACT can also be the consequence of the context. Thus, in general we can say that the more reactant people are, the more they adhere to conspiracy theories; but this positive effect is less important when people perceived a higher vaccine scarcity.

These results open perspectives for vaccinal strategies and information or awareness campaigns in order to convince the most hesitant participants. Indeed, this study seems to provide an interesting perspective on how communication about the absence of vaccines may have ultimately been an opportunity in that it may have limited the effect of reactance on adherence to conspiracy theories and their joint effect on intention to vaccinate against COVID-19. This study raises questions about the most relevant information and communication strategies when it comes to a major public health issue such as vaccination in the context of the current health crisis. However, this is not without raising serious ethical questions. Indeed, our results show the positive effects of communication messages highlighting the lack of vaccines to limit the effects of reactance and adherence to conspiracy theories on vaccination intentions. And spontaneously, this could be seen as a good strategy in that it could enable States to meet their vaccination targets. Indeed, some companies have understood the value of communicating through perceived scarcity as a marketing strategy, and it is one of the most widely used strategies (Wu and Lee, 2016). By targeting emotions to influence decision-making and guide behaviours, scarcity strategies, found in particular in Hunger Marketing, lead individuals to make emotional rather than rational determinations in situations of potential scarcity; generating intentions or decision-making that are primarily driven by emotions (Skarmeas et al., 2019; Szablewska & Kubacki, 2019).

## References

- Allington, D., Duffy, B., Wessely, S., Dhavan, N., & Rubin, J. (2021). Health-protective behaviour, social media usage and conspiracy belief during the COVID-19 public health emergency. *Psychological medicine*, 51(10), 1763-1769.
- Bordarie, J. & Plichon, V. (2022, March). Mieux comprendre l'effet de l'adhésion aux théories conspirationnistes sur l'intention vaccinale : le rôle modérateur de la réactance psychologique. Oral communication at "La société à l'ère du Covid-19", International conference, 10-11 March 2022, Tours, FRANCE.
- Bordarie, J. & Plichon, V. (2021, May). L'intention de se faire vacciner sous l'effet de la réactance psychologique et de l'adhésion aux théories complotistes. Oral communication at the COVID-19 workshop, 12 May 2021, Tours, FRANCE.

- Bruder, M., Haffke, P., Neave, N., Nouripanah, N., & Imhoff, R. (2013). Measuring individual differences in generic beliefs in conspiracy theories across cultures: Conspiracy Mentality Questionnaire. *Frontiers in psychology*, 4, 225.
- Craft, S., Ashley, S., & Maksl, A. (2017). News media literacy and conspiracy theory endorsement. *Communication and the Public*, 2(4), 388-401.
- Díaz, R., & Cova, F. (2021). Reactance, morality, and disgust: The relationship between affective dispositions and compliance with official health recommendations during the COVID-19 pandemic. *Cognition and Emotion*, 1-17.
- Fogarty, J. S., & Youngs Jr, G. A. (2000). Psychological Reactance as a Factor in Patient Noncompliance with Medication Taking: A Field Experiment 1. *Journal of Applied Social Psychology*, 30(11), 2365-2391.
- Gray, M. (2010). Revisiting Saddam Hussein's political language: The sources and roles of conspiracy theories. *Arab Studies Quarterly*, 32, 28-46.
- Hayes, A. F. (2018). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (2nd Ed.). New York, NY: Guilford Press.
- Hong, S. M., & Faedda, S. (1996). Refinement of the Hong psychological reactance scale. *Educational and psychological measurement*, 56(1), 173-182.
- Hong, S. M., & Page, S. (1989). A psychological reactance scale: Development, factor structure and reliability. *Psychological Reports*, 64(3 suppl), 1323-1326.
- Hornsey, M. J., Harris, E. A., & Fielding, K. S. (2018). The psychological roots of anti-vaccination attitudes: A 24-nation investigation. *Health psychology*, 37(4), 307.
- Imhoff, R., & Lamberty, P. (2020). A bioweapon or a hoax? The link between distinct conspiracy beliefs about the Coronavirus disease (COVID-19) outbreak and pandemic behavior. *Social Psychological and Personality Science*, 11(8), 1110-1118.
- Ipsos (2020). *Covid-19 et vaccination: Suivi de l'opinion*. <https://www.ipsos.com/fr-fr/covid-19-et-vaccination-suivi-de-l-opinion>
- Jolley, D., & Douglas, K. M. (2014). The effects of anti-vaccine conspiracy theories on vaccination intentions. *PloS one*, 9(2), e89177.
- Jordan, R. E., Adab, P., & Cheng, K. (2020). Covid-19: risk factors for severe disease and death. *Bmj*, 368.
- Keeley, B. L. (1999). Of conspiracy theories. *The journal of Philosophy*, 96(3), 109-126.
- Lynn, M. (1991). Scarcity effects on value: A quantitative review of the commodity theory literature. *Psychology & Marketing*, 8, 43-57
- Miller, C. H., & Quick, B. L. (2010). Sensation seeking and psychological reactance as health risk predictors for an emerging adult population. *Health communication*, 25(3), 266-275.
- Mittone, L., L. Savador. (2009). The Scarcity Bias, *Applied Psychology*, 58, 3, 453-468
- Park, K., Ha, J., & Park, J. Y. (2017). An experimental investigation on the determinants of online hotel booking intention. *Journal of Hospitality Marketing & Management*, 26(6), 627-643.
- Quinn, S. C., Hilyard, K. M., Jamison, A. M., An, J., Hancock, G. R., Musa, D., & Freimuth, V. S. (2017). The influence of social norms on flu vaccination among African American and White adults. *Health education research*, 32(6), 473-486.
- Sapountzis, A., & Condor, S. (2013). Conspiracy accounts as intergroup theories: Challenging dominant understandings of social power and political legitimacy. *Political Psychology*, 34(5), 731-752.
- Skarmeas, D., Zeriti, A., & Argouslidis, P. (2019). Importer and exporter capabilities, governance mechanisms, and environmental factors determining customer-perceived relationship value. *Industrial Marketing Management*, 78, 158-168.
- Steindl, C., Jonas, E., Sittenthaler, S., Traut-Mattausch, E., & Greenberg, J. (2015). Understanding psychological reactance. *Zeitschrift für Psychologie*.
- Sunstein, C. R., & Vermeule, A. (2009). Conspiracy theories: Causes and cures. *Journal of Political Philosophy*, 17, 202-227. doi:10.1111/j.1467-9760.2008.00325.x
- Sunstein, C. R. (2014). *Conspiracy theories and other dangerous ideas*. Simon and Schuster.
- Szablewska, N., & Kubacki, K. (2019). A human rights-based approach to the social good in social marketing. *Journal of Business Ethics*, 155(3), 871-888.
- Szybillo, G.J. (1975). A situational influence on the relationship of a consumer attribute to new-product attractiveness. *Journal of Applied Psychology*, 60, 652- 655
- Valsecchi, G. (2021, 10 février). Dénigrer les complotistes renforce l'adhésion qu'ils ont à leurs théories. *Le temps*. <https://www.letemps.ch/evenements/giulia-valsecchi-denigrer-complotistes-renforce-ladhesion-quils-ont-leurs-theories>
- Van Prooijen, J. W. (2017). Why education predicts decreased belief in conspiracy theories. *Applied cognitive psychology*, 31(1), 50-58.
- Wu, L., Lee, C., 2016. Limited edition for me and best seller for you: the impact of scarcity versus popularity cues on self-versus other-purchase behavior. *J. Retailing*. 92, 486-499. doi:10.1016/j.jretai.2016.08.001.

## SOURCES OF TRANSITION-TO-WORK SELF-EFFICACY: CAREER EXPLORATION AND SOCIAL SUPPORT

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### Abstract

Success in the transition from higher education to work is influenced by an array of factors associated with the individual, his/her context, as well as their interaction. The Social Cognitive Transition-to-Work (SCTW) Model conceptually organizes the complexity of this transition and provides directions for research in this area. Previous longitudinal studies based on SCTW Model have shown that transition-to-work self-efficacy predicts several career success indicators. Among these, career satisfaction, salary and job satisfaction may be identified. Bandura's Social Cognitive Theory identifies self-efficacy sources. When the transition-to-work process is considered, career exploration and social support are identified as potential self-efficacy sources. The present study aims to assess if career exploration and social support are associated with transition-to-work self-efficacy. Three-hundred and thirty-seven final year undergraduate students from a Public Higher Education in Northern Portugal participated in the study (67% female; median age = 23; standard deviation =  $\pm 7$ ). Career Exploration was measured with a 7-items Likert-type scale. Social Support was measured with a 22-items Likert-type scale distributed in three dimensions: family, teachers and peers. Transition-to-Work Self-efficacy was measured with a 28-items Likert-type scale that includes three dimensions: job-search behaviours, job-search emotional regulation and adaptation-to-work. All measures presented adequate reliability values. As expected, results showed moderate to large positive associations among career exploration, social support and transition-to-work self-efficacy. The regression analysis model explained 32% of the variance. The strongest transition-to-work self-efficacy predictors were family social support and career exploration. These results highlight key transition-to-work contextual factors that have implications for both intervention and research in the career domain. Higher education institutions may plan and implement psycho-educational interventions to develop transition-to-work self-efficacy among higher education students. Namely, considering that career exploration may act as a self-efficacy source, creating ways to improve career exploration probably will enhance students' transition-to-work self-efficacy. In terms of research, results gave support to the Social Cognitive Transition-to-Work (SCTW) Model as a useful conceptual tool to further guide future research.

**Keywords:** *Self-efficacy, transition-to-work, job search, career exploration, social support.*

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### 1. Introduction

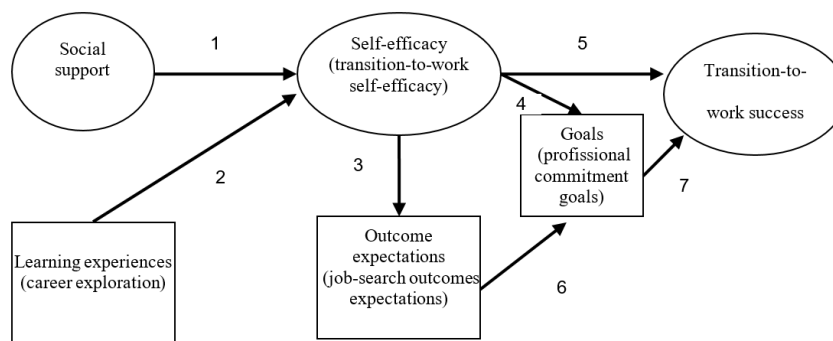
The challenges that young people face to succeed in professional life have never been so demanding. In the dialectic processes between what a young person can do to succeed in transitioning from education to work, and the contextual structure of work opportunities, self-efficacy has been identified as a useful construct associated with personal agency, that is, with the individual's ability to influence his environment and his own future (Bandura, 1997). Bandura defines self-efficacy as beliefs about personal abilities to successfully perform a certain behavior, proposing that these influence the way people think, feel, motivate themselves and behave (Bandura, 1986, 1991). Therefore, self-efficacy encompasses personal beliefs about the abilities to mobilize the motivation, cognitive resources and courses of action necessary to exert control over events throughout life (Wood & Bandura, 1989). Thus, personal efficacy is a dynamic aspect of the "self" that interacts in a complex way with the context, as well as with other motivational and self-regulatory mechanisms.

Success in the transition from higher education to work is influenced by an array of factors associated with the individual, his/her context, as well as their interaction. The Social Cognitive Transition-to-Work Model (SCTW; Vieira, 2012) conceptually organizes the complexity of this transition and provides directions for research and intervention in this area. Based on Social Cognitive Theory

(Bandura, 1986) and, more specifically, on the Social Cognitive Career Theory (SCCT; Lent, Brown & Hackett, 1994), the Transition-to-Work Model (Vieira, 2012) presents as an original contribution in the realm of transition to work (Figure 1).

The SCTW advocates that the process of psychological experience of the transition to work is influenced by a set of individual and contextual factors that interact and exert their influence on the dynamics of this transition. The arrows in Figure 1 are identified by the numbers 1 to 8, corresponding to the hypotheses about the relationships between their constituent elements. The importance of social support during life transitions in general (Chickering & Schlossberg, 1995) as well as in transition-to-work has been documented (Blustein et al., 1997; Flum, 2001). Social support consists of the process of interaction in relationships which improve coping, esteem, belonging, and competence through actual or perceived exchanges of physical or psychosocial resources (Gottlieb, 2000). In SCTW model the influence of contextual factors depends on the personal perception of the context, that is, “the context offers, provides and/or provides something to the organism, as long as it is able to perceive it as such” (Vondracek, Lerner & Schulenberg, 1986, p.38). Career exploration encompasses a set of activities that promotes greater knowledge about the self and the work and/or training environment (Blustein et al., 1997), representing, in the SCTW, the relevant vocational learning for the transition-to-work. SCTW arrows 1 and 2 represent the hypotheses that both social support and career exploration function as sources of self-efficacy.

Figure 1. Social Cognitive Transition-to-Work Model (SCTW; Adapt. from Vieira, 2008).



Self-efficacy contributes to the expectations of results in the job search (arrow 3) as well as to the career goals (arrow 4) and the goals people sets for themselves, as well as the progress in his pursuit, also influenced by outcome expectations (arrow 6). The Social Cognitive Career Theory and, more precisely, the Performance Model proposed by Lent, Brown and Hackett (1994) advocates a positive relationship between self-efficacy beliefs and academic/professional performance. That is, positive self-efficacy beliefs promote performance quality. Therefore, arrow 5 represents that self-efficacy in transition-to-work plays a leading role in the success of this transition. It should be noted that, in the SCTW, performance is broadly addressed as success in the transition to work. In this way, to evaluate this success, several indicators can be used, such as, for example, the employment situation (employed vs. unemployed), salary, job satisfaction, among others. Finally, taking into account the recommended relationships between goals and performance (Bandura, 1986, 1989; Locke & Latham, 2002; Schunk, 1989; Wood & Bandura, 1989), the SCTW proposes that goals in the transition to work have an effect direct and positive effect on the success of this transition (arrow 7). In conclusion, the SCTW serves as a comprehensive conceptual basis and guide for research on the process of transition from training to work, from a Social Cognitive perspective. Since the concepts and respective vectors represent eight hypotheses, SCTW studies that are total (if all concepts and relationships are considered) or partial (if only some of their parts are considered) can be carried out

## 2. Objectives

Bandura's Social Cognitive Theory (1986; 1997) identifies verbal persuasion as one of the sources of self-efficacy and, in the MSTT this source is framed in social support (arrow 1). Additionally, as career exploration activities provide learning experiences - either direct or by observation - they may be considered as sources of self-efficacy (arrow 2) insofar as they may allow the development of mastery

in certain activities, as well as access to models whose experiences of success may have an impact on the individual's self-efficacy. Therefore, the present study aims to assess if career exploration and social support are associated with transition-to-work self-efficacy.

### 3. Methods

#### 3.1. Participants

Three-hundred and thirty-seven final year undergraduate students from a Public Higher Education in Northern Portugal participated in the study (67% female; median age = 23; standard deviation =  $\pm 7$ ).

#### 3.2. Instruments

*Social Support.* Social support was accessed by Portuguese version of SSA (Social Support Appraisals) from Vaux et al. (1986). This instrument was designed to measure the degree to which a person feels cared for, respected and involved. The Portuguese version, adapted by Antunes and Fontaine (1994/5; 2000; 2005), is composed by 22 items distributed in three subscales, assessing perceived social support from family, peers and teachers.

*Career exploration.* Career exploration was accessed by 7 items that measure the degree to which a person has career specific knowledge about the self and the context.

*Transition-to-Work Self-Efficacy.* To assess self-efficacy, we used the Transition-to-Work Self-Efficacy Scale (TWSE; Vieira & Coimbra, 2005) that consists of 28 items addressing common tasks that are necessary to find work after finishing university, and to adjust to the work role such as “searching for jobs in the newspaper”, and, “being responsible for the accomplishment of job-tasks”. The following instructions are given to subjects: “Below there is a list of different activities. Rate the extent to which you feel confident in your ability to do each of them, circling the correspondent number in the column CONFIDENCE”. Items are scored on a six-point Likert-type scale ranging from “no confidence at all” (1) to “complete confidence” (6). Results from exploratory factor analysis showed that this scale is subdivided in three sub-scales: Adaptation to Work Self-Efficacy (12 items explaining 41 % of the variance, alpha .94), Emotional Regulation Self-Efficacy (9 items that accounted for 9 % of the variance, alpha .94), and, Job-Search Self-Efficacy (7 items that accounted for 6 % of the variance, alpha .84). Subscales are scored by adding item responses and dividing the total by the number of items in each sub-scale. For each TWSE sub-scales, self-efficacy indexes ranged from 1 to 6, with higher scores indicating stronger confidence in one’s transition-to-work capabilities. Several studies have shown adequate psychometric characteristics of this instrument, both in terms of its construct validity (Vieira, 2012) and its factor structure (Vieira, Maia & Coimbra, 2007). In the present study the total scale’s coefficient alpha was .95.

### 4. Results

Results showed moderate to large positive associations among career exploration, social support and transition-to-work self-efficacy. The regression analysis model explained 32% of the variance. The strongest transition-to-work self-efficacy predictors were family social support and career exploration.

### 5. Conclusions

The present study highlights key transition-to-work contextual factors that have implications for both intervention and research in the career domain. Educational institutions may plan and implement psycho-educational interventions to develop transition-to-work self-efficacy among higher education students. Namely, considering that career exploration may act as a self-efficacy source, creating ways to improve career exploration probably will enhance students’ transition-to-work self-efficacy. In terms of research, results gave support to the Social Cognitive Transition-to-Work (SCTW) Model as a useful conceptual tool to further guide future research and practice.

## References

- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Prentice Hall.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44 (9), 1175-1184.
- Bandura, A. (1991). The changing icons in personality psychology. In J. H. Cantor (Ed.), *Psychology at Iowa: Centennial essays* (pp. 117-139). Erlbaum.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. Freeman.
- Blustein, D. L., Phillips, S. D., Jobin-Davis, K., Finkelberg, S. L., & Roarke, A. E. (1997). A theory-building investigation of the school to work transition. *The Counseling Psychologist*, 25, 364-402.
- Chickering, A. W., & Schlossberg, N. K. (1995). *How to get the most out of college*. Allyn and Bacon.
- Flum, H. (2001). Relational dimensions in career development. *Journal of Vocational Behavior*, 59, 1-16.
- Gottlieb, B.H. (2000). Selecting and planning support interventions. In S. Cohen, L.G. Underwood, & B.H. Gottlieb (Eds.), *Social support measurement and intervention: A guide for health and social scientists* (pp. 195-220). Oxford University Press.
- Lent, R.W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of Vocational Behavior*, 45, 79-122.
- Wood, R. & Bandura, A. (1989). Social cognitive theory of organizational management. *Academy of Management Review*, 14, 361-384.
- Vaux, A., Phillips, J. Holly, L. Thompson, B., Williams, D., & Steward, D. (1986). The social support appraisals (SSA) scale: Studies of reliability and validity. *American Journal of Community Psychology*, 14, 195-220.
- Vieira, D.A. (2012). *Transição do ensino superior para o trabalho: O poder da autoeficácia e dos objetivos profissionais*. Politema/Vida Económica.
- Vieira, D., & Coimbra, J. L. (2005). *University-to-work transition: The development of a self-efficacy scale*. Paper presented at the International Congress of International Association for Vocational and Educational Guidance (IAVEG), Careers in context: New challenges and tasks for guidance and counselling (p.106). University of Lisbon.
- Vieira, D., Maia, J. e Coimbra, J. L. (2007). Do ensino superior para o trabalho: Análise fatorial confirmatória da escala de Autoeficácia na Transição para o Trabalho (AETT). *Avaliação Psicológica*, 6 (1), 3-12.
- Vondracek, F. W., Lerner, R. M. & Schulenberg, J. E. (1986). *Career Development: A life-span, development approach*. Hillsdale, NJ: Erlbaum.



# UNDERSTANDING THE COMPLEX RELATIONSHIP BETWEEN ORGANIZATIONAL PSYCHOLOGICAL OWNERSHIP AND ORGANISATIONAL CITIZENSHIP BEHAVIOURS DURING COVID19 CRISIS

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## Abstract

The Covid-19 crisis has forced many employees to telework (TLW). TLW can eventually generate a feeling of professional isolation (PI) for some workers and the higher the TLW, the higher the feeling of PI (Golden, 2008). PI is known to have negative impacts on organisational and teleworker outcomes such as job satisfaction (e.g., Bentley et al., 2016) or the adoption of organisational citizenship behaviours (OCBs) (Mulki and Jaramillo, 2011). OCBs are largely influenced by the organisational psychological ownership (OPO) (Zhang et al., 2021) which also influences organisational identification (ORI) (Van Dyne & Pierce, 2004). Yet, the relationship between ORI and OPO seems to be quite complex, considering for instance that OPO predicts the intention to leave the organisation while ORI does not (Knapp et al., 2014). Thus, this relationship deserves special attention for its implication in the OPO/OCBs relationship. Furthermore, the binding dimension of TLW is likely to have had complex consequences and may imply a feeling of PI, the moderating role of which in the OPO/OCBs relationship could be interesting to study.

The study population consisted of 185 participants, divided into 77.3% women and 22.7% men. The questionnaire included a measure of OPO (4 items), ORI (5), OCBs (6) and PI (7).

Results showed that ORI is a mediator of the OPO and OCBs relationship ( $\beta=.1136$ ;  $p=.0199$ ; LLCI\* $=.0182$  and ULCI\*\* $=.2089$ ) and ORI explains 11.3% of the variance. The analysis reveals a full mediation since OPO does not predict OCBs anymore when ORI is integrated ( $p < .084$ ). They also showed that PI moderates the relationship between OPO and OCBs ( $\beta=.0911$ ;  $p=.0314$ ; LLCI\* $=.0082$  and ULCI\*\* $=.1739$ ) and that explains 2.1% of the variance.

First of all, this study reveals the relationship between OPO and OCBs is quite complex since it is both mediated by ORI and also moderated by PI. The results may seem contradictory as they show that a high level of OPO combined with a high level of PI leads to a high level of OCBs; while we could have imagined the opposite with high levels of PI. The discussion will focus on two eventual explanations: seeking more relational closeness through OCBs and compensating the fear of being perceived as not working enough (Taskin & Edwards, 2007).

**Keywords:** *Organisational psychological ownership, organisational citizenship behaviours, organisational identification, professional isolation, telework.*

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## 1. Introduction

The Covid-19 crisis has forced many employees to telework (TLW). TLW may eventually generate a feeling of professional isolation (PI) for some workers and the higher the TLW, the higher the feeling of PI (Golden, 2008). The constraining dimension of TLW, during lockdown for example, may have increased the feeling of PI for workers who have never experienced TLW before. This PI is known to have negative impacts on organisational and teleworker outcomes such as job satisfaction (e.g., Bentley et al., 2016) or the adoption of organisational citizenship behaviours (OCBs) (Mulki and Jaramillo, 2011). OCBs can be defined as behaviours at work, which are not part of the prescribed role or tasks of the job held, i.e., the specific terms of the contract between an employee and his or her organization. They rather are the result of personal choices to get involve further than the job attempts, so that their omission does not imply a sanction. In other words, these behaviours concern to selfless voluntary behaviours and they typically include acts of mutual aid in situations of learning and change. They then constitute a source of "contextual performance", i.e., "individual efforts that are not related to the tasks of the job held" (Borman and Motowidlo 1993).

If OCBs are negatively influenced by PI, they are, on the contrary, positively influenced by the organisational psychological ownership (OPO) (Zhang et al., 2021). Psychological ownership is a feeling of possessiveness towards a target object (Pierce et al., 2001; Vandewalle, Van Dyne & Kostova, 1995). In our case OPO focuses on the feeling of possessiveness of the very organisation in which the employee works, leading him or her to speak of it in terms such as 'my organisation' (Vandewalle et al., 1995). In general, this feeling generates positive effects both for the organisation, e.g., reduced turnover intentions (Armstrong-Stassen & Schlosser, 2011), and OCBs (O'Driscoll, Pierce & Coghlan, 2006; Van Dyne & Pierce, 2004) and employees, e.g., in terms of attitudes, commitment, job satisfaction and organisational identification (ORI) (Van Dyne & Pierce, 2004).

By identifying strongly with their organisation, employees perceive a similarity between their own identity and the organisational identity. In this sense, it is quite clear that the OPO plays a role in the way employees construct a psychosocial image and a specific identity associated with the organisation because it reinforces self-esteem (Abrams & Hogg, 1988) and promotes a certain understanding of who they are (Hogg, 2001; Tajfel & Turner, 1985). Like OPO, a strong feeling of ORI leads to positive outcomes for both employees and the organisation, e.g., including job satisfaction, job involvement, in-role performance, extra-role performance such as OCBs and less intent to turnover (Riketta, 2005).

Yet, Knapp et al. (2014) distinguished the consequences of OPO and ORI since they highlighted that OPO predicts the intention to leave the organisation while ORI does not. Thus, the relationship between OPO and ORI seems to be quite complex and lead to contradiction in the literature. Both OPO and ORI contribute to a feeling of belonging to the organisation (Masterson & Stamper, 2003) insofar as individuals have invested in the organisation and consider it a personalised space. However, the manifestation of this belonging takes two different forms: in the case of OPO, belonging concerns the organisation and the employee considers, in a certain way, that he/she owns the organisation in which he/she works; in the case of ORI, belonging concerns the individual who defines himself/herself by the organisation in which he/she works. Then, it appears that OCBs are the consequence of a high feeling of OPO on the one hand, and the consequence of a high feeling of ORI on the other hand. If there is a strong connexion between OPO and ORI since the first one predicts the second (Chen, 2011; Zhang and Xu, 2019), and since both of them do not imply the same consequences (like for the intention to leave the organisation), we cannot confound them and this relationship deserves special attention.

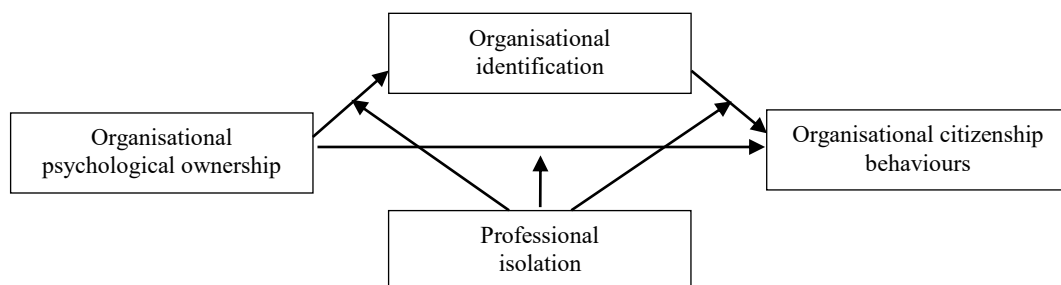
In the context of strong transformations related to the Covid-19 crisis, lockdown periods and constraint TLW, the study of these variables seems even more relevant. Indeed, the OPO, the ORI and the PI, have been put to the test by measures which, although imposed by the government, may have been the subject of more or less support for employees in their implementation by the organisations. PI has been studied and seems to have increased (Guillaud et al., 2021; Saba & Cachat-Rosset, 2020) during the crisis. Generally, PI has a negative effect on OCBs when OPO and ORI improve them. The question we are asking is what effect this contextual PI has on the relationship between both OPO and ORI with OCBs and to what extent the PI can thus negatively moderate this relationship.

## 2. Hypotheses

The literature argues for two different conceptions of the relationship between ORI and OPO; either ORI predicts OPO (Pierce, 2001; Knapp, 2014) or OPO predicts ORI (Chen, 2011; Zhang and Xu, 2019). In this study, we aimed at testing it and thus, we assume:

1. ORI should mediate the relationship between OPO and OCBs
2. Because of its contextual characteristic related to the crisis, IP should moderate the relationship between both OPO and ORI with OCBs.

Figure 1. Tested model



### 3. Method

#### 3.1. Sample and measures

The sample consisted of 185 participants, divided into 77.3% women (n=143) and 22.7% men (n=42). The mean age was 39.28 (SD=8.527), ranging from 23 to 61 years. The questionnaire consisted of 22 items with the aim of testing the model (Figure 1). It included four standardised scales, measuring respectively PI (7items), OPO (4), ORI (5) and OCBs (6). Several questions dealt with socio-demographic characteristics such as gender, age, socio-professional category, and level of education.

#### 3.2. Procedure

The questionnaire was posted online on Facebook and LinkedIn from 2021 January to 2021 June, during respectively lockdown period (from March 17<sup>th</sup> and May 11<sup>th</sup> in France) and curfew period (from 20 March 2021, the start time of the curfew is extended to 7 pm throughout France, the start time of the curfew is postponed to 9 p.m. on 19 May 2021 and then to 11 p.m. on 9 June 2021). The only two criteria for inclusion were to have a job in France, and being at least 18 years old. Three publicity campaigns were conducted. Prior to completing the questionnaire, participants were informed of the objectives of the study, the confidential and anonymous nature of their participation, and were explicitly asked to give their consent to continue the study.

#### 3.3. Statistical analysis

The analyses were performed using SPSS version 26. Means and Pearson correlation coefficients were calculated. We tested our hypothesis using SPSS PROCESS Macro (Hayes, 2013), which allows to test concomitantly mediation and moderation relationships through complex models (model 8).

### 4. Results

Considering the potential mediation effect, the results of the model showed that ORI mediated the relationship between OPO and OCBs ( $\beta=.1136$ ;  $p=.0199$ ;  $LLCI*=-.0182$  and  $ULCI**=.2089$ ). Globally, the integrated model explains 15.18% of the variance ( $p<.000$ ). We controlled the mediation effects through stepwise regression under SPSS. The analysis reveals a full mediation when ORI is integrated ( $p < .084$ ) and then OPO does not predict OCBs anymore. These results tend to indicate that OPO has no direct effect on OCBs, but it influences them through its positive relationship with ORI.

With regard to moderation effect of PI (Table 1), results indicate that PI acts as a significant moderator of OPO and OCBs relationship. However, only the conditional indirect effect is significant for the three tested values of the moderator (PI), as neither of the confidence intervals contain zero, while the direct effect was not significant (two confidence intervals included zero). However, the magnitude of this indirect effect is growing stronger as PI is increasing (PI=1,2857;  $\beta=.0950$ ;  $CI95= .0096$ ; .1883; PI=2.1429;  $\beta=.0950$ ;  $CI95=.0103$ ; .1982; PI=3.4286;  $\beta=.0950$ ;  $CI95=.0109$ ; .2222). In other words, the more isolated an individual feels, the more the PI will moderate the relationship between OPO and OCBs through ORI.

Table 1. Moderated Mediation Analysis.

| Model Summary                      | R2      | MSE   | F       | df1    | df2    | p      |
|------------------------------------|---------|-------|---------|--------|--------|--------|
|                                    | .1518   | .5952 | 8.4546  | 4      | 189    | .000   |
| Variable                           | $\beta$ | SE    | t       | p      | LLCI   | ULCI   |
| OPO                                | -.0917  | .1138 | -.8058  | .4214  | -.3161 | .1328  |
| ORI                                | .1136   | .0483 | 2.3487  | .0199  | .0182  | .2089  |
| PI                                 | -.3935  | .1685 | -.23354 | .0206  | -.7259 | -.0611 |
| OPO x PI                           | .0911   | .0420 | 2.1684  | .0314  | .0082  | .1739  |
| R2 change                          | 0.211   |       |         |        |        |        |
| Direct effect OPO => OCBs          |         |       |         |        |        |        |
| PI 1.2857                          | .0254   | .0758 | .3351   | .7379  | -.1241 | .1749  |
| PI 2.1429                          | .1034   | .0647 | 1.5998  | .1113  | -.0241 | .2310  |
| PI 3.4286                          | .2205   | .0818 | 2.6948  | .0077  | .0591  | .3820  |
| Indirect effect OPO => ORI => OCBs |         |       |         |        |        |        |
|                                    |         |       | Effect  | BootSE | LLCI   | ULCI   |
| PI 1.2857                          |         |       | .0950   | .0448  | .0096  | .1883  |
| PI 2.1429                          |         |       | .1015   | .0473  | .0103  | .1982  |
| PI 3.4286                          |         |       | .1114   | .0531  | .0109  | .2222  |
| Index of moderated mediation       |         |       |         |        |        |        |
|                                    |         |       | Index   | BootSE | LLCI   | ULCI   |
|                                    |         |       | .0077   | .0092  | -.0067 | .0300  |

Based on 5000 bootstrap samples

## 5. Discussion

The study aimed to examine the effects of organisational psychological ownership (OPO) and organisational identification (ORI) in the specific context of the Covid-19 crisis. We wanted to study the mediation role of ORI between OPO and organisational citizenship behaviours (OCBs). The results confirmed such a hypothesis. In other words, we can say that the ORI totally explains the relationship between OPO and OCBs. We can thus confirm previous results in the literature, notably those of Chen (2011) and Zhang and Xu (2019) who applied this modelling to other sectors such as tourism. We also can confirm the moderating role of the professional isolation. Indeed, PI acted as a moderator of the OPO and OCBs relationship. That is to say that the more employees felt isolated during this period of strong measures for working, the more the relationship between OPO and OCBs was positively affected.

This research revealed the complexity of the relationship between OPO and OCBs since it is both mediated by ORI and also moderated by PI. The results may seem contradictory as they show that a high level of OPO combined with a high level of PI leads to a high level of OCBs; while we could have imagined the opposite with high levels of PI. We can think that the search for greater relational closeness, linked in particular to a strong feeling of OPO and ORI, could lead individuals to wish to help their colleagues in a context made difficult by the crisis and the introduction of TLW which is otherwise constrained and which some of them may never have experienced before. In order to investigate this theory further, it would be interesting to see whether those who had never teleworked before particularly benefited from these OCBs, and felt particularly supported and helped by their colleagues. It would also be interesting to see whether those who had already experienced TLW before the crisis were more likely to develop OCBs than others. We can also ask to what extent TLW may lead some employees to fear being perceived as not working hard enough (Taskin & Edwards, 2007), which may then lead to more presenteeism, or increased work activity, including OCBs.

However, the results of this research cannot be generalised in the sense that they are based on a sample which, although correct, is still relatively small. The context of the study, which covers a period of confinement and a period of non-confinement but restriction, may also have played a role. Furthermore, this study did not measure the effects of occupational seclusion before and after these measures. This data is essential and a longitudinal study would have measured the direct effects of the restraint TLW on the OCBs and their evolution according to the context and the past experience of the TLW.

## References

- Abrams, D., & Hogg, M. A. (1988). Comments on the motivational status of self-esteem in social identity and intergroup discrimination. *European journal of social psychology*, 18(4), 317-334.
- Armstrong-Stassen, M., & Schlosser, F. (2011). Perceived organizational membership and the retention of older workers. *Journal of Organizational Behavior*, 32(2), 319-344.
- Bentley, T. A., Teo, S. T., McLeod, L., Tan, F., Bosua, R., & Gloet, M. (2016). The role of organisational support in teleworker wellbeing: A socio-technical systems approach. *Applied ergonomics*, 52, 207-215.
- Borman, W. C., & Motowidlo, S. M. (1993). Expanding the criterion domain to include elements of contextual performance.
- Golden, T. D., Veiga, J. F., & Dino, R. N. (2008). The impact of professional isolation on teleworker job performance and turnover intentions: does time spent teleworking, interacting face-to-face, or having access to communication-enhancing technology matter?. *Journal of Applied Psychology*, 93(6), 1412.
- Guillaud, É., Dondeyne, C., Taillens, M., Guyon, H., Muñoz, J., Prigent, P. G., & Noûs, C. (2021). Covid-19: l'université à l'épreuve du télétravail. Une organisation fragmentée. *Sociologies pratiques*, 43(2), 73-82.
- Hayes, A. F., & Scharkow, M. (2013). The relative trustworthiness of inferential tests of the indirect effect in statistical mediation analysis: does method really matter? *Psychological science*, 24(10), 1918-1927.
- Hogg, M. A. (2001). A social identity theory of leadership. *Personality and social psychology review*, 5(3), 184-200.
- Knapp, J. R., Smith, B. R., & Sprinkle, T. A. (2014). Clarifying the relational ties of organizational belonging: Understanding the roles of perceived insider status, psychological ownership, and organizational identification. *Journal of Leadership & Organizational Studies*, 21(3), 273-285.

- Masterson, S. S., & Stamper, C. L. (2003). Perceived organizational membership: An aggregate framework representing the employee–organization relationship. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 24(5), 473-490.
- Mulki, J. P., & Jaramillo, F. (2011). Workplace isolation: salespeople and supervisors in USA. *The International Journal of Human Resource Management*, 22(04), 902-923.
- O’driscoll, M. P., Pierce, J. L., & Coghlan, A. M. (2006). The psychology of ownership: Work environment structure, organizational commitment, and citizenship behaviors. *Group & Organization Management*, 31(3), 388-416.
- Pierce, J. L., Kostova, T., & Dirks, K. T. (2001). Toward a theory of psychological ownership in organizations. *Academy of management review*, 26(2), 298-310.
- Pierce, J. L., O’driscoll, M. P., & Coghlan, A. M. (2004). Work environment structure and psychological ownership: The mediating effects of control. *The Journal of social psychology*, 144(5), 507-534.
- Riketta, M. (2005). Organizational identification: A meta-analysis. *Journal of vocational behavior*, 66(2), 358-384.
- Saba, T., & Cachat-Rosset, G. (2020). COVID-19 et télétravail: un remède universel ou une solution ponctuelle. Québec et comparaison internationale.
- Tajfel, H., & Turner, J. C. (1985). The social identity theory of intergroup behavior. In *Political psychology* (pp. 276-293). Psychology Press.
- Vandewalle, D., Van Dyne, L., & Kostova, T. (1995). Psychological ownership: An empirical examination of its consequences. *Group & Organization Management*, 20(2), 210-226.
- Van Dyne, L., & Pierce, J. L. (2004). Psychological ownership and feelings of possession: Three field studies predicting employee attitudes and organizational citizenship behavior. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(4), 439-459.
- Zhang, Y., Liu, G., Zhang, L., Xu, S., & Cheung, M. W. L. (2021). Psychological ownership: A meta-analysis and comparison of multiple forms of attachment in the workplace. *Journal of Management*, 47(3), 745-770.
- Zhang, H., & Xu, H. (2019). Impact of destination psychological ownership on residents’ “place citizenship behavior”. *Journal of Destination Marketing & Management*, 14, 100391.

## EFFECT OF MOCK JUROR GENDER ON THE JUDGMENT OF CHILD SEXUAL ABUSE

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### Abstract

Sexual violence is a major public health issue today, especially when it involves children, for whom the consequences on development are major. This study is inspired by Pettalia et al.'s (2017) work, as it examines the influence of the juror's gender on the assessment of the defendant's guilt and the testimony of a minor who has been the victim of sexual violence. It extends that study by analyzing the effect of the victim's age, and the type of sexual assault (Sexual Assault involving Touching – CSAT or Sexual Assault involving Penetration) on the judgment. Participants were 388 students (121 men, 267 women;  $M = 20.54$ ,  $SD = 1.87$ ) at a French University. They read a fictional account of a child abuse case, involving a young girl who is questioned by the police about the abuse she has been victim of. She describes what her aggressor (her 44-year-old stepfather) did to her while her mother was out working. The accusation involved either CSAT or CSAP, not punished the same way under the French Penal Code. Participants then completed a self-report questionnaire about the seriousness of the act, the guilt of the defendant, and the plausibility of the victim's testimony. In line with previous studies, results showed that sexual assault involving penetration was considered more severe than touching and to have more repercussions on the victim's development. The victim's age also influenced the participants' assessment, particularly regarding her honesty and the gravity of the act; adolescents were considered more reliable than children. However, this study revealed differences arising from the juror's gender; women were more likely than men to assess the defendant negatively and were generally more pro-victim. The major finding is the difference between men and women in relation to the type of abuse; women tended to differentiate less between the two types of abuse than men in terms of seriousness of the act and the honesty of the victim. In terms of application, these findings may be interesting for prosecutors, raising their awareness of the potential biases and attitudes of jurors, and enabling them to limit the effect of judgment bias in these cases that have major consequences on young victims.

**Keywords:** *Child abuse case, mock juror's assessment, judgment, sexual abuse, type of abuse.*

### 1. Introduction

In 2021, there was a 33% increase in reports of sexual violence in France (Service Statistique Ministériel de la Sécurité Intérieure, 2022). This figure does not necessarily represent the increase in actual cases of sexual violence, but rather the upsurge of confessions that have occurred in recent months, especially on social networks, with an increasing number of testimonies of adults who were victims of sexual violence during their childhood or adolescence and who want to relieve themselves of the burden of silence.

Sexual assault on minors is an important concern today, as we know the repercussions these assaults may have on their development. This kind of assault is defined under French law as follows: "The use of violence, constraint, threat or surprise by an adult to sexually assault a person under 15 years of age" (French Penal Code, Article 227-25). According to Wolfe (2007), 50% of children who have been sexually abused have Post-Traumatic Stress Disorder (PTSD). Vila (2006) identified three major repercussions on children: intellectual inhibition, emotional blunting and detachment from interests and relationships.

Another aspect of research has been to identify the factors that may influence the way these assaults are judged. Sabatier and Schadron (2010) found that two types of factors are involved when making a judgment: judicial factors, including facts or evidence, and extra-judicial factors, including the juror's gender, the type of abuse, and the victim's age. Pettalia et al. (2017) focused on the latter type. They found that gender was a significant factor, women jurors tending to be more empathic with the victim than men and more severe with the defendant, which is in line with previous research showing that women are more likely to find the defendant culpable than men (Rogers & Davies, 2007; Devine & Caughlin, 2014). To date, few studies have been conducted specifically on the judgment of sexual abuse of minors.

## 2. Aims

The purpose of this research, inspired by Pettalia et al. (2017), is therefore to extend previous work on the extra-judicial variables that could influence the judgment of sexual violence against minors, with the aim of providing key information to judges in order to overcome judgment biases.

This research extends Pettalia et al.'s (2017) study, which examined the distinction between different kinds of abuse (physical, emotional, sexual and negligence). In the present study, we focus on sexual abuse, which was found to be the most severe offense in their study. We examine two specific types of sexual abuse: touching and rape. Unlike rape, touching does not involve penetration. We thus differentiate between Child Sexual Abuse involving Touching (CSA-T) and Child Sexual Abuse involving Penetration (CSA-P).

In line with the findings of Pettalia et al. (2017), we expected to find a difference between the judgments made by men and women (H1). Secondly, in line with Devine and Caughlin (2014) who found a relationship between the juror's gender and the judgment of guilt, we expected that women would be more likely to consider the perpetrator guilty (H2). Extending Pettalia et al.'s (2017) work, we differentiated between two types of sexual abuse (CSA-T versus CSA-P), hypothesizing that the perpetrator would be judged less severely in the CSA-T scenario than the CSA-P scenario, as penetration is perceived to be more harmful (Fergusson & Mullen, 1999) (H3). There is no scientific consensus on the influence of the victim's age on judgment, but we hypothesized that the testimony of an adolescent would be considered less reliable than that of a child, in accordance with some studies (Bottoms et al., 2014; Graham et al., 2007) (H4).

## 3. Methods

As in Pettalia et al.'s (2017) study, our sample comprised young adults (*mean age* = 20.54 years, *SD* = 1.87). Participants were 388 students at a French University (267 women, 121 men). They answered a questionnaire independently online, via Sphinx, in April 2020. They were randomly allocated one of four scenarios. Each scenario described a fictional child abuse case, involving a young girl who was abused by her stepfather (44 years old) at home while her mother was out working. The scenario was based on the most typical features of accusations of sexual violence involving minors. For example, Wolfe (2007) showed that 6- to 10-year-old girls are those who are most at risk of being abused by a sexual aggressor, mainly a man (Bouhet et al., 2007), who is known by the victim in 75 to 90% of cases (Finkelhor et al., 1990). In each scenario, we manipulated the age of the victim (8 or 15 years old) and the type of abuse (CSA-T or CSA-P), and we noted whether the juror (i.e. the participant) was a woman or a man. Therefore, we used a 2 (participant's gender: woman, man) x 2 (type of sexual abuse suffered by the victim: CSA-T, CSA-P) x 2 (victim's age: 8 or 15 years old) factorial design.

The first items of the questionnaire were designed to ensure the participants understood the situation. Next, they were asked their opinion about the act, the victim, and the perpetrator, rating items on a 7-point Likert scale, ranging from 1 (Not at all) to 7 (Totally). They were asked specifically about the victim's honesty, the plausibility of her testimony, the seriousness of the act, and the guilt of the perpetrator. We carried out a multivariate ANOVA and correlation analysis (Bravais Pearson) using Statistica (version 13.3).

## 4. Results

### 4.1. Participants' gender

The ANOVA indicated that women were more inclined than men to consider the victim's testimony to be reliable,  $F(1, 380) = 17.23$ ;  $p = .001$  (Women:  $M = 6.13$ ;  $SD = .05$ ; Men:  $M = 5.70$ ;  $SD = .08$ ), and they were also more likely to believe in the honesty of the victim,  $F(1, 380) = 5.27$ ;  $p = .02$  (Women:  $M = 6.11$ ;  $SD = .06$ ; Men:  $M = 5.84$ ;  $SD = .10$ ).

### 4.2. Type of abuse

Child Sexual Abuse involving Touching (CSA-T) was considered less serious by men ( $M = 6.40$ ;  $SD = .07$ ) than women ( $M = 6.73$ ;  $SD = .05$ )  $F(1, 380) = 6.19$ ,  $p = .01$ , whereas there was no significant difference between the judgment of men and women on abuse involving penetration (CSA-P). Statistics also indicated an interaction between the participant's gender and the type of abuse concerning the honesty of the victim,  $F(1, 380) = 4.10$ ;  $p = .04$ ; women's judgment did not differ between CSA-T ( $M = 6.13$ ;  $SD = .09$ ) and CSA-P ( $M = 6.09$ ;  $SD = .09$ ), whereas men considered the victim to be more honest in the CSA-P scenario ( $M = 6.06$ ;  $SD = 0.15$ ) than the CSA-T scenario ( $M = 5.62$ ;  $SD = 0.13$ ).

### 4.3. Victim's age

Participants considered that the assault was more serious when the victim was younger,  $F(1, 380) = 6.95$ ,  $p = .001$  (8-year-old:  $M = 6.83$ ,  $SD = .04$ ; 15-year-old:  $M = 6.66$ ,  $SD = .05$ ). They also thought that younger victims were more honest,  $F(1, 380) = 12.57$ ;  $p = .001$  (8-year-old:  $M = 6.19$ ;  $SD = .08$ ; 15-year-old:  $M = 5.76$ ;  $SD = .09$ ).

### 4.4. Guilt of the perpetrator

All the participants found the perpetrator guilty,  $F(1, 380) = 0.34$ ;  $p = .56$ . ( $M = 6.94$ ;  $SD = 0.05$ ).

## 5. Discussion

In line with the findings of Pettalia et al. (2017), the present study found that the participants' gender influenced their judgment in child abuse cases. Compared to men, women tended to be more pro-victim, and to judge the perpetrator more harshly. This study extended the earlier findings by showing that judgments differed according to the type of offence (CSA-T vs CSA-P). The most interesting finding concerns the interaction between these two variables, as women and men judged the two types of abuse differently. Women were less likely than men to differentiate between the two types of abuse in terms of the seriousness of the act and the victim's honesty. This could be explained by the fact that women may feel more personally involved in this type of abuse, whatever the act (touching or rape); statistics show that more women than men experience sexual abuse: 14% of women report having been sexually abused, compared to 4% of men (Hamel et al., 2016). Likewise, a recent Asian study (Shi & Zheng, 2020) revealed that women are less tolerant of sexual harassment than men, and several meta-analyses found that more women than men report that they have been sexually assaulted (Pereda et al., 2009; Stoltenborgh et al., 2011).

Concerning the age of the victim, the results reveal that this influenced the participants' judgment. Previous studies divided victims into different age groups, which could explain the disparity between their results. In future research, it would be interesting to vary the age of the victim in the scenarios, as the age range chosen could bias the results.

Finally, concerning the guilt of the perpetrator, it is possible that the form of the question may have constituted a bias, as participants had to make a yes/no judgment without the possibility of nuancing their response. However, in real-life judgments of sexual violence, the answer is not always so simple. It would therefore be interesting in future research to provide a different response format, to enable a more nuanced response.

## 6. Conclusion

The issue of sexual violence, especially against minors, is a topical issue, not because it is new, but because of heightened awareness. The results of this study confirm and highlight the existence of judgment biases in sexual violence cases. These findings are important because awareness of the potential biases and attitudes of jurors would help overcome judgment bias in these cases. It would be interesting in future studies to introduce different age groups of victims in order to examine the effect of this variable



on judgments. This would allow us to identify which factors influence the way these cases are judged and how these change across the lifespan.

The results of the present study provide the basis for future work. For example, it would be interesting to study other factors about the victim (...) or the persecutor (e.g. religion, social status, history of abuse), in order to extend analysis of the biases that may influence judgment of these cases.

### References

- Bouhet B, Pérard D, & Zorman M, (2007). De l'importance des abus sexuels en France. In Gabel M. (Eds). *Les enfants victimes d'abus sexuels*. Paris: Presse Universitaire de France
- Devine, D. J., & Caughlin, D. E. (2014). Do they matter? A meta-analytic investigation of individual characteristics and guilt judgments. *Psychology, Public Policy, and Law*, 20(2), 109–134.
- Finkelhor, D., Hotaling, G., Lewis, I. A., & Smith, C. (1990). Sexual abuse in a national survey of adult men and women: Prevalence, characteristics, and risk factors. *Child Abuse & Neglect*, 14(1)
- Hamel, C., Debauche, A., Brown, E., Lebugle, A., Lejbowicz, T., Mazuy, M. et Dupuis, J. (2016). Viols et agressions sexuelles en France: Premiers résultats de l'enquête Virage. *Population Sociétés*, (10), 1-4.
- Pereda, N., Guilera, G., Forns, M., & Gómez-Benito, J. (2009). The international epidemiology of child sexual abuse: A continuation of Finkelhor (1994). *Child Abuse & Neglect*, 33(6), 331-342
- Pettalia, J., Pozzulo, J. D., & Reed, J. (2017). The influence of sex on mock jurors' verdicts across type of child abuse cases. *Child Abuse & Neglect*, 69, 1-9.
- Rogers, P., & Davies, M. (2007). Perceptions of Victims and Perpetrators in a Depicted Child Sexual Abuse Case: Gender and Age Factors. *Journal of Interpersonal Violence*, 22(5), 566-584.
- Sabatier, C., & Schadron, G. (2010). Les déterminants des décisions des jurés. In Morchain, P., & Somat, A. (Eds.), *La psychologie sociale: applicabilité et applications*, 157–188. Rennes: Presses Universitaires de Rennes
- Shi, X., & Zheng, Y. (2020). Perception and Tolerance of Sexual Harassment: An Examination of Feminist Identity, Sexism, and Gender Roles in a Sample of Chinese Working Women. *Psychology of Women Quarterly*, 44(2), 217-233.
- Stoltenborgh, M., van IJzendoorn, M. H., Euser, E. M., & Bakermans-Kranenburg, M. J. (2011). A global perspective on child sexual abuse: Meta-analysis of prevalence around the world. *Child Maltreatment*, 16(2), 79–101
- Vila, G. (2006). L'état de stress post-traumatique chez l'enfant. *Journal de Pédiatrie et de Puériculture*, 19(3), 97-100.
- Wolfe, V. V. (2007). Child sexual abuse. In Mash E. J. & Barkley R. A. (dir.), *An assessment of childhood disorders* (4e éd.) (p. 685-748). New York, NY: Guilford Press.

## THE FRAGILITY OF REMEMBERING – DATA FROM CLINICAL CASES

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### Abstract

False memories, memory distortions, confabulations, and other forms of memory aberrations and deficits occur in everyday life and – more frequently – in neurological and psychiatric patients. We studied such changes of memories in 42 patients with alcoholic Korsakoff's syndrome, 18 with clipped or ruptured aneurysms of the anterior communicating artery [ACoA], 41 with a diagnosis of dissociative amnesia, and 52 healthy control individuals. All three patient groups had severe memory deficits. The neurological patients had deficits both with respect to acquiring new semantic and episodic memories, while the psychiatric patients were unable to retrieve episodic memories only. Both the neurological and the psychiatric patients had major problems in retrieving old episodic memories. However, the groups differed in that way, that the neurological patients tried to compensate their deficits by showing numerous confabulations (especially patients from the Korsakoff's group), while the group with ruptures and repairs of their ACoAs showed a considerably tendency towards producing false memories. The psychiatric patients, on the hand, demonstrated a total lack of retrieving episodic memories from their past and showed no efforts to invent or generate alternative memories. It is concluded that especially the prefrontal cortex (frontal lobes) and its associated structures (mediodorsal thalamus, which is regularly degenerated in patients with Korsakoff's syndrome) are relevant in controlling proper and accurate retrieval of information. This statement also seems to be confirmed from functional imaging results in patients with dissociative amnesia who show a reduced prefrontal metabolism. For normal individuals, states which reduce alertness (e.g., fatigue, sleep deprivation) and consequently dampen prefrontal control functions, similarly can lead to a heightened degree of fragile memory retrieval.

**Keywords:** *Anterior communicating artery rupture, Korsakoff's syndrome, dissociative amnesia, prefrontal cortex, false memory.*

### 1. Introduction

Remembering is central for our life – especially for planning the future; and, in general, we believe that we can rely on our personal past. Nevertheless, as already acknowledged by Sigmund Freud (1901), our memories are more fragile than we realize in everyday life. This holds true especially for personal events which have been acquired (encoded) at different periods of life and is found at higher quantities in patients with neurological or psychiatric disease conditions.

### 2. Objective

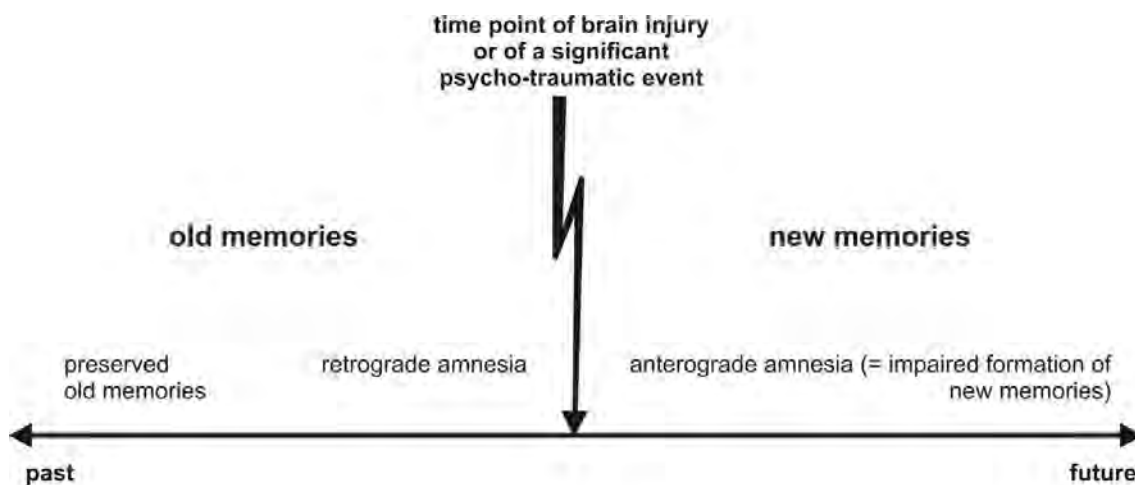
In order to investigate different mechanisms of memory distortions, we studied patients with different neurological and psychiatric disturbances together with healthy control individuals. Patients with Korsakoff's disease were chosen, because they show major memory problems – usually in the absence of intellectual deteriorations – and try to compensate these deficits by confabulating. Patients with clipped or ruptured aneurysms of the anterior communicating artery [ACoA] were chosen, because they tend to show various forms of memory distortions, including false memories. And patients with dissociative amnesia were selected because they usually have a radical loss of all retrograde episodic-autobiographical memories in the absence of corresponding visible brain damage.

### 3. Methods

*Subjects.* We studied 42 patients with alcoholic Korsakoff's syndrome, 18 patients with clipped or ruptured aneurysms of the ACoA (together referred to as 'neurological patients'), 41 patients with a diagnosis of dissociative amnesia (referred to as 'psychiatric patients'), and 52 healthy control individuals (largely relatives and friends of students). The Korsakoff's patients stemmed from several nursing home where they all were permanent residents (mean age: 57 years; duration of excessive alcohol consumption: 10-46 years). They had a documented history or residual signs of a Wernicke episode, which preceded the chronic state of the Korsakoff's Syndrome, but none of the participating individuals had signs of alcohol-related dementia. The ACoA-patients were recruited from two neurosurgical centers; all had rupture and repair of an aneurysm of the ACoA (17 by clipping the aneurysm and one by coiling) (mean age: 53 years; mean duration between surgery and testing: 39 days). The patients with dissociative amnesia (including patients with a fugue condition which in DSM-5 [APA, 2013] are subsumed under 'dissociative amnesia' as well) had more diverse backgrounds, but nearly all of them had been seen in medical clinics and had a chronic condition (on the average of more than half a year) (mean age: 33 years). The comparison groups in general were matched to the patients' groups for sex, age, years of education and occupation. Patients as well as healthy controls gave their informed consent to participate in the study according to the Declaration of Helsinki.

All patients had severe memory deficits; these were predominantly in the anterograde memory domain for the neurological patients, and predominantly in the retrograde domain for the psychiatric patients (Fig. 1). Consequently, the neurological patients had deficits both with respect to acquiring new semantic and episodic memories, while the psychiatric patients were unable to retrieve episodic memories, and a few of them had in addition problems in retrieving some semantic material as well.

*Figure 1.* After brain injury or one or more significant psycho-traumatic events memory may be impaired with respect to the remembering of old information (which was stored prior to the injury or the event), or with respect to the long-term acquisition with which the individual was confronted after the event or injury. The flash symbolizes the event or injury.



*Neuropsychological examinations.* All patients and control individuals were tested intensively neuropsychologically. That means, they all received screening instruments measuring their general intellectual status and estimating their intelligence with the *Mehrfach-Wahl-Wortschatz-Test (MWT-B)* (Lehrl, 2005), a measure similar to the National Adult Reading Test, or the *Leistungsprüfsystem* (Horn, 1983). Furthermore, attention and concentration, problem solving abilities, visuo-constructive abilities, executive functions, and processing of emotions were measured. With respect to memory, the Rey-Osterrieth Figure, the Doors Tests (Baddeley et al., 1994) and the revised version of the Wechsler-Memory-Test (Härting et al., 2002) were usually applied.

Furthermore, specific tests in the memory domain were given to the neurological and the psychiatric groups and the respective control individuals, namely an interview on confabulatory tendencies, constructed in German language after related interviews of Dalla Barba und co-workers (Dalla Barba et al., 1997a, b, 1999), named *Testbatterie zur Erfassung von Konfabulationstendenzen (TEKT)*; Borsutzky et al., 2006). This Interview was given to both neurological groups; in addition to questions, which only can be answered in a confabulatory ("untrue") manner, it also contains questions on personal and general semantic old memory. The ACoA group furthermore was tested with the

Deese–Roediger–McDermott (DRM) paradigm (Roediger&McDermott,1995). Five list of each 15 semantically associated words from those used by Roediger and McDermott (1995) were used. Critical lures of these lists were: chair, doctor, sleep, anger, and sweet. The critical lures are semantically closely associated to the items of their respective list, but were never presented.

The psychiatric patients and their controls received additional tests for semantic and autobiographical retrograde memory (German language versions of a Famous Faces Test and of an Autobiographical Memory Interview; see Fujiwara et al., 2008; Staniloiu & Markowitsch, 2014). Furthermore, this group received as questionnaires the Structured Clinical Interview for Dissociative Disorders (Wittchen et al., 1997), the Dissociative Experiences Scale (DES-II) (Gast and Rodewald, 2004), the revised Symptom-Check-List-90 (SCL-90-R; Hessel et al., 2001) and the Freiburg Personality Inventory (Fahrenberg et al., 2001).

#### 4. Results

All patients had at least normal intelligence on average: the Korsakoff's group had a mean estimated IQ of 104, the ACoA-patients of 101; the IQ of the patients with dissociative amnesia was for most cases average to above average. Similarly, measures of attention and concentration, on problem-solving abilities, and on visuo-constructive and executive functions were generally normal in all three patient groups (as well as in the control group).

A different picture emerged with respect to memory functions: Korsakoff's as well as ACoA-patients had anterograde memory deficits, while the patients with dissociative amnesia were largely unimpaired. Both the neurological and the psychiatric patients had major problems in retrieving old episodic memories.

The groups differed in that way that both groups of neurological patients tried to compensate their deficits by showing numerous confabulations in the episodic memory domain (especially patients from the Korsakoff's group). The group with ruptures and repairs of their ACoAs in addition manifested a considerably tendency towards producing false memories. The psychiatric patients, on the hand, demonstrated a total lack of retrieving episodic memories from their past, but showed no efforts to invent or generate alternative memories. A few of the patients with dissociative amnesia furthermore had deficits in retrieving old semantic memories. When analyzing possible reasons of the failure to retrieve these, it turned out that some of the semantic facts had an emotional connotation to the respective patient. For example, one patient had to study Latin, but apparently had an aversion against the language. He was unable to even retrieve or to translate simple everyday proverbs (e.g., "plenus venter non studet libenter"), or common Latin sayings from the church.

More generally, a number of the patients showed emotional changes. For the group of Korsakoff's patients, these were more in the fields of apathy and lack of initiative, while for the patients with dissociative amnesia they reflected what already Janet (1893) and Breuer and Freud (1895) termed "belle indifference" – a flattening of emotions. This condition was found in the majority of our patients and we had described it already in 2009 (Reinhold & Markowitsch, 2009). The patients have a lack of concern, especially about their own psychic condition and about their future. They do not seem to care about their family. On the other hand, they can be guided and directed much more easily than normal individuals, that is, they are suggestible to influences from others.

#### 5. Discussion and conclusions

Our results demonstrate that different patient group manifest deviances from normal memory retrieval which are attributable to their brain damage. For both neurological groups the relevant brain regions are localized in the frontal lobes and their connections with the mediodorsal nucleus of the thalamus. For patients with a Korsakoff's symptomatology it is well-known that their principal neural degeneration is in the medial thalamus (see Staniloiu et al., 2021, and within this publication especially Figure 1, which provides a detailed sketch of thalamo-frontal connections). For the patients of the ACoA-group, there is usually bilateral orbitofrontal damage which similarly leads to degeneration within the mediodorsal thalamus. The mediodorsal thalamus, on the other hand, is one of the hub regions within limbic circuits, whose damage leads to amnesia (Markowitsch, 1982; Markowitsch & Staniloiu, 2012).

Similarly, for the patients with dissociative amnesia, changes – in particular hypometabolic zones – have been documented in the prefrontal and anterior temporal cortex of the right hemisphere (Brand et al., 2009; Staniloiu et al., 2011; Staniloiu & Markowitsch, 2014). It can be concluded that the right prefronto-temporal hypometabolism leads to similar functional impairments - namely an inability to retrieve episodic old memories – as direct brain damage of this regional complex (Calabrese et al., 1996). Right-hemispheric lesions furthermore lead to increased emotional bluntness (Anderson et al., 2011;

Cimino et al., 1991; Quirin et al., 2013; Schore, 2005), a fact which corroborates the “belle indifference”, observed in many patients with dissociative amnesia. Related to the emotional flatness is the overgeneral memory effect, which can be found in different patient groups with reduced emotional reactivity (Seidl et al., 2006; Williams et al., 1996; Watkins et al., 2000; Valentino et al., 2009).

The prefrontal/orbitofrontal cortex is well-known as a region for monitoring in general. Its monitoring functions were postulated to exist for working memory (Redondo-Camós et al., 2022), executive functions (Markowitsch & Kessler, 2000; Jones & Graff-Radford, 2021), decision making (Labudda et al., 2010) and related operations (Hedden & Gabrieli, 2010). Consequently, a malfunctioning of this region is likely to interfere with processes of memory retrieval, especially, if this retrieval is more complex as in episodic-autobiographical information retrieval, where a synchrony between fact retrieval and their emotional colorization is required. As the prefrontal and orbitofrontal cortices are engaged in mechanisms of attention and alertness (Yao et al., 2018), it becomes obvious that even in normal individuals' states of reduced alertness (e.g., fatigue, sleep deprivation) lead to a heightened degree of fragile memory retrieval (see Manousakis et al., 2019; Dimitrov et al., 2021). Variables, such as vividness, detail, contents, and emotional colorization affect individual memories, especially if they cover different time periods, as was remarked already several decades ago by Squire and Cohen (1982).

## References

- Anderson, N. D., Davidson, P. S. R., Mason, W. P., Gao, F., Binns, M. A., & Winocur, G. (2011). Right frontal lobe mediation of recollection- and familiarity-based verbal recognition memory: evidence from patients with tumor resections. *Journal of Cognitive Neuroscience*, *23*, 3804-3816.
- APA (American Psychiatric Association), 2013. *Diagnostic and Statistical Manual of Mental Disorders* (5th ed). Arlington, VA: American Psychiatric Publishing.
- Baddeley, A., Emslie, H., & Nimmo-Smith, I. (1994). *Doors and People Test*. Bury St. Edmunds, UK: Thames Valley Test Company.
- Borsutzky, S., Fujiwara, E., & Markowitsch, H. J. (2006). *TEKT—Testatterie zur Erfassung von Konfabulationstendenzen*. Göttingen: Hogrefe.
- Brand, M., Eggers, C., Reinhold, N., Fujiwara, E., Kessler, J., Heiss, W.-D., & Markowitsch, H. J. (2009). Functional brain imaging in fourteen patients with dissociative amnesia reveals right inferolateral prefrontal hypometabolism. *Psychiatry Research: Neuroimaging Section*, *174*, 32-39.
- Breuer, J., & Freud, S. (1895). *Studien über Hysterie*. Vienna: Deuticke.
- Calabrese, P., Markowitsch, H. J., Durwen, H. F., Widlitzek, B., Haupts, M., Holinka, B., & Gehlen, W. (1996). Right temporofrontal cortex as critical locus for the ephory of old episodic memories. *Journal of Neurology, Neurosurgery, and Psychiatry*, *61*, 304-310.
- Cimino, C. R., Verfaellie, M., Bowers, D., & Heilman, K. M. (1991). Autobiographical memory: influence of right hemisphere damage on emotionality and specificity. *Brain and Cognition*, *15*, 106-118.
- Dalla Barba, G., Boisse, M. F., Bartolomeo, P., & Bachoud-Levi, A. C. (1997). Confabulation following rupture of posterior communicating artery. *Cortex*, *33*, 563-570.
- Dalla Barba, G., Cappelletti, Y. J., Signorini, M., & Denes, G. (1997). Confabulation: Remembering ‘another’ past, planning ‘another future’. *Neurocase*, *3*, 425-436.
- Dalla Barba, G., Nedjam, Z., & Dubois, B. (1999). Confabulation, executive functions, and source memory in Alzheimer's disease. *Cognitive Neuropsychology*, *16*, 385-398.
- Dimitrov, A., Nowak, J., Ligdorf, A., Oei, N. Y. L., Adli, M., Walter, H., & Veer, I. M. (2021). Natural sleep loss is associated with lower mPFC activity during negative distracter processing. *Cognitive and Affective Behavioral Neuroscience*, *21*, 242-253.
- Fahrenberg, J., Hampel, R., & Selg, H. (2001). *Freiburger Persönlichkeitsinventar* [Freiburg Personality Inventory] (7th ed.). Göttingen: Hogrefe.
- Freud, S. (1901). Zum psychischen Mechanismus der Vergesslichkeit [On the psychic mechanism of forgetfulness]. *Monatsschrift für Psychiatrie und Neurologie*, *4/5*, 436-443.
- Fujiwara, E., Brand, M., Kracht, L., Kessler, J., Diebel, A., Netz, J., & Markowitsch, H. J. (2008). Functional retrograde amnesia: a multiple case study. *Cortex*, *44*, 29-45.
- Gast, U., & Rodewald, F. (2004). *Strukturiertes Klinisches Interview für Dissoziative Störungen (Kurzfassung)* [Structured Clinical Interview of Dissociative Disturbances (Short version)]. Göttingen: Hogrefe.
- Härting, C., Markowitsch, H. J., Neufeld, H., Calabrese, P., Deisinger, K., & Kessler, J. (2000). *Die Wechsler-Memory-Scale Revised. Deutschsprachige Adaptation* [Wechsler-Memory Scale Revised. German language adaptation]. Bern: Huber.
- Hedden, T., & Gabrieli, J. D. E. (2010). Shared and selective neural correlates of inhibition, facilitation, and shifting processes during executive control. *Neuroimage* *51*, 421-431.

- Hessel, A., Schumacher, J., Geyer, M., & Brähler, E. (2001). Symptom-Checkliste SCL-90-R: testtheoretische Überprüfung und Normierung an einer bevölkerungsrepräsentativen Stichprobe [Symptom-Check List SCL-90-R: test-theoretical validation and standardization using a population representative sample]. *Diagnostica*, *47*, 27-39.
- Horn, W. (1983). *Leistungsprüfsystem*. Göttingen: Hogrefe.
- Janet P. (1893). L'amnésie continue. *Revue generale des sciences* *4*, 167-179.
- Jones, D. T., & Graff-Radford, J. (2021). Executive dysfunction and the prefrontal cortex. *Continuum*, *27*, 1586-1601.
- Labudda, K., Brand, M., Mertens, M., Ebner, A., Markowitsch, H. J., & Woermann, F. (2010). Alterations of decision making and underlying neural correlates after resection of a mediofrontal cortical dysplasia: a single case study. *Neurocase*, *16*, 59-63.
- Lehrl, S. (2005). *Mehrfachwahl-Wortschatz-Intelligenztest (MWT-B)* [Multiple Choice-active Word Vocabulary Intelligence Test]. Spitta Verlag, Balingen.
- Manousakis, J. E, Nicholas C, Scovelle AJ, Naismith SL, Anderson C. (2019). Associations between sleep and verbal memory in subjective cognitive decline: A role for semantic clustering. *Neurobiology of Learning and Memory*, *166*, Art. 107086. doi: 10.1016/j.nlm.2019.107086.
- Markowitsch, H.J. (1982). Thalamic mediodorsal nucleus and memory: A critical evaluation of studies in animals and man. *Neuroscience and Biobehavioral Reviews*, *6*, 351-380.
- Markowitsch, H. J., & Kessler, J. (2000). Massive impairment in executive functions: The case of a patient with severe degeneration of the prefrontal cortex. *Experimental Brain Research*, *133*, 94-102.
- Markowitsch, H. J., & Staniloiu, S. (2012). Amnesic disorders. *Lancet*, *380*, 1429-1440.
- Quirin, M., Gruber, T., Kuhl, J., & Düsing, R. (2013). Is love right? Prefrontal resting brain asymmetry is related to the affiliation motive. *Frontiers in Human Neuroscience*, *7*, Art. 902. <http://dx.doi.org/10.3389/fnhum.2013.00902>.
- Redondo-Camós, M., Cattaneo, G., Perellón-Alfonso, R., Alviarez-Schulze, V., Morris, T. P., Solana-Sanchez, J., ..., & Bartres-Faz, D. (2022). Local prefrontal cortex TMS-induced reactivity is related to working memory and reasoning in middle-aged adults. *Frontiers in Psychology*, *13*, Art. 813444. doi: 10.3389/fpsyg.2022.813444.
- Reinhold, N., & Markowitsch, H. J. (2009). Retrograde episodic memory and emotion: a perspective from patients with dissociative amnesia. *Neuropsychologia*, *47*, 2197-2206.
- Roediger, H. L., & McDermott, K. B. (1995). Creating false memories: Remembering words not presented in lists. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *21*, 803-814.
- Schore, A. N. (2005). Back to basics: attachment, affect regulation, and the developing right brain: linking developmental neuroscience to pediatrics. *Pediatric Reviews*, *26*, 204-217.
- Seidl, U., Markowitsch, H. J., & Schröder, J. (2006). Die verlorene Erinnerung. Störungen des autobiographischen Gedächtnisses bei leichter kognitiver Beeinträchtigung und Alzheimer-Demenz. In H. Welzer & H. J. Markowitsch (Eds.), *Warum Menschen sich erinnern können. Fortschritte in der interdisziplinären Gedächtnisforschung* [Why humans can remember. Progress in interdisciplinary memory research] (pp. 286-302). Stuttgart: Klett.
- Squire, L. R., & Cohen, N. J. (1982). Remote memory, retrograde amnesia, and the neuropsychology of memory. In L. S. Cermak (Ed.), *Human memory and amnesia* (pp. 275-303). Hillsdale, NJ: LEA.
- Staniloiu, A., Kordon, A., & Markowitsch, H. J. (2021). Korsakoff's syndrome and alcoholism. In S. Della Sala (Ed.), *Encyclopedia of behavioral neuroscience (Vol. 3)* (pp. 182-189). New York: Elsevier.
- Staniloiu, A., & Markowitsch, H. J. (2014). Dissociative amnesia. *Lancet Psychiatry*, *1*, 226-241.
- Staniloiu, A., Vitcu, I., & Markowitsch, H. J. (2011). Neuroimaging and dissociative disorders. In V. Chaudhary (Ed.), *Advances in brain imaging* (pp. 11-34). INTECH – Open Access Publ.
- Valentino, K., Toth, S. L., & Cicchetti, D. (2009). Autobiographical memory functioning among abused, neglected, and nonmaltreated children: the overgeneral memory effect. *Journal of Child Psychology and Psychiatry*, *50*, 1029-1038.
- Watkins, E., Teasdale, J. D., & Williams, R. M. (2000). Decentring and distraction reduce overgeneral autobiographical memory in depression. *Psychological Medicine*, *30*, 911-920.
- Williams, J. M., Ellis, N. C., Tyers, C., Healy, H., Rose, G., & MacLeod, A. K. (1996). The specificity of autobiographical memory and imageability of the future. *Memory and Cognition*, *24*, 116-125.
- Wittchen, H.-U., Zaudig, M., & Fydrich, T. (1997). *Strukturiertes Klinisches Interview für DSM-IV* [Structured Clinical Interview for DSM-IV]. Göttingen: Hogrefe.
- Yao, S., Qi, S., Kendrick, K. M., & Mobbs, D. (2018). Attentional set to safety recruits the ventral medial prefrontal cortex. *Scientific Reports*, *8*, Art. 15395. doi: 10.1038/s41598-018-33953-3.

# MANIPULATING EXPERIMENTALLY WITH SEXUAL DESIRE – THE IMPACT OF INNER SEXUAL FANTASIES

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## Abstract

**Objective.** Recent models of sexual response have challenged the traditional view of spontaneity of sexual desire and argue that desire is context specific and not so obviously spontaneous. However, the Inner responsive desire has been theorized mainly with regard to women's sexuality.

**Design and method.** For measurement of sexual desire, I distinguished state and trait levels of desire and applied Imagined Social Situation Exercise (ISSE) measures.

**Results.** The trait level of sex desire was significantly different for men and women and state sex desire before the experiment was equal. The sex manipulation changed sex desire level compared with the controls and it worked equally for both men and women.

**Conclusions.** Based on my results I can conclude that state and trait desire levels are similar for men and women and applying ISSE really increases state level of sexual desire. No sex differences were found and it seems that trait and state levels of sexual desire work relatively independently from each other.

**Keywords:** *Trait and state sexual desire, inner manipulation, fantasies.*

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## 1. Objective

There is the traditional view, that sexual desire is rather spontaneous and automatic, but some recent models of sexual response have challenged the traditional view by arguing that desire is context specific and not so obviously spontaneous. Incentive Motivation Models applied to sexuality, propose that encountering sexual stimuli triggers arousal, which then results in sexual desire. Speaking about sexual stimuli, there are two types of sexual stimuli, sexual stimuli may take the form of either a) sensory cues (e.g., from a partner or erotica) or b) inner thoughts, and that desire represents the conscious recognition of arousal to context. However, the Inner responsive desire has been theorized mainly with regard to women's sexuality.

## 2. Design and method

Goldey and van Anders (2011) introduced Imagined Social Situation Exercise (ISSE). In the ISSE, participants imagine a positive sexual encounter with another person and respond to open-ended questions about their imagined encounter. The ISSE has many of the benefits of fantasy: unlike stimuli such as films, pictures, and stories, which may require some individuals to view or read non-preferred stimuli - the ISSE allows participants to select the characteristics of a person and situation arousing to them personally.

In the current study, I examined and compared:

1. Effects of the ISSE, unstructured fantasy (in which participants imagine sexually arousing situations but do not write about them), and a neutral condition. Does this manipulation really increase sex desire in respondents?

2. I examined the difference between trait and state sexual desire in men and women. Do men have more sex desire than women?

3. Based on understanding that fantasy works better for women – is there any sex differences on fantasy situation?

4. Is there any connections between the base sexual desire and ISSE manipulation? May be who's high in trait sex desire can react more easily?

Trait sex desire I measured with Sexual Desire Inventory by Spector, Carey, Steinberg (1996).

Desire I measured with ISSE method with Goldey, van Anders (2011)

*Participants.* Participants were recruited for an online study, were mostly students and women.

Participants completed an online screening to ensure that they were over 18, comfortable with erotica, and in a private place. The final sample, which included participants who qualified for the study and completed enough of the survey to be used in analyses, consisted of 176 participants (103 women, 73 men). For comparing trait sex desire groups, I divided participants by their SDI scores higher than average and lower than average groups (mean was 60, min/max was 18-98).

### 3. Results and conclusions

Thus, based on my results, we can conclude:

1. State desire and trait desire is for men and women similar, there are no sex differences on the basis for sex arousal and in this specific situation, the basis was also the same.
2. Fantasy ISSE really has effect on perceived sex desire, thus could be used in therapy and in research.
3. In Fantasy condition no gender differences appeared after the manipulation, thus it is applicable for both men and women.
4. Connections between state and trait level sex desire were low and based on this we can conclude that they work rather independently from each other.

### *References*

- Goldey KL, van Anders SM (2011). Sexy thoughts: Effects of sexual cognitions on testosterone, cortisol, and arousal in women. *Horm Behav* 2011; 59:754–6.
- Spector, I. P., Carey, M. P., Steinberg, L. (1996). The Sexual Desire Inventory: Development, factor structure, and evidence of reliability. *Journal of Sex and Marital Therapy*, 22, 175-190.)



# UNRAVELING THE ROLE OF SOCIO-EMOTIONAL COMPETENCIES BETWEEN FUTURE TIME PERSPECTIVE AND SUBJECTIVE WELLBEING ACROSS ADULTHOOD

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## Abstract

Social and emotional learning is an integral part of human education and development and is the process through which everyone, children, and adults develop the skills, attitudes, and values necessary to acquire social and emotional competence (CASEL, 2020). Good emotional management, greater motivation, and awareness of oneself and the people around us, impact the quality of life, contribute to satisfaction and participation in the work context. But the challenges and the transition that adults face through their adult life are diverse: ranging from transition to adult identity to playing a constellation of roles from which derive many responsibilities as to the end of the working career.

The main objective of the study is to observe how the different stages of adult life are characterized by social and emotional skills. A second goal is to understand the relationships holding between SE skills, wellbeing experienced, and future time perspective.

A total of 212 participants living in North East of Italy were surveyed for their Socioemotional skills, future time perspective, and wellbeing. According to their age, three groups were identified: emerging, young and middle-aged adults.

The study confirms the specificity of Social and Emotional Competences (SECs) across adult development. Regression-based mediation models were estimated to test the direct and indirect effects between dimensions addressed. The analyses evidenced the mediation role of social and emotional skills in the relationship between future temporal perspective and psychological wellbeing. The model highlights the predictive effect of time perspective on CSEs, which have a predictive effect on psychological wellbeing.

The results highlight the critical role of socioemotional skills for understanding the complex relationship between FTP and subjective wellbeing. Additionally, Social and Emotional Learning must be considered an integral part of adult education and lifelong learning and guide prevention and support actions.

**Keywords:** *Socio-emotional skills, time perspective, wellbeing, adult development, education.*

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## 1. Introduction

Adults live in a globalized society characterized by high insecurity, challenges, and rapid changes that include digitization and individualization, economic crisis, global competition and reshape their lives in a way that they struggle to predict. Additionally, the challenges and the transitions that adults face through their adult life are diverse: emerging adults face the transition of identity from student to the young worker and the achievement of an economic level that ensures independence; middle adults' life is characterized by challenges concerning the work and family environment. Later, adults play a constellation of roles from which derive many responsibilities as to the end of the working career.

Being able to achieve future goals derived from the different roles can influence the ability to both manage daily challenges and successfully project themselves into the future (Arnett, Robinson, & Lachman, 2020; Savickas & Porfeli, 2012). People with stronger future orientation have expectations, aspirations, and plan. Changes in time perspective may lead them to focus more on emotion-regulating or redirect their social interactions toward relatively few close relationships (Carstensen, 2006; Carstensen et al., 2003). Older adults usually view the future less positively, compared to younger and middle-aged adults and score lower than younger adults in measures related to positive evaluations of the future, demonstrating a more limited future time horizon or perceiving a limited time left in life (Coudin & Lima, 2011; Lang and Carstensen, 2002; Webster and Ma, 2013).

The role of age for the individual experience of wellbeing, in work and organisational life has been also recently underlined (Zacher and Froidevaux, 2021) but maintaining psychological wellbeing across the life span can be challenging,

Social and emotional learning is an integral part of human education and development and is the process through which everyone, children and adults develop the skills, attitudes, and values necessary to acquire social and emotional competence (CASEL, 2020). Good emotional management, greater motivation, and awareness of oneself and the people around us, impact the quality of life, contribute to satisfaction and participation, hence of wellbeing in everyday life contexts. Additionally, studies suggest that older adults are aware of the limited time they have remaining, and so to maximize social and emotional gains they prioritize emotional meaning over knowledge acquisition. The maintenance or even growth in psychological wellbeing that occurs with age (Charles & Carstensen, 2008) may reflect their role.

Recent studies have shown that the competence to adequately manage emotional challenges in the professional field is related to greater wellbeing experienced (Dorociak Rupert, & Zahniser 2017; Mayordomo, 2016). Significant relationships have been also evidenced between intraindividual characteristics and future time perspective (Henry, Zacher, & Desmette, 2017). But studies addressing these issues across adulthood are still limited.

## 2. Objectives

The dimensions of wellbeing of environmental mastery and autonomy increase over the course of adult life (Ryff, & Keyes, 1995) and the social-emotional sphere becomes increasingly important (Carstensen, 2006). It is then worth observe how the different stages of adult life were characterized by social and emotional skills.

A second goal is to understand the relationships holding between SE skills and wellbeing experienced, and components of future time perspective. CSEs are then expected to play a mediating role in the relationship between future temporal perspective and wellbeing experienced.

## 3. Methods

### 3.1. Participants

A total of 212 participants participated in the study; 68.4% were female and 31.6% were male. Their age ranged from 19 to 60 years. To capture life-course differences three groups were identified: emerging, young and middle-aged. Emerging adults (age range 19-29) involved 104 people (49.1%), adults (from 30 to 45 years) were 64 (30.2%) and middle- adults (from 45 to 60 years) were 44 (20.8%). As for schooling, 6.1% up to 8 years of education, 40.6% have a secondary school diploma (from 9 to 13 years of study) and 53.3% have a three-year or higher education degree (from 13 years of study upwards). Forty-two (21.7%) carried out social and health or psycho-educational professions, 61 (28.8%) were in the technical-organizational field, 48 (22.6%) were students and 61 (28.8%) were involved in other professions. As regards relational life, 80 (37.7%) described themselves as single or unmarried, 125 (59%) mentioned a stable relationship, 7 (3.3%) are widowed or divorced.

### 3.2. Tools

Several tools were proposed to study participants tapping dimensions under study:

*Social-Emotional Competencies* (from Davidson et al., 2018). The tool investigates social-emotional skills with 40 items. The tool is characterized by 8 subscales that identify the different CSEs: Self-awareness of one's own strengths, Self-awareness of one's emotions, Management of emotions, Management of goals, Management of work, social awareness, social skills and Decision Making. Participants are asked to express the easiness of their experience for each statement on a 5-point scale where 1= very difficult, 2= quite difficult, 3= neither easy nor difficult, 4= quite easy, 5= very easy.

*Psychological Wellbeing Scales* (PWBS; Ryff, & Keyes, 1995). The 18-item questionnaire covers six dimensions of eudaimonic wellbeing (autonomy, environmental mastery, personal growth, purpose in life, positive relations with others, and self-acceptance) with a 4-point scale (1= very much in disagreement, 2= in disagreement, 3 = agree, 4 = very agree).

*Future time perspective* (Zacher, & Frese, 2009). The tool investigates the orientation to the future according to its 3 dimensions: breadth of the future, the perceived limits and the opportunities that can be seen. It consists of 10 items scale. Participants are asked to express the degree of consensus on 4 points (1= very much in disagreement, 2= in disagreement, 3 = agree, 4 = very agree).

#### 4. Analyses and results

Data analysis was realized using IBM SPSS Statistics, version 27 and *jamovi* version 1.6.

A Multivariate Analysis of Variance (MANOVA) conducted between the different stages of adult life compared to CSE dimensions showed a main significant effect [Wilks Lambda: 0.842,  $F(3,211) = 2.262$ ,  $p < .005$ ]. Specifically, a significant effect of age comparing groups respectively for Self-awareness [ $F(1vs3) = -3.74$ ,  $p < .05$ ;  $F(2vs3) = -3.22$ ;  $p < .05$ ], and Management [ $F(1vs2) = -3.50$ ;  $p < .05$ ] were found. As regards Self-awareness, older adults showed a significantly higher mean level than the other two age groups, while for Management the group of adults showed a significantly mean level in comparison with the young group (Table 1).

Table 1. Means and Standard Deviations (SD) in scores reported in the dimensions addressed and summary of pairwise comparisons. Significant differences are reported in bold italics

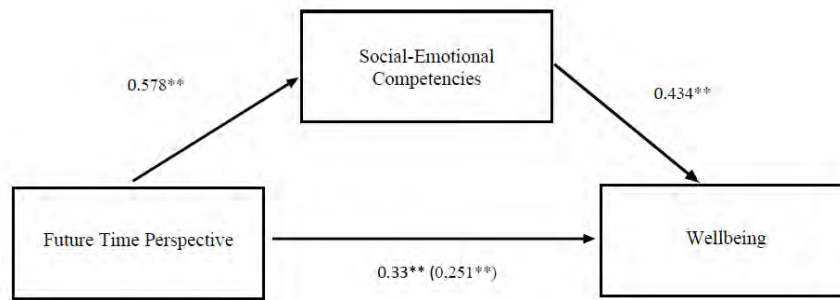
| Dimensions                  | Young adults (1) | Adults (2)    | Middle adults (3) | Multiple comparisons |               |               |
|-----------------------------|------------------|---------------|-------------------|----------------------|---------------|---------------|
|                             | M (SD)           | M (SD)        | M (SD)            | 1-2                  | 1-3           | 2-3           |
| Total SECs                  | 142,21 (14,7)    | 146,55 (15,2) | 147,86 (14,2)     | -4,34                | -5,65         | -1,32         |
| AWARENESS                   | 53,60 (6,0)      | 54,12 (6,7)   | 57,34 (5,9)       | -,519                | <b>-3,74*</b> | <b>-3,22*</b> |
| MANAGEMENT                  | 69,94 (9,1)      | 73,44 (8,3)   | 71,59 (7,7)       | <b>-3,50*</b>        | -1,65         | 1,85          |
| Decision making             | 18,66 (2,5)      | 18,98(2,5)    | 18,93 (2,2)       | -,32                 | -,27          | ,05           |
| Self Awareness of Strengths | 14,00 (1,7)      | 13,98 (1,9)   | 14,86 (1,8)       | ,02                  | <b>-,86*</b>  | <b>-,88*</b>  |
| Self Awareness of emotions  | 20,89 (3,6)      | 21,48 (3,7)   | 23,18 (2,8)       | -,59                 | <b>-2,29*</b> | <b>-1,70*</b> |
| Management of Emotions      | 12,18 (2,8)      | 13,25 (2,7)   | 13,20 (2,2)       | <b>-1,07*</b>        | -1,02         | ,05           |
| Management of goals         | 13,84 (2,9)      | 14,33 (2,3)   | 13,89 (1,9)       | -,49                 | -,05          | ,44           |
| Management of work          | 21,48 (3,9)      | 23,01 (3,3)   | 22,27 (2,8)       | <b>-1,53*</b>        | -,79          | ,74           |
| Social Awareness            | 18,71 (2,5)      | 18,65 (2,6)   | 19,29 (2,5)       | ,06                  | -,58          | -,64          |
| Social Skills               | 21,73 (3,6)      | 22,84 (3,3)   | 22,23 (3,3)       | -,40                 | ,22           | ,62           |

The results show a significant difference between groups in Self-awareness of one's strengths ( $F(1vs2) = -0.86$ ;  $p < .05$ ,  $F(2vs3) = -.88$ ,  $p < .05$ ), Self-awareness of emotions ( $F(1vs3) = -2.29$ ;  $p < .05$ ;  $F(2vs3) = -1.70$ ,  $p < .05$ ), Emotion Management ( $F(1vs2) = -1.07$ ;  $p < .05$ ), and Management of Work ( $F(1vs2) = -1.53$ ;  $p < .05$ ). For the first two scales the large adults show a significantly higher level of CSE for the first two, while for the second two were the adults of the intermediate age group to present a higher score.

To test the mediation role of SECs, *Path Analyses* were carried out based on regression models to observe the impact of SECs on the relationship between future time perspective and components of wellbeing. Before testing the hypotheses, intercorrelations between the study variables were calculated showing significant relationships between variables under study.

The mediating role of CSEs in the relationship between temporal perspective and perceived global wellbeing was then analyzed (Figure 1). CSEs seem to partially mediate the relationship between future perspective and wellbeing ( $\beta = .251$ ,  $p < .001$ ), although the direct effect between the two indices is greater ( $\beta = .33$ ,  $p < .001$ ). It is worth to highlight the predictive effect of the future time perspective ( $\beta = .578$ ,  $p < .001$ ) on CSEs, which have a predictive effect on psychological wellbeing ( $\beta = .434$ ,  $p < .001$ ).

Figure 1. Regression model of SECs and the relation with future time perspective and. Indirect effects are reported in parenthesis. Legenda: \* $p < .005$ , \*\* $p < .001$ .



Consequently, future time perspective plays a role in the wellbeing of the person and this relationship is mediated by the CSE. Results are summarized in Table 2.

Table 2. Direct and indirect and mediation effects of Social-Emotional Competencies.

| Type      | Effect                                   | Estimate | SE     | 95% C.I. (a) |       | $\beta$ | z     | p     |
|-----------|--|----------|--------|--------------|-------|---------|-------|-------|
|           |  |          |        | Lower        | Upper |         |       |       |
| Indirect  | Future Time Perspective, SECs, Wellbeing | 0.255    | 0.0436 | 0.169        | 0.340 | 0.251   | 5.84  | <.001 |
| Component | Future Time Perspective, SECs, Wellbeing | 1.437    | 0.1393 | 1.164        | 1.710 | 0.578   | 10.31 | <.001 |
|           |  | 0.177    | 0.0250 | 0.128        | 0.226 | 0.434   | 7.08  | <.001 |
| Direct    | Future Time Perspective, SECs, Wellbeing | 0.339    | 0.0622 | 0.217        | 0.461 | 0.334   | 5.45  | <.001 |
| Total     | Future Time Perspective, , Wellbeing     | 0.594    | 0.0566 | 0.483        | 0.705 | 0.586   | 10.49 | <.001 |

The model highlights the predictive effect of time perspective on CSEs, which have a predictive effect on psychological wellbeing. Thus, it is worth emphasizing the importance of Socio-Emotional Skills as a coping mechanism.

### 5. Discussion

The results of the study confirm the specificity of patterns in Social and Emotional Competences across adulthood. Social and Emotional skills vary both in the awareness and in management components. Emerging adults have significantly lower levels in total CSE, Self-Awareness Management, with reference to Awareness of Emotion and Work Management. Some awareness-related SECs seem characterized by a linear increase from emerging to middle adulthood; on the other hand, management related SECs seem sensitive to change in a specific adulthood period. Management of emotions in general and specifically in the work context might be challenged by contextual requests specifically for adults from 30 to 45 years.

As for psychological wellbeing, the results of the research are in line with the literature (Li & Hasson, 2020, Dorociak et al., 2017) showing a significant relationship between future time perspective and wellbeing, SECs and psychological wellbeing.

The analyses highlight a significant mediation role of CSEs between future perspective, wellbeing. Consequently, favoring the development of CSEs adults might experience greater wellbeing in different contexts of life, as suggested by recent research studies (Taylor, 2017).

With the progress of adult development, the relationship component becomes more and more important (Carstensen, 2006). It is then possible that people develop greater competencies in understanding and managing emotions and social aspects because they are more motivated to maintain significant affections, which increase the wellbeing experienced. In particular, mastery of the environment is in relation to the management skills of both work and emotions, emphasizing the importance for adults to cope with the professional and work challenges that arise in everyday life (Arnett, Robinson, & Lachman, 2020).

Results also support the need for integration of a lifespan developmental framework that conceives human development as a continuous, multidimensional, and multidirectional process as well as individual action regulation and adaptation to changing environments and life course perspective which focuses on the interplay between systems and the individual (Zacher and Froidevaux, 2021).

## 6. Conclusions

The results highlight the critical role of socioemotional skills for understanding the complex relationship between FTP and subjective wellbeing. In the face of the many daily challenges, the adult who has the highest skills to project himself into the future and to manage emotions and goals, will be able to experience greater psychological wellbeing. Although the study underlines the need for further extended studies on the issues addressed here, social and emotional learning should be considered an integral part of adult education and lifelong learning. Adult education and prevention actions should focus on self-orientation, orientation towards others, and orientation towards development goals or adapting to change to strengthen them and promote overall wellbeing and in particular environmental mastery.

## References

- Arnett, J. J., Robinson, O., & Lachman, M. E. (2020). Rethinking adult development: Introduction to the special issue. *American Psychologist*, 75(4), 425.
- Carstensen, L. L. (2006). The influence of a sense of time on human development. *Science*, 312(5782), 1913-1915.
- CASEL (Collaborative for Academic, Social, and Emotional Learning). <https://casel.org/casel-sel-framework-11-2020>
- Cate, R.A., & John, O.P. (2007). Testing models of the structure and development of future time perspective: maintaining a focus on opportunities in middle age. *Psychology and aging*, 22(1), 186.
- Charles, S. T., & Carstensen, L. L. (2008). Unpleasant situations elicit different emotional responses in younger and older adults. *Psychology and aging*, 23(3), 495.
- Coudin, G., & Lima, M. L. (2011). Being well as time goes by: Future time perspective and wellbeing. *International Journal of Psychology and Psychological Therapy*, (2), 219-232.
- Davidson, L., Crowder, M., Gordon, R., Domitrovich, C., Brown, R., & Hayes, B. (2018). A continuous improvement approach to social and emotional competency measurement. *Journal of Applied Developmental Psychology*, 55, 93-106
- Dorociak, K. E., Rupert, P. A., & Zahniser, E. (2017). Work life, wellbeing, and self-care across the professional lifespan of psychologists. *Professional Psychology: Research and Practice*, 48(6), 429.
- Henry, H., Zacher, H., & Desmette, D. (2017). Future time perspective in the work context: A systematic review of quantitative studies. *Frontiers in Psychology*, 8, 413.
- Matud, M. P., Bethencourth, J. M., Ibáñez, I., & Fortes, D. (2020). Gender and psychological wellbeing in older adults. *International Psychogeriatrics*, 32(11), 1293-1302.
- Mayordomo, T., Viguer, P., Sales, A., Satorres, E., & Meléndez, J. C. (2016). Resilience and coping as predictors of wellbeing in adults. *The Journal of Psychology*, 150(7), 809-821.
- Ryff, C. D., & Keyes, C. L. M. (1995). The structure of psychological wellbeing revisited. *Journal of personality and social psychology*, 69(4), 719.
- Savickas, M. L., & Porfeli, E. J. (2012). Career Adapt-Abilities Scale: Construction, reliability, and measurement equivalence across 13 countries. *Journal of vocational behavior*, 80(3), 661-673.
- Webster, J. D., & Ma, X. (2013). A balanced time perspective in adulthood: Wellbeing and developmental effects. *Canadian Journal on Aging/La Revue canadienne du vieillissement*, 32(4), 433-442.
- Zacher, H., & Frese, M. (2009). Remaining time and opportunities at work: relationships between age, work characteristics, and occupational future time perspective. *Psychology and aging*, 24(2), 487.
- Zacher, H., & Froidevaux, A. (2021). Life stage, lifespan, and life course perspectives on vocational behavior and development: A theoretical framework, review, and research agenda. *Journal of Vocational Behavior*, 126, 103476.



# POSTERS



## SELF-CARE PROCESS IN CARDIOVASCULAR DISEASE: OBSERVATIONAL STUDY ON OUTPATIENTS' PATHWAY

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### Abstract

**Background.** Cardiovascular disease (CVD) is a chronic non-communicable illness that causes more than half of all deaths across Europe. 80% of premature heart disease and stroke is preventable by effective measures availability for people at high risk. However, many such interventions are not being implemented and managed by patients. Managing such illness requires mastering self-care. **Objective.** Aim of our study was to identify predictive factors of illness management by evaluating emotional characteristics, emotion regulation, and self-care process in young CVD outpatients. **Methods.** An observational study was conducted. 61 patients, age 18–75 years (M 56.4 ± sd 12.0), diagnosed with CVD participated in the study. The psychological battery was administered during clinical follow-up: Self Care of Chronic Illness Inventory, Depression Anxiety Stress Scale-21, World Health Organization Quality of Life – Bref, Difficulties in Emotion Regulation Scale. **Results.** The sample showed mild Anxiety and Stress degree, low Self-care, Social relationship, and emotional Clarity. First, participants were distributed into two groups by median age: Young (Y) and Old (O). Statistical analysis showed significant lower Psychological health ( $p = 0.03$ ) and higher Non acceptance of emotional responses ( $p = 0.02$ ) in O group. Then, participants were distributed in two groups by timing from CVD diagnosis: Early Disease (ED) and Long Disease (LD). One Way ANOVA showed lower emotional Awareness ( $p=0.03$ ) in LD group. Controlling for diagnosis timing, negative Pearson's correlations emerged between difficulties in emotion regulation domains and self-care monitoring, self-efficacy and QoL. **Conclusions.** Poor adherence to CVD pharmacological therapy could be addressed by identifying the emotional characteristics, subjective emotion ability, and self-care process of patients who are or may be at risk of non-persistence. The psychological screening and tailored psychological support on these predictive factors may result in clinical benefits.

**Keywords:** Cardiovascular disease, self-care behaviours, quality of life, psychological dimensions.

### 1. Introduction

Cardiovascular disease (CVD) is a chronic non-communicable illness that causes more than half of all deaths across Europe. 80% of heart disease and stroke can be prevented adhering to effective cardiovascular treatment. Effective and well tolerated drug therapies are available to effectively control blood pressure in almost 80% of patients. However, approximately one third of patients with a history of myocardial infarction and approximately one half without do not adhere to effective cardiovascular preventive treatment (Slivnick et al., 2019). It becomes pivotal to investigate the risk factors of drug non-adherence to achieve positive therapeutic goals by reducing the risk of manifest disease. To date, few studies have focused on the patient individual factors influence on health management.

According to a new taxonomy (Vrijens et al., 2012), adherence to medications is a process characterized by 3 major components: the *initiation* (the time from prescription until the first dose of the medication is taken), the *implementation* (the extent to which a patient's actual dosing corresponds to the prescribed dosing regimen), and the *discontinuation* (it marks the end of therapy, when the next dose to be taken is omitted and the treatment is interrupted thereafter). This parameter enables the definition of persistence, which is the length of time between initiation and the last dose immediately preceding discontinuation. Non-persistence is one of the most common causes of poor adherence in hypertension with 50% of patients having stopped their treatment at 1 year (Burnier, 2019).

CVD treatment adherence is a complex dynamic process that requires the mastery of self-care: acquiring specific skills and developing a set of strategies to achieve global health goals, cope with the



disease and self-regulate one's behaviours, self-efficacy. To date, few studies have been focused on predictive psychological factors of CVD patient long term adherence and well-being.

Aim of our study was to identify predictive factors of disease management by evaluating emotional characteristics, emotion regulation, self-care process, and quality of life in young CVD patients.

## **2. Design**

### **2.1. Ethical approval**

This study was approved by the IRB of the University of L'Aquila (IT) (Prot. N° 37590/2021). Informed consent was obtained from each participant, and the study adhered to the Declaration of Helsinki (WMA, 2018).

### **2.2. Study design**

We conducted an observational study.

## **3. Objectives**

The aim of the study was to investigate predictive factors of CVD management identifying emotional characteristics and self-care process in young outpatients.

## **4. Methods**

### **4.1. Participants**

61 patients (39F, 22M), age 18–75 years (M 56.4 ± SD 12.0), diagnosed with CVD disease participated in the study. Inclusion criteria have been: (a) ≥ 18 years old (a); (b) CVD diagnosis; (c) cardiovascular pharmacological treatment; (d) provision of informed consent. Exclusion criteria have been: (a) alcohol or substance abuse; (b) sign of psychiatric or neurological diseases.

### **4.2. Measures**

The psychological battery was administered during clinical follow-up: Self Care of Chronic Illness Inventory (SC-CII) to measure 5 domains of Self-care behaviors in chronic disease (Monitoring, Maintenance, Management, Self-Efficacy, Total Self-care); Depression Anxiety Stress Scale-21 (DASS-21) to measure the emotional states of Depression, Anxiety and Stress; World Health Organization Quality of Life – Bref (WHOQOL-BREF) to assess 4 domains of quality of life (QoL): Physical health, Psychological health, Social relationships, and Environment; Difficulties in Emotion Regulation Scale (DERS) to investigate individual differences in the ability to identify, accept and manage emotional experiences: Non acceptance, Goals, Impulse, Awareness, Clarity.

### **4.3. Procedures**

Medical staff identified eligible patients. Trained clinical psychologists (blinded to the aim of the study) conducted the psychological assessment in a quiet, dedicated room. The duration of the evaluations was 20 minutes. Data were collected anonymously.

### **4.4. Statistical analyses**

Descriptive statistics for measures were calculated in order to analyse the emotional characteristics, self-care behaviours and QoL of the sample; ANOVA analyses (followed by Tukey's post hoc analyses) were conducted to detect the statistical significance of the overall differences across the psychological variables by age and timing of diagnosis. Then, Pearson r correlations were applied. The Jamovi stat was applied for statistical analyses. The level of significance adopted was  $\alpha < 0.05$ .

## **5. Results**

The sample showed mild Anxiety (M = 9.64±9.74, cut-off = 7) and Stress (M = 15.3±10.5, cut-off = 14); no signs of Depression (M = 9.41±9.58, cut-off = 9). Moreover, participants reported low Total Self-care (M = 69.0±11.6, cut-off = 70), low Social relationship (M 44.5, SD±10.7), and emotional Clarity (M 5.46, SD±2.71).

First, we wanted to analyse age effect on emotional variables, Self-care behaviours, QoL, and emotion regulation. Participants were distributed into two groups by median age (58 years old): Young group (Y) and Old group (O). One-way ANOVA (2 x 5) was conducted to compare performance of Y and

O groups on WHOQOL-BREF domains. Statistical analysis showed significant lower Psychological health ( $F(4,6) = 59$ ;  $\eta^2 = 0.91$ ;  $p = 0.03$ ) in O group. One-way ANOVA (2 x 5) was conducted to compare performance of Y and O groups on DERS domains. Statistical analysis showed significant higher Non acceptance ( $F(5,2) = 57.2$ ;  $\eta^2 = 0.93$ ;  $p = 0.02$ ) in O group. No other significant differences emerged.

Then, we wanted to analyze CVD diagnosis timing effect on emotional variables, Self-care behaviours, QoL, and emotion regulation. Participants were distributed into two groups by timing from CVD diagnosis (median 84 months): Early Disease (ED, n.31) and Long Disease (LD, n.30). One way ANOVA (2 x 5) comparing DERS by CVD timing diagnosis groups (ED, LD) showed significant lower Awareness ( $F(4,6) = 58.3$ ;  $\eta^2 = 0.93$ ;  $p = 0.03$ ) in LD group. No other significant differences emerged.

Controlling for diagnosis timing, negative Pearson's correlations emerged between Awareness and Monitoring ( $p=0.005$ ) and Self-efficacy ( $p < .001$ ); between Clarity and Self-efficacy ( $p=0.012$ ). Negative correlation emerged between Non Acceptance and WHO ( $p < .001$ ) (Psychological health ( $r = -0.5$ ), Physical health ( $r = -0.4$ ), Social relationship ( $r = -0.4$ ), Environment ( $r = -0.4$ )). Negative correlation emerged between Goals and WHO ( $p < .001$ ) (Psychological health ( $r = -0.6$ ), Physical health ( $r = -0.5$ ), Social relationship ( $r = -0.5$ ), Environment ( $r = -0.5$ )); between emotional Clarity and WHO Psychological health ( $r = -0.4$ ;  $p < .001$ ), Physical health ( $r = -0.3$ ;  $p=0.004$ ), Social relationship ( $r = -0.3$ ;  $p=0.005$ ), Environment ( $r = -0.3$ ;  $p=0.008$ ); between emotional Impulse and WHO ( $p < .001$ ) (Psychological health ( $r = -0.5$ ), Social relationship ( $r = -0.4$ ), Environment ( $r = -0.5$ ) and Physical health ( $r = -0.3$ ;  $p=0.004$ )).

## 6. Discussion

This study examined the psychological dimensions, QoL, self-care process of CVD outpatients who are in cardiovascular treatment to identify predictive factors of illness management.

Our study confirmed data literature on the psychological vulnerability of CVD patients (Silverman et al., 2019): our sample showed signs of anxiety and stress. Moreover, our sample highlighted poor adherence to cardiovascular treatment management, low social relationship and lack of emotional clarity.

Regarding to the aging and CVD, many older adults receiving pharmacological therapy may already have significant multimorbidity that complicate treatment outcomes and exacerbate vulnerability in therapy adherence (Forman et al., 2018). Our results confirmed the vulnerability of older patients: O group showed significantly lower psychological health and higher non-acceptance of emotional responses.

Non-persistence is one of the most common causes of poor adherence in CVD patients. According to this, our results showed lack of emotional awareness in patients diagnosed for long time. Interestingly, our findings showed negative correlations between emotion regulation problems and the patient's ability to monitor and recognize early signs and symptoms of CVD and the self-efficacy in carrying out specific self-care behaviours as well as with QoL.

## 7. Conclusions

Poor adherence to CVD pharmacological therapy could be addressed by identifying the emotional characteristics, subjective emotion ability, and self-care process of patients who are or may be at risk of non-persistence. In clinical practice, psychological screening can be an effective tool for detecting predictive factors in the management of the CVD patient's health and adherence to medical treatment. The identification and appropriate support of these factors may result in clinical benefits.

## References

- Burnier M (2017). Drug adherence in hypertension. *Pharmacological research*, 125(Pt B), 142–149.
- Forman, DE, Maurer, MS, Boyd, C, Brindis, R, Salive, ME, Horne, FM, Bell, SP, Fulmer, T, Reuben, D B, Zieman, S, & Rich, MW. (2018). Multimorbidity in Older Adults with Cardiovascular Disease. *Journal of the American College of Cardiology*, 71(19), 2149–2161.
- Silverman, AL, Herzog, AA, & Silverman, DI. (2019). Hearts and Minds: Stress, Anxiety, and Depression: Unseen Risk Factors for Cardiovascular Disease. *Cardiology in review*, 27(4), 202–207.
- Slivnick, J, & Lampert, BC. (2019). Hypertension and Heart Failure. *Heart failure clinics*, 15(4), 531–541.
- Vrijens, B, De Geest, S, Hughes, & al. (2012). A new taxonomy for describing and defining adherence to medications. *British journal of clinical pharmacology*, 73(5), 691–705.

# WHAT COMPONENTS SHOULD BE STRENGTHENED BY WORKING WITH A COUPLE TO INCREASE THEIR RELATIONSHIP SATISFACTION AND THEIR WELL-BEING?

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## Abstract

There are many schools of couple therapy, but none has emerged yet that would clearly dominate the rest. Therefore, it is extremely important to constantly search for new therapeutic practices and verify them in empirical research. The purpose of this study was to check the link between women's self-esteem and their satisfaction in a relationship and well-being. Attempts have also been made to verify if there is a correlation between relationship satisfaction and well-being, and with the components of love: intimacy, passion and commitment (IPC). There were 116 women, aged 19 to 45, in a heterosexual, romantic relationship who participated in the study. A self-developed questionnaire was used to identify the phases of the relationship, as well as Polish adaptations of tools measuring self-esteem, life and relationship satisfaction. The results indicate a positive correlation between the level of women's self-esteem and their well-being (strong) and relationship satisfaction (moderate). Results confirming a positive correlation between women's relationship and life satisfaction and strong positive correlations between love components and relationship satisfaction were also obtained. Moderate correlations between self-esteem and its subscales were also established: self-liking and a self-competence with intimacy. There was also a positive correlation of self-acceptance with the sum of the components of love as well as of passion and intimacy with well-being. Additionally, a positive relationship was found between self-esteem and self-acceptance subscale and life satisfaction. The data from regression analysis showed that the predictors of life satisfaction are self-esteem, relationship satisfaction and the sum of the love components. The results of this study contribute to research on close relationships, as well as to the therapeutic practice of couples. They can also have a practical dimension for individual psychological or therapeutic help. There is a chance that by developing self-esteem, as well as intimacy and passion in a client's relationship, the therapist will not only enable her to increase satisfaction with the relationship, but also with life.

**Keywords:** *Self-Esteem, relationship, intimacy, well-being, couple therapy.*

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## 1. Introduction

The conducted research was aimed at searching for new predictors of women's life and relationship satisfaction, in order to show additional possibilities of working with clients in a therapeutic setting. For this purpose, the correlations between women's self-esteem, their well-being and relationship satisfaction were analysed, and between women's relationship satisfaction, their well-being and the components of love, i.e. intimacy, passion and commitment (Sternberg, 1986). In the development proposed by Wojciszke (2014), he distinguished five phases of a romantic relationship in which there is a different saturation of the components of love. The first phase of a relationship is *falling in love* with passion. As intimacy increases, the relationship passes into the phase of *romantic beginnings*, and when complemented with commitment, it enters the third phase - a *complete relationship*. All three elements of love are present in this phase. With the disappearance of passion, the relationship passes into the fourth phase - a *friendly relationship*, and when the level of intimacy decreases over time, the partners enter an *empty relationship* – the fifth phase of the relationship, in which only commitment remains.

### 1.1. Relationship satisfaction

Relationship satisfaction is a fundamental factor in describing the quality of the relationship. This quality may be influenced by, i.e., a subjective sense of satisfaction of the spouses (Plopa, 2008), compliance of the attitudes they adopt towards their priority values (Wojciszke, 2014), mutual perceived

physical attractiveness (Weeden, Sabini, 2005) or increased interaction with those who are attractive to us (Luo, Zhang, 2009). Rozwadowska (2015) showed a positive relationship between the level of intimacy and the sense of satisfaction with the relationship in the case of women. In the case of men, high level of intimacy and passion contributed to high relationship satisfaction. One factor positively related to relationship satisfaction is sexual satisfaction, especially in men (Sprecher, 2002).

## 1.2. Well-being

Subjective well-being is related to close relationships (Diener, & Oishi, 2000). It refers to the assessment of the degree of one's own satisfaction with life by an individual. This assessment is based on the presence of positive affect and the absence of negative affect in various areas of life and time contexts (Diener et al., 1999). Positive emotions seem to be important in this context, because, according to Barbara Fredrickson (2011), they broaden people's thought-action repertoires, build psychological resilience and trigger upward spirals toward enhanced emotional well-being.

## 1.3. Self-esteem and close relationships

The level of self-esteem is of great importance in interpersonal contacts and romantic relationships. Murray et al. (2001) indicated that people with low self-esteem evaluate their partners worse, as well as show lower levels of satisfaction and optimism regarding the future of their relationship. In addition, people with low self-esteem are sensitive to rejection, which causes a tendency to distance themselves from their partner (Murray et al., 2015). Moreover, the level of self-esteem is related to the subjective satisfaction with life (Diener & Diener, 1995), and in romantic relationships, also to general, emotional and sexual satisfaction (Shackelford, 2001).

In connection with the above, the following research hypotheses were formulated:

H1: Women's self-esteem is positively related to their well-being.

H2: Women's self-esteem is positively related to their relationship satisfaction.

H3: Women's self-esteem is positively related to all the components of love.

## 2. Method

The sample consisted of 116 women aged 19 to 45 ( $M = 29$ ,  $SD = 6.81$ ). The conditions to qualify for participation in the study were: at least one year of experience in the relationship and heterosexuality. Recruitment took place via social media and the survey was conducted online. The subjects completed a set of questionnaires, in the following order: screening - a self-developed questionnaire to test the relationship phase, Tafarodi and Swann's Self-Liking / Self-Competence Scale-Revised Version (SLCS-R) to measure self-esteem, STLS Acker and Davis to measure the components of love, Diener's Satisfaction with Life Scale (SWLS) for measuring satisfaction with life, Comprehensive Marital Satisfaction Scale (CMSS) by Blum and Mehrabian for measuring relationship satisfaction.

## 3. Results

### Correlates of life satisfaction (well-being)

There was positive correlation between well-being and self-esteem ( $r = 0.54$ ;  $p < 0.001$ ; 29% of common variance), and its components: self-liking ( $r = 0.54$ ;  $p < 0.001$ ) and self-competence ( $r = 0.44$ ;  $p < 0.001$ ). Moreover, well-being correlated with romantic beginnings ( $r = 0.30$ ;  $p < 0.001$ ), complete love ( $r = 0.42$ ;  $p < 0.001$ ) and friendliness ( $r = 0.35$ ;  $p < 0.001$ ), and negatively with empty compound ( $r = -0.36$ ;  $p < 0.001$ ) and decay ( $r = -0.37$ ;  $p < 0.001$ ).

### Correlates of relationship satisfaction

Relationship satisfaction turned out to be positively correlated with self-esteem ( $r = 0.31$ ;  $p = 0.001$ ) and its subscales: self-liking ( $r = 0.32$ ;  $p < 0.001$ ) and self-competence ( $r = 0.23$ ;  $p = 0.011$ ). Relationship satisfaction also positively correlated with the sum of all three components of love ( $r = 0.67$ ;  $p < 0.001$ ), as well as with each component individually, with the strongest relationship between intimacy and relationship satisfaction ( $r = 0.84$ ;  $p < 0.001$ ). There was also a correlation between relationship satisfaction and well-being ( $r = 0.53$ ;  $p < 0.001$ ). Relationship satisfaction also correlated positively with romantic beginnings ( $r = 0.61$ ;  $p < 0.001$ ), complete love ( $r = 0.69$ ;  $p < 0.001$ ) and friendliness ( $r = 0.69$ ;  $p < 0.001$ ) and negatively with empty compound ( $r = -0.78$ ;  $p < 0.001$ ) and decay ( $r = -0.77$ ;  $p < 0.001$ ). Moreover, the results showed that self-esteem is positively correlated with intimacy ( $r = 0.33$ ;  $p < 0.001$ ). Importantly, self-acceptance correlates both with self-esteem ( $r = 0.35$ ;  $p < 0.001$ ) and with the sum of all three components of love ( $r = 0.19$ ;  $p = 0.038$ ).

#### 4. Discussion

The results show a relationship between women's self-esteem and their well-being and relationship satisfaction. Especially the latter seems to be important, as previous studies were not clear on this issue. The research showed also a correlation between women's self-esteem and the components of love: passion, intimacy, and commitment (IPC). Both self-esteem and its subscales: self-liking and the self-competence correlated moderately positively with intimacy, the strongest being the relationship between intimacy and self-liking. A significant, though weak, correlation was observed between the self-liking subscale and IPC. The obtained results indicate that women's relationship satisfaction is positively related to their well-being. Markey, Markey and Gray (2007) showed that partner support can protect against the harmful effects of stress and lead to achievement of well-being. It has also been shown that there is a positive correlation between IPC and relationship satisfaction.

People undertake various activities to strengthen their self-esteem, including: compensating for the decrease in self-esteem in one area with another area, blaming other people and circumstances for their own mistakes, using comparisons with others to their advantage or using positive self-presentation (cf. Doliński, 2000). Knowledge in this area, as well as the results presented in this paper, may prove useful in the treatment of couples. Firstly, it is recommended to use a tool for measuring self-esteem when diagnosing problems in close relationships. It is also recommended to support both partners in developing their self-regulatory competences without compromising the quality of the relationship. They can be taught not to escape to other spheres of life, e.g. professional, to raise their self-esteem when the relationship is experiencing difficulties, or to work with them to regulate their self-esteem at the expense of the other person (through comparisons), which can happen in less conscious relationships. It is additionally recommended using a self-esteem measuring tool when diagnosing personal problems or reduced life satisfaction. Working on self-esteem of an individual can be a factor supporting the effective resolution of life difficulties.

#### References

- Diener, E., & Diener, M. (1995). Cross-cultural correlates of life satisfaction and self-esteem. *Journal of Personality and Social Psychology*, 68(4), 653-663.
- Diener, E., Suh, E.M., Lucas, R.E., & Smith, H.L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276-302.
- Diener, E., & Oishi, Sh. (2005). The nonobvious social psychology of happiness. *Psychological Inquiry*, 16, 4, 162-167.
- Doliński, D. *Psychologia wpływu społecznego*. Wrocław: Towarzystwo Przyjaciół Ossolineum.
- Fredrickson B. L. (2001). The role of positive emotions in positive psychology. The broaden-and-build theory of positive emotions. *The American psychologist*, 56(3), 218-226.
- Luo, S. & Zhang, G. (2009). What leads to romantic attraction: similarity, reciprocity, security, or beauty? Evidence from a speed-dating study. *Journal of Personality*, 77(4), 933-964.
- Markey, C., Markey, P., & Gray, H. (2007). Romantic relationships and health: An examination of individuals' perceptions of their romantic partners' influences on their health. *Sex Roles*, 57, 435-445.
- Murray, S. L., Gomillion, S., Holmes, J. G., & Harris, B. (2015). Inhibiting Self-Protection in Romantic Relationships Automatic Partner Attitudes as a Resource for Low Self-Esteem People. *Social Psychological and Personality Science*, 6(2), 173-182.
- Murray, S. L., Holmes, J. G., Griffin, D. W., Bellavia, G., & Rose, P. (2001). The mismeasure of love: How self-doubt contaminates relationship beliefs. *Personality and Social Psychology Bulletin*, 27(4), 423-436.
- Plopa, M. (2008). *Psychologia rodziny: teoria i badania*. Kraków: Oficyna Wydawnicza Impuls.
- Rozwadowska, M. (2015). Kto rządzi we współczesnych bliskich związkach? Ocena decyzyjności partnerów w różnych sferach wspólnego życia. *Czasopismo Psychologiczne – Psychological Journal*, 21, 1, 53-63.
- Sprecher, S. (2002). Sexual satisfaction in premarital relationships: Associations with satisfaction, love, commitment, and stability. *Journal of sex research*, 39, 190-196.
- Shackelford, T. K. (2001). Self-esteem in marriage. *Personality and Individual Differences*, 30, 371-390.
- Sternberg, R. J. (1986). A triangular theory of love. *Psychological review*, 93(2), 119-135.
- Weeden, J., & Sabini, J. (2005). Physical Attractiveness and Health in Western Societies: A Review. *Psychological Bulletin*, 131(5), 635-653.
- Wojciszke, B. (2014). *Psychologia miłości*, Gdańsk: GWP.

## HEALTH MANAGEMENT IN PATIENTS WITH CHRONIC DISEASES: FACTORS IMPROVING SELF-CARE MASTERING

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### Abstract

**Background:** Chronic Diseases (CD) such as diabetes, musculoskeletal disorders, cardiovascular diseases, neurological disorders, and cancers increase with age and place a burden on individuals and healthcare systems, and more they are associated with a lower Quality of Life (QoL) in the elderly. CD conditions suggested improvements of self-care investigations switching research perspectives from medication or dietary adherence, biological exams, or symptoms management to maintaining health through treatment adherence and health-promoting practices.

**Objective:** Aim of the present study was to evaluate the health management of chronic disease, analyzing the effectiveness of self-care and the emotional dimensions (anxiety, stress, depression).

**Materials and Methods:** We conducted an observational study on 132 outpatient patients aged 18 to 75 years (mean age 52.6 years, SD  $\pm$  12.4) diagnosed with CD; 57,5% of the sample were females. The participants were enrolled at the Clinical Medicine Division of S. Salvatore Hospital in L'Aquila, ASL1 Abruzzo (IT). The psychological battery was composed of three standardized self-assessment measured emotional traits (DASS-21), QoL (WHOQOL-26), and Self-Care (SC-CII). Participants were divided into 2 groups based on CD as follows: a) cardiovascular disease (ex. cardiological disease) (CVD) group was composed of 68 patients (51.5%), b) other disease group (ex. disorders of the locomotor, gastrointestinal, and urogenital systems) (OD) was composed of 64 patients (48.5%).

**Results:** Descriptive analyses based on sociodemographic and clinical characteristics showed no difference among all the variables (gender, education, marital status, occupation, and timing diagnosis). One-way ANOVA was performed comparing the emotional dimensions for both CVD/OD groups. Statistical analysis showed significant difference in the OD group which showed greater signs of anxiety ( $p=0.029$ ), depression ( $p=0.007$ ), and stress ( $p=0.013$ ), than the CVD group. Then, we performed Pearson's correlation to compare the QoL with the ability to self-care index. The results highlighted a significant correlation between self-care maintenance, self-efficacy, and QoL.

**Discussion and Conclusion:** Our results show that, among CDs, patients with gastrointestinal, locomotor, and urogenital diseases appear to suffer more than patients with cardiovascular disease. The QoL is compromised in the maintenance of physical and mental health, in social relationships and, in self-efficacy index; the study highlights those actions could be planned for a person-centered approach with the aim of planning a better health outcome in CDs to progressively involve patients in overall self-care.

**Keywords:** *Clinical psychology, chronic diseases, self-care, emotional impact, patient engagement.*

### 1. Introduction

Self-management education complements traditional patient education in supporting patients to live the best possible quality of life with their chronic condition. Chronically ill patients make daily decisions about self-management of their illnesses. This reality introduces a new paradigm of chronic disease: the patient-professional partnership, which involves collaborative care and self-management education. More factors should be considered to improve the health awareness tailored on disease toward to better patient engagement: usually, gender, aging, comorbidities, sample source, value set were assessed but could be enlarged to individual factors as emotional regulation and psychological dimensions.

## 2. Study Design

Participants have been enrolled in Clinical Medicine Division of S. Salvatore Hospital in L'Aquila, ASL1 Abruzzo (Italy). This study was approved by the Internal Review Board of the University of L'Aquila, Italy (Prot. N° 107750/2020). Informed consent was obtained from each participant at the time of enrolment and the study adhered to the Declaration of Helsinki.

An observational study was conducted among outpatients diagnosed with CD, as a such as musculoskeletal, urogenital, gastrointestinal, and cardiovascular disorders. Trained clinical psychologists, blind to the objectives of the study, conducted the psychological screening in a quiet, dedicated room. The duration of the evaluations was 15 minutes. Data were collected anonymously.

## 3. Objective

Aim of the present study was to evaluate the health management of chronic disease, analyzing the effectiveness of self-care and the emotional dimensions, such as anxiety, stress, and depression.

## 4. Methods

### 4.1. Participants

Participants were n. 132 outpatients aged 18 to 75 years (mean age 52.6 years, SD  $\pm$  12.4) diagnosed with CD; 57,5% of the sample were females; 51,5% (N=68) of the sample were patients with diagnosed of cardiovascular diseases (CVD), while 48,5% (N=64) of the sample were patients with diagnosed with other chronic diseases (OD) including musculoskeletal, gastrointestinal, and urogenital diseases. Participants were divided into 2 groups based on CD as follows: a) CVD group and b) OD group.

### 4.2. Measurement

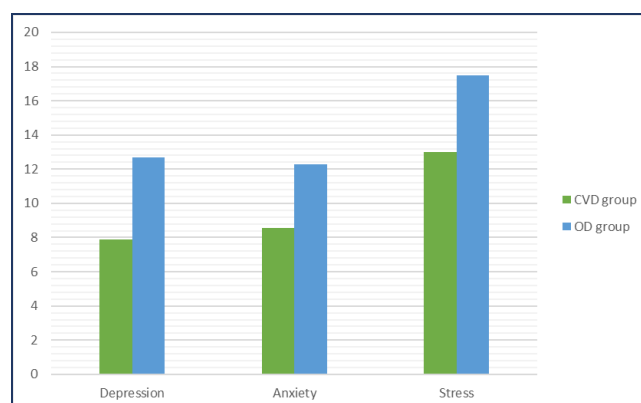
Two types of participant information were collected. First, demographics were collected through participant self-reports. We selected independent variables to be included in the analysis as they were age/stage of life characteristics (e.g., having children, being employed, and marital status) related to the time since diagnosis. Second, clinical data were obtained from the participants' medical records regarding the disease current stage, and the type of medical (pharmacological/surgery) treatment performed.

The psychological battery was composed of three standardized self-assessment measured emotional traits (depression, anxiety, stress) (DASS-21) (Bottesi G., et al, 2015), QoL (physical area, psychological area, environmental area, social relations area) (WHOQOL-26) (De Girolamo G., et al., 2000), and Self-Care indexes (maintenance, monitoring, management, and self-efficacy) (SC-CII) (De Maria M. et al., 2021).

### 4.3. Statistical Analysis

One-way ANOVA was performed comparing the emotional dimensions (depression, anxiety, and stress) for both CVD/OD groups. Statistical analysis showed significant difference in the OD group which showed greater signs of anxiety ( $p=0.029$ ), depression ( $p=0.007$ ), and stress ( $p=0.013$ ), than the CVD group (Figure 1). The comparison of all variables (self-care index, timing diagnosis or comorbidity) resulted not significantly different.

Figure 1. Representation of the emotional state by CD.



Then, we performed Pearson's correlation to compare the QoL with the ability to self-care. The results highlighted a significant correlation between self-care maintenance, monitoring, management, self-efficacy, and QoL: regard to the psychological health index, a positive correlation emerged between the self-care maintenance ( $p=0.002$ ), monitoring ( $p=0.049$ ) and self-efficacy ( $p=0.001$ ); in the physical health index positive correlation is highlighted with self-efficacy ( $p=0.035$ ).

## 5. Discussion

Our results draw a clinical scenario useful in view of adopting the biopsychological approach. Among the CD, patients with gastrointestinal, locomotor and urogenital diseases appear to suffer more than cardiovascular diseases: patients with gastrointestinal, locomotor and urogenital diseases show signs of depression, stress, and anxiety and therefore a lesser ability to cope with daily life. By analyzing self-care skills, exposure to emotional distress appears to impair the skills of self-care maintenance, monitoring, management, and self-efficacy. When mental or physical functions are impaired, this may cause disability and frailty, and is often associated with progression of chronic conditions (Bayliss et al., 2003; Graven et al., 2014; Moser et al, 2008; Riegel et al., 2012). According to the literature (Raeann et al., 2018) our study evidenced that the quality of perception of physical health is positively influenced by sense of self-efficacy for self-care: self-efficacy plays an important role in both physical and mental health. Decision- making capacity, necessary for deter-mining a course of action in response to symptoms and fluctuating states of health and wellness, is a result of an active role among CD patients (Riegel et al., 2009). Considering these variables could be enhanced medical protocols and adopted protective coping strategies for patients who have a chronic disease.

## 6. Conclusion

The overall finding highlighted that CD management should be addressed by empowering individuals who manage their own health conditions. Emerging actions for a person-centered approach to better health outcome in CD could be planned to progressively engage patients in comprehensive self-care, enhancing deeply personalized medicine protocols towards patient health awareness.

## References

- Bayliss, E. A., Steiner, J. F., Fernald, D. H., Crane, L. A., & Main, D. S. (2003). Descriptions of barriers to self-care by persons with co-morbid chronic diseases. *The Annals of Family Medicine*, 1(1), 15–21 <https://doi.org/10.1370/afm.4>
- Bottesi, G., Ghisi, M., Altoè, G., Conforti, E., Melli G., Sica, C. (2015). The Italian version of the Depression Anxiety Stress Scales-21: Factor structure and psychometric properties on community and clinical samples. *Comprehensive Psychiatry*, vol. 60, pp. 170-181.
- De Girolamo, G., Rucci, P., Scocco, P., Becchi, A., Coppa, F., D'addario, A., Darù, E., De Leo L., Galassi, L., Mangelli, L., Marson, C., Neri G., Soldani, L. (2000). La valutazione della qualità della vita: validazione del whoqol-breve. *Epidemiologia e psichiatria sociale*.
- De Maria, M., Matarese, M., Strömberg, A., Ausili, D., Vellone, E., Jaarsma, T., Osokpo, O., Daus, M., Riegel, B., Barbaranelli, C. (2021). Cross-cultural assessment of the Self-Care of Chronic Illness Inventory: A psychometric evaluation. *International Journal Nursing Studies*, vol. 116, p. 103422, 2021.
- Graven, L. J., & Grant, J. S. (2014). Social support and self-care behaviors in individuals with heart failure: An integrative review. *International Journal of Nursing Studies*, 51(2), 320–333 <https://doi-org.univaq.clas.cineca.it/10.1016/j.ijnurstu.2013.06.013>
- Moser, D. K., & Watkins, J. F. (2008). Conceptualizing self-care in heart failure: A life course model of patient characteristics. *Journal of Cardiovascular Nursing*, 23(3), 205–218. doi: 10.1097/01.JCN.0000305097.09710.a5
- Riegel, B., Jaarsma, T., & Strömberg, A. (2012). A middle-range theory of self-care of chronic illness. *Advances in Nursing Science*, 35(3), 194–204. doi: 10.1097/ANS.0b013e318261b1ba
- Riegel, B., Moser, D. K., Anker, S. D., Appel, L. J., Dunbar, S. B., Grady, K. L., Whellan, D. J. (2009). State of the science promoting self-care in persons with heart failure: A scientific statement from the American Heart Association. *Circulation*, 120(12), 1141–1163. <https://doi-org.univaq.clas.cineca.it/10.1161/CIRCULATIONAHA.109.192628>



## IMPULSIVITY AND EMOTION REGULATION IN GIFTED ADULTS WITH ADDICTIVE BEHAVIORS

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### Abstract

Empirical evidence pointed out giftedness, as defined by high intellectual abilities (IQ  $\geq$  130 according to the WHO), to be a protective or a neutral factor in the development of psychopathologies in children and adolescents (e.g., Martin et al., 2010, Alexopoulou, 2020). Nevertheless, very few studies demonstrated interest regarding addictions and giftedness. The few ones that have attempted to explore this subject focused only on academic giftedness and their relation to substance use. For instance, Williams and Hagger-Johnson (2017) found an increased risk of drinking alcohol regularly and cannabis use during adolescence and early adulthood in academic gifted students at age 11, whereas Peairs et al. (2010) studied the probability to try alcohol in students and found no difference between academic gifted students and their non-gifted peers. Overall, there is a huge lack of data regarding addictions and factors strongly associated with addictive behaviors, like impulsivity (Berg et al., 2015) or emotion regulation (Estevez et al., 2017), in gifted people, and more especially in gifted adults.

The purpose of this research is to better understand gifted adults with addictive behaviors by studying impulsivity and emotion regulation in this specific population.

The sample consists of adults ( $\geq$  18 years) divided into 4 groups according to their condition: giftedness or not, with or without addiction. The 4 groups will be compared based on scientifically validated tools in impulsivity (UPPS) and emotion regulation (DERS). The IQ scores is evaluated with a full Wechsler Intelligence Scale. An interview is made systematically to check the addiction criteria of the DSM-V. We voluntarily chose to consider every kind of addictions to stay in line with an exploratory goal.

The preliminary results (n = 150) will be exposed in this poster. We expect that the gifted adults with addictive behaviors would show better scores in emotion regulation abilities overall than the non-gifted ones, but lower scores regarding the sphere of emotional identification and awareness. This would be consistent with the results of Brasseur (2013) that suggested less emotional intelligence in gifted adolescents regarding identification and understanding of their own emotions. We also believe that they would show lower scores in impulsivity compared to the non-gifted ones because of a positive correlation between emotion regulation overall and low impulsivity.

**Keywords:** *Impulsivity, emotion regulation, addiction, gifted, adults.*

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### 1. Introduction

Empirical evidence sustained by recent literature reviews OR meta-analysis pointed out giftedness, as defined by high intellectual abilities (IQ  $\geq$  130 according to the WHO), to be a protective or a neutral factor in the development of psychopathologies in children and adolescents, such as anxiety or depression (e.g., Alexopoulou, 2020; Martin et al., 2010). Nevertheless, very few studies demonstrated interest regarding addictions and giftedness, especially in adults. The few studies that have attempted to explore this area focused only on academic gifted students and on their relation to substance use. For instance, Williams and Hagger-Johnson (2017) found an increased risk of drinking alcohol regularly and cannabis use during adolescence and early adulthood in academic gifted students assessed at age 11, whereas Peairs et al. (2010) studied the probability to try alcohol in students and found no difference

between academic gifted students and their non-gifted peers. Overall, there is a huge lack of data regarding addictions and factors strongly associated with addictive behaviors, like impulsivity (e.g., Berg et al., 2015) or emotion regulation (e.g., Estevez et al., 2017), in gifted adults. Some studies have examined the emotional skills issues in gifted children and adolescents, including emotion regulation abilities, by demonstrating interest in emotional intelligence (see Zeidner & Matthews, 2017, for a review). Focusing on emotional intelligence-trait (i.e., perceived emotional self-efficacy in daily life), a recent meta-analysis reported no difference overall between gifted and their non-gifted peers (Ogurlu, 2020), but several studies detailed this result by lower scores in gifted regarding intrapersonal ability face to higher scores in the interpersonal one (Brasseur, 2013; Schwean et al., 2006). Especially, the results of Brasseur (2013) emphasized more difficulties in gifted adolescents (15-19 years old) understanding their own emotions and suggested difficulties in identifying them, compared to their non-gifted peers. In the adult population, one case study also reported a specific difficulty in a patient with giftedness and addictive behavior about the identification of his own emotions (Theodorou et al., 2019). However, there is no empirical evidence in larger population of gifted adults with addictive behaviors compared to control groups.

## 2. Research goal

The purpose of this research is to better understand gifted adults with addictive behaviors by studying sub-areas of impulsivity and emotion regulation in this specific population compared to control groups.

## 3. Methods and materials

The sample consists of adults ( $\geq 18$  years) divided into four groups according to their condition: giftedness or not, with or without addiction. The four groups will be compared based on scientifically validated tools on impulsivity (UPPS) and difficulties in emotion regulation (DERS). In this study, we consider participants to be gifted when they have a total IQ  $\geq 126$  to take into consideration the confidence interval, since it is well documented that substance abuse can impair cognitive functions (Fernandez-Serrano et al., 2011). Nevertheless, the results will be compared with the ones of a threshold at 130 to meet the scientific consensus and check the pertinence of this choice. The IQ score is evaluated with a full Wechsler Intelligence Scale. An interview is made systematically to check the addiction criteria of the DSM-V. We voluntarily chose to consider every kind of addictions to stay in line with an exploratory goal.

## 4. Expected results

Preliminary results ( $N = 150$ ) will be exposed in this poster. We expect that gifted adults would show better emotion regulation abilities overall than non-gifted ones (i.e., lower mean scores on DERS). This would be consistent with the results of Brasseur and Grégoire (2010) who found a positive development of emotion regulation abilities with age in gifted adolescents overall, compared to non-gifted ones for whom emotion regulation tended to stagnate. Nevertheless, we expect to observe more difficulties in both gifted groups regarding the specific spheres of emotional identification and awareness (i.e., higher scores on DERS in these sub-scales) in line with the results of Brasseur (2013). We also believe that the gifted group with addictions would have even higher scores in these sub-scales, in accordance with the case study of Theodorou et al. (2019). Finally, we expect higher scores in both groups with addictions, either gifted or not, regarding emotional dysregulation and impulsivity. However, we believe that the gifted ones would show lower emotional dysregulation overall, compared to its non-gifted match group. Consequently, we also expect to observe lower scores regarding impulsivity in the gifted group with addictions, compared to the non-gifted one, as several studies showed significant positive correlations between emotional dysregulation overall and impulsivity measures (e.g., Schreiber et al., 2012).

## References

- Alexopoulou, A., Alexopoulou, A., Batsou, A., & Drigas, A. (2020). Stress, Anxiety & Mental Health Problems in Gifted Adolescents. *Psychological Disorders and Research*, 1-6. <https://doi.org/10.31487/j.PDR.2020.03.03>
- Berg, J. M., Latzman, R. D., Bliwise, N. G., & Lilienfeld, S. O. (2015). Parsing the heterogeneity of impulsivity: A meta-analytic review of the behavioral implications of the UPPS for psychopathology. *Psychological Assessment*, 27(4), 1129-1146. <https://doi.org/10.1037/pas0000111>
- Brasseur, S., & Gregoire, J. (2010). L'intelligence émotionnelle – trait chez les adolescents à haut potentiel: Spécificités et liens avec la réussite scolaire et les compétences sociales. *Enfance*, 2010(01), 59. <https://doi.org/10.4074/S0013754510001060>
- Brasseur, S. (2013). *Etude du fonctionnement des compétences émotionnelles des jeunes à Haut Potentiel Intellectuel* [Thèse de doctorat, Université Catholique de Louvain]. Dial. <https://dial.uclouvain.be/pr/boreal/object/boreal:130229>
- Estévez, A., Jáuregui, P., Sánchez-Marcos, I., López-González, H., & Griffiths, M. D. (2017). Attachment and emotion regulation in substance addictions and behavioral addictions. *Journal of Behavioral Addictions*, 6(4), 534-544. <https://doi.org/10.1556/2006.6.2017.086>
- Fernández-Serrano, M. J., Pérez-García, M., & Verdejo-García, A. (2011). What are the specific vs. Generalized effects of drugs of abuse on neuropsychological performance? *Neuroscience & Biobehavioral Reviews*, 35(3), 377-406. <https://doi.org/10.1016/j.neubiorev.2010.04.008>
- Martin, L. T., Burns, R. M., & Schonlau, M. (2010). Mental Disorders Among Gifted and Nongifted Youth: A Selected Review of the Epidemiologic Literature. *Gifted Child Quarterly*, 54(1), 31-41. <https://doi.org/10.1177/0016986209352684>
- Matthews, G., Lin, J., Zeidner, M., & Roberts, R. D. (2018). Emotional intelligence and giftedness. In S. I. Pfeiffer, E. Shaunessy-Dedrick, & M. Foley-Nicpon (Éds.), *APA handbook of giftedness and talent*. (p. 585-600). American Psychological Association. <https://doi.org/10.1037/0000038-038>
- Ogurlu, U. (2021). A meta-analytic review of emotional intelligence in gifted individuals: A multilevel analysis. *Personality and Individual Differences*, 171, 110503. <https://doi.org/10.1016/j.paid.2020.110503>
- Peairs, K. F., Eichen, D., Putallaz, M., Costanzo, P. R., & Grimes, C. L. (2011). Academic Giftedness and Alcohol Use in Early Adolescence. *Gifted Child Quarterly*, 55(2), 95-110. <https://doi.org/10.1177/0016986210392220>
- Schreiber, L. R. N., Grant, J. E., & Odlaug, B. L. (2012). Emotion regulation and impulsivity in young adults. *Journal of Psychiatric Research*, 46(5), 651-658. <https://doi.org/10.1016/j.jpsychires.2012.02.005>
- Schwean, V., Saklofske, D., Widdifield-Konkin, L., Parker, J. D. A., & Kloosterman, P. (2006). Emotional Intelligence and Gifted Children, *E-Journal of Applied Psychology: Emotional Intelligence*. 2(2): 30-37. Doi: 10.7790/ejap.v2
- Theodorou, M., Dusanter, Y. M., Ladurelle, E., & Bralet, M. C. (2019). Gifted and addicted: Integrative psychotherapy for emotion regulation and social communication skills. *French Journal of Psychiatry*, 1, S99-S100. <https://doi.org/10.1016/j.fjpsy.2019.10.316>
- Williams, J., & Hagger-Johnson, G. (2017). Childhood academic ability in relation to cigarette, alcohol and cannabis use from adolescence into early adulthood: Longitudinal Study of Young People in England (LSYPE). *BMJ Open*, 7(2), e012989. <https://doi.org/10.1136/bmjopen-2016-012989>
- Zeidner, M., & Matthews, G. (2017). Emotional intelligence in gifted students. *Gifted Education International*, 33(2), 163-182. <https://doi.org/10.1177/0261429417708879>
- Zeidner, M., Shanizinovich, I., Matthews, G., & Roberts, R. (2005). Assessing emotional intelligence in gifted and non-gifted high school students: Outcomes depend on the measure. *Intelligence*, 33(4), 369-391. <https://doi.org/10.1016/j.intell.2005.03.001>

## SUCCESSFUL AGING: THE CONTRIBUTION OF PERSONALITY VARIABLES

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### Abstract

Understanding social, economic, and psychological factors are important for promoting elderly health. Rowe and Kahn (1997) described three main components for "successful aging" (SA): avoiding disability and disease, high cognitive and physical capacities, and active engagement in one's life. Psychological dimensions (i.e., personality) have not been sufficiently studied yet. However, they could be considered to define SA. This study aimed to determine whether physical, cognitive, social, and personality factors were associated with SA.

A total of 2109 participants living at home (53.39% men;  $m_{\text{age}} = 75,38 \pm 8.11$ ) – from the Survey of Health, Aging, and Retirement in Europe (SHARE dataset release 7.0.0 of 2017) – completed questionnaires measuring physical (mobility, number of diseases, IADL, BMI) and cognitive (memory, executive function) health, social engagement, and personality (Big Five Inventory). These variables were gathered into three distinct blocks: sociodemographic characteristics (age, sex), model's Rowe and Kahn variables (physical, cognitive, social engagement), and personality. SA was assessed by the Euro depression scale. A correlation matrix was computed to examine the interrelationships between all variables. We then performed linear regression analysis when it was appropriate.

A higher level of motor and cognitive abilities correlated with a lower level of depressive symptoms ( $r=0.34$ ;  $p<.001$ ;  $r=-.20$ ;  $p<.001$ ;  $r=-.17$ ;  $p<.001$ ). The number of diseases was positively correlated with depressive symptoms ( $r=0.26$ ;  $p<.001$ ). The more engaged people were, the fewer depressive symptoms they had ( $r=0.09$ ;  $p=.019$ ). An effect of the level of education on depressive symptoms ( $F(5,847)= 7.06$ ;  $p<.001$ ) was found: people with a higher educational level had a lower depression score than those with a lower educational level. A lower level of neuroticism, higher level of agreeableness, and conscientiousness were significantly correlated with a lower level of depressive symptoms ( $r=0.41$ ;  $p<.001$ ;  $r=-.09$ ;  $p<.028$ ;  $r=-.08$ ;  $p=.028$ ). Linear regression analyses showed that personality variables explained 11% of the variance of depression scores, beyond sociodemographic characteristics (age, sex) (9%) and variables in the Rowe and Kahn model (10%). The three blocks, all together, explained 29% of the variance of the depression scores.

In line with Rowe and Kahn's model (1997), results showed that physical, cognitive, and social factors from the SHARE study partially explained SA (i.e., absence of depressive symptoms here). Interestingly, personality variables also explained a significant proportion of depressive symptoms. Personality may have an important role in addressing SA: adapting the care as well as the prevention to encourage the elderly to engage in physical, social, or cognitive activities.

**Keywords:** *Successful aging, personality, depressive symptoms.*

### 1. Introduction

Today, to prevent dependency among older adults, recent recommendations from the World Health Organization invite all actors involved in the field of aging to change their way of thinking from a disease-centered approach to a healthy aging approach. Several economic, cognitive, and psychological factors are involved in "successful aging" (SA). Approaches such as Rowe and Kahn (1997) focus on these factors improving the overall health of the individual. The authors highlighted three main components: avoiding disability and disease, having high cognitive and physical capacities, and an active engagement in one's life. However, psychological dimensions, such as personality, have not yet been sufficiently studied when looking at "SA". Yet, it could be essential to tend towards SA considering how personality traits can influence the components of SA (Baek et al., 2016). Moreover, depression, or rather the absence of depressive symptoms, can be considered as an important indicator of SA. This study aims to determine to what extent physical, cognitive, social, and personality factors could explain SA.

## 2. Methods

A total of 2109 participants living at home (53.39% men; 46.61% women,  $m_{age} = 75,41 \pm 7,98$ ) from the Survey of Health, Aging, and Retirement in Europe (SHARE dataset release 7.0.0 of 2017) completed questionnaires measuring social engagement, physical (mobility index, Instrumental Activities of Daily Living's scale (IADL), Body Mass Index (BMI)), number of diseases, and cognitive (verbal fluency, recall of words delayed,) abilities, , and five personality's traits: extraversion, agreeableness, conscientiousness, neuroticism, openness (Big Five Inventory). SA was evaluated through the absence of depressive symptoms, with the Euro-D depression scale (the higher the score, the more depressive symptoms the participant has).

A correlation matrix was computed to examine the interrelationships between all variables and SA.

Next, we performed hierarchical moderated regression analyses. Variables were gathered into three distinct blocks: Sociodemographic characteristics (age, sex), Components from Rowe and Kahn's model (physical, cognitive, social engagement), Personality.

## 3. Results

Table 1 presents the results of the correlation analyses between all the variables and SA, their means, and standard deviations. The results showed that a higher level of mobility and cognitive abilities correlated with a lower level of depressive symptoms. The number of diseases was positively correlated with depressive symptoms. The more engaged people were, the fewer depressive symptoms they had. An effect of the level of education on depressive symptoms was found: people with a higher educational level had a lower depression score than those with a lower educational level. A higher level of agreeableness, conscientiousness, and lower level of neuroticism, were significantly correlated with a lower level of depressive symptoms.

Table 1. Population characteristics and correlation analyses.

|   | <b>M(SD)<br/>Or %</b> | <b>SA</b> |
|---|-----------------------|-----------|
| <b>Sociodemographic characteristics</b> |                       |           |
| <b>Age</b>                              | 75.38 (8,11)          |           |
| <b>Gender (men)</b>                     | 53.39%                |           |
| <b>Level of education</b>               | 2.49 (1,72)           |           |
| <b>Social engagement</b>                |                       |           |
| <b>Engagement (engaged)</b>             | 68,06%                | 0.09**    |
| <b>Physical and cognitive abilities</b> |                       |           |
| <b>Mobility Index</b>                   | 0.75 (1,11)           | 0.34**    |
| <b>IADL</b>                             | 26.54 (4,88)          | 0.01      |
| <b>BMI</b>                              | 7.52 (9,72)           | 0.06      |
| <b>Number of diseases</b>               |                       | 0.26***   |
| <b>Verbal fluency</b>                   | 3.42 (2,14)           | -0.20***  |
| <b>Recall of word delayed</b>           | 2.26 (1,43)           | -0.17***  |
| <b>Personality</b>                      |                       |           |
| <b>BFI</b>                              |                       |           |
| • <b>Extraversion</b>                   | 3.49 (0,85)           | -0.02     |
| • <b>Agreeableness</b>                  | 3.93 (0,81)           | -0.11***  |
| • <b>Conscientiousness</b>              | 4.42 (0,71)           | -0.08*    |
| • <b>Neuroticism</b>                    | 3.05 (1,07)           | 0.41***   |
| • <b>Openness</b>                       | 3.51 (0,95)           | -0.05     |
| <b>SA</b>                               | 2.63 (4.85)           |           |

\*p < 0.05; \*\*p < 0.01; and \*\*\*p < 0.001.

Table 2 presents the results for the linear regression analyses. Linear regression analyses showed that personality variables explained 11% of the variance of depression scores, beyond sociodemographic characteristics (age, sex) (9%) and variables in the Rowe and Kahn model (10%). The three blocks, all together, explained 29% of the variance of the depression scores.

Table 2. Results of multiple regression analysis for depression.

| Predictor variables                          | $\beta$  | Depression              |              |
|--|----------|-------------------------|--------------|
|  |          | $R^2$                   | $\Delta R^2$ |
| <b>Sociodemographic characteristics</b>      |          | 0.09                    | 0.09***      |
| • Age  | 0.10**   |                         |              |
| • Gender                                     | 0.21***  |                         |              |
| • Level of education                         | -0.13*** |                         |              |
| <b>Components from Rowe and Kahn's model</b> |          | 0.19                    | 0.10***      |
| • Engagement                                 | -0.01    |                         |              |
| • Mobility                                   | 0.21***  |                         |              |
| • BMI  | -0.05    |                         |              |
| • Verbal fluency                             | -0.10**  |                         |              |
| • Recall of words delayed                    |          |                         |              |
| • Number of diseases                         | -0.02    |                         |              |
| • IADL                                       | 0.17***  |                         |              |
|  | -0.01    |                         |              |
| <b>Personality</b>                           |          | 0.30                    | 0.11***      |
| • Extraversion                               | 0.03     |                         |              |
| • Agreeableness                              | -0.06    |                         |              |
| • Conscientiousness                          | -0.09**  |                         |              |
| • Neuroticism                                | 0.32***  |                         |              |
| • Openness                                   | 0.02     |                         |              |
|  |          | <b><math>R^2</math></b> | <b>0.29</b>  |

\* $p < 0.05$ ; \*\* $p < 0.01$ ; and \*\*\* $p < 0.001$ .

#### 4. Discussion

In line with Rowe and Kahn's model (1997), results showed that physical, cognitive, and social factors from the SHARE study partially explained SA. But, when personality variables are combined with Rowe and Kahn's components, it explained a more significant proportion of SA. Indeed, some personality traits may play an important role in SA, including contributing to positive functioning in terms of health, cognition, social relationships, and well-being across the lifespan (Pocnet et al., 2020). Conscientious older adults may be more likely to engage in physical, social, or cognitive activities. It seems necessary, in the future, to study bidirectional links between personality and components of SA to understand if personality has an effect on the components of the SA or it's a component in its own right.

#### References

- Baek Y., Martin, P., Siegler, I.C., Davey, A. & Poon, L.W. (2016). Personality traits and successful aging: findings from the Georgia centenarian study. *The International Journal of Aging and Human Development*, 0(0), 1-22.
- Glass, T.A., De Leon, C.F., Bassuk, S.S., & Berkman, L.F., (2006). Social engagement and depressive symptoms in late life longitudinal findings. *Journal of Aging and Health* 18, 604-628.
- Pocnet, C., Popp, J. & Jopp, D. (2021). The power of personality in successful ageing: a comprehensive review of larger quantitative studies. *European Journal of Aging*, 18, 269-285.
- Rowe, J. W., & Kahn, R. L. (1997). Successful Aging1. *The Gerontologist*, 37(4), 433-440. <https://doi.org/10.1093/geront/37.4.433>

## FOOD ADDICTION AND ADULT ADHD SYMPTOMS AMONG BARIATRIC SURGERY CANDIDATES: ARE THEY ASSOCIATED WITH POORER QUALITY OF LIFE?

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### Abstract

**Background and objective:** Both food addiction (FA) and adult ADHD symptomatology have a significant impact on quality of life (QOL), which in turn may affect bariatric surgery outcomes in the context of severe obesity. The main objective of this study was to investigate the association between FA, ADHD symptomatology and QOL in the specific population of bariatric surgery candidates.

**Method:** Three hundred and twenty-two adult bariatric surgery candidates were recruited during the systematic preoperative psychiatric assessment. The participants completed questionnaires assessing body mass index (BMI), QOL (QOL-Obesity, and Dietetics rating scale, QOLOD), FA (YFAS 2.0), and adult ADHD symptoms (ASRS).

**Results:** Prevalence for FA and significant adult ADHD symptoms were 26.7% and 9% respectively. All QOL dimensions were negatively correlated with FA and adult ADHD symptoms. The age, the ASRS, and YFAS 2.0 scores independently predicted the QOL score. The participants with FA had significantly lower QOL scores on the five dimensions of the QOLOD. The participants with adult ADHD symptoms had significantly lower scores on the physical and psycho-social QOL dimensions only.

**Discussion:** This study supports the hypothesis of FA and ADHD symptoms are associated with poorer QOL, in bariatric surgery candidates. Because they affect QOL and poorer surgery outcomes, investigation, and management of FA and ADHD symptoms may be interesting clinical interventions.

**Keywords:** Bariatric surgery, quality of life, food addiction, addictive behaviors, adult ADHD.

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### 1. Introduction

Food addiction (FA) is prevalent among bariatric surgery candidates, and it is associated with poorer postoperative outcomes (Guerrero Pérez et al., 2018). Disordered eating is associated with poorer quality of life (QOL) and reduced weight loss after bariatric surgery (Devlin, 2018). It is important to identify risk factors for FA in this population. Davis et al. (2011) showed that persons with FA have a higher risk of childhood attention deficit hyperactivity disorder (ADHD) and current inattention and hyperactivity/impulsivity symptoms. They suggested this symptomatology involves a deficit in self-regulation and predilection for immediate pleasure, which may lead to disordered eating. Brunault et al. (2019) conducted a study on patients with severe obesity. They suggested individuals with adult ADHD were at higher risk of FA than patients without adult ADHD. FA severity was correlated with a more severe adult ADHD symptomatology. The QOL of individuals with ADHD is lower, especially when they have comorbidities. Psychosocial life is especially impacted (Quintero et al., 2019). Thus, both FA and ADHD symptomatology may have a significant impact on QOL. The main objective of this study was to investigate the association between FA, adult ADHD symptoms, and the QOL in the specific population of bariatric surgery candidates.

## 2. Methods

### 2.1. Population and procedure

All the participants were adult bariatric surgery candidates. They were included during the systematic preoperative psychiatric assessment of the Nutrition Department of the University Hospital of Tours. Three hundred and twenty-two participants were included in the study. 76.1% of the participants were women. The mean age was 46.8 (SD=11.3) years. The mean body mass index (BMI) was 45.3 (SD=7.5) kg/m<sup>2</sup>.

### 2.2. Materials

The participants completed self-reported questionnaires assessing the BMI, QOL, FA, and adult ADHD symptoms. The 36 items of the QOL-Obesity and Dietetics rating scale (QOLOD) assess 5 dimensions of QOL: physical impact, psychosocial impact, impact in sex life, comfort with food, and diet experience. Each dimension was rated from 0 (poor QOL) to 100 (high QOL). The Yale Food Addiction Scale 2.0 (YFAS 2.0) assesses FA over the previous 12 months. The 35 items of the scale investigate the 11 criteria of addiction. The total score is the number of positive criteria (from 0 to 11). FA diagnosis is based on the presence of at least 2 positive criteria and clinically significant impairment or distress associated with food behavior. The 6-items Adult ADHD Self-Report Scale (ASRS-v1.1) assesses adult ADHD symptoms (inattention and hyperactivity/impulsivity). The presence of at least 4 positive criteria indicates significant adult ADHD symptomatology.

### 2.3. Data analysis

Spearman correlations analyses were conducted between the five dimensions of the QOLOD scale, and age, BMI, YFAS 2.0, and ASRS-v1.1. Multiple regression analysis was conducted to assess the prediction of QOLOD score through these continuous variables. We used Mann-Whitney tests to compare these variables according to the FA and adult ADHD symptoms status.

## 3. Results

The prevalence of FA and adult ADHD symptoms was 26.7% and 9.0% respectively. The prevalence of comorbid FA and adult ADHD symptoms was 4.7%.

The QOLOD total score was negatively correlated with the YFAS 2.0 ( $\rho=-.46, p<.001$ ) and the ASRS-V1.1 ( $\rho=-.45, p<.001$ ). The correlation between YFAS 2.0 and the QOLOD was higher for the dimension "comfort with food" ( $\rho=-.39, p<.001$ ), whereas the correlation between ASRS-V1.1 and the QOLOD was higher for the dimension "psycho-social impact" ( $\rho=-.36, p<.001$ ) (see *Table 1*). The QOLOD total score was independently predicted by age ( $\beta=-.15, p=.002$ ), ASRS-V1-1 ( $\beta=-.28, p<.001$ ) and YFAS 2.0 ( $\beta=-.38, p<.001$ ), and not by BMI ( $\beta=-.09, p=.06$ ;  $R^2_{adjusted}=.32$ ;  $F(4,317)=38.849, p<.001$ ).

The participants with FA (n=86) had significantly higher ADHD symptomatology and lower QOL. The five dimensions of the QOL questionnaire were lower for individuals with FA than those without. The participants with adult ADHD symptoms (n=29) had significantly higher FA severity and lower QOL. Only the physical and psycho-social QOL dimensions were lower for individuals with adult ADHD symptoms than those without. (see *Table 2*).

*Table 1. Spearman correlations.*

*Table 1. Spearman correlations*

|                              | 1         | 2          | 3          | 4          | 5         | 6         | 7         | 8         | 9         | 10 |
|------------------------------|-----------|------------|------------|------------|-----------|-----------|-----------|-----------|-----------|----|
| 1 Age                        | -         |            |            |            |           |           |           |           |           |    |
| 2 BMI                        | -0.078    | -          |            |            |           |           |           |           |           |    |
| 3 YFAS 2.0                   | -0.026    | 0.036      | -          |            |           |           |           |           |           |    |
| 4 ASRS-V1-1                  | -0.087    | -0.055     | 0.371 ***  | -          |           |           |           |           |           |    |
| 5 QOL - Total                | -0.108    | -0.087     | -0.463 *** | -0.452 *** | -         |           |           |           |           |    |
| 6 QOL - Physical impact      | -0.153 ** | -0.531 *** | -0.278 *** | -0.285 *** | 0.701 *** | -         |           |           |           |    |
| 7 QOL - Psycho-social impact | 0.065     | -0.406 *** | -0.358 *** | -0.362 *** | 0.806 *** | 0.661 *** | -         |           |           |    |
| 8 QOL - Impact on sex life   | -0.099    | -0.327 *** | -0.278 *** | -0.198 *** | 0.64 ***  | 0.526 *** | 0.577 *** | -         |           |    |
| 9 QOL - Comfort with food    | -0.045    | -0.359 *** | -0.394 *** | -0.189 **  | 0.434 *** | 0.337 *** | 0.318 *** | 0.233 *** | -         |    |
| 10 QOL - Diet experience     | 0.007     | -0.342 *** | -0.348 *** | -0.253 *** | 0.599 *** | 0.409 *** | 0.537 *** | 0.348 *** | 0.484 *** | -  |

Note: \*\* $p<.01$ ; \*\*\* $p<.001$ ; BMI: Body Mass Index; YFAS: Yale Food Addiction Scale; ASRS: Adult ADHD Self-Report Scale; QOL: Quality Of Life



Table 2. Quantitative variables in participants with versus without FA or adult ADHD symptoms.

Table 2. Quantitative variables in participants with versus without FA or adult ADHD symptoms

|                            | Participants... |             | Statistics |       | Participants...             |                          | Statistics |       |
|----------------------------|-----------------|-------------|------------|-------|-----------------------------|--------------------------|------------|-------|
|                            | without FA      | with FA     | U          | p     | without adult ADHD symptoms | with adult ADHD symptoms | U          | p     |
| Age                        | 46.9 (11.4)     | 46.5 (11.1) | 9938.0     | .76   | 47.1 (11.1)                 | 43.5 (12.9)              | 3561.0     | .15   |
| BMI                        | 44.9 (6.5)      | 46.3 (9.6)  | 9784.0     | .62   | 45.4 (7.4)                  | 44.7 (8.1)               | 4101.0     | .76   |
| YFAS 2.0                   | 1.4 (1.7)       | 6.1 (2.7)   | 1531.0     | <.001 | 2.5 (2.7)                   | 4.8 (3.7)                | 2734.5     | .001  |
| ASRS-VI-1                  | 1.1 (1.3)       | 2.0 (1.5)   | 6280.5     | <.001 | 1.0 (1.0)                   | 4.3 (.5)                 | .000       | <.001 |
| QOL - Total                | 65.6 (12.9)     | 52.7 (10.5) | 4550.5     | <.001 | 63.0 (13.2)                 | 54.4 (14.5)              | 2645.5     | <.001 |
| QOL - Physical impact      | 1.4 (0.4)       | 1.2 (.4)    | 6634.0     | <.001 | 1.4 (.5)                    | 1.2 (.4)                 | 3103.0     | .016  |
| QOL - Psycho-social impact | 1.5 (0.4)       | 1.1 (.4)    | 5005.5     | <.001 | 1.4 (.5)                    | 1.2 (.5)                 | 3135.5     | .020  |
| QOL - Impact on sex life   | 1.6 (0.6)       | 1.2 (.6)    | 6642.5     | <.001 | 1.5 (.6)                    | 1.4 (.6)                 | 3525.0     | .130  |
| QOL - Comfort with food    | 1.4 (0.5)       | 1.1 (.5)    | 6758.0     | <.001 | 1.3 (.5)                    | 1.2 (.6)                 | 3819.0     | .368  |
| QOL - Diet experience      | 1.5 (0.4)       | 1.3 (.4)    | 6858.0     | <.001 | 1.5 (.4)                    | 1.3 (.5)                 | 3345.0     | .058  |

Note: mean (standard deviation); FA: food addiction; ADHD: Attention deficit hyperactivity disorder; BMI: Body Mass Index; YFAS: Yale Food Addiction Scale; ASRS: Adult ADHD Self-Report Scale; QOL: Quality Of Life; U: Mann Whitney coefficient

#### 4. Discussion

This study supports the hypothesis that FA and ADHD symptoms are associated with poorer QOL among bariatric surgery candidates. The psycho-social life was especially affected in individuals with FA or significant adult ADHD symptoms. These results support further investigations on the psychological and social factors associated with FA and ADHD symptoms in patients with severe obesity and bariatric surgery candidates, especially as these comorbidities are associated with poorer QOL and postoperative outcomes. Consequently, these results highlight the need for a systematic assessment of severe obesity comorbidities such as FA, adult ADHD symptoms, and other psychopathological disorders. Additionally, pre- or post-surgical psychological interventions targeting FA and ADHD symptoms may be interesting approaches to improve postoperative outcomes and prevent disordered eating relapse after surgical intervention.

The results should be seen in light of some limitations. The procedure included only self-administered questionnaire that are less reliable than semi-structured interview. Moreover, ADHD was assessed with the ASRS-VI.1. This scale does not investigate the childhood symptoms as suggested by the DSM-5 criteria of ADHD. Because of the small incidence of ADHD symptoms, it was not possible to investigate the impact of the FA-ADHD symptoms comorbidity on the QOL. Despite these limitations, the current study provides significant information about the factors associated with QOL among bariatric surgery candidates and pave the way for possible therapeutic interventions that may improve postoperative outcome.

#### References

- Brunault, P., Frammery, J., Montaudon, P., De Luca, A., Hankard, R., Ducluzeau, P. H., Cortese, S., & Ballon, N. (2019). Adulthood and childhood ADHD in patients consulting for obesity is associated with food addiction and binge eating, but not sleep apnea syndrome. *Appetite*, 136, 25–32.
- Davis, C., Curtis, C., Levitan, R. D., Carter, J. C., Kaplan, A. S., & Kennedy, J. L. (2011). Evidence that 'food addiction' is a valid phenotype of obesity. *Appetite*, 57(3), 711–717.
- Devlin, M. J., King, W. C., Kalarchian, M. A., Hinerman, A., Marcus, M. D., Yanovski, S. Z., & Mitchell, J. E. (2018). Eating pathology and associations with long-term changes in weight and quality of life in the longitudinal assessment of bariatric surgery study. *The International journal of eating disorders*, 51(12), 1322–1330.
- Guerrero Pérez, F., Sánchez-González, J., Sánchez, I., Jiménez-Murcia, S., Granero, R., Simó-Servat, A., Ruiz, A., Virgili, N., ... Fernández-Aranda, F. (2018). Food addiction and preoperative weight loss achievement in patients seeking bariatric surgery. *European eating disorders review: the journal of the Eating Disorders Association*, 26(6), 645–656.
- Quintero, J., Morales, I., Vera, R., Zuluaga, P., & Fernández, A. (2019). The Impact of Adult ADHD in the Quality of Life Profile. *Journal of Attention Disorders*, 23(9), 1007–1016.

# VERIFICATION OF PSYCHOMETRIC PROPERTIES OF THE INSOMNIA TYPE QUESTIONNAIRE (ITQ) IN THE CZECH POPULATION

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## Abstract

Insomnia is one of the second most common mental disorders and is one of the primary risk factors for developing depression. The global prevalence of insomnia symptoms ranges from 30-35% and the course of the disease is often chronic. Clinically significant insomnia is reported by 10–23% of college students. Sleep deprivation among college students has been associated with increased alcohol consumption, a higher incidence of somatic illness, risky sexual behavior, and traffic accidents. Researchers have identified significant heterogeneity in the clinical and biomarker characteristics of insomnia leading to subtypes without sufficient validity. The Dutch Insomnia Type Questionnaire (Blanken et al., 2019) aims to identify robust subtypes and thus reduce heterogeneity among insomnia. The aim of our research is to adapt the Insomnia Type Questionnaire into the Czech sociocultural environment and verification of its psychometric characteristics and mapping of subtypes of insomnia. The identification of insomnia subtypes is a potential benefit for clinical practice, as it could allow the selection of high-risk individuals for early preventive intervention. Reducing previously unrecognized insomnia heterogeneity through subtyping can then help elucidate the mechanisms of insomnia and the development of personalized insomnia treatment.

**Keywords:** *Insomnia, sleep, insomnia type questionnaire, subtyping.*

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## 1. Introduction

The Dutch Insomnia Type Questionnaire (Blanken et al., 2019) aimed to identify robust subtypes and thus reduce heterogeneity among insomniacs. The questionnaire was developed using a large sample (N=4,322) of which 2,224 individuals met the ISI score (cut of score 10) for insomnia. The remaining individuals served as a control group. The questionnaire was able to identify 5 subtypes of insomnia: highly anxious, moderately anxious but sensitive to rewards (with intact reactions to pleasant emotions), moderately anxious insensitive to rewards, moderately anxious with higher reactivity (to the environment and life events), moderately anxious with low reactivity.

## 2. Objectives

The aim our study was to validate the psychometric characteristics of the Czech adaptation of the Insomnia Type Questionnaire (Blanken et al., 2019) and to map insomnia subtypes in the Czech population.

## 3. Methods and results

The data collection took place in two waves through the dissemination of an online questionnaire in the social networking environment, from 22 February 2021 to 19 January 2022. A total of 1,051 respondents completed the questionnaire, including 613 persons in the first wave and 438 persons in the second wave of data collection.

The research sample included a total of 1051 people, of whom 839 were women (79.8%), 211 were men (20.1%) and one respondent who did not indicate gender (0.1%). The largest number of respondents was in the 20-25 age group (N = 607; 57.8).

### ITQ reliability verification

We checked the internal consistency of the items of the sub-questionnaires that make up the ITQ. These results could contribute to estimating the reliability of the questionnaire. The resulting internal consistency of the items for the Mini-IPIP scale indicated lower reliability of this scale. This could be due to the attempt to measure broad characteristics with only four items. For the FIRST questionnaire, we discarded item 5 ("After watching a scary movie or show") because only a smaller half of probands responded to this item. After discarding this item, the internal consistency value of the FIRST scale did not change. Other results showed relatively high internal consistency across scales. In the next step, we tested the reliability of the scales using the split-half method.

### The correlation analysis of the variables

In the correlation analysis of the variables close positive correlations were observed between action control and the experience of satisfaction, as well as between feelings of happiness, extraversion, positive rumination and positive attunement. A close positive correlation was found between neuroticism, negative attunement, and perfectionistic rumination. Variable severity of insomnia was moderately positively correlated with pre-sleep arousal, fatigue, insomnia as a response to stress, rumination, and humiliation. According to the results, there was a close negative relationship between neuroticism, action control and feelings of happiness, and a weakly close relationship between extraversion and neuroticism. Medium-tight negative correlations emerged between behavioral activation, positive rumination, extraversion, and experiencing satisfaction. Results indicated that there were weakly close negative correlations between insomnia severity, positive attunement, positive rumination, feelings of happiness, and action control. These relationships indicated that the aforementioned variables were unlikely to contribute to the development of insomnia symptoms. Conversely, variables that were strongly positively correlated with insomnia severity, such as pre-sleep arousal, fatigue or rumination, may promote the development of insomnia.

Based on the results of the correlation analysis, we were interested in what a model predicting insomnia severity from the variables pre-sleep arousal, fatigue or insomnia in response to stress would look like. Together, these three predictors explained 48.5% of the variability in insomnia, which was 6.9% more than for pre-sleep arousal as a single predictor.

### Factor analysis

By calculating the resulting scores of each questionnaire, we obtained a total of 20 variables for which we were interested in their factorial affiliation. We converted the resulting variables into Z-scores. Factor analysis identified five components that explained 61.8% of the variance in the original variables.

The factor analysis yielded five components that divide the outcome variables into their respective groups. The first component is strongly characterized by clinging thinking, neuroticism, rumination, and overall negative attitudes. It is negatively correlated with feelings of happiness and control of action (activity). Symptoms of insomnia in this case may be related to the experience of stress, increased fatigue, but also increased pre-sleep arousal. We have labeled it generally as "Negative Experiencing" for the purpose of further analysis.

According to the factor structure, the second component corresponds to experienced feelings of happiness, positive attunement and positive clinging. It is positively correlated with extraversion and very closely negatively correlated with behavioral activation and weakly correlated with neuroticism. We have labeled it as "Positive Experiencing."

The third component shows a strong association with childhood traumatization and experienced parental pressure. Negative moderate relationships were found in relation to agreeableness, experiencing satisfaction, feelings of happiness and positive rumination. We labeled this component as "Childhood trauma, parental pressure."

The fourth component, named "Organization, Perfectionism", is characterized by high organization and control of activities. It may also be related to experiencing feelings of happiness, friendliness, positive rumination, and overall positive attunement.

The fifth component is characterised by very close relationships between severity of insomnia, pre-sleep arousal, and fatigue, as well as moderately close positive relationships of perfectionistic rumination, humiliation, and overall negative attunement. There were weakly close positive relationships with agreeableness and experienced pleasure.

Correlational analysis showed that the components were barely correlated or negatively correlated with each other, supporting the assumption that they could be separate categories of variables representing a particular group of characteristics.

### Cluster analysis

Using factor analysis, we obtained five groups of variables. These groups of variables were tested by cluster analysis, which showed that respondents could be classified into five different groups, or subtypes, based on their responses and characteristics. We compared these subtypes with the results of the original research.

The first group of people did not display many characteristics, the most prominent being perfectionistic traits, control and experienced parental pressure. Persons in this group experienced fewer positive emotions and pleasures, and were more likely to be negatively attuned. This description could correspond to subtype 5: slightly distressed, low reactive. For the second group of persons, experiences of happiness, extraversion and generally positive tuning were prominent, along with organization, perfectionistic rumination and insomnia in response to stress. Similar features were found for subtype 2: moderately distressed, reward sensitive. The third group showed some positive attunement, but generally negative experiences predominated. There was increased fatigue and difficulty sleeping due to increased arousal before falling asleep. Similar characteristics are found in subtype 3: moderately distressed, reward insensitive. The fourth group was dominated by childhood trauma, generally negative experiences, but also some degree of activity control. This group could probably correspond to subtype 4: slightly distressed, highly reactive. The last group is characterised by strong negative experiencing, lack of experienced happiness or pleasure and perfectionism. This last group could correspond to the subtype highly distressed (1: highly distressed).

The representation of people in each subtype was relatively even. Group 2 was the largest group with 277 persons, followed by Group 5 with 231 persons and Group 1 with 206 persons. The smallest group was group 4 with 154 persons and the slightly larger group 3 with 183 persons.

### Validity

To test validity, we compared our results with those of the original research by Blanken et al. (2019), to determine whether the ITQ questionnaire battery could be a reliable indicator of insomnia subtypes.

Evidence 1: The factor structure of the variables showed the relationships we would expect between the variables, which could be seen as one evidence of construct validity of the questionnaire.

Evidence 2: Cluster analysis resulted in the probands being classified into five groups approximately corresponding to the distribution of subtypes in the original research.

## **4. Conclusions**

The research focused on the psychometric properties of the Czech version of the ITQ. It provided evidence of the reliability and validity of this questionnaire, confirmed different subtypes of insomnia, and thus could contribute to improving the quality of treatment and care for patients with insomnia in Czech Republic. This research is based on data collected by self-report questionnaire method. Therefore, the limitation may be intentional or unintentional distortion of data by respondents due to fatigue or other subjective factors.

### *References*

- Blanken, T. F., Benjamins, J. S., Borsboom, D., Vermunt, J. K., Paquola, C., Ramautar, J., Dekker, K., Stoffers, D., Wassing, R., Wei, Y., & Van Someren, E. J. W. (2019). Insomnia disorder subtypes derived from life history and traits of affect and personality. *The Lancet Psychiatry*, 6(2), 151-163. [https://doi.org/10.1016/S2215-0366\(18\)30464-4](https://doi.org/10.1016/S2215-0366(18)30464-4)

# LEARNING WORDS WHILE LISTENING TO SYLLABLES: INSIGHTS FROM NEUROSCIENCE

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## Abstract

Understanding the processes by which children acquire language so quickly and effortlessly is one of the most important issues that science is still trying to answer today. Several approaches have been adopted. From early observational studies involving the collection of data from a small number of children through parental diaries to large scale cross-sectional and longitudinal studies involving the collection of different measures of receptive and productive language skills from children at different developmental stages, recent studies, adopting an experimental approach, have taken advantage of noninvasive brain activity measures to get new insights into one of the most amazing human skills. In this work, we present event-related potentials (ERP) data collected from 24 children while they were exposed to a continuous auditory stream made of the repetition of three-syllable nonsense words with different levels of predictability (high vs. low) under implicit and explicit conditions, to illustrate how the use of brain monitoring techniques can provide exciting data into the processes and mechanisms underlying language acquisition.

**Keywords:** *Speech segmentation, statistical learning, language acquisition, artificial language, neuroscience.*

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## 1. Introduction

Language is extremely complex, yet before five-years-old most children master the fundamentals of their native language even without having been “taught” to do so. So, it is not surprising that many authors consider language the ‘miracle’ of human nature, and that unraveling the processes and mechanisms underlying language acquisition is one of the most important issues scientists are still trying to answer today. This is a huge conceptual and methodological problem, particularly with pre-verbal children. The advent of brain functioning techniques that are safe and non-invasive, such as event-related potentials (ERP), made it possible to analyze how the brain responds to language stimuli even in the absence of any behavioral response, making it an exceptional tool to study language acquisition.

In this paper, we aimed to illustrate how the use of ERPs may provide valuable insights into the processes and mechanisms underlying this capacity, focusing on the analysis of one of the biggest challenges children face from birth, i.e., to discover where a word begins and ends in a continuous acoustic input - speech. It has been argued that children rely on what has been called statistical learning (SL), a form of implicit learning that occurs as children are exposed to the language spoken around them, allowing the extraction of the structure underlying the succession of speech sounds (Saffran et al., 1996), although the techniques that have been used to test it in young children present several flaws (see Soares et al., 2021). Here, we demonstrated how the use of ERPs can overcome these limitations, providing valuable insights into the origins of the language faculty.

## 2. Method

### 2.1. Participants

Twenty-four children (Mage = 5;7; range 5;1 to 6;5) from a longitudinal study conducted to study the developmental trajectories of preschool children with and without Developmental Language Disorder (Grant PTDC/PSI-ESP/28212/2017) participated in the study. All participants were native speakers of European Portuguese, with normal hearing and no history of language disabilities. Written informed consent was obtained from their parents.

### 2.2. Stimuli

Sixteen three-syllable nonsense words taken from Soares et al. (2020) were used in the familiarization phases of the implicit and explicit versions of the SL tasks (eight per task). In each task,

four ‘words’ presented Transitional Probabilities (TPs) of 1.00 (high-TP ‘words’), and four TPs of .33 (low-TP ‘words’). For example, the nonsense word ‘*tucida*’ corresponds to a high-TP ‘word’ as the syllables it entails only appear in that ‘word’, while the nonsense word ‘*migedo*’ corresponds to a low-TP ‘word’ as the syllables it entails also appear in other ‘words’ as ‘*gemiti*’ and ‘*tidomi*’ (see Soares et al., 2020 for details). In each SL task, the nonsense words were presented with no pauses between each other. For the test phases, the 16 foils created by Soares et al. (2020) were used in the two-alternative forced-choice (2-AFC) tasks (eight per task) typically used to test SL. The foils were made up of the same syllables used in the high and low-TP ‘words’, although they were never presented together during exposure (TPs=0).

### 2.3. Procedure

Data collection was performed in an electric-shielded and sound-attenuated room. EEG was recorded with 64 channels BioSemi Active-Two system (BioSemi, Amsterdam, The Netherlands) according to the international 10–20 system and digitized at a sampling rate of 512 Hz.

Participants performed first the implicit version of the SL task and, after a break, the explicit version of an analogous SL task. In each task, each word was repeated 60 times in two blocks of 30. Stimuli were presented via headphones. After exposure, participants performed a 2-AFC task, in which they had to choose between two triplets presented consecutively which “sounded more familiar”. The 2-AFC task comprised 16 trials where each of the eight ‘words’ was paired with two different foils. The explicit task mimicked the implicit except that, before exposure, participants were explicitly instructed about the ‘words’ (different from the ones used in the implicit version) they will be listening to during familiarization.

### 2.4. Data analyses

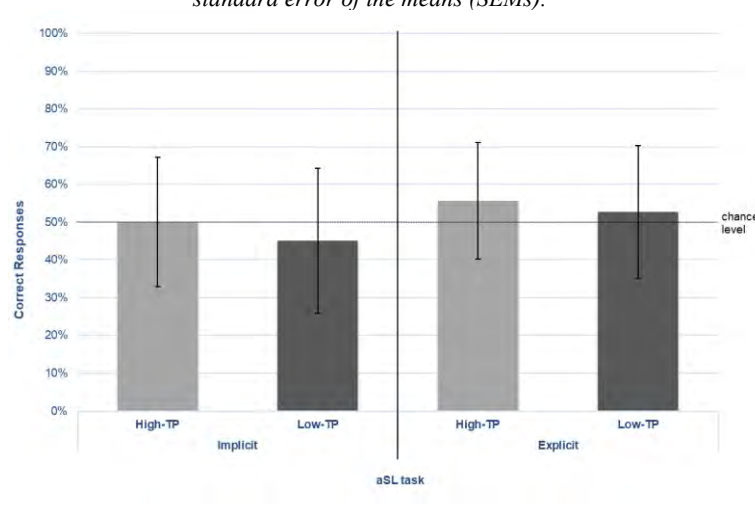
EEG data processing was conducted with the Brain Vision Analyzer 2.1.1. Mean amplitudes were calculated for the 80-120 ms (N100), and 400-500 ms (N400) time windows, taken as the neural signatures of words’ segmentation in the brain (see Abia, 2008; Cunillera et al., 2006; De Diego Balaguer et al., 2007; Soares et al., 2020), in the topographical regions where amplitudes were maximal (fronto-central and central regions). The % of correct responses was also computed for each of the 2-AFC tasks and separately for the high- and low-TP ‘words’. Behavioral and ERP analyses were performed in the 27.0 IBM-SPSS® software.

## 3. Results

### 3.1. Behavioral data

The means % of correct responses in each 2-AFC task per condition are presented in Figure 1. Results from one-sample t-tests against chance level showed that children’s performance did not differ from chance in either of the aSL tasks and type of ‘words’ (all  $ps > .115$ ). The results from the ANOVA considering aSL task (implicit vs. explicit) and type of ‘word’ (High-TP vs. Low-TP) also failed to show any significant effects across conditions.

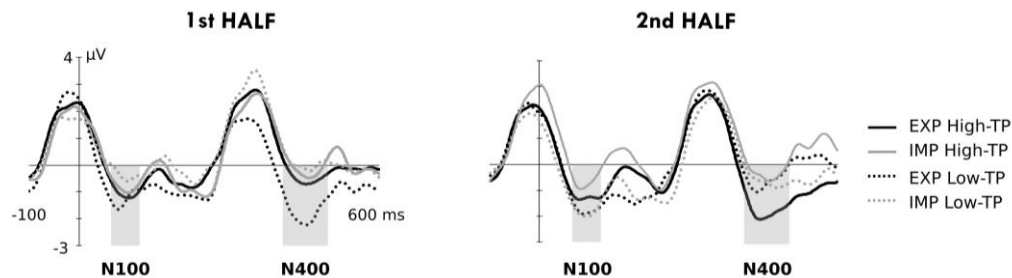
Figure 1. % correct responses in the 2-AFC tasks (implicit and explicit) per type of ‘word’. Bars indicate the standard error of the means (SEMs).



### 3.2. ERP data

The ANOVA considering SL task (implicit vs. explicit), Type of ‘word’ (high-TP vs. low-TP), and Length of exposure (1<sup>st</sup> half vs. 2<sup>nd</sup> half) as within-subject factors, showed a main effect of the length of exposure,  $F(1,19)=5.22$ ,  $p=.034$ ,  $\eta_p^2=.215$ , indicating that, regardless of the SL task and type of ‘word’, children showed a larger N100 amplitude in the 2<sup>nd</sup> half than the 1<sup>st</sup> half of the SL tasks. In the N400 component, the ANOVA showed a main effect of SL task,  $F(1,19)=8.23$ ,  $p=.010$ ,  $\eta_p^2=.302$ , indicating an enhancement in the SL task performed under explicit than implicit conditions. The three-fold interaction was also significant,  $F(1,19)=4.65$ ,  $p=.044$ ,  $\eta_p^2=.197$ . Pairwise comparisons showed a higher amplitude of the N400 component under explicit than implicit conditions for low-TP ‘words’ in the 1<sup>st</sup> half of the task ( $p=.030$ ), and for the high-TP ‘words’ in the 2<sup>nd</sup> half of the task ( $p=.027$ ). Moreover, a larger amplitude was found for the low-TP vs. high-TP ‘words’ in the 1<sup>st</sup> half of the explicit SL task ( $p=.041$ ). Finally, the effect of length of exposure reached significance for low-TP ‘words’ under explicit instructions, resulting in a larger N400 amplitude in the 1<sup>st</sup> half than in the 2<sup>nd</sup> half of the SL task ( $p=.022$ ).

Figure 2. Effects in the N100 and N400 ERP components for the high-TP and low-TP words in the implicit and explicit learning conditions.



### 4. Conclusions

Although the behavioral results indicate that there was no learning due to exposure to the auditory streams presented both under implicit and explicit conditions, the electrophysiological data have allowed us to observe effects due to the extraction of the statistical structure embedded in the speech streams as exposure unfolds. The effects in the N100 and N400 ERP components replicate previous findings observed with adult participants, hence supporting the view that they can be taken as online indexes of the emergence of a pre-lexical trace of ‘words’ in the brain (see Abia, 2008; Cunillera et al., 2006; De Diego Balaguer et al., 2007; Soares et al., 2020). In sum, our results join to others showing that the 2-AFC task is not suitable for assessing SL in young children. The absence of behavioral results does not mean they are not able to extract the regularities embedded in the input, but simply shows that children do not yet have the necessary skills to perform the 2-AFC task appropriately. The use of noninvasive brain activity measures such as ERPs can thus be a valuable tool to overcome these limitations, providing new insights into the processes and mechanisms underlying one of the most amazing human skills.

### References

- Abla, D., Katahira, K., & Okanoya, K. (2008). On-line assessment of statistical learning by event-related potentials. *Journal Cognitive Neuroscience*, *20*, 952-964.
- Cunillera, T., Toro, J. M., Sebastian-Galles, N., & Rodriguez-Fornells, A. (2006). The effects of stress and statistical cues on continuous speech segmentation: an event-related brain potential study. *Brain Research*, *1123*, 168-178.
- De Diego Balaguer, R., Toro, J. M., Rodriguez-Fornells, A., & Bachoud-Lévi, A. (2007). Different neurophysiological mechanisms underlying word and rule extraction from speech. *PLoS ONE* *2*, e1175.
- Saffran, J. R., Aslin, R. N., & Newport, E. L. (1996). Statistical learning by 8-month-old infants. *Science*, *274*, 1926-1928.
- Soares, A. P., França, T., Gutiérrez-Domínguez, F., & Oliveira, H. M. (under review). As Trials Go By: Effects of 2-AFC Item Repetition on SL Performance for High- and Low-TP ‘Words’ Under Implicit and Explicit Conditions.
- Soares, A. P., Gutiérrez-Domínguez, F., Vasconcelos, M. G., Oliveira, H. M., Tomé, D., & Jiménez, L. (2020). Not all words are equally acquired: Transitional probabilities and instructions affect the electrophysiological correlates of statistical learning. *Frontiers in Human Neuroscience*, *14*, 387.

## MORAL DISTRESS OF SCHOOLTEACHERS (RESEARCH REVIEW)

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### Abstract

Our research review aims to identify areas in which schoolteachers experience moral distress. The research of moral distress in health professions, especially nurses, has been steadily growing in recent years. Teachers and nurses describe moral dilemmas that are similar in nature, and the environment may be considered highly similar in various aspects (Shapira-Lischinsky, 2010, Brüggemann et al., 2019). Social pressures put teachers in front of moral dilemmas, and they must repeatedly choose either to succumb to social pressure and decide with which they disagree internally, or to take a risk, oppose the pressure and do what they consider morally right (Mares, 2017). However, teachers also experience situations of ethical dilemmas involving their colleagues or superiors behaving in an unethical way (Brüggemann et al., 2019; Campbell, 1996; Tirri, 1999). Teachers then experience a moral outrage and face the dilemma of whether and how to intervene. This study is a systematic review of studies selected via keywords, narrowed down to 2010-2021 period. A summary of these studies might contribute to future research as well as to the future development of better measurement of moral distress in schools.

**Keywords:** *Moral distress, teachers, moral stress, teacher's job.*

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### 1. Introduction

Teachers are often faced with the decision of whether to give in to social pressure and accept a decision with which they internally disagree, or whether to take a risk, resist the pressure and do what they themselves consider morally right. Either of these two decisions, made in an ethically difficult situation, causes moral distress for the teacher. Moral distress is an ethical issue which can affect teacher's work life and the quality of teaching. Distress can be viewed as moral because one person's behaviour affects the well-being of others.

The concept of moral distress is associated with Jameton's (1984) study of nursing. The expert on ethics in nursing, American Andrew Jameton defined moral distress as a situation in which 'one knows the right thing to do, but institutional constraints make it nearly impossible to pursue the right course of action'. (Jameton, 1984, p.6) His later modification of the definition reads: "An individual experiences moral distress when he comes to a moral conclusion about a case he is handling alone, but institutions or associates make it difficult or outright impossible for him to act on that decision." (Jameton, 1993, p. 542).

In his article, Berger (2014) views moral distress as a silent epidemic that undermines efforts to promote professionalism. He urges health educators to seize the opportunity to influence the education and life-long practice experiences by recognizing the ubiquity and impact of moral distress of medical students and residents; by confronting negative role modelling; and by remediating deficiencies in trainees' ethical analytic skills and knowledge.

### 2. Methods

The aim of this review is to explore moral distress in teachers and thus provide a comprehensive summary. The following criteria were chosen to include individual studies:

- The record of the existence of the study could be searched as of January 10, 2022,
- The keywords for the search were moral distress, teacher/school/teaching/education/professor
- The study focuses on moral distress/moral stress
- The study is aimed at education (teachers, academic, school, school leaders)
- The study was published in English
- Study based on a quantitative / qualitative / mixed approach
- The study is a full peer-reviewed text published in an academic periodical



- All open access

The following criteria were chosen to exclude individual studies:

- Negation of one or more inclusion criteria (above)
- The study does not take the form of a professional article (these are, for example, conference reports, poster presentation reports, articles in popular psychological literature ...)
- This is a book publication or a study protocol

According to these criteria, 8 studies were found and will be discussed below.

The review of the literature related to moral distress in nursing education (Ganske, 2010) illustrated that there is link between moral distress in the nurse education and phenomena such as collective incivility of students, dishonesty, including cheating and plagiarism, grade inflation, colleague incivility, bullying, academic admission standards, standards of the profession, and cultural concerns. An environment that includes academic dishonesty, grade inflation, and/or bullying may lead to moral distress which may impact student learning, faculty job satisfaction.

Colnerud (2015) in his study uses the term moral stress instead of moral distress, but in his view, these are synonymous. In Colnerud's (2015) study, he seeks to determine whether moral distress is a phenomenon that relates to teaching practice. The grading system has been found to be an example where external principles (institutional constraints) conflict with teachers' desire to serve the well-being of students. Teachers' choice of action is externally controlled. According to the study, cases where students need to be protected from harm and where internal moral imperatives of the teacher conflicts with other internal moral imperatives and the teacher is responsible only to himself bring about the greatest risk of experiencing moral distress. The moral distress was also related to time pressure. Stress is not only caused by the number of students, the number of hours or the number of tasks, but also by the weight of unresolved dilemmas that manifest themselves as frustration, ambiguity and guilty conscience, which adds moral stress to the stress of the workload.

The study of Vehviläinen et al. (2017) looks at plagiarism as a source of emotional and moral distress, and as a situation calling for collegiality and reflection. For the analysis of moral distress in teachers job resources-demands model was chosen (Bakker and Demerouti,2007). The study identified the following job demands associated with plagiarism: 1. Rupture in the personal pedagogical relationship 2. Challenge to the supervisory, gate-keeping responsibility 3. A breach in everyday normality 4. Ambivalence in the explanations of plagiarism 5. The burden of accusation, verifying and disciplining.

Teachers in the study of Vehviläinen et al. (2017) discussed 3 resources that helped them manage the moral distress associated with plagiarism: 1. Conversations with colleagues and other reflective spaces 2. Support from superiors and administrative personnel 3. Shared playing rules, procedures, and plagiarism-detection programmes

In the qualitative study of Pejmankhah et al. (2018) the aim was to describe the experiences of 13 nursing teachers in the form of semi-structured interviews. The results of current study showed that classes and subclasses shown in Figure 1 are among the characteristics of moral distress in nursing teachers.

Figure 1. Characteristics of moral distress in nursing teachers.

| Class                              | Subclass   |
|------------------------------------|--|
| Valuation of situation             | Mindfulness of unethical situation   |
|                                    | Difficulty of correct ethical judgement  |
|                                    | Concern of undesirable consequences of the adopted measures                                |
| Getting entangled in the situation | Being involved in inappropriate task   |
|                                    | Forcing into agreement with other people   |
|                                    | Threat to occupational security  |
| Mental involvement                 | Cyclic and repetitive mental involvement   |
|                                    | Uncontrollable mental involvement in the situation   |
| Unavoidability                     | Repetition of the bothering experience in occupational and inter-professional interactions |
|                                    | Necessity of encountering with the situation   |

Brüggenmann et al. (2019) aimed to explore bystander passivity in the context of school settings and to contribute to theoretical development by connecting bystander passivity to moral disengagement and moral distress. According to Jameton's (1993) definition dividing moral distress into initial and reactive distress, we can infer that bystander passivity could evoke moral distress of the reactive type, where one sees some form of intervention as the right course of action but does not make that intervention because of external constraints. Brüggenmann et al. (2019) also distinguished different types of passivity in school settings.

In her article, Váchová (2019) describes the process of creating a questionnaire of moral distress focused on the teacher environment. Based on 20 interviews, she created 4 categories of situations causing moral distress. Teachers felt moral dilemmas especially in their working relationships.

Toescher et al. (2020) identified the profile of professors of nursing experiencing moral distress from different perspectives. Using cluster analysis, they found that professors working in Brazilian federal public universities experience from mild to moderate intensity of moral distress and the profile with the greatest number of participants (136 participants) is composed of less experienced (worked in their respective institutions for approximately 5 years) and younger female professors (aged 37 years old on average) working in graduate programs, experiencing moderate intensity of moral distress.

Stelmach et al. (2021) aimed to understand the extent to which moral distress affects a school leader's role, and the key sources of moral distress. His study shows how moral distress in school leaders affects who they are and how they perform as leaders. The study confirmed that 51% of the 954 participants had experienced moral distress. Of those experiencing moral distress, 45% reported experiencing it several times a week or month and 41% experienced it several times a year. Moral distress emerged from expectations from school district leaders and parents. In his article, he also discusses 3 sources of the limitations of school leaders feeling unable to do the right thing: the increasing complexity of classrooms, the deterioration of working relationships with parents, and the increase in directives that forced school leaders to meet district expectations.

### 3. Conclusions

Research on moral distress among teachers is an important but under-researched area. The studies found differ in their methodology, sample size and sample composition. Still, they conclude to similar findings – teachers often face ethical decisions whether to give in to social pressure and decide whether they internally disagree or to take the risk of standing up to social pressure and do what they themselves believe is morally right. Whatever they decide, they are unlikely to avoid moral distress. The topic of moral distress is important to explore further because of teacher common dissatisfaction and teacher's attrition from education caused by burnout, among other things.

### References

- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: state of the art. *Journal of Managerial Psychology*, 22(3), 309–328.
- Berger, J. T. (2014). Moral distress in medical education and training. *Journal of general internal medicine*, 29(2), 395-398
- Brüggemann, A. J., Forsberg, C., Colnerud, G., Wijma, B., & Thornberg, R. (2019). Bystander passivity in health care and school settings: Moral disengagement, moral distress, and opportunities for moral education. *Journal of Moral Education*, 48(2), 199-213.
- Campbell, E. (1996). Ethical implications of collegial loyalty as one view of teacher professionalism. *Teachers and Teaching: Theory and Practice*, 2, 191–208. doi:10.1080/1354060960020203
- Colnerud, G. (2015). Moral stress in teaching practice. *Teachers and Teaching*, 21(3), 346-360.
- Ganske, K. M. (2010). Moral distress in academia. *OJIN: The Online Journal of Issues in Nursing*, 15(3), 6.
- Jameton, A. (1984). *Nursing practice: The ethical issues*. Prentice Hall.
- Jameton, A. (1993). Dilemmas of moral distress: Moral responsibility and nursing practice. *AWHONN's Clinical Issues in Perinatal and Women's Health Nursing*, 4, 542–551.
- Mares, J. (2017). Morální distres u učitelů – skrytý problém. *Pedagogika*, 67(1) 27–55.
- Pejmankhah, S., Abbaszadeh, A., Ebadi, A., Pezhmankhah, S., & Borhani, F. (2018). Experience of nursing teachers of moral distress characteristic: a qualitative study. *Pharmacophore*, 9(4), 21-28.
- Shapira-Lishchinsky, O. (2010). Ethical dilemmas in teaching and nursing: The Israeli case. *Oxford Review of Education*, 36, 731–748.
- Stelmach, B., Smith, L., & O'Connor, B. (2021). Moral distress among school leaders: an Alberta, Canada study with global implications. *International Journal of Leadership in Education*, 1-23.
- Tirri, K. (1999). Teachers' Perceptions of Moral Dilemmas at School. *Journal of Moral Education*, 28(1), 31-47. doi: 10.1080/030572499103296
- Váchová, M. (2019). Development of a tool for determining moral distress among teachers in basic schools. *Pedagogika*, 69(4).
- Vehviläinen, S., Löfström, E. & Nevgi, A. Dealing with plagiarism in the academic community: emotional engagement and moral distress. *High Educ*, 75, 1–18 (2018). <https://doi.org/10.1007/s10734-017-0112-6>

## CAN ARTIFICIAL INTELLIGENCE SUPPORT CREATIVE PROBLEM-SOLVING?

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### Abstract

The process of creative problem-solving and stimulating innovation in organizations is long, costly, and high-risked. While risk is by definition included in the creative process, ideation can cut down time and costs of fostering innovative solutions. Inventive systems such as TRIZ (*Теория решения изобретательских задач*), CPS (Creative Problem-Solving) or DT (Design Thinking), have paved the way in supporting creators, designers, inventors and scientists in innovative solutions seeking. However, only a few of these systems are scientifically proven to be effective. It seems that CPS, initiated by Osborn, is the best evidence-based inventive system, as well as it is still developed both in empirical research, and in real-life practice (Buijs, Smulders & van der Meer, 2009; Isaksen & Treffinger, 2004; Puccio, Murdock & Mance, 2005). The main assumption of CPS is that creating innovative ideas is a phase process, i.e. following a certain universal pattern. Baer and Kaufman (2005) argue that CPS involves various skills, especially domain-specific creativity (i.e. related to expert knowledge), which is embedded in general abilities such as intelligence and motivation. However, the use of CPS requires high-class experts who are not only specialists in a specific field but also trained in creative problem-solving. Regardless of the costs, it is a bottleneck for the application of such inventive techniques on a larger scale. Therefore, new approaches in development of AI-powered creative tools to assist creators and designers seem to be emerging. One of them is @CREATE – an expert inventive system based on CPS and supported by artificial intelligence. The idea of @CREATE will be presented by the authors.

**Keywords:** *Creativity, creative problem solving, innovations, artificial intelligence.*

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### 1. Creative problem-solving in practice

The process of creative problem-solving and searching for innovation in business is ineffective, lengthily, and costly. Achievements of companies such as Apple or Tesla are enviously looked at and the careers of Steve Jobs or Elon Musk are analysed, concluding that their success cannot be simply copied. And rightly so, because if Steve Jobs wanted to repeat someone's success, he would achieve nothing unique. Innovation cannot be repeated, because it is, by definition, something that has never happened before. However, organizations lack the knowledge of how to foster creativity and stimulate innovation.

Many tools have been developed in the field of invention, such as the widely known brainstorming, which, drawing from tricks observed in the case of outstanding artists, scientists, inventors and entrepreneurs, supports the search for creative solutions (cf. Proctor, 2014). Excellent inventory systems have already been created, such as Altszuller's TRIZ (*Теория решения изобретательских задач*) and Osborn's CPS (Creative Problem Solving), which paved the way for the conceptual support of creators, designers, inventors and researchers in the search for innovative solutions and creative problem solving. Their effectiveness seems unquestionable (Vernon, Hocking, & Tyler, 2016). Over the past several decades, many variants of this type of systems and marketing strategies have appeared, more or less related to the inventive area. They include, among others: Design Thinking, Crowdsourcing, Customer-Made Approach, Customer Relationship Management, Customer Experience Management, Innovation Styles, Rapid Prototyping, Lean Management, Re-engineering, Six Sigma, Just-in-Time, Automation, User-driven Innovation, Open knowledge/innovation, User Experience, User Interface Design, LEAN START-UP, etc. The problem is that for most of these new ideas no empirical data have been collected to prove if their implementation can significantly increase the effectiveness of the creative outcomes, understood as originality and usefulness of the developed solutions (Carson, 2010).

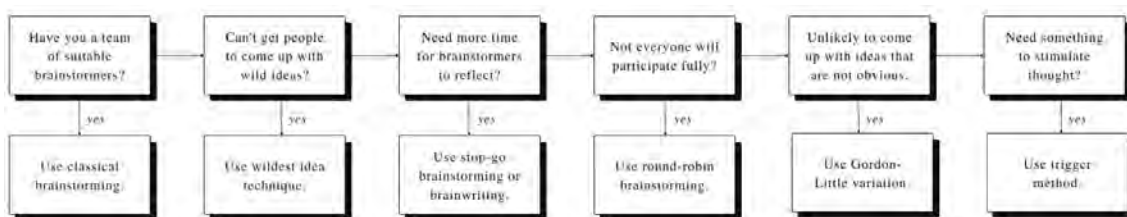
Among the above-mentioned "innovation methodologies", CPS has the strongest scientific base and was developed and tested both in research, and in practice (Buijs, Smulders and van der Meer, 2009; Isaksen and Treffinger, 2004; Puccio, Murdock and Mance, 2005). The elementary assumption of CPS is that the emergence of innovation is a phase process, i.e. following a certain universal pattern. Baer and Kaufman (2005) argue that CPS involves different domains of ability in which domain-specific creativity (i.e. related to expert knowledge) is embedded in general abilities such as intelligence and motivation.

Nowadays, despite the lack of an unambiguous consensus, most researchers in the field of inventions assume that the creative process consists of the following phases: (1) problem situation analysis – the purpose of which is to properly formulate the problem and gather all the information and tools necessary to start generating ideas; (2) ideas generation - the aim of which, in line with the excess strategy, is to bring together as many diverse and original ideas as possible; (3) evaluation and implementation planning – consisting of assessing the developed solutions, and then selecting the solution(s) that meet the assumed boundary conditions for implementation. For many practical problems it is unnecessary to go through all these phases, much less strictly in that order. It has been also pointed out that efficient problem solving requires flexibility (Pretz, Naples & Sternberg, 2003). A full cycle of problem-solving appears to be necessary when dealing with problems new to the individual (Mumford, Peterson, & Childs, 1999). In many other instances, CPS can be used in an interactive and iterative fashion, rather than simply as a linearly ordered set of steps.

## 2. CREATE expert system

Based on the collected research results, the CREATE Expert System has been developed. It consists of a set of decision trees comprehensively referring to the entire process of generating innovations, taking into account the type of innovation (incremental, radical, process or in the field of services) and phases (analysis, generation and evaluation). The CREATE system includes 26 inventive techniques supporting creative problem solving and the emergence of innovative solutions. An exemplary decision tree dedicated to the generation phase is presented in Figure 1.

Figure 1. Example of Decision Tree for Brainstorming (based on Proctor, 2014, p. 151).



## 3. @CREATE platform supported by artificial intelligence

Currently, the prototype of the @CREATE platform based on the CREATE Expert System is in the implementation phase. The platform task will be to support generating innovation and problem solving in organizations. The @CREATE platform is going to replace an expert in the field of inventions, suggesting which inventive techniques to use in a specific problem situation and how to put them together in the full cycle of design thinking or problem solving. @CREATE will be based on artificial intelligence solutions. It will allow the accumulation of unique knowledge concerning innovation in organizations thanks to implementing the do-it-yourself idea (DYI) based on the CREATE expert system.

As in any system based on machine learning methods, the key issue in @CREATE is the data used for training and testing of the system, recommending techniques in a creative problem solving field. This type of information will be collected on an ongoing basis from users using the application. We anticipate using the program to collect differentiated data at several stages of interaction. Firstly, the system will use demographic data about the users themselves: their age, gender, position, team size, and others (unchanging or weakly variable data). The engine will also be largely fed with data relating to the problem itself. Users will be asked about the multidimensional characteristics of the problem, including its type, specificity, perceived difficulties, etc., and the expected solutions, i.e. the type of innovation sought, boundary conditions, including solution evaluation criteria, etc.

In the next step, the records for working with a specific method will be included (subjective data). Assessment forms will be displayed in the app when the creative process step is completed. We will ask about the satisfaction with the developed solution, the estimated value of the ideas or the satisfaction with working within the application. Depending on the type of user, the meaning of the answers will be more or less crucial for the recommendation engine (assigning appropriate weights). In the surveys, we

plan to include mainly quantitative or ordinal scales, for example Likert's scales or scales with a slider. Such data, in addition to the potential impact on the development of the recommendation engine, will also help us to improve the platform. The last type of data used by @CREATE will be the objective measures of working with specific inventive methods. We are talking here, for example, about the number of solutions developed, as well as time spent in the application. All data will be collected at the application level, encrypted, and sent to the server via a secure connection. The core of the @CREATE system - the recommendation engine, will work there as well. After collecting new information, training and replacement of the engine version will take place.

The recommendation engine will consist of two artificial intelligence models. After collecting the appropriate amount of data, we assume they will be in the form of deep neural networks, but the first experiments will be conducted using more standard methods of machine learning. The role of the first model will be to suggest inventive techniques that can be applied at a given stage of the creative process. At this phase, data characterising the problem and expected solutions will be of key importance. The similarity to the problems solved earlier will be determined (both by a specific user and other people using @CREATE). In turn, the role of the second model will be to personalize and match specific recommendations to a specific recipient and their team, taking into account, among others, demographic data, preferences, level of satisfaction, history of working on problems.

At a given stage, the user will be offered various options to choose from, along with a rationale. The distinguishing feature of our system will be the indication of parameters that contributed to a given recommendation, which will increase the transparency and trust of users. Choosing a particular technique by the user will have an impact on the recommendations in the next steps. The user will also be offered various paths that will allow, for example, to get as many solutions that are significantly different, or one solution, but in the shortest possible time, etc. In the initial phase, to solve the cold start problem, @CREATE platform will work based on the CREATE expert system. Thanks to this, users who solve the problems unknown to the engine will also be able to use the recommendations. Likewise, the expert system will also be used in the initial data collection process itself.

#### 4. Summary

The @CREATE platform will be an innovative solution *per se*, having no counterpart in the world. So far, no one has invented an algorithm to recommend inventive techniques, which in @CREATE will be implemented based on artificial intelligence solutions. Other software supports individual creative techniques (such as brainstorming) or contains a database of techniques, but does not support the decision-making processes. @CREATE will moderate the process of creation, "advising" methods, leading to the implementation of innovative solutions. However, the highest anticipated value and social mission of the @CREATE will be to support the innovativeness of its future users.

#### References

- Baer, J. & Kaufman, J. C. (2005). Bridging generality and specificity: The amusement part theoretical (APT) model of creativity. *Roeper Review*, 27, 158-163.
- Buijs, J., Smulders, F., & van der Meer, H. (2009). Towards a more realistic creative problem solving approach. *Creativity and Innovation Management*, 18, 286-298.
- Carson, S. (2010). *Your creative brain: Seven steps to maximize imagination, productivity, and innovation in your life*. San Francisco, CA: John Wiley.
- Isaksen, S. G. & Treffinger, D. J. (1987). *Creative problem solving: Three components and six specific stages*. Buffalo, NY: Centre for Studies in Creativity.
- Mumford, M. D., Peterson, N. G., & Childs, R. A. (1999). Basic and cross-functional skills. In N. G. Peterson, M. D. Mumford, W. C. Borman, P. R. Jeanneret, & E. A. Fleishman (Eds.), *An occupational information system for the 21st century: The development of O\*NET* (pp. 49-69). American Psychological Association.
- Pretz, J. E., Naples, A. J., & Sternberg, R. J. (2003). Recognizing, defining, and representing problems. In J. E. Davidson & R. J. Sternberg (Eds.), *The psychology of problem solving* (pp. 3-30). Cambridge University Press.
- Proctor, T. (2014). *Creative Problem Solving for Managers Developing Skills for Decision Making and Innovation*. New York: Routledge.
- Puccio, G. J., Murdock, M. C., & Mance, M. (2005). Current developments in creative problem solving for organization: A focus on thinking skills and styles. *The Korean Journal of Thinking & Problem Solving*, 15, 43-46.
- Vernon, D., Hocking, I., & Tyler, T. C. (2016). An Evidence-Based Review of Creative Problem Solving Tools: A practitioner's resource. *Human Resource Development Review*, 15(2), 230-259.

## ADOLESCENTS' SENSE OF BELONGING AT SCHOOL: THE ROLE OF EMPATHY AND INDIVIDUAL CHARACTERISTICS

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### Abstract

There are many benefits of a high sense of school belonging (i.e., lower psychological distress), yet a lot of students do not feel like they belong to their schools. Many researchers have therefore tried to increase the sense of belonging in adolescents via different interventions. One of the recent review articles (Allen et al., 2021) discovered that successful interventions targeted students' strengths and promoted positive interactions. One way these strengths and positive interactions could be targeted is to build empathy capacities. Although personal characteristics have been widely recognized as predictors of school belonging (i.e., age, gender, academic achievement, etc.) this does not seem to be the case for empathy. Only a few studies explored empathy components when addressing school belonging (i.e., Batanova & Loukas, 2014) and none, to our knowledge, have looked into empathy as a possible mediator of the relationship between personal characteristics and school belonging. The present study investigated the relationship between personal characteristics and the sense of belonging at school while investigating the mediating role of empathy on the relationship. A randomized sample of 1990 students from Slovenia ( $M = 15.35$  years,  $SD = 1.23$ ; 58.3% female) was used in a structural equation modelling to determine the relationships between the individual characteristics (gender, age, grades) and the Sense of belonging at school (OECD, 2018), while looking into the mediating role of both empathy components, namely, Empathic concern and Perspective taking (IRI; Davis, 1980). Results showed that all personal characteristics (gender, age, grades) are positively connected to both empathy components. Also, both empathy components (Perspective taking, Empathic concern) have a positive connection with the Sense of belonging at school. Furthermore, grades have a direct positive and gender a direct negative connection with the Sense of belonging at school. Lastly, both empathy components mediate all the indirect paths from the personal characteristics to the Sense of belonging at school, thus providing 6 positive indirect paths in-between. The model provides an insight into the important role that empathy has when addressing the sense of school belonging. Not only is it connected to it, but it also mediates the paths from the personal characteristics, which is especially important for the direct negative path from gender. Addressing empathy (especially empathic concern, which has the highest connection to school belonging) is advisable when trying to influence the sense of belonging at school.

**Keywords:** *School belonging, empathy, adolescents, individual characteristics, positive youth development.*

### 1. Introduction

Although there are many benefits of a high sense of school belonging (i.e., higher psychological strengths and lower psychological distress; Wagle et al., 2021), a lot of students do not feel like they belong to their schools. Many researchers have therefore tried to increase the sense of belonging in adolescents via different interventions, and one of the recent review articles (Allen et al., 2021) discovered that successful interventions targeted students' strengths and promoted positive interactions (between students as well as between school staff and students). One way these strengths and positive interactions could be targeted is to build empathy capacities among students (and other individuals). Although personal characteristics have been widely recognized as predictors of school belonging (i.e., age and gender, Kashy-Rosenbaum & Aizenkot, 2020; academic achievement, Azagba et al., 2014) this does not seem to be the case for empathy. Only a few studies explored empathy components when addressing school belonging (i.e., Batanova & Loukas, 2014; Safara & Rafiee, 2020) and none, to our knowledge, have looked into empathy as a possible mediator of the relationship between personal characteristics and school belonging. The present study investigated the relationship between personal characteristics and the sense of belonging at school while investigating the mediating role of empathy on the relationship.

## 2. Method

### 2.1. Participants

A randomized sample consisted of 1990 students from Slovenia ( $M = 15.35$  years,  $SD = 1.23$ ; 58.3% female) who participated in a study Positive Youth Development in Slovenia: Developmental pathways in the context of migration (PYD-SI Model).

### 2.2. Instruments

Interpersonal Reactivity Index (IRI; Davis, 1980) was used as a measure of empathy. It consists of four scales; two of them labelled as emotional empathy (Empathic concern, Personal distress) and the other two as cognitive empathy (Perspective taking, Fantasy). In our study, two scales (Empathic concern and Perspective taking) were included, where students assessed how well the items described them. Each had 7 items on a 5-point Likert scale (1 – “Not at all like me”, 5 – “Very much like me”), Cronbach’s alpha was .75 for Perspective taking and .69 for Empathic concern. Sense of belonging at school (OECD, 2018) was used as a measure of school belonging. It consists of 6 items, where students assessed how well the items describe their experiences, on a 4-point Likert scale (1 – “I strongly disagree”, 4 – “I completely agree”). Cronbach’s alpha was .80. Gender was coded 0 for males and 1 for females. Five non-binary people were excluded from the model due to poor representation. Grades was measured with one item, assessing the most common grades the students get in the school, on an 8-point Likert scale (1 – “mostly worse than 2”, 8 – “mostly 5”). In Slovenia, grades are labelled from 1-insufficient to 5-excellent.

### 2.3. Procedure

The students completed a paper or online version of the questionnaire measuring indicators of positive youth development with possible connected factors and demographics. We only present data for the selected measures. Reliability tests and descriptive statistics were calculated with IBM SPSS Statistics 21. The structural equation modelling (SEM) was performed in Mplus. The study was supported by The Slovenian Research Agency as part of the project Positive Youth Development in Slovenia: Developmental Pathways in the Context of Migration (PYD-SI Model) [J5-1781].

## 3. Results

Descriptive statistics and correlations are summarized in Table 1. As it can be seen, most correlations are significant. When looking at the Sense of school belonging, the outcome of our study, all variables but age are significantly connected to it, with Perspective taking having the highest association.

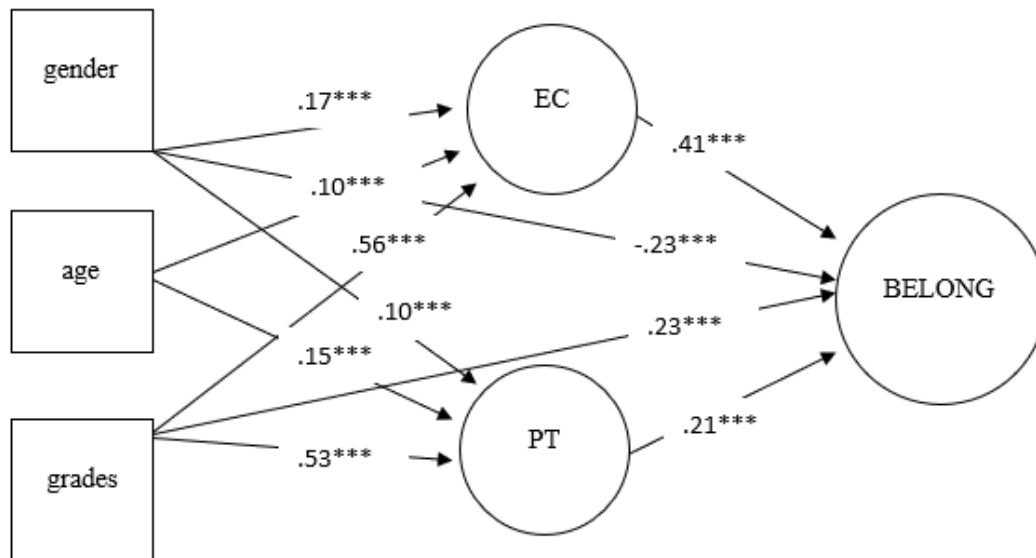
Table 1. Descriptive statistics and correlations across factors.

|                    | <i>M</i> | <i>SD</i> | Gender         | Age            | Grades        | Empathic concern | Perspective taking |
|--------------------|----------|-----------|----------------|----------------|---------------|------------------|--------------------|
| Gender             | 0.583    |           |                |                |               |                  |                    |
| Age                | 15.347   | 1.232     | 0.024          |                |               |                  |                    |
| Grades             | 5.845    | 1.584     | <b>.167**</b>  | <b>-.195**</b> |               |                  |                    |
| Empathic concern   | 3.609    | 0.645     | <b>.346**</b>  | 0.008          | <b>.145**</b> |                  |                    |
| Perspective taking | 3.274    | 0.610     | <b>.218**</b>  | <b>.076**</b>  | <b>.132**</b> | <b>.510**</b>    |                    |
| Sense of belonging | 3.133    | 0.528     | <b>-.100**</b> | -0.026         | <b>.074**</b> | <b>.094**</b>    | <b>.130**</b>      |

Notes: \*\* $p < .01$

Structural equation modelling was used to determine the relationships between the individual characteristics (gender, age, grades) and the sense of belonging at school, while looking into the mediating role of both empathy components, namely, Empathic concern and Perspective taking. The SEM model shows an adequate fit to the data:  $\chi^2(216) = 2901.211$ ,  $p < .001$ , CFI = .910, RMSEA = .079, 90% CI [.077 - .082], SRMR = .067, according to Hair et al. (1998). Results showed that all personal characteristics (gender, age, grades) are positively connected to both empathy components, with grades having the highest connection (see Figure 1). Also, both empathy components (Perspective taking, Empathic concern) have a positive connection with the Sense of belonging at school. Furthermore, grades have a direct positive and gender a direct negative connection with the Sense of belonging at school. Lastly, both empathy components mediate all the indirect paths from the personal characteristics to the Sense of belonging at school, thus providing 6 positive indirect paths in-between.

Figure 1. Relationships between personal characteristic (gender, age, grades), empathy (EC-Empathic concern, PT-Perspective taking) and Sense of school belonging: structural equation model. The numbers present standardised coefficient estimates. Only significant paths are presented. \*\*\* $p < .001$



#### 4. Conclusions

The model provides an insight into the important role that empathy has when addressing the sense of school belonging. Not only is it connected to it, but it also mediates the paths from the personal characteristics, which is especially important for the direct negative path from gender. Based on this model, males have a lower sense of school belonging, but if they tend to express high empathic skills (either component) their sense of school belonging is also higher. Addressing empathy (especially empathic concern, which has the highest connection to school belonging) is advisable when trying to influence the sense of belonging at school. Lastly, we need not forget about the personal characteristics connected to it, and ways to reinforce school belonging, which is highly connected to several future outcomes in the adolescents' life.

#### References

- Allen, K. A., Jamshidi, N., Berger, E., Reupert, A., Wurf, G., & May, F. (2021). Impact of school-based interventions for building school belonging in adolescence: A systematic review. *Educational Psychology Review*, 1-29.
- Azagba, S., Asbridge, M., & Langille, D. B. (2014). Is religiosity positively associated with school connectedness: evidence from high school students in Atlantic Canada?. *The journal of primary prevention*, 35(6), 417-427.
- Batanova, M., & Loukas, A. (2014). Unique and interactive effects of empathy, family, and school factors on early adolescents' aggression. *Journal of youth and adolescence*, 43(11), 1890-1902.
- Davis, M. H. (1980). A multidimensional approach to individual differences in empathy. *JSAS Catalogue of Selected Documents in Psychology*, 10, p. 85.
- Hair, J. F., Jr., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis*. Prentice-Hall International.
- Kashy-Rosenbaum, G., & Aizenkot, D. (2020). Exposure to cyberbullying in WhatsApp classmates 'groups and classroom climate as predictors of students 'sense of belonging: A multi-level analysis of elementary, middle and high schools. *Children and youth services review*, 108, 104614.
- OECD. (2018). *PISA-D Student Questionnaire*. Available at: <https://www.oecd.org/pisa/pisaproducts/PISA-D%20Main%20Study%20Student%20Questionnaire%20IS.pdf>
- Safara, M., & Rafiee, S. (2020). The Effectiveness of Empathy Training on Social Adjustment and School Belonging in Elementary Sixth-Grade Students. *Iranian Evolutionary and Educational Psychology Journal*, 2(1), 71-80.
- Wagle, R., Dowdy, E., Nylund-Gibson, K., Sharkey, J. D., Carter, D., & Furlong, M. J. (2021). School belonging constellations considering complete mental health in primary schools. *The Educational and Developmental Psychologist*, 1-13.



# LEARNING HABITS: DOES THE DIGITAL GENERATION HAVE DIGITAL STRESS AND HOW DOES IT AFFECT THE LEARNING OF MATHEMATICS?

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## Abstract

Mathematics is one of the most important subjects that students learn at all levels of education. Understanding and competence in mathematics allows to integrate better into the labour market, perform complex calculations and model significant processes. It is mathematics that has been proven to be the most sensitive to compulsory distance learning as a result of the Covid-19 pandemic. Due to the state of emergency in Latvia, all schools were periodically closed for a total of 9 months, when the learning process could only take place in the e-environment. In this context, the study was motivated by the question "Does digital stress exist for the digital generation and how does it affect the learning of mathematics?" The aim of the study is to determine the initiators of digital stress by using the Stressor-strain-outcome framework and the consequences that students face when learning math remotely. Using the Partial Least Squares Structural Equation Modelling with SmartPLS, a survey data of 185 students were analyzed. Anxiety, lack of instantaneous feedback, risks of self-directed learning and social isolation were found to contribute to digital stress, which in turn has a negative impact on interest and performance in learning mathematics. The study helped to delve into students' feelings and needs, as well as to develop recommendations to reduce the effects of the pandemic, to manage learning processes more effectively, to gain students' respect and to promote better learning in mathematics.

**Keywords:** *Digital generation, digital stress, math learning, learning habits, AI4Math.*

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## 1. Introduction

Researchers (Jukes, McCain & Crockett, 2010) have emphasized that today's children look the same on the outside as we do, but they are completely different on the inside. Because of digital bombardment, their brains must adapt to all the technologies they spend so much time with. Their brains change physically and chemically. The digital generation has more experience in processing information and data quickly, so they have developed hyperlinked minds. They want enjoyable and active learning, understandable review and immediate feedback. The Covid-19 pandemic hit the education industry worldwide and training could only take place remotely. Researchers (Zhao et al., 2021) have highlighted the benefits of e-learning, but there is still little research on the shadow side of mandatory e-learning driven by Covid-19 and a specific impact on learning mathematics. Therefore, the aim of the study is to determine the initiators of digital stress by using the Stressor-strain-outcome (SSO) framework and the consequences that students face when learning math remotely.

## 2. Literature review

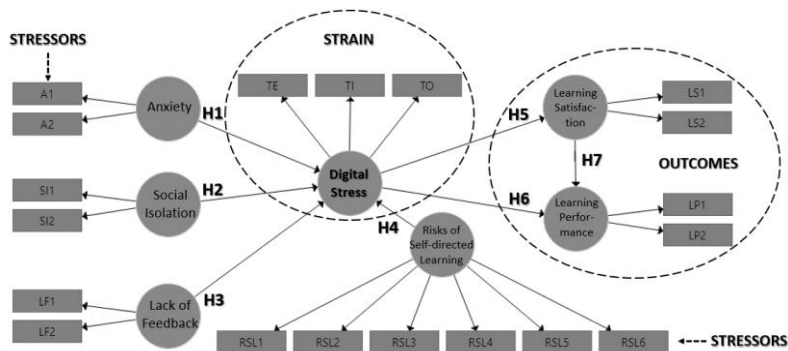
Mathematics is considered by many students to be an unpleasant and incomprehensible subject, which in turn causes anxiety and negatively affects student achievement (Istikomah & Wahyuni, 2018). Researchers Lyons and Beylock (2012) argue that math anxiety has similar symptoms to those experienced by the body for other reasons. Math anxiety is common in students of all ages and is only increasing over the years (Istikomah & Wahyuni, 2018). An additional concern in learning mathematics is the use of technology and has become an important issue in e-learning in recent years (Abdous, 2019). SSO is a popular and well-known theoretical framework that has been developed and applied over time to study the stressors associated with the use of technology (Ayyagari, Grover & Purvis, 2011). SSO usually consists of three components: 1) Stressors, 2) Strain, 3) Outcomes. And researchers (Lee et al., 2021) have highlighted the main "Stressors": Anxiety (A), Social Isolation (SI), Lack of immediate Feedback (LF) and Risks of Self-directed Learning (RSL). As the second section of the SSO or "Strain" in the

study, we chose the term digital stress, which researchers (Ragu-Nathan et al, 2008) describe as a phenomenon of stress and the type of psychological stress that users experience in organizations when implementing and using ICT. TechnoInvasion (TI) is one of the components of digital stress, as the ubiquitous nature of technology interferes with everyday life and learning. Another component of digital stress is TechnoOverload (TO), which overloads students and makes them work longer and longer. And the third component is TechnoExhaustion (TE), which is characterized by feelings of fatigue and the inability to cope with new ICTs in a healthy way during compulsory e-learning (Lee et al., 2021). We selected Learning Satisfaction (LS) and Learning Performance (LP) as components of the third SSO or “Outcomes” section, which are often used as key indicators to assess the effectiveness of the learning environment (Xu et al., 2014). Researchers (Lee et al., 2021) emphasize that digital stress can contribute to poor learning outcomes and performance, and that the component of student satisfaction is a crucial predictor of learning achievement.

### 3. Research methodology

As part of the study, an electronic survey was conducted for students of different schools, ages and genders in Latvia in April, May and November 2021, when Latvian schools were closed due to the Covid-19 pandemic and education could only take place online. A total of 185 responses were received. The survey was coordinated with the Vidzeme University College Academic Ethics Commission and questions was rated on a Likert five-point scale (from “1 - strongly disagree” to “5 - strongly agree”). When studying students' behaviour during distance learning mathematics, a graphical representation of the theoretical model was created (Figure 1) and the following seven hypotheses were put forward: **H1**: Anxiety contributes to digital stress; **H2**: Social isolation contributes to digital stress; **H3**: Lack of feedback has a positive effect on the occurrence of digital stress; **H4**: Risks of self-directed learning have a positive effect on the development of digital stress; **H5**: Digital stress has a negative effect on learning satisfaction; **H6**: Digital stress negatively affects learning performance; **H7**: Learning satisfaction has a positive effect on learning performance.

Figure 1. Graphical representation of the theoretical model of the research.



Due to the presence of the second order structure “Digital Stress”, the collected data were analyzed using the Partial Least Squares Structural Equation Modelling (PLS-SEM) method and SmartPLS application, which is able to analyze more complex higher order structures (Lee et al., 2021).

### 4. Data analysis

To evaluate the hypotheses, we analyzed the values of Cronbach’s Alpha, Rho<sub>A</sub>, and Composite Reliability indices for the first-order structures using SmartPLS. All values exceed the 0.70 threshold. Also, all Average Variance Extracted (AVE) values are greater than 0.50, so the convergence of the model reliability and validity is considered stable (Lee et al, 2021). Other than the first-order constructs, it is crucial to evaluate the quality of the formatively measured second-order construct, namely Digital Stress. Following Lee et al (2021), owing to (i) all the associated first-order constructs of digital stress are exhibiting significant Outer Weights (0.453, 0.576, 0.287) and (ii) the Variance Inflation Factors are below the limit of five (2.717, 2.341, 2.459), the second-order construct has been conceptualized appropriately. Table 1 summarizes the results of structural model testing using SmartPLS capabilities. Six hypotheses (H1, H3, H4, H5, H6, and H7) are fully supported because the absolute values of Path Coefficients are > 0.1 and P-values are <0.001. In turn, one hypothesis (H2) is partially supported because the Path Coefficient value is slightly less than 0.1 and the P-value is slightly greater than 0.001.

Table 1. Hypotheses testing results.

| Hypotheses and Paths                                 | Path Coefficients | P-values | Supported? |
|--|-------------------|----------|------------|
| H1: Anxiety → Digital Stress                         | 0.238             | 0.0000   | Yes        |
| H2: Social Isolation → Digital Stress                | 0.099             | 0.0711   | Partially  |
| H3: Lack of Feedback → Digital Stress                | 0.996             | 0.0000   | Yes        |
| H4: Risks of Self-Directed Learning → Digital Stress | 0.325             | 0.0001   | Yes        |
| H5: Digital Stress → Learning Satisfaction           | -0.187            | 0.0008   | Yes        |
| H6: Digital Stress → Learning Performance            | -0.314            | 0.0000   | Yes        |
| H7: Learning Satisfaction → Learning Performance     | 0.619             | 0.0000   | Yes        |

## 5. Conclusions

The results confirm previous studies (Lee et al, 2021) and fully support six (H1, H3, H4, H5, H6, H7) hypotheses that suggest that the digital generation is under digital stress, which in turn has a negative impact on math learning. The partially supported hypothesis H2 suggests that there is an insignificant association between social isolation and digital stress, as students today are not isolated and can easily communicate and maintain social bonds with each other through social media (Lee et al., 2021). The study helped to delve into students' feelings and needs, as well as to develop recommendations to further mitigate the effects of the pandemic, to manage learning processes more effectively, to gain students' respect and to promote better math learning. Educators are encouraged to develop plans that can reduce the impact of stressors (anxiety, lack of feedback, risks of self-directed learning) on digital stress and math learning in general. In order to avoid additional stress, we recommend: 1) to explain more to students the use of ICT tools, 2) to introduce continuous, immediate and innovative feedback methods, also using emotion analysis, 3) to include new strategies and methods in the learning process that would allow catch moments of loss understanding of mathematics topics and which would keep students' interest and motivation, 4) to develop support systems that help and teach students to plan time and resources for e-learning, 5) schools to take care of teachers' digital skills training and support systems.

## Acknowledgements

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## References

- Abdous, M. (2019). Influence of satisfaction and preparedness on online students' feelings of anxiety. *The Internet and Higher Education*, 41, 34–44.
- Ayyagari, R., Grover, V., Purvis, R. (2011). Technostress: Technological antecedents and implications. *MIS Quarterly*, 35 (4), 831–858.
- Istikomah, E., Wahyuni, A. (2018). Student's Mathematics Anxiety on the Use of Technology in Mathematics Learning. *Journal of Research and Advances in Mathematics Education*, 3 (2), 69-77.
- Jukes, I., McCain, T., Crockett, L. (2010). Understanding the Digital Generation. Teaching and Learning in the New Digital Landscape. *21st Century Fluency Project Inc.*
- Lee, V-H., Hew, J-J., Leong, L-Y., Tan, G.W-H., Ooi, K-B. (2021). The Dark Side of Compulsory e-education: Are Students Really Happy and Learning during the COVID-19 Pandemic? *International Journal of Human-Computer Interaction*.
- Lyons, I.M, Beilock, S.L. (2012). When Math Hurts: Math Anxiety Predicts Pain Network Activation in Anticipation of Doing Math. *PlosOne*. 7 (10), 1-6.
- Ragu-Nathan, T.S., Tarafdar, M., Ragu-Nathan, B.S., Tu, Q. (2008). The consequences of technostress for end users in organizations: conceptual development and empirical validation. *Inform. Syst. Res.* 19, 417–433.
- Xu, D., Huang, W.W., Wang, H., Heales, J. (2014). Enhancing e-learning effectiveness using an intelligent agent-supported personalized virtual learning environment: *An empirical investigation. Information and Management*, 51 (4), 430–440.
- Zhao, Y., Wang, N., Li, Y., Zhou, R., Li, S. (2021). Do cultural differences affect users' e-learning adoption? A meta-analysis. *British Journal of Educational Technology*, 52 (1), 20–41.

## DEVELOPMENT OF READING LITERACY IN FOREIGN LANGUAGE AND ATTENTION DEFICIT AND HYPERACTIVITY DISORDER CHILDREN

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### Abstract

The main purpose of the article is to discuss how children with Attention Deficit and Hyperactivity Disorder (ADHD) develop reading literacy in a foreign language. Usually, foreign language methodologies and instruction in foreign language education are specifically designed for the majority of learners who have the capacities and abilities to comprehend a foreign language and learn it. The majority also masters competencies necessary for reading comprehension enhancement. However, there are learners with neurodiversity who need special attention when acquiring a foreign language. In the real school settings, very little attention is devoted to such learners. This study stands on the presumption that individual differences are a natural part of foreign language education and every single individual has specific desires and needs when foreign language learning is concerned. ADHD foreign language learners are defined as having low levels of attention, low communication skills, low literacy, and difficulties to concentrate (Hawkins, Gathercole, Astle, 2016). The research was designed as a case study of an 11 years-old English language learner diagnosed with ADHD. The article presents selected data gained from a research project that took two years of examination. Specifically, it emphasises the ability of the selected ADHD learner to devote his attention to reading in a foreign language at the English language lessons after the intervention was introduced. The first part of the article defines characteristics of ADHD learners from a neurological and psychological points of view. Then the approach we selected for the intervention was a specifically designed set of strategies grounded in the strategies of drama games, multisensory approach to teaching foreign language and Total Physical Response (TPR), all characterised as non-traditional approaches to foreign language instruction. The second part of the article presents selected research data. The case study research was conducted in an average size public school in the south of Slovakia. Based on the results we tend to have strong conviction that non-traditional classroom management together with the selected intervention approach introduced in the research study stimulated higher interest of the selected learner to read and respond to the text interactively. The tools of Grammar Test, Observation and Semi-structured interview also served to investigate the selected variables. The object of research was carefully selected and all the research data were kept fully confidential.

**Keywords:** *Foreign language education, reading comprehension, reading literacy, attention deficit and hyperactivity disorder, multisensory approach, creative drama strategies.*

### 1. Introduction

Reading in a foreign language encompasses a wide spectrum of cognitive and metacognitive processes. Mainly they cover metalinguistic awareness, general knowledge about the theme of the text, reading strategies, working memory, attention span but also sociocultural aspects as reading habits, cultural awareness of the target language. As reading comprehension is one of the variables selected for the purpose of this research, we pay attention to the several aspects of the skill. Apparently, a great amount of attention is paid to reading comprehension because reading is one of the essential skills necessary for a successful FL learner. The current research study is a part of a wider research emphasising foreign language literacy development. The main goal of the programme was to provide a complex reading comprehension instrument how to enhance reading comprehension of FL readers in Slovakia. Furthermore, one selected part of the research was paid to the children diagnosed with ADHD (Attention Deficit Hyperactivity Disorder) and their competence of reading comprehension. The selected variables of Foreign Language Reading Comprehension and Unwanted Behaviour were selected for the purpose of this study.

Prior to the selection of the predictors the analyses of the most influential factors of text comprehension were selected. Over the course of the research the most influential appeared the factors of grammar comprehension, specifically understanding of the morphological, syntactical and lexical structures. Perception of grammatical rules the ability to work with the rules while reading appeared as the most influential predictor together with the cognitive structuration. Although we believe there are various other factors, we based our assumptions on the interaction and interrelatedness of the selected factors. Furthermore, the role of text comprehension and its relation to the perception of grammatical structures and vocabulary were researched. Regarding comprehension, we assume, it relates to knowledge and skill. As McNamara & Magliano specify, it comprises of lower level processes and higher level processes (McNamara & Magliano, 2009). Even the less proficient readers may comprehend the text on its lower levels, using text-based information, understanding the codes, memorising words, putting sentences together, and conveying the meaning. However, much complex process is acquired, for higher level reading, mainly, the process of connecting meaning, relating it to the text beyond the text, beyond the denotations, finding relationships among a variety of the concepts.

As Nuttall (2005), McNamara & Allen (2017), Adams, Bell, & Perfetti (1995), O'Reilly & McNamara (2007) share there are generally three main levels of reading, firstly it is **decoding** of the symbols, **understanding** the meaning and **connecting** the meaning with the personal knowledge and life experience. Regarding ADHD learners the main problematic areas of reading in a foreign language are *decoding*, *encoding*, low level of understanding *polysemy*, *syntax*, *semantic* and *pragmatic* character of texts. Their knowledge of lexis is low and they lack the ability to relate previous knowledge with the information from the text. Thus, it is essential to develop metacognitive strategies of ADHD learners, such as the capacity to self monitor, self assess, self-evaluate in order to be able to correct oneself or apply a different strategy for comprehension of the text (Clay, M. 2015). As several other writers claim metacognitive processes are far more important than explicit recognition of the words and is necessary for both, the beginner reader or the accomplished reader.

## 2. Objectives and methods

The main purpose of the research was to find out how the intervention techniques based on the Multisensory approach, Creative drama, Total Physical Response method, and Experiential learning affect development of reading comprehension of an ADHD language learner. The subject of the case study was an 11 years old boy learning English as a foreign language for 4 years in a public school (south of Slovakia). Out of the interest in the impact of the intervention on the selected boy, the following research questions were formulated: Research question 1: *What is the impact of the intervention techniques on the competence of reading comprehension of the selected ADHD learner?* Research question 2: *What is the impact of the intervention techniques on the behavior of the selected ADHD learner?* The research has been of a longitudinal character, thus the research study displays partial results.

The variables of *Foreign Language Reading Comprehension* and *Unwanted behavior* were tested by the method of Reading Comprehension test consisting of grammar structures, reading of a text, matching the meaning. The selected learner was exposed to the intervention rooted in the multisensory approach and the strategies of creative drama and TPR. The intervention took 5 months, once a week. The validity was verified by triangulation of methods (observation, grammar/reading test, unstructured interview).

### 2.1. Intervention

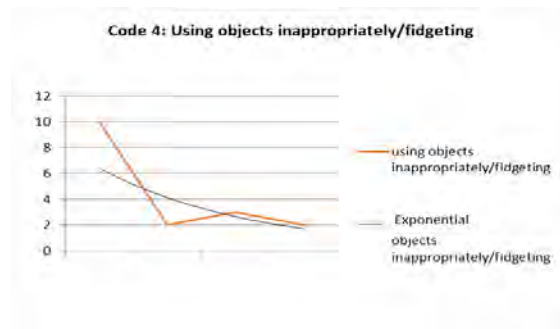
Although the selected ADHD learner was a part of the inclusive class, the intervention we designed reflected his needs. Every intervention unit was divided into 3 main phases: 1. Introductory (Warm-up), 2. Main part (In-reading phase), 3. Calm-down (Post-reading activities). The grounds of the intervention lesson design emphasized the variables related to language improvement in all its forms including oral speech, reading comprehension, listening, and eliminating those variables that inhibit foreign language performance of ADHD learners. The structure of each unit developed gradually applying lower cognitive processes to higher cognitive processes. Moreover, we paid a considerable amount of attention to metacognitive processes.

## 3. Case study research results

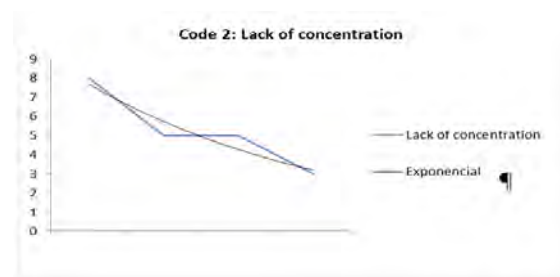
The subject of the study was an 11 years old boy diagnosed with ADHD. The school he attended was situated in a town of 25.000 inhabitants in the south of Slovakia. He had been taught English as a foreign language for 3 years. His improvement was measured by the test scores, which had increased by 15 percent in the category of Reading comprehension, 8 percent in the category of grammar and Language in Use. We are convinced that behavior of ADHD children is tightly related to their academic

results and by reducing unwanted behavior children are more willing to learn. Thus, Graph 1 and Graph 2 display the decreasing trend-lines of the selected Code 4 Using objects inappropriately/fidgeting and the Code 2 Lack of concentration. Both measured by Observation.

Graph 1. A trend-line of the Code 4 Category Unwanted behavior.



Graph 2. A trend-line of the Code 2 Category Unwanted behavior.



#### 4. Discussion and conclusion

The results show that the intervention based on the Multisensory approach, creative drama strategies and TPR had a positive impact on the ADHD learner. The grammar test results showed increase. Regarding the second research question the trend-lines of the selected Code 2 and Code 4 showed decreasing tendency of unwanted behavior of the selected learner. Although the results only represent one selected ADHD child we suggest to use the intervention

#### Acknowledgements

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#### References

- Adams, B. C., Bell, L. C., & Perfetti, C. A. (1995). A trading relationship between reading skill and domain knowledge in children's text comprehension. *Discourse Processes*, 20(3), 307–323.
- Clay, M. M. (2015). *Becoming literate: the construction of inner control*. Auckland: Global Education Systems.
- Hawkins, E., Gathercole, S., Astle, D., et al. (2016) Language Problems and ADHD Symptoms: How Specific Are the Links? *Brain Sciences*, 6, 50.
- Nuttall, CH. (2005). *Teaching Reading Skills in a Foreign Language*. Springer Nature Limited. UK.
- McNamara, D. S., & Magliano, J. 2009. Toward a comprehensive model of comprehension. In B. H. Ross (Ed.), *The psychology of learning and motivation* (pp. 297–384). Elsevier Academic Press.
- McNamara, D. S. & Allen, L. K., (2017). Five building blocks for comprehension strategy instruction. In José A. León & Inmaculada Escudero (Eds.), *Reading comprehension in educational settings* (pp. 125-144). John Benjamins Publishing Company.

# CULTURAL DIVERSITY AT WORK: CONCEPTS, PERCEIVED CONSEQUENCES AND PERSONAL RESOURCES FOR FRENCH AGRICULTURAL EMPLOYEES

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## Abstract

**Background:** As a result of globalization, work environments are now characterized by cultural diversity, resulting in diversified norms and approaches to quality of life at work (QWL), for which employees and organizations are unprepared (Ellemers & Rink, 2016). Consideration of this diversity is imperative because it can lead to intercultural misunderstandings and conflicts that are likely to affect employees' performance and level of QWL (Stahl et al., 2010). Thus, to adapt, employees and organizations need to develop intercultural skills (Nguyen et al., 2018). **Objectives:** This study aims at three exploratory objectives. First, we observed employees' perceptions of cultural differences, the indicators that they see as most salient, and how they evaluate them. Second, the perceived consequences of cultural diversity at work. Finally, the personal resources that can enable employees to interact effectively in culturally diverse situations. **Method:** Semi-structured interviews were conducted with 12 French agricultural employees (10 women and 2 men, aged between 18 and 65). An interview guide was used, and the data were analysed to identify the frequency of occurrence of each theme in text segments (Braun & Clarke, 2006). **Results:** The results show that the participants were aware of cross-cultural differences, which they perceived through 10 principal indicators. They observed that cultural diversity at work could have both positive (e.g. cohesion) and negative (e.g. racism) personal and organizational consequences and that cultural differences affect QWL and performance. Finally, with regard to the resources required to manage cultural diversity at work. The participants observed the importance of acquiring personal resources, in line with the literature on intercultural skills like cultural intelligence (Earley & Ang, 2003).

**Keywords:** *Cultural diversity, intercultural interactions, quality of life at work (QWL), cultural intelligence (CQ), qualitative approach.*

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## 1. Introduction

The globalization of the economy increases the cultural diversity of work teams and contact between employees with different cultural references (language, beliefs, values, practices). The resulting acculturative phenomenon can cause difficulties among employees because it challenges many points of reference and habits that affect their level of QWL (Stahl et al., 2010). More specifically, employees have to cope with new demands related to their interactions with colleagues with different cultural backgrounds, which can be a source of misunderstandings and conflict. Hence, there is a need for employees to acquire intercultural skills to optimize their overall level of QWL (Nguyen et al., 2018), notably CQ, defined as “*an individual's ability to function effectively in situations characterized by cultural diversity*” (Earley & Ang, 2003). CQ has four dimensions: motivational (interest in other cultures), cognitive (knowledge of other cultures), metacognitive (awareness of cultural influences in intercultural interactions), and behavioral (behavioral adjustment of intercultural interactions). The literature shows that CQ is a key skill for promoting QWL in multicultural contexts, but studies on the subject are rare in France and focus on expatriates. This study thus concerns employees working in an intercultural situation in their home country.

## 2. Objectives

This study has three exploratory objectives. The first concerns employees' perceptions of cultural differences, the indicators that they see as most salient, and how they evaluate them. The second concerns the perceived consequences of cultural diversity at work. Finally, it explores the personal resources that can enable employees to interact effectively in culturally diverse situations.

### 3. Methods

**Sample:** Semi-structured interviews were conducted with 12 French agricultural employees (10 women and 2 men, aged between 18 and 65). All of them reported that they interacted with people from different cultures at work, all or most of the time.

**Procedure:** The participants were contacted by email or face-to-face. The interviews were conducted at the workplace and lasted approximately 45 minutes. Examples of the questions asked:

- *What do you think makes cultures different from each other?*
- *What qualities are needed to work effectively with people from different cultures?*
- *Are there any positive or negative consequences associated with working with people from different cultures?*

**Data analysis:** We conducted a thematic analysis (TA) of the participants' responses based on Braun and Clarke's method (2006). We combined two approaches: an inductive approach to identify the "themes" and "codes" in the data, and a deductive approach based on theoretical concepts of intercultural relations and three types of intelligence (Crowne, 2013). Data analysis was based on two additional indices: the percentage of participants who mentioned the themes, and the frequency of occurrence of each theme in text segments. The coding was carried out by two Ph.D psychology students.

### 4. Results

#### 4.1. Cultural representation and key indicators of cultural differences

Participants mentioned ten principal indicators. All mentioned **way of living**, characterized by norms, traditions and customs (157 quotes), **language** (71 quotes), and **nationality** (31 quotes).

Extract from the corpus: "*the pace of life is different, they don't rush around like us {...}. It's their way of life. They are very slow {...} for them it's normal. You wait. You've got all the time in the world*" (woman, human resources).

**Religion** (92 quotes), **male/female relations** (43 quotes), and **characteristics of the country**, such as the economic and legal system (57 quotes), were mentioned by 83.3% of participants.

Extract from the corpus: "*Moroccans are very religious, something that we don't see in France. They stop work to pray several times a day*" (man, manager in packaging).

Finally, 75% of participants mentioned cultural differences related to "**the work culture**" (52 quotes), 66.6% mentioned **values** (38 quotes) and the **way of thinking** (26 quotes), and 58.3% mentioned a different **way of behaving** (34 quotes).

Extract from the corpus: "*Africans like work {...} They are very motivated, they don't complain. They live in the present. They are always smiling, and they are positive*" (woman, manager).

These mostly normative indicators generate positive effects but also negative effects.

#### 4.2. Perceived negative and positive consequences of cultural diversity at work

**Negative consequences:** All the participants associated cultural diversity at work with negative consequences (332 quotes). More specifically, all mentioned relationship problems (134 quotes), such as conflict and racism. Moreover, 83.3% associated cultural diversity at work with emotional problems (45 quotes), such as anxiety, stress and awkwardness. Finally, all participants associated it with performance difficulties such as additional workload or staff turnover (67 quotes).

Extract from the corpus: "*I can't accept that a man of a different culture makes a throat-slitting gesture to a woman manager*" (woman, director).

**Positive consequences:** 83.3% of participants associated cultural diversity at work with positive consequences (92 quotes). For instance, 75% associated it with personal development (16 quotes), team spirit and solidarity (22 quotes).

Extract from the corpus: "*open-mindedness, economic growth, in every way it has been good for the company*" (woman, sales manager).

To optimize the benefits and overcome the difficulties, different personal resources were mentioned.



### 4.3. Personal resources that can enable employees to interact effectively in culturally diverse situations

- **“Open-mindedness”** and **“interest”**: 100% of participants (62 quotes) believed that interest in and tolerance of other cultures are essential. They also mentioned the need to communicate and “create links” with people from different cultural backgrounds (motivational CQ).
- **“Patience”** and **“Adaptation”**: All the participants mentioned the importance of adapting their behavior to the demands of the situation (123 quotes), notably through new methods of working (behavioral CQ).
- **“Knowledge”**: 83.3% of participants (48 quotes) said that it is important to know about other cultures in order to work with people from different cultural backgrounds (cognitive CQ).
- **“Self-questioning”**: 50% of participants (11 quotes) thought that it was important to think about their own way of functioning in relation to their culture (meta-cognitive CQ).

## 5. Discussion

The aim of this exploratory study was to analyze how agricultural employees perceive cultural differences, their consequences, and the resources needed to adjust to them. The results show that employees perceive culture through subjective indicators, such as way of life, work culture, values (Hofstede, 2001), which can be a source of enrichment but also of misunderstandings. They associate cultural diversity more with negative consequences such as interpersonal difficulties (e.g. conflict). To optimize intercultural communication, they agree about the need to acquire personal skills that reflect the four dimensions of CQ (Earley & Ang, 2003). The motivational and behavioral CQ are the first. The results suggest the importance of integrating both the cultural factor and CQ into research and management practices. It shows the added value of CQ in the promotion of QWL and performance in a multicultural work environment. Finally, it encourages organizations to develop their employees' CQ, by setting up training schemes for example.

## 6. Limitations

Due to the small size of our sample and the overrepresentation of women, caution should be taken about generalizing these results. Further analysis of the 3 dimensions (perceptions, skills and consequences) and the role of gender in a male-dominated profession is required.

## 7. Conclusion

This exploratory study provides the basis for an on-going, more general study using a questionnaire, dealing with the resources perceived to be necessary for personal and organizational adaptation in a multicultural work context.

## References

- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101. DOI:10.1191/1478088706qp063oa
- Crown, K.A. (2013). An empirical analysis of three intelligences. *Canadian Journal of Behavioural Science*, 45(2), 105-114. DOI: 10.1037/a0029110
- Early, P.C., & Ang, S. (2003). *Cultural intelligence: Individual interactions across cultures*. Stanford, CA: Stanford University Press.
- Ellemers, N., & Rink, F. (2016). Diversity in work groups. *Current Opinion in Psychology*, 11, 49-53. <https://doi.org/10.1016/j.copsyc.2016.06.001>
- Hofstede, G. (2001). *Culture's consequences: Comparing values, behavior, institutions, and organizations across nations* (2de Ed.). California: Sage Publications. [https://digitalcommons.usu.edu/unf\\_research/53](https://digitalcommons.usu.edu/unf_research/53)
- Nguyen, A.M.D., Jeffereies, J., & Rojas, B. (2018). Short term, big impact? Changes in self-efficacy and cultural intelligence, and the adjustment of multicultural and monocultural students abroad. *International Journal of Intercultural Relations*, 66, 119-129. DOI:10.1016/j.ijintrel.2018.08.001
- Stahl, G.K., Maznevski, M.L., Voigt, A., & Jonsen, K. (2010). Unraveling the effects of cultural diversity in teams: A meta-analysis of research in multicultural work groups. *Journal of International Business Studies*, 41(4), 690- 709. DOI:10.1057/JIBS.2009.85

# UNIVERSALITY AND CULTURAL DIVERSITY IN MORAL SYSTEMS AMONG WEIRD AND NON-WEIRD SOCIETIES: A CASE STUDY OF FRANCE AND MOROCCO

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## Abstract

**Background:** Morality plays a fundamental role in the functioning of any human society by regulating social interactions and behaviors. Moral Foundations Theory (MFT) (Haidt & Joseph, 2004) led to a major change by proposing pluralist “moralities” with a common ground in all cultures composed of five main moral principles (Care, Fairness, Loyalty, Authority, Purity). These principles thought to be universal and rooted in the evolutionary past establish the moral system. Nevertheless, the prioritization of moral values stemming from these principles is different across cultures. We thus tested the moral endorsement of these principles in a cross-cultural dataset among a WEIRD society (France), and a non-WEIRD society (Morocco). **Method:** 150 French (mean age; 28.81±12.70 years) and 152 Moroccans (mean age; 29.94±13.90 years) were recruited online. They first completed the 14 ethnic identity questions of the Quebec version of the Ethnic Identity Measure (MIE). They also completed the Moral Foundations Questionnaire (MFQ). **Results:** The effect of culture on subjects' level of endorsement to moral principles is significant. Moroccans score higher on the moral principles of Loyalty, Authority, and Purity, while French score higher on the moral principles of Care and Fairness. The importance accorded to these principles influences the structure of the moral system of both societies. **Discussion:** The principles of Care and Fairness correspond to the individualizing foundation because these are all linked to individual rights and that the individual is at the center of moral values. France's moral system draws on more liberal social rules, founded upon individual rights, justice, and the principle of avoiding harm. The principles of Loyalty, Authority, and Purity correspond to the binding foundation. It restricts the liberty of individuals in favor of promoting the interests of the group. Morocco's moral system supports the regulation of individuals' egoism by encouraging them to adopt behaviors that facilitate cooperation.

**Keywords:** *Universal moral, moral foundations, moral principles, cross-cultural research, WEIRD and non-WEIRD societies.*

## 1. Theoretical background

Morality plays a fundamental role in the functioning of any human society by regulating social interactions and behaviors. The individual's environment establishes shared cultural knowledge, which brings about affective, cognitive, and behavioral consequences on morality.

Moral Foundations Theory (MFT) (Haidt & Joseph, 2004) set a milestone in the field by proposing pluralist “moralities” with a common ground in all cultures composed of 5 main moral principles. The characteristics of Care are benevolence, kindness, sympathy. Fairness represents reciprocity, respect for individual rights. Loyalty represents commitment, patriotism. Authority represents obedience, discipline, submission. Purity represents chastity, devotion, piety. These principles thought to be universal and rooted in the evolutionary past establish the moral system (Haidt & Kesebir, 2010). It is, therefore, the prioritization of moral values stemming from these principles, which differentiates cultures and individuals.

Graham, Haidt and, Nosek (2009) describe the principles of Care and Fairness as the individualizing foundation, because they are all linked to individual rights and that the individual is at the center of moral values. They emphasize the importance of personal rights, justice, and caring about the well-being of individuals (Vauclair, Wilson, & Fischer, 2014). Nowadays, they mostly appear in individualistic societies associated with Western, Educated, Industrialized, Rich, and Democratic (WEIRD; Henrich, Heine, & Norenzayan, 2010). Nevertheless, cultures do not limit their values to that of protecting the individual. For this reason, Graham et al. (2009) defined the binding foundation, corresponding to three other principles (Authority, Loyalty, and Purity). This foundation restricts the liberty of individuals in favor of promoting the interests of the group (Vauclair et al., 2014). One mainly finds this foundation within non-WEIRD societies (known as oriental, less educated, less industrialized, quite poor, and non-democratic), associating it to collectivist cultures.

## 2. Research questions

Empirical results support the theory of division of the individualizing and binding foundations between individualistic and collectivist cultures (Graham et al., 2009). Thereby, does France and Morocco societies exhibit cultural patterns of moral system?

## 3. Methods

150 French (22.51% men, 27.16% women, mean age; 28.81±12.70 years) and 152 Moroccans (23.18% men, 27.15% women, mean age; 29.94±13.90 years) filled out the questionnaire, which was put online from December 2020 to May 2021 on the Sphinx Online software. The questionnaire provided information about socio-demographic characteristics, age, gender, level of education, country of birth etc.

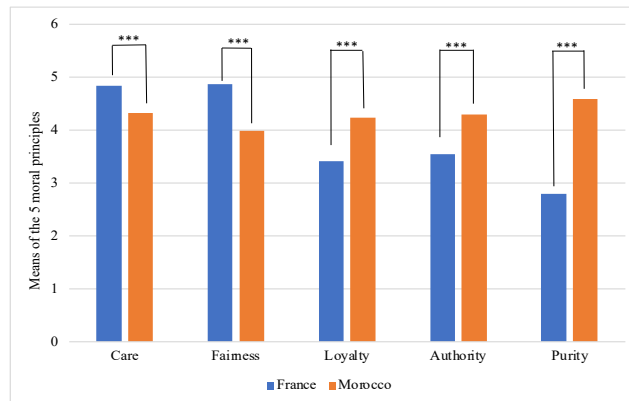
They first completed the 14 ethnic identity questions of the Quebec version of the Ethnic Identity Measure (MIE) (Tremblay, Corbière, Perron, & Coallier, 2000). The goal was to select participants with a sense of belonging to their own culture. Retained participants had scores of 3 or higher.

They also completed the French version of the Moral Foundations Questionnaire (MFQ) (Métayer & Pahlavan, 2014), which has been designed to assess individual moral system on the 5 moral principles. It consists of 2 parts of 15 items, each one containing 3 items per principle.

## 4. Results

In a Multivariate Analysis of Variance conducted the effect of culture on subjects' level of endorsement to moral principles is significant,  $F(5,29) = 81.65, p < .001$ . Moroccans score higher on the moral principles of Loyalty ( $4.24 \pm 0.84$  vs  $3.41 \pm 0.83$ ), Authority ( $4.30 \pm 0.83$  vs  $3.54 \pm 0.92$ ), and Purity ( $4.59 \pm 0.87$  vs  $2.80 \pm 1.04$ ) than French (*Figure 1*). While French score higher on the moral principles of Care ( $4.84 \pm 0.67$  vs  $4.32 \pm 1.02$ ) and Fairness ( $4.86 \pm 0.57$  vs  $3.98 \pm 1.08$ ) than Moroccans (*Figure 1*).

Figure 1. Means of the 5 moral principles according to culture. \*\*\*  $p < .001$ .



To observe the structure of the moral system of both societies, we conducted a Principal Component Analysis (PCA) (*Table 1*). For French, 2 factors explained 75.86% of the total variance with eigenvalues greater than 1. Factor 1 is represented by Care and Fairness and factor 2 is represented by Loyalty, Authority, and Purity. For Moroccans, 2 factors explained 73.68% of the total variance with eigenvalues greater than 1. Factor 1 is represented by Loyalty and Purity and factor 2 is represented by Care and Fairness. Authority is not represented by the 2 factors.

Table 1. PCA of French and Moroccans. \*Factor weight > .70.

| PCA Variables | France (n=150) |          | Morocco (n=152) |          |
|---------------|----------------|----------|-----------------|----------|
|               | Factor 1       | Factor 2 | Factor 1        | Factor 2 |
| Care          | -0.890*        | -0.065   | 0.507           | -0.779*  |
| Fairness      | -0.867*        | -0.045   | 0.489           | -0.790*  |
| Loyalty       | -0.029         | -0.878*  | -0.775*         | -0.581   |
| Authority     | -0.103         | -0.878*  | -0.652          | -0.620   |
| Purity        | 0.103          | -0.880*  | -0.848*         | -0.623   |
| Eigenvalues   | 2.281          | 1.502    | 2.617           | 1.067    |
| Total %       | 45.761         | 30.103   | 52.340          | 21.349   |

## 5. Discussion

In this study, participants from Morocco obtained higher scores when considering principles of Loyalty, Authority and Purity compared to French participants. The differences center around these 3 principles, which are justifiable when one considers the cultural differences in terms of collectivism and the link between Purity and religious practice, in Morocco. Collectivist cultures extol interdependence among individuals, conformity, and emphasize the needs of the group above the pursuit of individual goals. Moroccan culture has modes of social organization close to those observed in the distant past in traditional societies, associated with non-WEIRD societies. For them, concerns regarding Purity, spiritual degradation, and moral expectations of loyalty toward one's social group, are the concerns that arise the most. French participants, on the other hand, advocate more the principles of Care and Fairness. Their morality draws on more liberal social rules, based on individual rights, justice, and the principle of avoiding harm. This corresponds well to the traits of an individualistic culture which are autonomy, liberty, and the pursuit of uniqueness.

Generally, the structure of the moral system of both societies supports the theory of division of the individualizing (principles of Care and Fairness) and binding (principles of Loyalty, Authority, and Purity) foundations. These foundations, independent of one another, establish the moral system based on the idea that all intuitions and feelings induce judgments and moral arguments.

## 6. Limit

Morality does not get reduced to one cultural moral or social status; in effect, there are universal moral concerns. The inter-individual heterogeneity must be considered as individuals do not passively bend with dominant representations of their culture.

## 7. Conclusion

We saw intercultural differences of moral foundations among a WEIRD society (France) and a non-WEIRD society (Morocco). Individuals, throughout their cultural experiences, rely more on one or another of these foundations and moral principles. It is consequently important to consider these when evaluating the moral identity of societies.

### References

- Graham, J., Haidt, J., & Nosek, B. A. (2009). Liberals and conservatives rely on different sets of moral foundations. *Journal of Personality and Social Psychology*, 96, 1029–1046. doi: 10.1037/a0015141
- Haidt, J., & Joseph, C. (2004). Intuitive ethics: how innately prepared intuitions generate culturally variable virtues. *Daedalus*, 133, 55–66. doi: 10.1162/0011526042365555
- Haidt, J., & Kesebir, S. (2010). Morality. In John Wiley & Sons, Inc (Ed.), *Handbook of Social Psychology* (pp. 797–832). Hoboken, NJ, US
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, 33, 61–83. doi: 10.1017/S0140525X0999152X
- Métayer, S., & Pahlavan, F. (2014). Validation de l'adaptation française du questionnaire des principes moraux fondateurs. *Revue internationale de psychologie sociale*, 27/2, 79-107. Retrieved from <https://www.cairn.info/revue-internationale-de-psychologie-sociale-2014-2-page-é79.htm>
- Tremblay, C., Corbière, M., Perron, J., & Coallier, J.-C. (2000). Équivalence interculturelle de la mesure d'identité ethnique (MIE). *L'Orientation scolaire et professionnelle*, 29/4. Retrieved from <http://journals.openedition.org/osp/5800>
- Vauclair, M., Wilson, M., & Fischer, R. (2014). Cultural conceptions of morality: examining laypeople's associations of moral character. *Journal of Moral Education*, 43, 54–74. doi: 10.1080/03057240.2013.873365

# INVESTIGATING THE RELATIONSHIP BETWEEN ATTENTIONAL FILTERING AND MEMORY PERFORMANCE IN VIRTUAL REALITY ENVIRONMENT

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## Abstract

Experimental research on cognition needs more realistic paradigms to achieve ecological validity as well as to transfer and eventually generalize the results to clinical practice. Selective attention was found to be highly related to memory and training of attentional filtering enhanced memory performance. Moreover, a real memory room might provide a more interesting environment for cognitive training, even though it is very demanding for the examiner to arrange the set-up. Therefore, we developed a change detection task using a virtual reality (VR) environment and compared it with one in a real environment (RE) room. Data of healthy younger and older adults were analyzed regarding their memory and distractor inhibition performance. The results indicate that both test set-ups reveal age effects but only RE in younger adults produces a distractor effect. For younger adults, VR was found to be more challenging as compared to the real room whereas OA performed similar in VR and RE. Technical development like VR becomes more and more attractive to create interesting experimental test settings but their additional value needs to be further investigated.

**Keywords:** *Distractor inhibition, memory, virtual reality, aging, selective attention.*

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## 1. Introduction

Neuropsychological and experimental assessments make use of conventional methods (e.g. paper-pencil or computerized tasks) in order to measure psychological constructs, such as attention and memory. As these tests lack generalization to everyday performance, realistic test settings are discussed to measure cognitive performance in a more ecologically valid way. However, realistic testing, in which the examiner has a highly interactive role, is difficult to control, and conducting experiments objectively as well as standardized is thus challenging. A promising tool to combine ecological validity of realistic testing and high standardization of test procedures seems to be virtual reality. Some studies using virtual reality already replicated clinical test results with good construct validity (Corriveau Lecavalier et al., 2020; Diaz-Orueta et al., 2012; Parsons et al., 2017; Parsons & Barnett, 2018) but further implications for cognitive research such as age-related effects of technical assessment or motivation of subjects doing the task is insufficient, especially for functions of memory and attention.

Memory performance, selective attention and their interactions are well-investigated (Schmicker et al., 2016, 2017, 2021; Vogel et al., 2005). Subjects, who can ignore irrelevant distractors while encoding relevant items more effectively also have a higher memory capacity compared to subjects with a lower memory capacity, who seemingly store irrelevant information unnecessarily (Vogel et al., 2005). However, the respective research is mainly based on computerized tasks and is thus hardly suitable for generalization to everyday performance or for use in applied cognitive trainings. Hence, more realistic test settings have to become focus of respective research. Considering ecological validity, a previous study used a real environment assessing age differences in memory performance and distractor inhibition in a change-detection paradigm (Rumpf et al., 2019). Based on this paradigm, we adapted a virtual reality paradigm and compared the results of younger and older adults to those of the realistic environment by Rumpf et al. (2019).

## 2. Objectives

This study investigated whether a virtual reality (VR) change-detection test can replicate the findings of a realistic environment (RE). Performance of younger and older adults was compared

concerning memory and distractor inhibition effects. We expected to see age-differences in total memory performance and lower performance in conditions containing distractors compared to those without distractors, independent from age.

### 3. Methods

Memory performance of younger (YA, 19-33 years old) and older adults (OA, 60-77 years old) in a VR paradigm ( $n_{YA}=33$ ,  $n_{OA}=12$ ) was compared to the results of a previous study that used a similar memory room in a real environment ( $n_{YA}=28$ ,  $n_{OA}=22$ ). The VR change-detection paradigm was based on the method created by Rumpf et al. (2019). Participants entered a room in which they had 15s time to memorize the orientation and position of color-marked targets. The experiment encompassed a condition without distractors (6 target objects) and a distractor condition (6 target object and 6 distractor objects). Objects were 12 items that can normally be found in an ordinary office (folder, calculator, scissors, pencil holder, stapler, calendar, notebook, pen, watering can, alarm clock, lunch box, mug). Before each trial, participants were told the crucial target color. In case of the distractor condition, they were instructed to only memorize the red or green marked objects, while distractors of the other color were present. In the no-distractor condition they had to memorize all objects, which were marked with the same color, namely either red or green. After a retention interval of 1 min, participants entered the room again and put the changed objects back to their former positions. Objects could change their position in the room as well as their rotation. Performance was measured as the correctly recognized changes (hits) and correct rejections, independent from dimensions, i.e. position or rotation (max. 6 hits/CR, i.e. 100% accuracy). Data were analyzed using R version 4.1.2 (2021-11-01). Two-way ANOVAs for the factors group (YA, OA) and condition (RE, VR) and repeated-measures ANOVAs for DIS (ND, D) separately for both conditions as well as the post-hoc tests were calculated.

### 4. Results

Data analysis revealed that both RE and VR reflect age-related differences in memory performance ( $F(1,91) = 63.10$ ,  $p < .001$ ,  $\eta^2=0.41$ ), although performance in VR was generally lower than in RE (total memory performance:  $F(1,91) = 7.95$ ,  $p < .01$ ,  $\eta^2=0.08$ ; figure 1). Whereas performance of OA did not differ significantly between RE and VR ( $p = .85$ ), younger participants performed significantly worse in VR ( $p < .001$ ).

Trials containing distractors descriptively worsened the performance of all participants independent from age (figure 2). While VR measures produced smaller distractor effects (difference between no distractor and distractor condition) than RE ( $F_{VR}(1,43)=2.71$ ,  $p = .107$ ,  $\eta^2= 0.15$ ;  $F_{RE}(1,48)=5.89$ ,  $p < .05$ ,  $\eta^2=0.053$ ). Only YA showed a post hoc significant distractor effect in RE ( $p < .05$ ).

Figure 1. Memory performance (total in %correct answers) measured in the real environment (RE) and in the virtual reality (VR) in younger adults (YA) and older adults (OA).

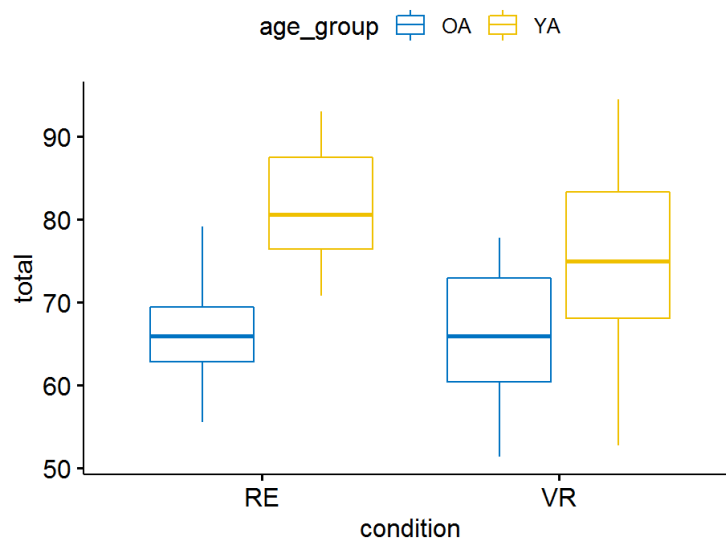
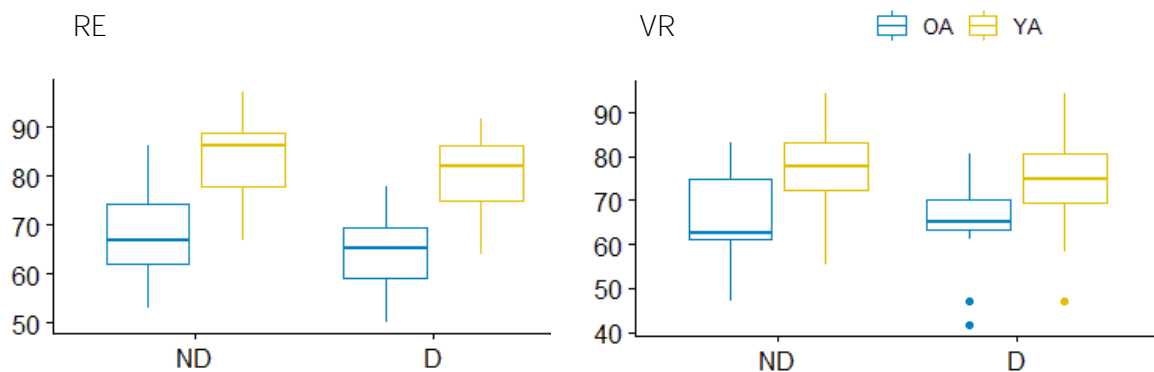


Figure 2. Memory performance in no distractor (ND) and distractor (D) condition measured in the real environment (RE) and in the virtual reality (VR) in younger adults (YA) and older adults (OA).



## 5. Discussion

The VR change detection paradigm was able to replicate age effects of total memory performance as younger adults outperformed older participants in RE as well as VR setting. Yet, VR might be generally more challenging compared to the real room. There is additional demand due to orienting with the VR, handling technical hardware, e.g. using the head-mounted display, and getting familiar within the virtual environment. All these factors might influence performance by additional distracting information and hence could result in less distractor interference as performance occurs to be generally worse. However, the results are promising in terms of VR feasibility. Finally, its potential to combine ecological validity and objective standardized assessment should lead to future research and a deeper understanding of VR effects in cognitive fields.

## References

- Corriveau Lecavalier, N., Ouellet, É., Boller, B., & Belleville, S. (2020). Use of immersive virtual reality to assess episodic memory: A validation study in older adults. *Neuropsychological Rehabilitation*, 30(3), 462–480.
- Diaz-Orueta, U., Iriarte, Y., Climent, G., & Banterla, F. (2012). AULA: An ecological virtual reality test with distractors for evaluating attention in children and adolescents. *Virtual Reality and Scientific Visualization Journal*, 5(2), 1–20.
- Parsons, T. D., Carlew, A. R., Magtoto, J., & Stonecipher, K. (2017). The potential of function-led virtual environments for ecologically valid measures of executive function in experimental and clinical neuropsychology. *Neuropsychological Rehabilitation*, 27(5), 777–807.
- Parsons, T. D., & Barnett, M. D. (2018). Virtual apartment stroop task: Comparison with computerized and traditional stroop tasks. *Journal of Neuroscience Methods*, 309, 35–40.
- Rumpf, U., Menze, I., Müller, N. G., & Schmicker, M. (2019). Investigating the Potential Role of Ecological Validity on Change-Detection Memory Tasks and Distractor Processing in Younger and Older Adults. *Frontiers in Psychology*, 1–12.
- Schmicker, M., Müller, P., Schwefel, M., & Müller, N. G. (2017). Attentional Filter Training but Not Memory Training Improves Decision-Making. *Frontiers in Human Neuroscience*, 11(March), 1–7.
- Schmicker, M., Schwefel, M., Vellage, A.-K., & Müller, N. G. (2016). Training of Attentional Filtering, but Not of Memory Storage, Enhances Working Memory Efficiency by Strengthening the Neuronal Gatekeeper Network. *Journal of Cognitive Neuroscience*, 28(4), 636–642.
- Vogel, E. K., McCollough, A. W., & Machizawa, M. G. (2005). Neural measures reveal individual differences in controlling access to working memory. *Nature*, 438(7067), 500–503.

## **TOWARDS UNDERSTANDING RISK AND PROTECTION PERSPECTIVES OF YOUNG BEDOUIN CHILDREN**

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### **Abstract**

The study is based on a participatory, context-informed study that examined the perception of ‘risk’ and ‘protection’ among 30 Bedouin children aged four to five. It was conducted in the Bedouin unrecognized Villages of the Naqab — Southern Israel and utilized photography, drawings, and verbal explanations. The analysis yielded seven themes representing children’s perceptions of risk and protection. It indicated that children facing extreme adversity were aware of numerous risk conditions, including a lack of infrastructure and the fear of losing their homes, thus adversely affecting their well-being. Children’s insights, and suggested modes of protection, as the study findings reveal, are crucial for promoting children’s welfare.

**Keywords:** *Bedouin children in Israel, context-informed perspective, protection, risk, visual methods.*

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### **1. Introduction**

In recent years, sociologists of childhood and the U. N. Convention on the Rights of the Child (CRC) have focused their attention on including children in academic, practical, political, and social discourse. This has brought about a change in the way investigators comprehend the world of the child (Marey-Sarwan, 2019). This attitude is fundamentally different from the former approach, which studied children but not based on the children themselves.

### **2. Objectives**

This study examines perspectives of ‘risk’ and ‘protection’ among young Bedouin children in the unrecognized villages of the Naqab (the desert area in the southern part of Israel). It set out with the assumption that young children from excluded populations living in the periphery have their own attitudes and opinions regarding what is occurring in their environment and that they have the right and the ability to express them. Hearing their voices and including their point of view in the context of risk and protection on public academic forums is likely to contribute to strengthening their ability to cope and effect change in their society.

### **3. The study context**

The Bedouin in the unrecognized villages (UVs) of the Naqab are a native minority population, citizens of Israel. They are described as a traditional, collectivistic, and conservative society with approximately 80 per cent of households living below the poverty line, and a high fertility rate (Abu-Bader & Gottlieb, 2009). Today there are some 35 officially “unrecognized” villages according to the State of Israel, which views these lands as state lands. The government of Israel defines these villages as “illegal”, and refuses to provide them with essential services, such as water, electricity, infrastructure, medical services, education and welfare services, roads and public transportation (Human Rights Watch, 2017). Bedouin children constitute approximately per cent 60 of the Bedouin population in the UVs. Despite extensive need, only one-third of the UVs have pre-schools and schools (Fargeon & Rotem, 2016). These data reflect daily life in the UVs and indicate the multiple risk factors that affect the welfare and security of Bedouin children at a young age such as burns, unsupervised traffic, open sewage pits, toxic gases that children inhale following garbage burning, stray dogs, etc. (Marey-Sarwan & Roer-Strier, 2017).



#### 4. Research design and method

This study is based on a participatory, context-informed study (Marey-Sarwan & Ulitsa), which takes into account the complexity of intertwined contexts: historical, socio-political and ecological conditions, in addition to social customs and cultural values. Active participation research is a strategy that is widely implemented by researchers active among marginalized populations that are at elevated risk in order to allow the voices of participants from excluded peripheral groups to be heard (Harcourt et al., 2011).

Participants were 30 Bedouin children aged four to five. Due to the children's young age and their inability to read or write, the research study combined two visual aids, photography and drawing, the children providing verbal explanations of them (Clark, 2011). **Photovoice** is a qualitative community-based participatory research method, that provides valuable insights into research participants' perceptions and uses photography as a tool to document and reflect reality (Vaccarino-Ruiz et al., 2021). Through the use of a camera, Photovoice enables the voices of people who are usually silenced to be heard, and thus they can share their daily experiences and represent their community. **Drawings** are considered a natural way of expressing emotions and cognition (Huss et al., 2013). The use of drawings in the present study not only served as an artistic tool for expressing the children's views and situation, but also empowered them and allowed their voices to be heard.

#### 5. Data collection

First, I met groups of two or three children, explained the study and instructed them on how to use the digital camera. Secondly, I asked the group to provide me with a tour around their place of residence and asked them to help me understand "what constitutes a risk for children" and "what helps them feel safe" by photographing places, people and situations from daily life that caused them to feel either threatened or protected. Afterwards, the children were asked to select one photograph that best represented protection and one that best represented risk and to discuss them. One week later, each child was asked to draw what caused him/her to feel safe or at risk and was asked to explain their drawing. Finally, the children were asked to suggest means of prevention and coping with the risk factors that emerged from the photos and drawings.

#### 6. Findings

The findings express the thoughts and perceptions of young Bedouin children and enable learning about matters that preoccupy them. The children revealed a wide range of risks that were liable to harm their safety and wellbeing and presented several resilience resources that help them cope with risks and protect themselves. It indicated that children facing extreme adversity were aware of numerous risk conditions, including a lack of infrastructure and the fear of losing their homes, thus adversely affecting their well-being. The findings yielded seven main themes representing the children's perceptions of risks and protection and their ways of coping with the dangers indicated. All factors the children mentioned—vehicles, people, etc.—were likely to constitute causes of risk and means of protection, except for one, demons and monsters, that were considered solely a risk.

#### 7. Discussion and conclusions

The study findings indicate that the children's social-political-cultural contexts closely influence their perceptions of risk and coping. This study clearly shows a need to examine the asymmetries of power as a result of the violent political conflict which is the cause of demolition of children's homes and recurring forced relocation plans, which leave Bedouin children in constant fear and anxiety, facing not only environmental hazards, but also deprivation of their basic rights as children. It was obvious that the children experienced and were aware of the dangers, and far from being protected from them, as might be expected according to the CRC (United Nations, 1989).

The difficult context of a community in constant anxiety with extreme poverty and a lack of necessities might provide an explanation for how the children draw on different resources in the face of risk. These include the family and the home as protective factors, providing them with security. Including young children from peripheral, excluded populations in research and examining their perceptions regarding risk and protection in context constitutes the basis for in-depth future studies and is therefore a significant contribution to the body of research into childhood.

The findings also provide a strong empirical basis to call for action to improve children's welfare. I sincerely hope that listening to children's perspectives on risk and protection will urge policymakers to implement the CRC. Any proposed intervention to protect the children of the UVs that does not include the provision of specific culturally informed solutions might result in the misuse of resources and contribute to the Bedouins' continuing sense of being marginalized and abused.

### References

- Abu-Bader, S., & Gottlieb, D. (2009). Poverty, education and employment in Arab-Bedouin society: A comparative view. *ECINEQ* 37, 1–63. Available from: <http://www.ecineq.org>
- Clark, A. (2011). Breaking methodological boundaries? Exploring visual, participatory methods with adults and young children. *European Early Childhood Education Research Journal* 19(3), 321–330.
- Fargeon, B., & Rotem, M. (2016). *Enforcing distress: House demolition policy in the Bedouin community in the Negev*. Negev, Israel: Coexistence Forum for Civil Equality.
- Harcourt, D., Perry, B., & Waller, T. (eds.) (2011). *Researching young children's perspectives: Debating the ethics and dilemmas of educational research with children*. New York, NY: Routledge.
- Human Rights Watch (2017). *World report*. Available from: <https://www.hrw.org/world-report/2017/country-chapters/israel/palestine>
- Huss, E., Kaufman, R., & Sibony, A. (2013). Children's drawings and social change: Food insecurity and hunger among Israeli Bedouin children. *British Journal of Social Work* 44(7): 1857–1878.
- Marey-Sarwan, I. (2019). 'Seeing through their eyes': Towards understanding risk and protection perspectives of young Bedouin children in the unrecognized villages of the Naqab. *Children & Society*, 34(2), 151-169. Published online doi:10.1111/chso.12364
- Marey-Sarwan, I., & Roer-Strier, D. (2017). Parent's perceptions of risk for children: A case study of Bedouin parents from unrecognized villages in Israel. *Social Service Review*, 91(2), 171-202.
- Marey-Sarwan, I., & Ulitsa, N. (2020). Context-informed research on child risk and protection: Principles and challenges. In D. Roer-Strier., & Y. Nadan (Eds.), *Context-informed perspectives of child risk and protection in Israel* (pp. 27-40). Springer's Child Maltreatment Series, Cham.
- United Nations. (1989). *Convention on the Rights of the Child*. New York, NY: United Nations.
- Vaccarino-Ruiz, S. S., Gordon, D. L., & Langhout, R. D. (2021). Toward the democratization of knowledge: Using photovoice, social biography, and the “five whys” in YPAR with children. *Cultural Diversity and Ethnic Minority Psychology*. <https://doi.org/10.1037/cdp0000457>





# VIRTUAL PRESENTATIONS



## **DEPRESSIVE SYMPTOMS IN EARLY-MARRIED WOMEN: THE EFFECT OF SOCIAL SUPPORT AND MARITAL POWER**

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### **Abstract**

Child marriage or early marriage is defined as the type of marriage performed before the girl is physically, physiologically, and psychologically ready to shoulder the responsibilities of marriage and childbearing. Turkish Population and Health Survey in 2018 demonstrated that 21% of women married before the age of 18, while 4% of them married before the age of 15. As can be observed from the statistics, early marriage is considered to be a serious problem, especially for girls in Turkey. Therefore, understanding the effects of early marriage on women seems to be an essential step to prevent young girls from getting married at an early age. Children are forced to take the adult roles before they are ready and have no control over their future; this situation paves the way for psychological problems such as depression. The variables that may predict depressive symptoms in early-married women were examined based on the relevant literature.

The aim of the present study is to examine the mediator role of perceived power in the relationship between social support and depressive symptoms in early-married women. The study sample consists of 97 women (between the ages of 19-30) who got married before the age of 18. The participants were given Demographic Information Form and The Multidimensional Scale of Social support, Couple Power Scale, and Depression subscale of Brief Symptom Inventory.

In model test results of the analysis, perceived power mediates the relationship between social support and depression in early-married women. According to the results, women who have more social support feel more power in the marital relationship, which in turn results with less depressive symptoms.

These findings of the current study suggest that social support and perceived power in a marital relationship play a significant role in depressive symptoms of early-married women. Along with the further studies, this study may help improve treatment strategies, which focus on social support and marital power for early-married women who present depressive symptoms.

**Keywords:** *Early marriage, social support, marital power, depressive symptoms.*

### **1. Introduction**

Child marriage is considered formal marriage or informal union between a child under the age of 18 and another child or an adult (UNICEF, 2021). Although child marriage is a problem that concerns both girls and boys, child marriage for girls is more common than for boys (Jensen & Thornton, 2013). Despite the legal regulations and the efforts of national and international organizations, child marriages continue to exist as a severe problem globally and in Turkey. This situation illustrates that the problem cannot be solved only through laws. It is seen that the social and cultural values that approve and legitimize child marriages are often more accepted than the laws (Yüksel-Kaptanoğlu & Ergöçmen, 2012). According to Turkey Demographic and Health Survey data (TNSA, 2018), approximately one out of every four women in Turkey is married before eighteen. Understanding the effects of child marriage may be an essential step to prevent or reduce the number of young girls from getting married at an early age.

Marriage of young girls before the age of 18 have severe consequences for girls in terms of their position and responsibility within the home (Jensen & Thornton, 2003; Nour, 2009), the balance of power (McFarlane et al., 2016), negligence of personal development and freedom (Mikhail, 2002) and domestic violence (Kopelman, 2016). Children are forced to take the adult roles before they are ready, and having no control over their future can be a traumatic experience for children and paves the way for psychological problems (Warner, 2004). Taking responsibility at such a young age and not knowing what to do and how to do it can reduce self-esteem and thus cause emotional distress (Bhutto et al., 2013;

Kopelman, 2016; Warner, 2004; World Vision U.S, 2008). According to Soylu and Ayaz (2013), 46% of children who get married early are diagnosed with a mental disorder. The most common diagnoses are adjustment disorder and major depressive disorder in early-married women (Le Strat et al., 2011; Soylu & Ayaz, 2013). Researchers have identified significant links between social support and depression (Ibarra-Rovillard & Kuiper, 2011; Leung et al., 2007). The link between social support and depressive symptoms may be operating through secondary factors, and in the present study, the mediating role of perceived power on the relationship between social support and depressive symptoms will be investigated.

Social support is defined as the perception of attainable resources or supportive social ties (Barrera, 1986). When people think that they have enough resources and social relations with other people, they perceive social support (Chun & Lee, 2017). Many research indicated that social support has a significant role in increasing the perception of a sense of power (Bullers, 2001; Greenaway et al., 2015; Haslam et al., 2005). Power is the capacity to produce an intended effect in the relationship (Gray-Little & Burks, 1983), an ability to control or influence another person's actions (Ragsdale et al., 2009). According to Neff and Harter (2002), having less power in the relationship was linked to poorer psychological health. Perceiving power inequality in the relationship is associated with greater depression (Galliher et al., 1999).

In this regard, it is thought that it is crucial to address the direct and indirect relationships between social support, sense of power, and depression in early-married women in terms of contributing to the literature.

## 2. Method

### 2.1. Design and procedure

The study was employed a cross-sectional design. Prospective participants followed a link to information about the study and a further link to an online questionnaire. Participants were informed that consent was indicated by the completion and submission of the online questionnaire.

### 2.2. Participants

The participants of the study were 97 early married women between ages 19-30 (mean=25.34±3.07). Among these 97 women, 22 (22.7%) were primary school, 38 (39.2%) were middle school, 23 (23.7%) were high school and, 14 (14.4%) were university graduates. Thirty-seven early-married women (38.1 %) reported being exposed to physical violence throughout their marriage.

### 2.3. Instruments

**Demographic Information Form:** Participants completed questions concerning age and education level.

**Couple Power Scale (Malatyali & Sunal, 2020):** It was used to measure perceived relationship power.

**The Multidimensional Scale of Social Support (MSPSS, Zimet et al., 1988):** The scale was used to measure social support.

**Brief Symptom Inventory (Şahin & Durak, 1994):** The depression subscale was used to measure depressive symptoms.

## 3. Results

The relationships between social support, perceived power, and depressive symptoms were investigated using Pearson Correlation analysis. The variables were significantly related to depressive symptoms, as presented in Table 1.

Table 1. Correlations, means and standard deviation (SD) for variables (N = 97).

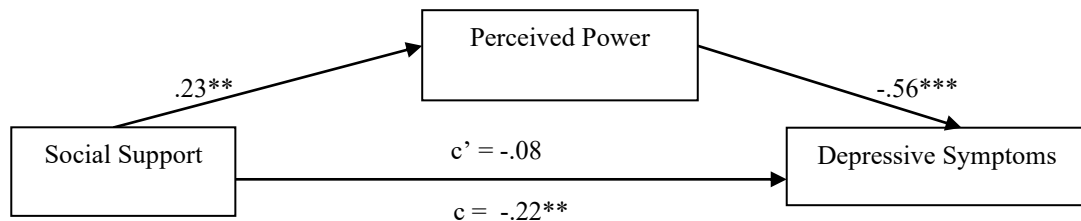
| Variables              | M (SD)        | 1      | 2       | 3 |
|------------------------|---------------|--------|---------|---|
| 1. Social Support      | 52.32 (18.41) | 1      | -       | - |
| 2. Perceived power     | 44.90 (15.10) | .29**  | 1       | - |
| 3. Depressive symptoms | 27.11 (14.87) | -.27** | -.61*** | 1 |

\*\*p<.01, \*\*\*p<.001

Table 1 showed that social support ( $r = .29, p < .01$ ) was significantly and positively correlated with depressive symptoms, while perceived power ( $r = -.61, p < .001$ ) was significantly and negatively correlated with depressive symptoms among early-married women.

Meanwhile, the PROCESS macro model 4 developed by Hayes (2013) was used to determine whether perceived power moderate the relationship between social support and depressive symptoms among early-married women. In case that the 95% confidence interval did not include 0, an effect was considered significant.

Figure 1. The mediating role of perceived power in the relationship between social support and depressive symptoms.



The figure includes non-standardized betas. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

The bootstrap analysis examined the mediator role of perceived power on the relationship between social support and depressive symptoms (Figure 1). According to the results, the total effect of social support and depressive symptoms ( $B = -.221, SE = .079, p < .01, 95\% CI [-.379, -.062]$ ) was significant. In addition, social support was a significant predictor of perceived power ( $B = .234, SE = .080, p < .01, 95\% CI [.074, .394]$ ). Perceived power ( $B = -.566, SE = .083, p < .001, 95\% CI [-.731, -.399]$ ) had a significant direct effect on depressive symptoms. The bootstrap analysis demonstrated the significant mediator role of perceived power ( $B = -.132, SE = .049, 95\% CI = [-.228, -.032]$ ). The mediational model explained 37.7% of the variance in depressive symptoms ( $R^2 = .3778, F_{(2,94)} = 28.54, p < .001$ ). In other words, less social support resulted in less perceived power that predicted an increase in depressive symptoms.

#### 4. Discussion

In the present study, the mediating role of perceived power on the relationship between social support and depressive symptoms was investigated. The analyses showed that perceived power was positively correlated with social support and negatively correlated with depressive symptoms.

This study also aimed to test the mediating effect of perceived power on the relationship between social support and depressive symptoms. The results revealed that perceived power fully mediated the effects of social support on depression. This showed that as social support increased, levels of perceived power escalated, which in turn led to lower levels of depressive symptoms. This result is essential regarding the central role of perceived power in dealing with depressive symptoms in early-married women. To deal with depressive symptoms, the negative effects of social support on depressive symptoms can be delivered by strengthening perceived power.

The literature has documented a positive association between social support and perceived power (Cai et al., 2021; Greenaway et al., 2015; Haslam et al., 2005). Social support increases individuals' perceived sense of power over a relationship with others (Chun and Lee, 2017). Relationship power is also an important predictor of depressive symptoms. Haley (1963) stated that depression occurs as a part of marital power struggle in marriage, and less powerful spouses have depression. Individuals with less relationship power perceive their spouses' threatening feelings such as anger more than they are (Anderson & Berdahl, 2002). Individuals who think their relationships are unequal experience more distress, and as the inequality in the relationship increases, the stress level also increases (Sprecher, 1998). Those who benefit less from the relationship experience more anger and depression. Having less power in a romantic relationship is associated with more psychological symptoms for women. Various studies have reported that having less power is associated with lower self-esteem and depression (Galliher et al., 1999; Neff & Suizzo, 2006).

Despite the association between social support and depression, little is known about the factors that might mediate this relationship, making this study unique. This is a preliminary work for understanding the role of perceived relationship power and how perceived relationship power might require more research attention. Our findings may serve as a cue that would explain why it is functional to increase women's relationship power.



## References

- Anderson, C., & Berdahl, J. L. (2002). The experience of power: examining the effects of power on approach and inhibition tendencies. *Journal of personality and social psychology*, *83*(6), 1362.
- Bhutto, Z. H., Shariff, N. F., & Zakaria, A. (2013). Child Marriage as a Determinant of Depression in Women. *Journal of Behavioral Sciences*, *23*(1), 93.
- Bullers, S. (2001). The mediating role of perceived control in the relationship between social ties and depressive symptoms. *Women & Health*, *31*(2-3), 97-116.
- Cai, W., Guinote, A., & Wu, S. (2021). Revisiting the powerful-not-lonely effect across cultures: The mediating role of self-construal and social support. *Current Psychology*, 1-9.
- Chun, J. W., & Lee, M. J. (2017). When does individuals' willingness to speak out increase on social media? Perceived social support and perceived power/control. *Computers in Human Behavior*, *74*, 120-129.
- Gallagher, R. V., Rostosky, S. S., Welsh, D. P., & Kawaguchi, M. C. (1999). Power and psychological well-being in late adolescent romantic relationships. *Sex Roles*, *40*, 689-710.
- Gray-Little, B., & Burks, N. (1983). Power and satisfaction in marriage: A review and critique. *Psychological Bulletin*, *93*, 513-538.
- Greenaway, K. H., Haslam, S. A., Cruwys, T., Branscombe, N. R., Ysseldyk, R., & Heldreth, C. (2015). From "we" to "me": Group identification enhances perceived personal control with consequences for health and well-being. *Journal of Personality and Social Psychology*, *109*(1).
- Haley, J. (1963) *Strategies of Psychotherapy*. New York: Grune & Stratton.
- Haslam, S. A., O'Brien, A., Jetten, J., Vormedal, K., & Penna, S. (2005). Taking the strain: Social identity, social support, and the experience of stress. *British Journal of Social Psychology*, *44*(3).
- Ibarra-Rovillard, M. S., & Kuiper, N. A. (2011). Social support and social negativity findings in depression: Perceived responsiveness to basic psychological needs. *Clinical psychology review*, *31*(3), 342-352.
- Jensen, R., & Thornton, R. (2003). Early female marriage in the developing world. *Gender & Development*, *11*(2), 9-19.
- Kopelman, L. M. (2016). The forced marriage of minors: a neglected form of child abuse. *The Journal of Law, Medicine & Ethics*, *44*(1), 173-181.
- Le Strat, Y., Dubertret, C., & Le Foll, B. (2011). Child marriage in the United States and its association with mental health in women. *Pediatrics*. *128*: 524-30.
- Leung, K. K., Chen, C. Y., Lue, B. H., & Hsu, S. T. (2007). Social support and family functioning on psychological symptoms in elderly Chinese. *Archives of gerontology and geriatrics*, *44*(2), 203-213.
- McFarlane, J., Nava, A., Gilroy, H., & Maddoux, J. (2016). Child brides, forced marriage, and partner violence in America: tip of an iceberg revealed. *Obstetrics & Gynecology*, *127*(4), 706-713.
- Malatyali, M. K., & Sunal, A. B. (2020). Evli Çiftlerde Bağlanma Boyutları ile Evlilik Doyumu Arasındaki İlişkide Evlilik Gücünün Aracı Rolü. *Türk Psikoloji Dergisi*, *35*(85), 65-78.
- Mikhail, S. L. B. (2002). Child marriage and child prostitution: Two forms of sexual exploitation. *Gender & Development*, *10*(1), 43-49.
- Neff, K. D., & Suizzo, M. A. (2006). Culture, power, authenticity and psychological well-being within romantic relationships: A comparison of European American and Mexican Americans. *Cognitive Development*, *21*(4), 441-457.
- Neff, K. D., & Harter, S. (2002). The authenticity of conflict resolutions among adult couples: Does women's other-oriented behavior reflect their true selves? *Sex Roles*, *47*, 403-417.
- Nour, N. M. (2009). Child marriage: a silent health and human rights issue. *Reviews in Obstetrics & Gynecology*, *2*(1), 51-56.
- Ragsdale, K., Gore-Felton, C., Koopman, C., & Seal, D. W. (2009). Relationship power, acculturation, and sexual risk behavior among low-income Latinas of Mexican or Puerto Rican ethnicity. *Sexuality Research & Social Policy*, *6*(1), 56-69. <https://doi.org/10.1525/srsp.2009.6.1.56>.
- Soylu, N., & Ayaz, M. (2013). Adli değerlendirme için yönlendirilen küçük yaşta evlendirilmiş kız çocuklarının sosyodemografik özellikleri ve ruhsal değerlendirmesi. *Anatolian Journal of Psychiatry/Anadolu Psikiyatri Dergisi*, *14*(2).
- Sprecher, S. (1988). Investment model, equity, and social support determinants of relationship commitment. *Social Psychology Quarterly*, *51*(4), 318 - 328.
- Şahin, N. H., ve Durak, A. (1994). Kısa Semptom Envanteri: Türk Gençleri için Uyarlanması. *Türk Psikoloji Dergisi*, *9*(31), 44-56.
- Türkiye Nüfus ve Sağlık Araştırması (2018). Hacettepe Üniversitesi Nüfus Etütleri Enstitüsü, Ankara. [http://www.hips.hacettepe.edu.tr/tnsa2018/rapor/2018\\_TNSA\\_Ozet\\_Rapor.pdf](http://www.hips.hacettepe.edu.tr/tnsa2018/rapor/2018_TNSA_Ozet_Rapor.pdf)

- UNFPA (2007). Ending child marriage. <http://www.unfpa.org/sites/default/files/pub-pdf/endchildmarriage.pdf>
- UNICEF (2021). Child marriage. <https://www.unicef.org/protection/child-marriage>
- Warner, E. (2004). Behind the wedding veil: Child marriage as a form of trafficking in girls. *Journal of Gender, Social Policy & the Law*, 12(2), 233.
- World Vision (2008). Before She is Ready. [http://www.wvi.org/sites/default/files/publications\\_Before%20Shes%20Ready.pdf](http://www.wvi.org/sites/default/files/publications_Before%20Shes%20Ready.pdf)
- Yüksel-Kaptanoğlu, İ, & Ergöçmen, B. A. (2012). Çocuk gelin olmaya giden yol. *Sosyoloji Araştırmaları Dergisi*, 15(2).
- Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The multidimensional scale of perceived social support. *Journal of Personality Assessment*, 52(1), 30-41.

## CLINICAL ASSESSMENT IN A PROFESSIONAL SETTING: ARE THERE IMPLICATIONS FOR SELF-REPORTS OF PSYCHOPATHOLOGY?

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### Abstract

In the field of psychological assessment, response biases pose a great problem, and can lead to misleading decisions, with negative impact regardless of the context. Both the underreport of personality characteristics and psychopathological symptoms and the overreport of problems and symptoms are current threats to this field. The clinical context is one on which both response attitudes occur. The clinical-organizational context (where clinical psychology services are provided in the individuals' professional setting) is very specific, with particularities that have hardly been studied, so little is known about underreporting and overreporting in this type of clinical assessment. This study intends to explore and compare two contexts, clinical and clinical-organizational, in response attitudes and their potential implications on the report of psychopathology. Specifically, this study has three aims: to identify if there are differences between individuals of the two contexts in higher order psychopathology indicators and specific clinical problems; if these differences would be due to response attitudes (i.e., tendency to overreporting and to underreporting), and which are the best scales to differentiate individuals doing overreporting and underreporting in both samples. A total of 516 participants, grouped in two samples, Clinical ( $n = 277$ ;  $M_{age} 41.50$ ,  $SD 11.54$ ), and Clinical-Organizational ( $n = 239$ ;  $M_{age} 42.92$ ,  $SD 9.16$ ) were assessed with the Minnesota Multiphasic Personality Inventory-2 - Restructured Form (MMPI-2-RF) Validity, Higher-Order and Restructured Clinical scales. The MANOVAS showed significant differences between the two samples in the composite of underreport scales, overreport scales, Higher-Order scales, and Clinical scales, with the clinical-organizational sample having higher underreport levels than the clinical sample, and lower overreport levels, as well as lower symptomology and clinical problems. The correlations pattern between the different sets of scales supports the conclusion that the response attitudes significantly impact the report of psychopathology. The F-r and Fp-r overreport scales, and the K-r underreport scale are the best ones in differentiating the two samples. The results suggest that the professional setting may influence the disclosure of psychological difficulties and problems, thus having impact on psychological assessment.

**Keywords:** *Underreporting, overreporting, clinical assessment, organizational context, MMPI-2-RF.*

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### 1. Introduction

The clinical-organizational context – where clinical psychology services are provided inside the individuals' professional setting – is a very specific context, which has been hardly approached in research and is not mentioned in studies in the field of psychology. In the scientific literature, the role of psychological assessment on professional contexts, namely high stakes contexts, is addressed only within the scope of personnel recruitment and selection (e.g., Cao & Drasgow, 2019; Levashina et al., 2014) and never within the one of clinical intervention with employees having mental health complaints or clinical disorders. Therefore, this seems to reflect the assumption that individuals will have a similar attitude concerning the disclosure of their problems, complaints or symptoms, independently of the assessment or intervention context, either a mental health or a professional one.

The response attitudes to self-report psychological tests are very relevant, as they may alter the results and undermine the goal of psychological assessment. Two opposite response attitudes are at stake, the underreporting vs. the overreporting of symptoms and undesirable personality characteristics (Dhillon, Bagby, Kushner, & Burchett, 2016).

## 2. Objectives

Thus, this exploratory study aims at comparing two samples of individuals involved in psychological assessment processes, namely of personality and psychopathology – one from a clinical context, and the other from a clinical-organizational one. The dependent variables are, primarily, the measures of the response attitudes and, secondarily, the clinical results – which are generally assumed to be influenced by the former. Therefore, we intend to assess if this influence is similar in the two samples.

## 3. Methods

### 3.1. Participants

Participants were 516, of both genders, with age  $\geq 18$  years, and valid protocols, from two samples: Clinical – with participants from clinical centers in the community and mental health units; Clinical-Organizational – with participants from clinical centers of public or private institutions in which they work. In both samples, participants presented clinical complaints or clinical signs that motivated a psychological assessment.

The Clinical sample included 277 participants with valid protocols, 73% men, with mean age  $M_{\text{age}} = 41.50$  ( $SD = 11.54$ ), and education  $M_{\text{school years}} = 11.47$  ( $SD = 3.39$ ). The Clinical-Organizational sample included 239 participants, 86% men, with mean age  $M_{\text{age}} = 42.92$  ( $SD = 9.16$ ) and education  $M_{\text{school years}} = 11.61$  ( $SD = 2.14$ ).

The samples revealed significant differences in gender variable only,  $\chi^2(1) = 13.648$ ,  $p = .000$ .

### 3.2. Instrument

MMPI-2-RF (Ben-Porath & Tellegen, 2011) is an inventory assessing personality and psychopathology. In this study, the following measures were used:

- two underreport validity scales – Uncommon Virtues (L-r), and Adjustment Validity (K-r);
- five overreport validity scales – Infrequent Responses (F-r), Infrequent Psychopathology Responses (Fp-r), Infrequent Somatic Responses (Fs-R), Symptom Validity (FBS-r), and Response Bias Scale (RBS);
- the three Higher-Order (H-O) scales – Emotional/Internalizing Dysfunction (EID), Thought Dysfunction (THD), and Behavioral/Externalizing Dysfunction BXD); and
- the nine Restructured Clinical (RC) scales – Demoralization (RCd), Somatic Complaints (RC1), Low Positive Emotions (RC2), Cynicism (RC3), Antisocial Behavior (RC4), Ideas of Persecution (RC6), Dysfunctional Negative Emotions (RC7), Aberrant Experiences (RC8), and Hypomanic Activation (RC9).

### 3.3. Procedure

The instrument was administered individually by clinical psychologists, in accordance with the test standardized guidelines and scientific research norms. Participants signed an informed consent and privacy was in conformity with the international principles for psychological research. The research was approved by two Ethic Committees.

## 4. Results

Pertaining to the underreport Validity scales, the MANOVA showed significant differences between the two samples in the composite  $F(1, 514) = 31.55$ ,  $p < .001$ , Wilks' Lambda = .891, partial  $\eta^2 = .109$  (see Table1).

Table 1. Descriptive Statistics (Mean and Standard-deviation) for the Underreport Validity Scales and Analysis of Variance (ANOVA) – Clinical and Clinical-Organizational Samples.

|     | Clinical<br>$n = 277$ |       | Clinical<br>Organizational<br>$n = 239$ |       | ANOVA<br>$F(1,515)$                  |
|-----|-----------------------|-------|---|-------|--------------------------------------|
|     | $M$                   | $SD$  | $M$                                     | $SD$  |                                      |
| L-r | 60.61                 | 11.82 | 64.94                                   | 11.89 | 17.166, $p < .001$ , $\eta^2 = .032$ |
| K-r | 41.93                 | 9.14  | 49.31                                   | 12.03 | 62.469, $p < .001$ , $\eta^2 = .108$ |

In the overreport Validity scales, the MANOVA showed significant differences in the composite  $F(4, 511) = 14.51, p < .001$ , Wilks' Lambda = .875, partial  $\eta^2 = .125$  (see Table 2).

Table 2. Descriptive Statistics (Mean and Standard-deviation) for the Overreport Validity Scales and Analysis of Variance (ANOVA) – Clinical and Clinical-Organizational Samples.

|       | Clinical<br><i>n</i> = 277 |           | Clinical<br>Organizational<br><i>n</i> = 239 |           | ANOVA<br><i>F</i> (1,514)         |
|-------|----------------------------|-----------|--|-----------|-----------------------------------|
|       | <i>M</i>                   | <i>SD</i> | <i>M</i>                                     | <i>SD</i> |                                   |
| F-r   | 82.74                      | 22.53     | 67.61  | 25.02     | 52.268, $p < .001, \eta^2 = .092$ |
| Fp-r  | 75.74                      | 19.04     | 63.87  | 16.78     | 55.629, $p < .001, \eta^2 = .098$ |
| Fs-r  | 67.84                      | 20.54     | 59.23  | 19.11     | 24.099, $p < .001, \eta^2 = .045$ |
| FBS-r | 64.35                      | 15.60     | 59.32  | 16.54     | 12.641, $p < .001, \eta^2 = .024$ |
| RBS   | 72.32                      | 18.97     | 64.95  | 19.92     | 18.477, $p < .001, \eta^2 = .035$ |

Regarding the Higher-Order scales, the MANOVA showed significant differences in the composite  $F(2, 512) = 24.583, p < .001$ , Wilks' Lambda = .874, partial  $\eta^2 = .126$  (see Table 3).

Table 3. Descriptive Statistics (Mean and Standard-deviation) for the Higher-Order Scales and Analysis of Variance (ANOVA) – Clinical and Clinical-Organizational Samples.

|     | Clinical<br><i>n</i> = 277 |           | Clinical<br>Organizational<br><i>n</i> = 239 |           | ANOVA<br><i>F</i> (1,515)         |
|-----|----------------------------|-----------|--|-----------|-----------------------------------|
|     | <i>M</i>                   | <i>SD</i> | <i>M</i>                                     | <i>SD</i> |                                   |
| EID | 65.48                      | 12.33     | 55.88  | 15.44     | 61.606, $p < .001, \eta^2 = .107$ |
| THD | 66.31                      | 16.24     | 57.90  | 15.14     | 36.595, $p < .001, \eta^2 = .066$ |
| BXD | 52.48                      | 10.18     | 48.91  | 8.50      | 18.285, $p < .001, \eta^2 = .034$ |

Finally, the MANOVA showed significant differences in the composite of the nine Clinical scales  $F(8, 506) = 10.444, p < .001$ , Wilks' Lambda = .843, partial  $\eta^2 = .157$  (see Table 4).

Table 4. Descriptive Statistics (Mean and Standard-deviation) for the Restructured Clinical Scales and Analysis of Variance (ANOVA) – Clinical and Clinical-Organizational Samples.

|     | Clinical<br><i>n</i> = 277 |           | Clinical<br>Organizational<br><i>n</i> = 239 |           | ANOVA<br><i>F</i> (1,515)         |
|-----|----------------------------|-----------|--|-----------|-----------------------------------|
|     | <i>M</i>                   | <i>SD</i> | <i>M</i>                                     | <i>SD</i> |                                   |
| RCd | 66.35                      | 11.83     | 57.12  | 14.46     | 63.614, $p < .001, \eta^2 = .110$ |
| RC1 | 64.30                      | 13.89     | 56.61  | 16.18     | 33.711, $p < .001, \eta^2 = .062$ |
| RC2 | 64.03                      | 13.88     | 57.26  | 15.57     | 27.221, $p < .001, \eta^2 = .050$ |
| RC3 | 59.94                      | 11.08     | 55.40  | 11.18     | 21.307, $p < .001, \eta^2 = .040$ |
| RC4 | 53.94                      | 10.60     | 47.67  | 9.91      | 47.815, $p < .001, \eta^2 = .085$ |
| RC6 | 68.82                      | 15.72     | 62.92  | 14.97     | 18.898, $p < .001, \eta^2 = .035$ |
| RC7 | 60.77                      | 12.84     | 52.96  | 14.83     | 41.065, $p < .001, \eta^2 = .074$ |
| RC8 | 63.39                      | 14.57     | 54.44  | 13.37     | 52.282, $p < .001, \eta^2 = .092$ |
| RC9 | 53.40                      | 9.26      | 50.52  | 8.65      | 13.171, $p < .001, \eta^2 = .025$ |

Among the validity scales, the K-r underreport scale and the F-r and Fp-r overreport scales are the best ones in differentiating the two samples. The mean correlation of these three scales with the High-Order and the Clinical scales is .637 in the clinical-organizational sample, and .501 in the clinical one.

## 5. Discussion

Although the two samples have participants with clinical complaints or signs of psychopathology, they present their psychological distress and psychopathology in different magnitudes, as they have significant differences in all sets of scales. In the underreport scales, the clinical-organizational sample has higher mean values in both L-r and K-r, and reached on L-r a level that suggests social desirability bias, i. e., a denial of common shortcomings most people are willing to admit. Pertaining to K-r, which identifies a tendency to claim unrealistically positive psychological adjustment, the clinical-organizational sample displays values identical to the ones of students under standard instructions in the study of Brown and Selbom (2020), and higher than the ones reported by Crighton et al. (2017). These are common mean values in the normal population, but elevated and uncommon in the clinical population.

On the contrary, the clinical-organizational sample has significantly lower values in the overreport scales, with only two clinically significant elevations, while the clinical one has clinically significant elevation in all but one scale. The values of the clinical sample are relatively close to the mean ones of three specific groups of psychiatric patients studied by Marion, Selbom and Bagby (2011).

Although there may exist some cases of overreport in the clinical-organizational sample, the results indicate that underreport prevails in this sample. As this response attitude influences the level of disclosure throughout the test, this sample presents moderate to low values of distress and emotional, somatic and behavioral problems, in the Higher-Order and RC scales. This sample has no clinically significant elevation in the three High-Order scales, while the clinical one has it on Emotional/internalizing dysfunction and Thought dysfunction. It is relevant that our clinical-organizational sample has values identical to the ones of students with standard instructions (Brown & Selbom, 2020), higher than the ones reported by Crighton et al. (2017) in Behavioral/externalizing dysfunction, and lower than the ones described by Brown and Selbom (2020), in Emotional/internalizing dysfunction.

In the Restructured Clinical scales, the clinical sample does not have many significant elevations (in Demoralization and Ideas of Persecution, only), having in general lower values than the psychiatric patients in the study of Marion et al. (2011). However, the mean values of this sample are compatible with the ones of a clinical population with different types of clinical problems and personality disorders, while in the clinical-organizational sample, where no clinically significant elevation was found, the mean values are far from representing a clinical sample. This sample presents itself more as a normal sample from the community, having Antisocial Behavior scores lower than the students (Brown & Selbom, 2020; Crighton et al., 2017), Dysfunctional Negative Emotions lower than the ones described by Brown and Selbom (2020), and Aberrant Experiences lower than the reported by Crighton et al. (2017).

Finally, the correlations pattern shows the stronger association, in the clinical-organizational sample, between both the higher tendency to claim unrealistically positive psychological adjustment and the lower report of infrequent responses, and of infrequent psychopathology responses, with the Clinical Higher-Order and Restructured scales, suggesting a higher impact of response attitude bias in the psychopathology measures for the clinical-organizational sample than for the clinical one.

Thus, in conclusion, it seems clear that, despite the clinical nature of these two samples, the context in which they are assessed and treated is different and has implications for the results. The fact that the clinical-organizational sample has mean values, in scales pertaining to psychological adjustment, close to the ones of normal student samples, and results in several psychopathology scales also similar and even lower than the ones presented by these samples, seems to indicate that these patients are not fully disclosing their psychological symptomatology, when assessed in services linked to their workplace. These results draw the attention to the underrepresentation of psychological symptomatology in persons assessed inside the organizations, and to the risk this poses to themselves, and to their professional performance and responsibility, something even more relevant in high-stakes professions. This issue demands attention from psychologists in these services, and more research in this field is needed, maybe in order to identify different cut-offs for the clinical scales' interpretation in this population.

## References

- Ben-Porath, Y. S., & Tellegen, A. (2011). *MMPI-2-RF (Minnesota Multiphasic Personality Inventory-2 Restructured Form): Manual for administration, scoring, and interpretation*. Minnesota: University of Minnesota Press.
- Brown, Tiffany A. & Sellbom, M. (2020) The Utility of the MMPI-2-RF Validity Scales in Detecting Underreporting, *Journal of Personality Assessment*, 102(1), 66-74, DOI: 10.1080/00223891.2018.1539003
- Cao, M., & Drasgow, F. (2019). Does forcing reduce faking? A meta-analytic review of forced-choice personality measures in high-stakes situations. *Journal of Applied Psychology*, 104, 1347-1368.
- Crichton, A., Marek, R., Dragon, W., & Ben-Porath, Y. (2017). Utility of the MMPI-2-RF validity scales in detection of simulated underreporting: Implications of incorporating a manipulation check. *Assessment*, 24(7), 853–864. DOI: 10.1177/1073191115627011
- Dhillon, S., Bagby, R. M., Kushner, S., & Burchett, D. (2017). The impact of underreporting and overreporting on the validity of the Personality Inventory for DSM-5 (PID-5): A simulation analog design investigation. *Psychological Assessment*, 29, 473–478.
- Levashina, J., Weekley, J.A., Roulin, N., & Hauck, E. (2014). Using Blatant Extreme Responding for detecting faking in high-stakes selection: Construct validity, relationship with general mental ability, and subgroup differences. *International Journal of Selection and Assessment*, 22, 371-383.
- Marion, B. E., Selbom, M., & Bagby, R. M. (2011). The detection of feigned psychiatric disorders using the MMPI-2-RF overreporting validity scales: An analog investigation. *Psychology, Injury and Law*, 4, 1-12. DOI 10.1007/s12207-011-9097-0

## SOME SYMPTOMS OF MENTAL DISORDERS AMONG SARS-COV 2 PATIENTS IN A FIELD HOSPITAL: A PILOT STUDY

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### Abstract

The risk of mental disorders has been recognized in SARS-CoV 2 infected patients. This article presents some results of a cross-sectional research conducted on 54 SARS-CoV 2 infected patients in a field hospital at Dong Thap province, with the aim to understand the prevalence of some mental disorders and their associated factors in SARS-CoV 2 infected patients. A self-report scale was used: Hospital Anxiety Depression Scale (HADS). The results of research showed that clinically meaningful psychological symptoms were found in 14.8% of patients for anxiety symptoms; 11.4% for depression symptoms; 5.6% for both anxiety and depression symptoms. The associated factors for anxiety symptoms included the duration of SARS-CoV 2 infectivity and anger while infected. There was a significant difference in the association between the duration of SARS-CoV 2 infectivity and the prevalence of depressive symptoms. So, the prevalence of the mental disorder in SARS-CoV 2 infected patients was higher than community; These mental symptoms could be recovered gradually over time. Further studies are needed to clarify this issue.

**Keywords:** *Mental disorder, SARS-CoV 2, associated factors.*

### 1. Introduction

Mental health is an integral part of health and well-being, as reflected in the definition of health in the Constitution of the World Health Organization: “Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity”. Mental health, like other aspects of health, can be affected by a range of socioeconomic factors that need to be addressed through comprehensive strategies for promotion, prevention, treatment and recovery in a whole-of-government approach. (World Health Organization, 2021a)

In December 2019, a series of pneumonia of unknown cause emerged in Wuhan, Hubei, China, which were subsequently identified as being caused by a novel coronavirus termed severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). Disease onset may result in progressive respiratory failure owing to alveolar damage and even death (Zhou et al., 2020) (Huang et al., 2020). Following World Health Organization, until 27<sup>th</sup> January 2022, 360 578 392 SARS CoV 2 infected cases were recorded in almost country in the world. (World Health Organization, 2021b) In Vietnam, there was 2 203 208 SARS-CoV 2 infected cases, 1 946 611 recovered case and 37 291 dead as for 27<sup>th</sup> January 2022. (Vietnam Ministry of Health, 2021)

The results of infected SARS-CoV-2 are not only having physical symptoms like fever (87.9%), fatigue (69.6%), dry cough (67.7%) but also symptoms of mental disorders. (Han et al., 2020) During the acute illness, common symptoms among patients admitted to hospital for SARS-CoV-2 included anxiety symptoms (9.4%), depressive symptoms (40%), sleep disturbances (28.8%). (Thaweerat et al., 2021) (Chakrabarti S, 2021) Ju W.K et al. realized that clinically meaningful psychological symptoms were found in 18% patients for anxiety, 39% for depression, 30% for insomnia, 9% for suicidal tentative. (Kim et al., 2020) According to the other research being conducted by Ebru Sahan et al., the percentage of significant levels of anxiety and depression were 34.9 and 42%, respectively. (Şahan et al., 2021) There are three main reasons for neuropsychiatric symptoms in SARS-CoV-2 infected patients. Firstly, the virus can invade the brain then affect it by cytokines, interplay of inflammation. (Boldrini et al., 2021) Secondly, drugs used to treat SARS-CoV-2 infected patients like some kind of antibiotics, corticoid. (Sheng et al., 2005) And the final is psychological stresses caused by social distancing situation, worrying about spreading and negative health consequences of virus, job loss and economic fallout, ...



In this article, we investigated some symptoms of mental disorders and its associated factors among SARS-CoV-2 infected patients in a field hospital.

## 2. Methods

### 2.1. Participants and procedure

This pilot, cross-sectional study was conducted in 54 SARS-CoV 2 infected in-patients with asymptomatic and mild disease who were hospitalized during the fourth wave of Covid-19 pandemic in Vietnam during August 2021 in a field hospital at Dong Thap province. The inclusion of participants was anonymous and voluntary. Patients with asymptomatic SARS-CoV 2 means they had a positive sample in Real-time Polymerase Chain Reaction but no symptoms. Patients with mild symptoms, no oxygen requirement and with a stable oxygen saturation maintained at SpO<sub>2</sub> 95 and above at room atmosphere were categorized as to be having the mild disease.

About Socio-Demographic information, 25 participants were men (46.3%); The mean age of the participants was 30.2, lowest and highest were 8 and 60 years old respectively. The percentage of asymptomatic infected patients was 87%, the rest of the participants had mild symptoms like mild fever and fatigue. There was no participant having background diseases such as cancer, diabetes, hypertension, chronic heart disease, asthma, chronic kidney disease. About the career of participants, the percentage of self-employed person was highest, at 59.3%, followed by the student, with 14.8%. Farmers career was taking up 14.8% while the civil servant was lowest, only 5.6%.

The education level of participants included 46.3% secondary, 42.6% high school and 11.1% university/college. In this sample size, the rate of single and married was equal, with 46.3%, followed by divorce status, at 7.4%.

### 2.2. Collection

A total of 54 SARS-CoV 2 positive in-patient with asymptomatic and mild disease who were under quarantine in the covid wards were requested to fill in the Google questionnaire form. Patients were asked to fill in the Google form using their smartphones. All participants were clearly explained about the nature and purpose of the study and were provided necessary assurances about the confidentiality of the data being collected. Voluntary informed consent was taken from each SARS-CoV 2 positive patient before their participation.

### 2.3. Hospital anxiety and depression scale

The hospital Anxiety and Depression Scale (HADS) was originally developed by Zigmond and Snaith (1983). This is a self-report scale that has been developed and found to be a reliable instrument for detecting states of depression and anxiety in the setting of a hospital medical clinic, specially developed for use in patients with somatic comorbidity. This instrument consists of 7-items subscales for both depression and anxiety. The anxiety and depressive subscales are also valid measures of the severity of the emotional disorder. Each item is scored from 0 to 3 and this means that a person can score between 0 and 21 for either anxiety or depression. The HADS manual indicates that a score between 0 and 7 is “normal”, between 8 and 10 “mild”, between 11 and 14 “moderate” and between 15 and 21 “severe”. Bjelland et al. (2002) through a literature review of many studies identified a cut-off point of 8/21 for anxiety or depression. For anxiety, this gave a specificity of 0.78 and a sensitivity of 0.9. For depression, this gave a specificity of 0.7 and a sensitivity of 0.83. (Bjelland et al., 2002)

In this study, HADS and its sub-scales get an  $\alpha$  significance  $>0.8$ , so this instrument can be used to measure exactly (Table 1).

Table 1. An  $\alpha$  significance of the HADS and its sub-scales.

| Scale / sub-scales   | A number of items | $\alpha$    |
|----------------------|-------------------|-------------|
| <b>HADS</b>          | <b>14</b>         | <b>0.89</b> |
| Anxiety sub-scale    | 7                 | 0.86        |
| Depression sub-scale | 7                 | 0.87        |

### 2.4. Statistical analysis

The data were analyzed using Statistical Package for Social Science (SPSS) Version 25.0 for Mac. The descriptive statistics (i.e., means, frequencies, percentages) were used for socio-demographics information and distribution of the variables in SARS-CoV 2 infected patients. Inferential statistics (ed, chi-square tests) were performed to identify a significant relationship between outcome variables (symptoms of anxiety and depression) and the independent variables like the socio-demographic factors, some psychological features in patients.

### 3. Results

#### 3.1. Prevalence of anxiety and depression among SARS-CoV 2 infected patients in a field hospital

Table 2. Prevalence of anxiety and depression among SARS-CoV 2 infected patients.

| Symptoms                       | Means | Standard Deviation | Min | Max | Normal |      | Having symptoms of anxiety/depression |      |
|--------------------------------|-------|--------------------|-----|-----|--------|------|---------------------------------------|------|
|                                |       |                    |     |     | n      | %    | n                                     | %    |
| Anxiety                        | 4.50  | 3.14               | 0   | 11  | 46     | 85.2 | 8                                     | 14.8 |
| Depression                     | 3.48  | 3.02               | 0   | 12  | 48     | 88.9 | 6                                     | 11.1 |
| Both of anxiety and depression |       |                    |     |     | 51     | 94.4 | 3                                     | 5.6  |

Notes: cut-off points at 8.

In the sub-scale for anxiety, the means was  $4.5 \pm 3.14$ , min 0 and max 11 points. The percentage of patients having symptoms of anxiety was 14.8%.

In the sub-scale for depression, the means was  $3.48 \pm 3.02$ , min 0 and max 12 points. The percentage of patients having symptoms of depression was lower anxiety at 11.1%.

#### 3.2. The associated factors of anxious symptoms among SARS-CoV 2 infected patients in a field hospital

Table 3. The associated factors of anxious symptoms among SARS-CoV 2 infected patients.

|  | Normal (n=46)     | Anxiety (n=8)    | p             |
|--|-------------------|------------------|---------------|
| <b>Gender</b>                                      |                   |                  |               |
| - Male   | 19 (35.2%)        | 6 (11.1%)        | .125          |
| - Female   | 27 (50%)          | 2 (3.7%)         |               |
| <b>Age</b>   | 29.96 $\pm$ 12.19 | 31.75 $\pm$ 10.4 | .696          |
| <b>Educational Status</b>                          |                   |                  |               |
| - Elementary/Middle school                         | 21 (38.9%)        | 4 (7.4%)         | .31           |
| - High school                                      | 21 (38.95)        | 2 (3.7%)         |               |
| - Graduate   | 4 (7.4%)          | 2 (3.7%)         |               |
| <b>Duration of SARS-CoV 2 infected</b>             | 12.89 $\pm$ 3.72  | 8.75 $\pm$ 4.23  | <b>.006**</b> |
| <b>Number of relatives got SARS-CoV 2 infected</b> | 1.37 $\pm$ 1.65   | 3 $\pm$ 2.98     | .171          |
| <b>Feelings of guilt</b>                           |                   |                  |               |
| - Yes  | 19 (35.2%)        | 4 (7.4%)         | .711          |
| - No   | 27 (50%)          | 4 (7.4%)         |               |
| <b>Worrying about Sars-CoV 2 infected</b>          |                   |                  |               |
| - Yes  | 17 (31.5%)        | 1 (1.9%)         | .245          |
| - No   | 29 (53.7%)        | 7 (13.0%)        |               |
| <b>Anger cause by getting SARS-CoV 2</b>           |                   |                  |               |
| - Yes  | 23 (42.6%)        | 8 (14.8%)        | <b>.015*</b>  |
| - No   | 23 (42.6%)        | -                |               |
| <b>Satisfaction with medical care</b>              |                   |                  |               |
| - Yes  | 45 (83.3%)        | 8 (14.8%)        | 1             |
| - No   | 1 (1.9%)          | -                |               |

Analysis at significance level = .05, we realized that duration of SARS-CoV 2 infected, feelings of anger cause of getting SARS-CoV 2 in relation with symptoms of anxiety and risk factors which can lead to anxiety significantly in SARS-CoV 2 positive patients. Patients getting symptoms of anxiety were more likely belonging to shorter duration of SARS-CoV 2 infected group ( $p=.006$ ) and feelings of anger caused by getting SARS-CoV 2 ( $p=.015$ ).

### 3.3. The associated factors of depressive symptoms among SARS-CoV 2 infected patients in a field hospital

Table 4. The associated factors of depressive symptoms among SARS-CoV 2 infected patients.

|  | Normal (n=46) | Depression (n=8) | p             |
|--|---------------|------------------|---------------|
| <b>Gender</b>                                      |               |                  |               |
| - Male   | 20 (37%)      | 5 (9.3%)         | .085          |
| - Female   | 28 (51.9%)    | 1 (1.9%)         |               |
| <b>Age</b>   | 29.96 ± 12.19 | 31.75 ± 10.4     | .647          |
| <b>Educational Status</b>                          |               |                  |               |
| - Elementary/Middle school                         | 21 (38.9%)    | 4 (7.4%)         | .395          |
| - High school                                      | 22 (40.7)     | 1 (1.9%)         |               |
| - Graduate   | 5 (9.3%)      | 1 (1.9%)         |               |
| <b>Duration of SARS-CoV 2 infected</b>             | 12.94 ± 3.6   | 8 ± 3.69         | <b>.000**</b> |
| <b>Number of relatives got SARS-CoV 2 infected</b> | 1.56 ± 1.96   | 2 ± 2.1          | .61           |
| <b>Feelings of guilt</b>                           |               |                  |               |
| - Yes  | 22 (40.7%)    | 1 (1.9%)         | .224          |
| - No   | 26 (48.1%)    | 5 (9.3%)         |               |
| <b>Worrying about Sars-CoV 2 infected</b>          |               |                  |               |
| - Yes  | 16 (29.6%)    | 2 (3.7%)         | 1             |
| - No   | 32 (59.3%)    | 4 (7.4%)         |               |
| <b>Anger cause by getting SARS-CoV 2</b>           |               |                  |               |
| - Yes  | 28 (51.9%)    | 3 (5.6%)         |               |
| - No   | 20 (37%)      | 3 (5.6)          | 1             |
| <b>Satisfaction with medical care</b>              |               |                  |               |
| - Yes  | 45 (83.3%)    | 8 (14.8%)        | 1             |
| - No   | 1 (1.9%)      | -                |               |

Analysis at significance level = 0.05, we realized that duration of SARS-CoV 2 infected in relation with symptoms of depression and risk factors which can lead to depression significantly in SARS-CoV 2 positive patients. Patients getting symptoms of depression were more likely belonging to shorter duration of the SARS-CoV 2 infected group (p= .000).

## 4. Discussion

Through an online survey in this study with 54 SARS CoV 2 infected patients, we found out that the percentages of in-patients having symptoms of anxiety and depression were 14.8% and 11.1%, respectively. These figures were much lower than figures which were collected in Ho Chi Minh Covid-19 resuscitation Hospital, at 53.3% accounting for anxiety and 20% for depression.(HCMC resuscitation hospital, 2021) The difference is made by the severity of SARS CoV 2 infected patients, drugs used to treat in this study, patients recruited in HCMC Covid-19 resuscitation hospital were severe with many medicines like corticosteroid, antibiotics and physical procedures. On the other hand, our finding was in mild and asymptomatic patients who only were impacted by Covid-19 inflammation and psychological distress. Which can reflect more exactly the impact of psychological stress by SARS-CoV 2 infected situation. The prevalence of some symptoms of mental disorders in others research was the same as our finding such as anxiety 9.4% (Wajana et al., 2021), 15.2% for anxiety and 29.3% for depression (Xueyi Li, 2021). Although these figures seem to be different, it's much higher prevalence which were estimated in the community (anxiety 3.8% and depression 3.4%). (Thaweerat et al., 2021)(Saloni Dattani et al., 2021)

About risk factors, we found out that 2 factors were the duration of SARS-CoV 2 infection and anger caused getting this virus. Duration of SARS-CoV 2 infected in anxiety comorbid group was lower. We can explain this in several ways. Firstly, most symptoms of SARS-CoV 2 appear in the first 10 days like fever, cough, fatigue, muscle and body aches,... then disappear after; these symptoms made a sense of worrying and distress in patients. (McQuaid et al., 2021); Secondly, in the early period of infection, SARS-Co V 2 patients can not adjust to new situations, they had to admit to a field hospital, separating from family members, stopping their work. After that, they can deal with new situations, being familiar with isolated environment in a hospital. Finally, SARS-CoV 2 invades the central nervous system and create the strongest inflammation response in the first week then gradual decline until 4 weeks. Reducing the central nervous system can minimize anxiety response.(Nalbandian et al., 2021) The feeling of anger caused by getting SARS-CoV 2 is a characteristic of stress, unstable emotion in infected patients which will lead to psychological distress and worrying. Furthermore, the duration of SARS CoV 2 infected was a risk factor of depressive symptoms in patients. Depressive responses were higher in the early time, then fall slowly.

## 5. Conclusion

In mild and asymptomatic SARS-CoV 2 infected patients, the prevalence of some symptoms of mental disorders is still higher than in the community and these symptoms can be recovered slightly. The feeling of anger caused by getting SARS-CoV 2 is a risk factor for anxiety symptoms.

## 6. Limitation

Our research had some limitations. The first weakness point is a small sample size. Secondly, a cross-sectional study cannot describe the progression of mental disorder symptoms. Finally, bias caused by self-answer of patients via an online survey through Google form.

## References

- Bjelland, I., Dahl, A. A., Haug, T. T., & Neckelmann, D. (2002). The validity of the Hospital Anxiety and Depression Scale: An updated literature review. *Journal of Psychosomatic Research*, 52(2), 69–77. [https://doi.org/10.1016/S0022-3999\(01\)00296-3](https://doi.org/10.1016/S0022-3999(01)00296-3)
- Boldrini, M., Canoll, P. D., & Klein, R. S. (2021). How COVID-19 Affects the Brain. *JAMA Psychiatry*, 78(6), 682–683. <https://doi.org/10.1001/jamapsychiatry.2021.0500>
- Chakrabarti S. (2021). Mental Health in Hospitalised COVID 19 Patients in Quarantine During Second Wave in a South Indian Private Teaching Hospital. *J Multidiscip Healthc*, 14, 2777–2789.
- Han, Q., Lin, Q., Jin, S., & You, L. (2020). Coronavirus 2019-nCoV: A brief perspective from the front line. *The Journal of Infection*, 80(4), 373–377. PubMed. <https://doi.org/10.1016/j.jinf.2020.02.010>
- HCMC resuscitation hospital. (2021). HCMC: 20% of COVID-19 got depression, 66.7% got anxiety. <https://Moh.Gov.Vn/>.
- Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., Gu, X., Cheng, Z., Yu, T., Xia, J., Wei, Y., Wu, W., Xie, X., Yin, W., Li, H., Liu, M., ... Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The Lancet*, 395(10223), 497–506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- Kim, J.-W., Stewart, R., Kang, S.-J., Jung, S.-I., Kim, S.-W., & Kim, J.-M. (2020). Telephone based Interventions for Psychological Problems in Hospital Isolated Patients with COVID-19. *Clinical Psychopharmacology and Neuroscience: The Official Scientific Journal of the Korean College of Neuropsychopharmacology*, 18(4), 616–620. PubMed. <https://doi.org/10.9758/cpn.2020.18.4.616>
- McQuaid, C., Brady, M., & Deane, R. (2021). SARS-CoV-2: Is there neuroinvasion? *Fluids and Barriers of the CNS*, 18(1), 32. <https://doi.org/10.1186/s12987-021-00267-y>
- Nalbandian, A., Sehgal, K., Gupta, A., Madhavan, M. V., McGroder, C., Stevens, J. S., Cook, J. R., Nordvig, A. S., Shalev, D., Scharwat, T. S., Ahluwalia, N., Bikdeli, B., Dietz, D., Der-Nigoghossian, C., Liyanage-Don, N., Rosner, G. F., Bernstein, E. J., Mohan, S., Beckley, A. A., ... Wan, E. Y. (2021). Post-acute COVID-19 syndrome. *Nature Medicine*, 27(4), 601–615. <https://doi.org/10.1038/s41591-021-01283-z>
- Şahan, E., Ünal, S. M., & Kırpınar, İ. (2021). Can we predict who will be more anxious and depressed in the COVID-19 ward? *Journal of Psychosomatic Research*, 140, 110302–110302. PubMed. <https://doi.org/10.1016/j.jpsychores.2020.110302>
- Saloni Dattani, Hannah Ritchie, & Max Roser. (2021). Mental Health. *Published Online at OurWorldInData.Org*.
- Sheng, B., Cheng, S. K. W., Lau, K. K., Li, H. L., & Chan, E. L. Y. (2005). The effects of disease severity, use of corticosteroids and social factors on neuropsychiatric complaints in severe acute respiratory syndrome (SARS) patients at acute and convalescent phases. *European Psychiatry: The Journal of the Association of European Psychiatrists*, 20(3), 236–242. PubMed. <https://doi.org/10.1016/j.eurpsy.2004.06.023>
- Thaweerat, W., Pongpirul, W. A., & Prasithsirikul, W. (2021). Assessment of anxiety and depression among hospitalized COVID-19 patients in Thailand during the first wave of the pandemic: A cross-sectional study. *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery*, 57(1), 106–106. PubMed. <https://doi.org/10.1186/s41983-021-00362-9>
- Vietnam Ministry of Health. (2021, September 26). *Vietnam Ministry of Health* [<https://covid19.gov.vn>].
- World Health Organization. (2021a). *Comprehensive Mental Health Action Plan 2013-2030*. World Health Organization.
- World Health Organization. (2021b, September 24). *Coronavirus disease (COVID-19) pandemic* [<https://www.who.int>].
- Zhou, P., Yang, X., Wang, X.-G., Hu, B., Zhang, L., Zhang, W., Si, H.-R., Zhu, Y., Li, B., Huang, C.-L., Chen, H.-D., Chen, J., Luo, Y., Guo, H., Jiang, R.-D., Liu, M.-Q., Chen, Y., Shen, X.-R., & Wang, X. (2020). A pneumonia outbreak associated with a new coronavirus of probable bat origin. *Nature*, 579. <https://doi.org/10.1038/s41586-020-2012-7>

## THE EMPIRICAL RESEARCH OF COLLEGE STUDENTS' BACKGROUND OF ARTS EDUCATION AND RELATIONSHIP WITH MENTAL HEALTH

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### Abstract

**Research background:** Today, with the normalization of COVID-19 prevention and control, college students are easy to show a psychological state of sub-healthy because of excessive mental stress, and even get a series of psychological problems, such as test anxiety, social anxiety, employment anxiety, and so on. In this context, according to the investigation and research, it is found that the mental health of students with arts education background is better than those who have not studied arts, and arts education plays an increasingly important role in the development of physical and mental health of college students.

**Research purpose:** The research purpose is to explore the relationship between college students' years of arts education and their life meaning experience, to find the relationship between college students' arts education background and their mental health.

**Research methods:** The data were collected by questionnaire and analyzed by SPSS and Mplus software. Through the mediation model and regression analysis of the questionnaire data, this paper demonstrates the relationship between college students' arts education background and their mental health.

**Subjects:** The data of 277 students were selected for latent variable analysis, and the years of learning arts and the frequency of participating in arts were taken as independent variables to study their effects on mental health-related factors such as life meaning experience and life meaning pursuit.

**The results of data analysis:** Through the analysis of the mediation model, it is found that the longer the years of learning arts, the higher the value of life meaning experience and the pursuit of life meaning. The number of years of learning arts also plays a mediating role in the experience and pursuit of life meaning through life satisfaction. When positive emotion is used as a mediating variable, the higher the frequency of participation in arts, the higher the experience of life meaning and the pursuit of life meaning.

**Keywords:** *Arts education, life meaning experience and pursuit, positive emotions, life satisfaction.*

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### 1. Background

From the outbreak of COVID-19, the college students are in a more closed learning environment with a lack of face-to-face communication. This situation makes college students more stressed and highly susceptible to sub-healthy psychological states. Various sources of stress also lead to a variety of sleep problems, such as sleep duration, sleep disorders, and daytime disorders. These sleep problems can lead to excessive cortical arousal, confused thinking, poor concentration, memory loss, and further impact on cognitive function. Severe sleep problems further lead to the development of psychological disorders or diseases (Gao, L., 2016). To improve the mental health of college students, it is necessary to start from various aspects. According to the research, there is a certain connection between the learning background of arts education and the mental health of college students. Arts education can cultivate the sensual quality of college students and enrich their inner spiritual world. This facilitates their effective fight against depression and positively affects the development of physical and mental health (Li Hongju, 2019).

Paying attention to the mental health status of college students, studying the influence of arts education background on mental health, and taking timely scientific measures to improve the mental health level of college students is very important for the talent training of quality education in the new era. This study is based on the analysis of the existing relevant literature and makes an investigation and research on the relationship between college students' arts education background and mental health, to provide theoretical basis and data support for the construction and development of college students' mental health.

In a paper on how leisure activities affect health, Daisy Fancourt and colleagues pointed out that there is no unified reason to explain how leisure activities affect health, but Stebbins RA has described a unified framework. He believes that from the perspective of Yan Su leisure is more conducive to mental health. These usually take months or years of training to develop professional skills and knowledge (for example, playing musical instruments in a community orchestra). Artistic activities from this perspective will enrich personal experience, promote self-renewal and make interpersonal relationships more harmonious. There are also many benefits in terms of self-expression, creativity, social attractiveness, sense of belonging, meaning, and achievement (Stebbins,2020). There is a growing body of data on the health benefits of participating in leisure activities (voluntary and enjoyable non-work activities, such as hobbies, arts, etc.). Another similar article identified and mapped more than 600 mechanisms of action during the survey. And through psychological, physiological, and other aspects to confirm these beneficial effects on mental health.

In one study of active and receptive arts participation and its association with mortality among U.S. adults, researchers applied socio-demographic knowledge and controlled for relevant variables and found that participants aged 65 years and older who did not listen to music, sing/play instruments, or engage in arts and crafts-related activities had higher mortality rates. Participants aged <65 years, likewise had a higher mortality risk if they did not listen to music. Engaging in artistic activities was shown to have a lower risk of mortality, and it can be seen that the overall psychological profile of the college student population with an artistic educational background would be more stable, thus having a beneficial effect on the development of physical and mental health, with a lower mortality rate at the same age.

## 2. Subjects and tools

In this study, students from a university in Beijing were selected as subjects, and 288 questionnaires were distributed. After receiving valid questionnaires and screening, 277 questionnaires remained. We analyzed the questionnaire data, taking the years of arts learning as the independent variable and life meaning experience as an important mental health variable to conduct the research. The main scale used in the study is the Life meaning scale, which has 10 items, of which No. 1, 4, 5, 6, and 9 are the dimension of life meaning experience, and No. 2, 3, 7, 8, 10 are the dimension of the pursuit of life meaning. The positive emotion scale was used to measure the positive emotion, with a total of 4 items: happy, excited, take it easy, and I am great. In addition, there are different items about the number of years of learning arts, life satisfaction, and love of arts. The analysis software tool was Mplus 8.3. The data were analyzed by confirmatory factor analysis and structural equation model.

## 3. Results

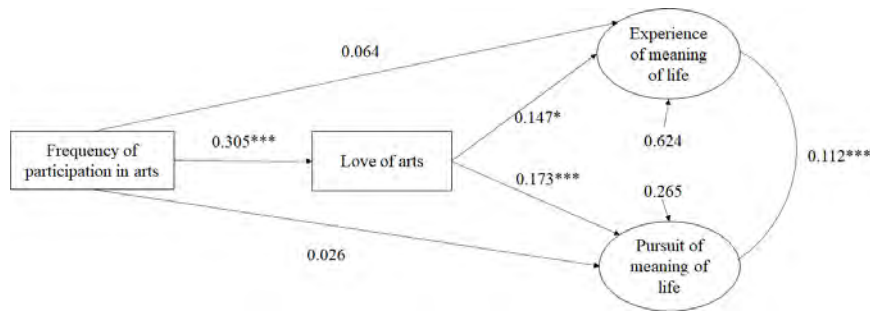
This research mainly explores three models, the purpose is to reveal the impact of artistic activities on the meaning of life, and its mediating process, the three models fit well.

Table 1. Goodness-of-fit indexes for Model I, Model II and Model III (N= 277).

|           | $\chi^2$ | $\chi^2/df$ | CFI   | TLI   | RMSEA |
|-----------|----------|-------------|-------|-------|-------|
| Model I   | 97.332   | 1.947       | 0.968 | 0.957 | 0.058 |
| Model II  | 159.016  | 1.871       | 0.958 | 0.948 | 0.056 |
| Model III | 102.439  | 2.049       | 0.965 | 0.954 | 0.062 |

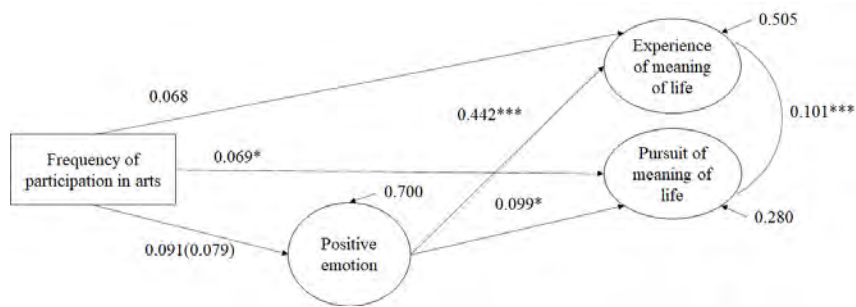
The results are shown in Table. For all the three models, the chi-square statistic is significant (Model1:  $\chi^2 = 97.332$ ,  $df = 50$ ,  $p = 0.0001$ ; Model2:  $\chi^2 = 159.016$ ,  $df = 85$ ,  $p < 0.0001$ ; Model3:  $\chi^2 = 102.439$ ,  $df = 50$ ,  $p < 0.0001$ ). Three commonly used goodness-of-fit indices were employed to assess model fit. The comparative fit indexes (CFI) are all greater than 0.90, the Tucker-Lewis indexes (TLI) are also greater than 0.90, and the root means square errors of approximation are all smaller than 0.08 which indicated that the tested models fit the data well.

Figure 1. Model I.



Model 1 (figure 1) mainly explores the mediating effect of arts love on the influence of learning arts years on the meaning of life, and the results show that the love of arts completely mediates the influence of learning arts years on the pursuit of life meaning and the experience of life meaning.

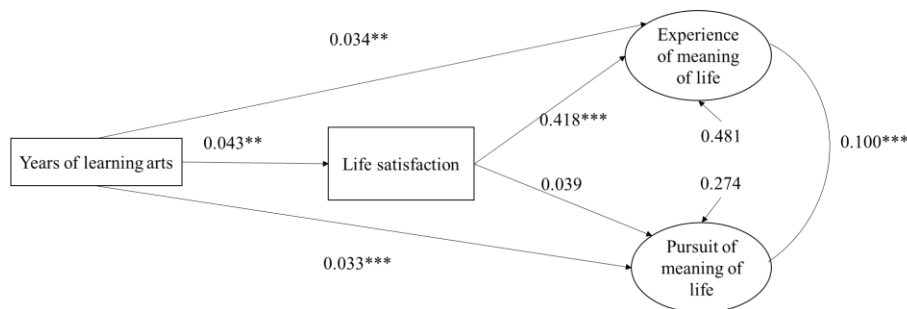
Figure 2. Model II.



The results of figure 2 show that the frequency of participation in arts activities has a marginally significant impact on positive emotion, indicating that the frequency of participation in arts activities can also predict positive emotion to a certain extent.

Positive emotion completely mediates the influence of the frequency of participating in artistic activities on the experience of the meaning of life and partly mediates the influence of the frequency of participating in artistic activities on the pursuit of the meaning of life.

Figure 3. Model III.



The result of model 3 (figure 3) shows that life satisfaction partially mediates the influence of years of learning arts on the experience of life meaning, while the mediating effect of life satisfaction on the process of learning arts years on the pursuit of life meaning is not significant.

#### 4. Discussion

Based on the analysis of the correlation between the years of learning arts, the frequency of participation in arts, and the experience of life meaning and the pursuit of life meaning, this study explores the relationship between learning arts time and the mental health of college students. Through model fitting, it is found that the mediation model in which the number of years of learning arts affects college students' life meaning experience through life satisfaction is established, and the influence can be done in both direct and indirect ways. On the one hand, the longer the college students' arts study time,

the more happiness they get from the arts activities, the higher the personal life satisfaction and the better the life meaning experience. On the other hand, the longer the time of learning arts, the more positive feedback students get in arts activities, the higher the life meaning experience and the pursuit of life meaning.

When taking the frequency of participation in arts as the independent variable and the degree of love for arts as the mediate variable, the higher the frequency of participation in arts, the higher the degree of love for arts, the higher the experience and pursuit of the meaning of life. When learning arts frequency as an independent variable, it acts on the experience and pursuit of life meaning through positive emotion.

It can be seen that the longer the college students study arts and the higher the frequency of participating in arts activities, the better their psychological quality will be. College students can participate in more arts-related activities to promote mental health, increase their satisfaction with life and experience the value and meaning of life at the same time. In a word, there is a positive correlation between college students' arts study years and mental health.

## 5. Conclusion

Today, with the epidemic and control, parents and society have widely concerned about the physical and mental health development of college students. Students' mental health level is also affected by many factors. This study verifies the importance of arts learning background for mental health development through a questionnaire survey.

Arts education has a gradual and lasting effect on the mental health growth of college students. Through long-term professional practice in music, arts, dance, and other artistic activities, students will gradually establish a correct attitude and get rich and nourished in the spiritual world. While cultivating their interests, students also meet their aesthetic needs. At the same time, interest encourages students to make breakthroughs in their fields of proficiency, achieve achievements, and gain richer meaningful experiences. And this creative process also feeds back the psychological development of students. It can be seen that arts education activities have a positive and beneficial effect on students, and the specific practice needs the joint efforts of parents, teachers, schools, and other parties.

## References

- Daisy Fancourt, Henry Aughterson, Saoirse Finn, Emma Walker, Andrew Steptoe (2021). How leisure activities affect health: a narrative review and multi-level theoretical framework of mechanisms of action, *The Lancet Psychiatry*.
- Gao Li, Ren Shengli, Yin Guocai, Li Jiabao & Ji Feng. (2016). A survey of the effects of stress on sleep and cognitive function of college students. 2022-01-25, <https://kns.cnki.net/KCMS/detail/detail.aspx?dbname=SNAD&filename=SNAD000001635561>.
- Li Hongju. (2019). On the positive effect of arts education on the physical and mental health of college students. *Arts Education* (02), 32-33.
- Stebbins RA (2020). *The serious leisure perspective: a synthesis*. New York: Palgrave McMillan.
- Story, Yang, Z., & Bravata, D. M. (2021). Active and receptive arts participation and their association with mortality among adults in the United States: a longitudinal cohort study. *Public Health* (London), 196, 211–216. <https://doi.org/10.1016/j.puhe.2021.05.034>.



## THE POLISH ADAPTATION OF THE BRIEF MEASURE OF RELATIONSHIP IMPORTANCE

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### Abstract

This paper presents the procedure of the Polish adaptation of the Brief Measure of Relationship Importance (BMRI; Watkins & Beckmeyer, 2020) designed to assess young adults' beliefs about the values and costs of being in romantic relationships. The adaptation of the BMRI involved the following steps: 1) the translation of the original BMRI into the Polish language by three independent translators and the back-translation by three other independent translators; 2) the assessment of the equivalence of the Polish translation of BMRI in a study involving a sample of 38 bilingual university students and 3) the pilot study performed in a sample of 192 participants (144 women and 48 men aged 18-53 with a mean age of 26.35). The performed analyses provided evidence for the two-factor structure of the Polish BMRI with two factors – relationship desire and relationship dismissal (CFI = .94; TLI = .91, SRMR = .04; RMSEA = .10 [90% CI; .07, .14]), and satisfactory internal consistency of both subscales assessed using McDonald's omega (.71 for relationship desire and .82 for relationship dismissal). No gender differences were observed in regard to relationship desire,  $F(1,190) = 0.51, p = .476$  and relationship dismissal,  $F(1,190) = 3.13, p = .079$ . Furthermore, differences emerged between single and coupled individuals in the domain of relationship desire,  $F(1,190) = 64.73, p < .001$  with single individuals reporting lower relationship desire than coupled individuals; and in the domain of relationship dismissal,  $F(1,190) = 57.43, p < .001$  with single individuals reported higher relationship dismissal. In conclusion, the Polish version of the BMRI is a reliable measure of adult people's romantic relationship attitudes, which requires further assessment.

**Keywords:** *Polish adaptation, romantic relationships, relationship desire, relationship dismissal.*

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### 1. Introduction

In Polish psychology, research on intimate relationships is currently a dynamically developing area. Its further development is possible mainly by conducting research using research tools developed in different cultures. One of the recently created research instruments in the domain of intimate relationships is the Brief Measure of Relationship Importance (BMRI) which Watkins and Beckmeyer developed in 2020 in the United States of America. The lack of a Polish language version of this tool encouraged the present authors to develop the Polish adaptation of the BMRI. This paper aims to present the procedure of developing the Polish-language version of the BMRI and the results obtained in the pilot study.

The BMRI (Watkins & Beckmeyer, 2020) is a 6-item tool designed to measure young adults' beliefs and attitudes about intimate relationships. It was developed in response to the need to explore young adults' desires for being in a relationship in the context of other personal priorities. The BMRI enables the assessment of young adults' perceptions regarding the role of romantic relationships at the stage of young adulthood, regardless of their current relationship status. The questions included in the BMRI address: (a) the desire to be in a relationship, (b) the importance of relationships, (c) ratings of whether relationships bring more benefits or costs, and (d) whether young adults choose to pursue other life goals before entering into a relationship with a partner.

The BMRI consists of two factors determined by using EFAs and CFAs. The first factor, *Relationship dismissal*, consists of four items ( $\alpha = .79$ ), which pertain to dismissing the importance or value of romantic relationships within one's life. The second factor, *Relationship desire*, consists of two items ( $\alpha = .77$ ), which pertain to the desire and enthusiasm for romantic relationships. The exploratory version of the BMRI consisted of nine items, with two of them rejected in EFAs analysis and one of them rejected in CFAs analysis due to its low factor loadings. Despite removing the seventh item (the third

item in the *relationship desire* subscale) in the original study, in the current investigation, we decided to retain the seven items in order to test an exploratory 7-item version of the BMRI in the Polish setting. The two factors, *relationship desire* and *relationship dismissal*, represented the two subscales of the BMRI and were moderately correlated ( $r = -.39, p < .001$ ).

The initial validity of the BMRI was assessed by testing its associations with various romantic experiences and behaviors. Specifically, Watkins and Beckmeyer (2020) demonstrated that

(a) relationship dismissal was associated with having fewer romantic relationships; (b) romantic desire was associated with greater happiness with romantic experiences; (c) relationship desire was associated with higher relationship satisfaction; (d) relationship dismissal was associated with lower relationship satisfaction; (e) relationship dismissal was positively associated with relationship cycling (i.e., breaking up and then reuniting); (f) relationship desire was associated with a greater likelihood of having high marriage intent (i.e., declaration of wanting to get married at some point in one's life); (g) relationship dismissal was associated with being less likely to have high marriage intent; (h) relationship desire was associated with a greater likelihood of having high relationship intent (i.e., declaration of wanting to be in a romantic relationship); (i) relationship dismissal was associated with being less likely to have high romantic relationship intent.

## 2. Method

### 2.1. Procedure

The current investigation aiming at developing the Polish version of the BMRI was conducted according to the standards and recommendations for research aimed at cultural adaptation of research tools (e.g., Brzeziński & Hornowska, 2007). The study consisted of the following three steps:

#### **Stage 1: Translation**

The direct linguistic translation involved three independent English translators who translated the original BMRI version into Polish. The back translation involved three other English translators who translated the Polish version of the BMRI into the English language. Discrepancies in the translations were verified by another translator. As a result of this procedure, an experimental version of the Polish BMRI was created.

#### **Stage 2: The assessment of the equivalence of the Polish and English versions of the BMRI**

The equivalence of the Polish language version of the BMRI was assessed in a study using the Polish and the original language version of the BMRI scale with 38 bilingual individuals fluent in English and Polish. Recruitment of participants was conducted through an email invitation, which was sent to bilingual students from the (Adam Mickiewicz University in Poznań). The survey was conducted as an online survey. In the first stage of the study, participants were asked to complete the BMRI in English and provide primary sociodemographic data. The second stage of the study took place after four weeks. Participants were asked to complete the BMRI in the Polish language and provide sociodemographic information.

#### **Stage 3: Pilot study**

In the online pilot study, the experimental version of the BMRI was employed. The study involved 192 participants. Recruitment of participants was conducted through an online social media platform - the survey invitation with details was published on Facebook. Participants were asked to complete the Polish version of the BRMI and provide basic sociodemographic data.

### 2.2. Participants

**2.2.1. Participants in the study assessing the equivalence of the Polish and English versions of the BMRI.** At this study stage, 38 bilingual university students participated, including 27 women, seven men, and four other gender people aged 19-29 with a mean age of 21.82. From all 38 participants, 26 were in a relationship, and 12 were single.

**2.2.2. Participants in the pilot study.** In the pilot study, 192 participants were enrolled, including 144 women (75%) and 48 men (25%) aged 18-53 with a mean age of 26.35. Among eligible 192 participants, 139 were in a relationship (72%), and 53 were single (28%). Concerning marital status, 51 participants were married (27%), and 39 participants (20%) were in an informal relationship. One hundred sixty-seven (87%) participants were heterosexual, 18 (9%) bisexual, and seven participants (4%) indicated being homosexual/ pansexual/ asexual/did not know. Concerning education, 98 participants (51%) were students, 83 (43%) with university degrees, and 11 (6%) with high school education. Thirty two participants (17%) lived a village, 26 (14%) in a town with less than 25,000 inhabitants, 12 (6%) in a town with 25,000 to 50,000 inhabitants, 22 (11%) in a town with 50,000 to 200,000 inhabitants, 29 (15%) in the city with 200,000 to 500,000 inhabitants, 71 (37%) in the city with more than 500,000 inhabitants.

### 2.3. Measures

**The Brief Measure of Relationship Importance** (BMRI; Watkins & Beckmeyer, 2020). The BMRI scale measures young adults' beliefs about the advantages and costs of being in an intimate relationship. The original English language version was used to assess the equivalence of the Polish and English versions of the BMRI. The experimental Polish version of the BMRI was used in the pilot study.

**Demographic data.** Demographic data involved the questions concerning age, gender, current relationship, and marital status, gender, place of living, educational background, having kids, sexual orientation.

## 3. Results

### 3.1. The equivalence of the Polish and English versions of the BMRI

In order to check the equivalence of the Polish and English versions of BMRI, the correlations between the BMRI items in the Polish and English versions of the BMRI were calculated (see Table 1).

Table 1. Correlations between the BMRI Items in the Polish and English Language Versions.

| Items                 | <i>r</i> |
|-----------------------|----------|
| BMRI-1-EN & BMRI-1-PL | .508**   |
| BMRI-2-EN & BMRI-2-PL | .555***  |
| BMRI-3-EN & BMRI-3-PL | .719***  |
| BMRI-4-EN & BMRI-4-PL | .608***  |
| BMRI-5-EN & BMRI-5-PL | .610***  |
| BMRI-6-EN & BMRI-6-PL | .417**   |
| BMRI-7-EN & BMRI-7-PL | .637**   |

Note. \*\*\* $p < .001$ ; \*\*  $p < .01$ .

Next, the correlations between the Relationship dismissal and Relationship desire subscales have been calculated. The analyses showed that both the Relationship dismissal subscales and Relationship desire subscales were positively and strongly correlated,  $r = .842$ ,  $p < .001$ , and  $r = .752$ ,  $p < .001$ , respectively.

### 3.2. Factor structure of the BMRI

To determine the factorial structure of the Polish BMRI, the CFA analysis using the ML estimation was used.

The CFA analysis provided evidence for the two-factor structure of the Polish BMRI with two factors – relationship desire and relationship dismissal (CFI = .94; TLI = .91, SRMR = .04; RMSEA = .10 [90% CI; .07, .14]).

### 3.3. The inter-correlations of the BMRI Subscales

The relationship desire and relationship dismissal subscales were significantly and negatively correlated with each other ( $r = -.63$ ,  $p < .001$ ).

### 3.4. The internal consistency of the Polish BMRI

The internal consistency of both subscales was assessed using McDonald's omega and was as follows: .71 for relationship desire and .82 for relationship dismissal.

### 3.5. Mean-level analyses

In regard to the mean-level analyses across gender, the performed analyses revealed no gender differences in regard to relationship desire,  $F(1,190) = 0.51$ ,  $p = .476$  and relationship dismissal,  $F(1,190) = 3.13$ ,  $p = .079$ .

Concerning relationship status, the performed analyses showed the differences between single and coupled individuals in the domain of relationship desire,  $F(1,190) = 64.73$ ,  $p < .001$  with single individuals reporting lower relationship desire than coupled individuals; and in the domain of relationship dismissal,  $F(1,190) = 57.43$ ,  $p < .001$  with single individuals reported higher relationship dismissal.

## 4. Discussion

The current study aimed to develop the Polish version of the Brief Measure of Relationship Importance (Watkins & Beckmeyer, 2020). The Polish adaptation was performed in three stages: (1) the translation of the original BMRI into the Polish language by three independent translators and the

back-translation by three other independent translators; (2) the assessment of the equivalence of the Polish translation of BMRI in a study involving a sample of bilingual university students and (3) the pilot study performed in a sample of 192 participants to assess the basic psychometric properties of the BMRI.

The study assessing the equivalence of the Polish and English BRMI in a sample of bilingual university students showed that both the items of the BMRI and two subscales were significantly and positively correlated. This pattern of correlations provided evidence for the equivalence of the Polish and English versions of the BMRI.

The pilot study results showed a two-factor structure of the Polish BMRI with two factors – relationship desire and relationship dismissal and satisfactory internal consistency of both subscales assessed using McDonald's omega. Further, the mean-level analyses showed no gender differences regarding relationship desire and relationship dismissal. In addition, the analyses demonstrated differences between single and coupled individuals regarding relationship desire, with single individuals reporting lower relationship desire than coupled individuals and relationship dismissal with single individuals reporting higher relationship dismissal.

The current investigation has several limitations. First, the sample utilized in the pilot study was small and was predominantly female, and consisted of younger participants. Thus, future validation research would benefit from including larger and more heterogeneous samples. Second, future research would also benefit from employing temporal assessments to determine the stability of the BRMI across time.

In conclusion, despite these limitations, the Polish version of the BMRI appears to be a reliable measure of adult people's romantic relationship attitudes, which requires further investigation. Analogically to the authors of the original BMRI, the Polish BMRI can provide information regarding adult individuals' attitudes toward intimate relationships versus their subjective feelings of happiness, relationship satisfaction, attitudes toward getting married or engaging in romantic relationships. The adaptation of the BMRI scale to Polish conditions will allow researchers in Poland to investigate young adults' beliefs about the values and costs of being in romantic relationships among Poles.

### *Acknowledgments*

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### *References*

- Brzeziński, J., & Hornowska, E. (2007). Adaptacja kulturowa testów psychologicznych [Cultural adaptations of psychological tests]. In J. Strelau, (Ed.). *Psychologia: Podręcznik akademicki. Podstawy psychologii* [Psychology. Academic textbook. Fundamentals of psychology] (pp. 415-426). Gdańsk: Gdańskie Wydawnictwo Psychologiczne.
- Watkins, N. K., & Beckmeyer, J. J. (2020). Assessing young adults' beliefs regarding the importance of romantic relationships. *Journal of Family Issues*, *41*(2), 158-182. Doi: <https://doi.org/10.1177/0192513X19871080>.

# ADDRESSING EMOTIONAL AND RESILIENCE INEQUALITY AMONG COLLEGE STUDENTS VIA AN ONLINE ACADEMIC RESILIENCE COURSE

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## Abstract

Transitioning from high-school to university challenges young adults to develop greater self-reliance in order to fulfill their needs, engage in relationships, plus adhere to general self-care, and other healthy behaviors. High-intensity emotions due to difficulties or failure to achieve these goals may result in poor decision-making and impaired self-care (disordered eating, substance abuse, other unfavorable behaviors).

This presentation will describe the effects of taking a 13-modules of computerized resilience academic course with a mandatory 1-2 personal assignments for each module. The course effectiveness was assessed via a controlled trial comparing the 124 students that chose to take this elective course and 150 socio-demographic matched controls that did not choose to take this course.

At baseline, participants in the research group demonstrated statistical significance lower values compared to the comparison group in the following measures: self-resilience (measured by the Connor-Davidson Resilience Scale-CD\_RISK), self-esteem (measured by Rosenberg Scale), global scores of emotional statuses (measured by depression, anxiety, and pressure scores -Dass-21) and body esteem (measured by the Body Esteem Scale -BES). Thus, all the baseline values were entered as covariates to the ANCOVA Repeated Measures analysis to assess the differences between the intervention and the comparison group along the 4 assessments time: baseline, course termination (after 3.5 months), 3 & 6 months, post-termination.

Results revealed a statistically significant superiority to the intervention group in the improvement of all these variables with small effect sizes. At the 6 month's post course termination, the mean scores of participants in the intervention group reached equality in most variables compared to the mean scores of the comparison group. In some variables they even demonstrated higher scores. The mediating effect of the year that the course was taken and the ethnicity (minorities vs. others) were not statistically significant. Nevertheless, the improvement in minorities' resilience and self-esteem was double compared to the improvement among all others. The improvement in self resilience and self-esteem among first year students was 1.5 times higher than that of the 2<sup>nd</sup> and 3<sup>rd</sup> years students. The promising results indicates that emotional and resilience inequality may be addressed via an academic self-learning online-course.

**Keywords:** Resilience, academic course, emotional inequality, intervention online course.

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## 1. Introduction

Transitioning from high-school to academic studies challenges emerging adults (ages 18-29) to rely more on themselves. In addition to the stress related to the academic burden, they must build growing independence and autonomy, engage in matured self-care, healthy behaviours and relationships, as well as other competing demands of university life (Webb & Shmidt, 2020).

Resiliency building in young people may help to protect against emotional instability, risky health behaviours, improve well being as well as academic attainment. All these can act as a protective factor against adversity and therefore build resilience against developing depression, anxiety, eating disorders and other physical and mental health problems (Conley et al., 2015). Resilience is the process of adapting well in the face of adversity, threat, stressors or trauma (Olsson et al., 2003). It is a dynamic protecting factor that can be enhanced through prevention programs (Windle et al., 2011).

Since most students hesitate to seek help due to their perceptions, anonymity needs, harm avoidance patterns, stigma and other reasons, online services were advised (Ebert et al., 2019). Growing evidence supports the effectiveness of internet-based prevention programs to reduce risk behaviors and increase resilience and well-being (Atkinson & Diedrichs, 2021). Yet, effectiveness outcomes are inconsistent (Dyrbye et al., 2017; Atkinson & Diedrichs, 2021).

This manuscript presents the feasibility and effectiveness outcome of “Favoring Resilience”, a semi-self-guided offline academic course. It was developed to address the vital need of a well-rounded program to reduce the inequality in resilience and emotional status of emerging adults at academic institutions. Its content addresses multi-dimensions which were suggested by Deci and Ryan’s (2008) self-determination theory as well as by the BASIC PH - multi-dimensional resilience model (Lahad, 2006).

## 2. Methods

### 2.1. Participants and procedures

The feasibility and effectiveness of “Favoring Resilience” was assessed via a controlled trial but condition assignment was not randomized, since it was carried out within the real-world university setting. During the academic year of 2019-2020, every first and second-year undergraduate student at Tel Hai College, Israel, received an invitation to attend the elective course “Favoring Resilience”, an unsynchronized two-weekly hrs. course.

A comparison group of 150 matched students were recruited from the same faculties, years of study and gender via a public call to all students that did not take this course. All subjects provided written informed consent before completing the study protocol and were compensated \$15 per survey time point. Students were not compensated for completing the intervention. The Tel Hai Academic College Institutional Review Board approved the research protocol (8/2019) which was pre-registered as NCT04129892 (17.10.2019). Both groups completed the same surveys electronically, at four time points: baseline, course completion, and two follow up questionnaires (3 and 6 months from course conclusion). The author was blind to participants surveys, data management and analysis.

The total sample included 302 students, aged 25 yrs. ( $SD= 3.4$ ). Seventy five percent were female, 40% from the Science faculty and the rest from Humanities & Social Sciences faculty, 90% were Jews and 10% Arabs, 50% were on their first year. No statistically significant differences were noted between the intervention and the comparison groups at baseline in respect to sociodemographic characteristics. Nevertheless, the baseline questionnaires indicated that the mean score of students in the intervention group (those who chose to take the course) were inferior compared to the comparison group.

### 2.2. Intervention

“Favoring Resilience” is an elective course that was developed and designed by the author of this manuscript. It has a duration of one semester (thirteen weeks) and includes 11 on-line unsynchronized modules. Each week one module and its assignments are opened. The tasks are related to specific personal events that demonstrate the challenge students faced, including how they coped and how it impacted their self-perception, regarding to each of the resilience components introduced in the course. Tasks are uploaded by students at appointed times. None of the assignment were checked or scored since their goal was to encourage participants to observe and self-investigate their past, experience their roots and belongings, as well as their strengths and weaknesses. The journey required self-regulation and self-discipline, employing and experiencing autonomy and self-observation.

The modules topics targeted both protecting and risk factor and included: A frontal/zoom introduction meeting; components of emotional resilience; development of resilience; self-esteem and self-image; social impact (belonging and connectedness); media literacy; emotion regulation; managing stress and anxiety; self-control; body image; managing with crises and emergency and existing prevention models and programs.

### 2.3. Outcome measures

Standardized instruments to measure the program's effect were: Connor-Davidson Resilience Scale (CD-RISC) total score of all 25-items (Connor & Davidson, 2003); Depression, Anxiety and Stress Scale (DASS-21) (Lovibond & Lovibond, 1995); The Rosenberg 10 item Self Esteem Scale (Rosenberg, 1986); The 23 items Body Esteem Scale (Mendelson et al., 2001; Franzoi, 1994); The Eating Attitudes Test (Eat-26) (Garner, 1982); The 'Pressures by Media' subscale of the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4) (Schaefer et al., 2015). All included scales are validated Hebrew-translated versions. Measures were administered via Qualtrics’ survey links. All scales showed acceptable psychometric results and high internal validity.

### 2.4. Statistical methods

SPSS (version 23, IBM Corp.) was used to perform formal statistical analyses, with significance considered at the  $p<0.05$ . Only those that filled all four surveys (124 students in the intervention group and 150 in the comparison group) entered the statistical analysis. Baseline differences between the groups

were assessed using independent t tests and Chi-squared tests. Differences between groups along the study assessment points were performed with ANOVA repeated measures **with baseline scores as covariates**. The impact of the year of study and ethnicity as mediating variables on the change in variables, was performed by ANCOVA with baselined values as covariates.

### 3. Results

#### 3.1. Feasibility

Nightly-five percent of participants reported that they will recommend their friends to take this course. “Favoring Resilience” is the largest **elective** course in our sciences faculty. It has no size participation limit. Feedbacks reports defined it as an interesting, although not emotionally easy course. This is a course that offers students the high potential to obtain a high grade due to the fact that 40% is a given grade if all assignments are submitted on time. The mixed population from the faculty of science and the faculty of humanities and social science also makes the course appealing. Although cost-effectiveness was not calculated, it seems that the course maintenance expenses are lower than most other courses in the faculty.

#### 3.2. Intervention effects

Results revealed a statistically significant superiority to the research group in the improvement of most variables with small effect sizes. At the 6 month’s post course termination, the mean scores of participants in the research groups reached equality in most variables compared to the mean scores of the comparison group. In some variables they even demonstrated higher scores. The year that the course was taken (first academic year or later) and the ethnicity (minorities vs. others) were not statistically significant. Nevertheless, the improvement in minorities’ resilience and self-esteem was double than the improvement among all others, and the improvement in self resilience and self-esteem among first year students was 1.5 times higher than that of the 2<sup>nd</sup> years students.

Table 1. Differences between the intervention and the comparison group in scores over measurement times. (Means, standard deviation, significance, and effect size).

| Outcome variable           | Time      | No course (N=150)<br>Mean ± SD | Intervention group (N=124)<br>Mean ± SD | Effect, F (df)          | Partial eta square <sup>1</sup> |                          |
|----------------------------|-----------|--------------------------------|---|-------------------------|---------------------------------|--------------------------|
| <b>Resilience score</b>    | T1        | 97.47±9.99                     | 92.65 ±13.62                            | Group 0.66 (1,271)      | 0.00                            |                          |
|                            | T2        | 96.16±10.74                    | 97.30±13.29                             | Time 2.75 (3,813)*      | 0.01                            |                          |
|                            | T3        | 96.19 ±10.24                   | 96.83 ±12.87                            | TXG 14.77 (3,813)***    | 0.05                            |                          |
|                            | T4        | 95.64±10.95                    | 96.51±13.30                             |                         |                                 |                          |
| <b>Emotional status</b>    | T1        | 13.81±9.42                     | 17.38 ±11.80                            | Group 1.03 (1,271)      | 0.00                            |                          |
|                            | T2        | 13.35±9.63                     | 13.53±10.75                             | Time 5.52 (3,813) ***   | 0.02                            |                          |
|                            | T3        | 14.16±10.20                    | 12.77 ±9.84                             | TXG 6.92 (3,813) ***    | 0.02                            |                          |
|                            | T4        | 14.38±10.12                    | 14.52±11.54                             |                         |                                 |                          |
| <b>Self-esteem</b>         | T1        | 32.04±4.67                     | 30.35 ±5.28                             | Group 0.80 (1,271)      | 0.00                            |                          |
|                            | T2        | 31.56±4.74                     | 32.27±5.21                              | Time 5.76 (3,813)***    | 0.02                            |                          |
|                            | T3        | 32.12 ±4.58                    | 31.98 ±5.12                             | TXG 13.03 (3,813)***    | 0.05                            |                          |
|                            | T4        | 31.80±4.67                     | 31.99±5.19                              |                         |                                 |                          |
| <b>Influenced by media</b> | T1        | 2.92±0.61                      | 3.05 ±0.66                              | Group 2.06 (1,271)      | 0.01                            |                          |
|                            | T2        | 2.91±0.63                      | 2.92±0.67                               | Time 9.45 (3,813)***    | 0.03                            |                          |
|                            | T3        | 2.84±0.61                      | 2.89 ±0.70                              | TXG 3.05 (3,813)*       | 0.01                            |                          |
|                            | T4        | 2.89±0.65                      | 2.88±0.68                               |                         |                                 |                          |
| <b>Body Esteem</b>         | T1        | 3.51±0.65                      | 3.31±0.83                               | Group 5.22 (1,271)*     | 0.02                            |                          |
|                            | T2        | 3.49 ±0.61                     | 3.49 ±0.77                              | Time 6.91 (3,813)***    | 0.02                            |                          |
|                            | T3        | 3.52±0.63                      | 3.50±0.78                               | TXG 7.52 (3,813)***     | 0.03                            |                          |
|                            | T4        | 3.52±0.67                      | 3.47±0.79                               |                         |                                 |                          |
| <b>EAT-26</b>              |           | <b>Time effect</b>             | <b>Time effect</b>                      | <b>p (Group effect)</b> |                                 |                          |
|                            | T1        | 9.70±8.07                      | p=0.0001                                | 9.68±11.38              | p=0.0002                        | 0.81 (0.07) <sup>2</sup> |
|                            | T2        | 8.70±8.08                      | (0.11) <sup>3</sup>                     | 9.82±7.91               | (0.04) <sup>3</sup>             | 0.59 (0.10) <sup>2</sup> |
|                            | T3        | 8.15±7.09                      |   | 8.40±7.28               |                                 | 0.99 (0.03) <sup>2</sup> |
| T4                         | 8.09±6.68 |                                | 8.74±9.63                               |                         | 0.59 (0.03) <sup>2</sup>        |                          |

p<0.05 \*\*p<0.01 \*\*\* p<0.001 TXG= Time X Group interaction

<sup>1</sup>Partial eta square - 0.01 small 0.06 medium 0.14 Large

<sup>2</sup> Group effect (Wilcoxon Two-Sample Test) Wilcoxon effect size: <0.3 (small effect)

<sup>3</sup>Time effect (Friedman’s Chi-Square Test): < 0.3 (small effect), < 0.5 (moderate effect), > 0.5 (large effect)

#### 4. Discussion

This manuscript reports on the feasibility and effectiveness of “Favoring Resilience”, a non-synchronized internet-based academic course that targets students’ resilience, emotional status, self-esteem, body esteem, media literacy and eating disorders perceptions and behaviors.

Both feasibility and effectiveness results are encouraging. Results revealed that participants’ depression, anxiety, and stress status as well as self-esteem and resilience scores, were statistically improved. This is in opposed to other resilience initiatives that reported no improvement in these dimensions (Conley et al., 2015; Akeman et al., 2019; Dyrbye et al., 2017). Effect sizes for the current intervention were similar to that found for previous interventions with college populations (Conley et al., 2015). Although the effect sizes are small, these relative numbers could be clinically relevant in absolute terms (avoided depression, increases quality of life and cost reduction) if preventive interventions are scalable to a large number of people at risk (Regabert et al., 2020).

The results reinforce the ability to improve protective and risk factors for resilience and mental health in the young-adult population at a sensitive time in their lives. First-year students reported that it helped them to fit in, integrate into academic life, and cope better with the COVID-19 crisis.

Although the results are encouraging, the study has several limitations that limit the unbiased intervention effect and the ability to generalize study results. Usage of a convenience sample and lack of random allocation (participants present selective populations). It seemed like, those that selected to participate in the course (the intervention group) were disadvantage in respect to resilience, emotional status, body esteem and self-esteem at baseline. This may affect the results since higher intervention effects are frequently observed among those with “pathological features”. Cuijpers (2022) claims that universal interventions often do not examine preventive effects, if participants a priori have problems. In the current study, only a few participants reached pathological scores in one or two measures, thus their ability to override real improvement is assumed to be minimal. Moreover, the baseline values were taken into consideration by using them as covariates. Acknowledging these limitations, there are several strengths. The research used measures with high psychometric qualities, no missing data, low dropout and high response rate which prevent statistical errors.

#### 5. Conclusion

Today, when minority issues are taking center-stage, academic resilience course which may reach large number of individuals in an easy manner, has low maintenance costs and provides large toolbox to enhance students’ resilience and decrease inequality is a pertinent resource to address the challenge of increased mental health in academic institutions.

The promising results indicates that emotional and resilience inequality may be addressed via an academic self-learning online-course, but future research should assess this initiative with randomized controlled study design and larger sample size.

#### References

- Akeman, E., Kirlic, N., Clausen., AN., Cosgrove, K.T., McDermott., T.J., Lisa D. Cromer, L.D., Paulus, M.P., Yeh., Hung-Wen, Aupperle., R.L. (2019). A pragmatic clinical trial examining the impact of a resilience program on college student mental health. *Depress Anxiety*,1–12. DOI: 10.1002/da.22969.
- Atkinson, M. J., & Diedrichs, P. C. (2021). Examining the efficacy of video-based microinterventions for improving risk and protective factors for disordered eating among young adult women. *The International journal of eating disorders*, 54(5), 708–720. <https://doi.org/10.1002/eat.23460>
- Conley, C. S., Durlak, J. A., & Kirsch, A. C. (2015). A meta-analysis of universal mental health prevention programs for higher education students. *Prevention Science*, 16(4), 487–507.
- Connor, K. M., & Davidson, J. R. T. (2003). Development of a new Resilience scale: The Connor-Davidson Resilience scale (CD-RISC). *Depression and Anxiety*, 18(2), 76–82. <https://doi.org/10.1002/da.10113>
- Cuijpers, P. (2022). Why primary prevention often is no prevention at all. *European Neuropsychopharmacology*, 58, 1–3. <https://doi.org/10.1016/j.euroneuro.2022.01.004>
- Dyrbye, L.N., Shanafelt, T.D., Werner, L. et al. (2017). The Impact of a Required Longitudinal Stress Management and Resilience Training Course for First-Year Medical Students. *J Gen Intern Med*, 32,1309–1314. <https://doi.org/10.1007/s11606-017-4171-2>



- Deci, E. L., & Ryan, R. M. (2008). Self-determination theory: A macrotheory of human motivation, development, and health. *Canadian Psychology/Psychologie Canadienne*, 49(3), 182. [https://doi.org/10.1037/a00128010366\(19\)30275-5](https://doi.org/10.1037/a00128010366(19)30275-5).
- Ebert, D. D., Mortier, P., Kaehlke, F., Bruffaerts, R., Baumeister, H., Auerbach, R. P., Alonso, J., Vilagut, G., Martínez, K. I., Lochner, C., Cuijpers, P., Kuechler, A. M., Green, J., Hasking, P., Lapsley, C., Sampson, N. A., Kessler, R. C., & WHO World Mental Health-International College Student Initiative collaborators (2019). Barriers of mental health treatment utilization among first-year college students: First cross-national results from the WHO World Mental Health International College Student Initiative. *International journal of methods in psychiatric research*, 28(2), e1782. <https://doi.org/10.1002/mpr.1782>
- Franzoi, S.L. (1994). Further evidence of the reliability and validity of the body esteem scale. *Journal of Clinical Psychology*, 50, 237-239.
- Garner, D. M., Bohr, Y., & Garfinkel, P. E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine*, 12(4), 871-878. <https://doi.org/10.1017/S0033291700049163>
- Lahad, M. (2017). From Victim to Victor: The development of the BASIC PH model of coping and resiliency. *Traumatology*, 23(1), 27-34. 1085-9373/17/\$12.00 <http://dx.doi.org/10.1037/trm0000105>
- Lovibond, S.H. & Lovibond, P.F. (1995). Manual for the Depression Anxiety & Stress Scales (2nd Ed.). Sydney: Psychology Foundation
- Mendelson BK, Mendelson MJ, White DR. (2001). Body-esteem scale for adolescents and adults. *J Pers Assess*. 76,90-106. doi:10.1207/S15327752JPA7601\_6.
- Olsson CA, Bond L, Burns JM, Vella-Brodrick DA, Sawyer SM. (2003). Adolescent resilience: A concept analysis. *Journal of Adolescence*, 26(1),1-11. 10.1016/S0140-1971(02)00118-5
- Rigabert, A., Motrico, E., Moreno-Peral, P., Resurrección, D. M., Conejo-Cerón, S., Cuijpers, P., Martín-Gómez, C., López-Del-Hoyo, Y., & Bellón, J. Á. (2020). Effectiveness of online psychological and psychoeducational interventions to prevent depression: Systematic review and meta-analysis of randomized controlled trials. *Clinical Psychology Review*, 82, Article 101931. <https://doi.org/10.1016/j.cpr.2020.101931>
- Schaefer LM, Burke NL, Thompson JK, Dedrick RF, Heinberg LJ, Calogero RM, et al. (2015). Development and validation of the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4). *Psychol Assess*, 27, 54-67. doi:10.1037/a0037917.
- Webb, H., & Schmidt, U. (2021). Facilitators and barriers to supporting young people with eating disorders during their transition to, and time at, university: An exploration of clinicians' perspectives. *European eating disorders review: the journal of the Eating Disorders Association*, 29(3), 443-457. <https://doi.org/10.1002/erv.2795>
- Windle, G., Bennett, K.M. & Noyes, J. A. (2011). methodological review of resilience measurement scales. *Health Qual Life Outcomes*, 9, 8. <https://doi.org/10.1186/1477-7525-9-8>

# IMPACT OF MUSIC THERAPY IN PERSONALITY DEVELOPMENT

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## Abstract

Music is a divine power and universal language that can be understood by non professionals also. Music is one of the most mystical powers that can affect the individual without getting noticed and can hypnotise to act accordingly or can have an amazing impact on mood, mind, personality and behaviour. This proposed research paper would reveal how listening of music can impact individual's personality according to the inclination of music depending on gender (male/female). The result was, an eye opener to the fact that listening of music as therapy has main relation to the one's personality and each individual's choice of music is the reflection of their personality unlike its dependency on gender aspect.

**Keywords:** *Anxiety, depression, music therapy, personality development, stress management.*

## 1. Introduction

Music has been one of our oldest forms of stress reduction. Avant et al. – 1990 -1991, reported that musical engagement was shown to be more effective than, for example, progressive muscle relaxation and focused imagery in relieving stress. Music has been used to facilitate psychological well-being among the infants to elderly. There is much empirical data collected showing that music can enhance the physiological states and emotional well-being of not only infants but to the school going kids to professionals and helps in enhancing healthy and positive personality. Some of the positive benefits reported regarding the music and its impact in personality and behaviour including the stabilisation and regularisation of heart rate, blood pressure and sleep cycles including the boosting up of confidence and self-esteem. For instance, the 24th week of an unborn infant's life, their perceptual world is embedded within the sound of their mother's heartbeat. The child is not grown in an acoustic vacuum, but rather in an environment textured by the regularly occurring beats of the mother's heart and the melodic contours of her physiological states. These temporally regularised acoustic textures provide security to the infant as their regularity affords an environment in which the infant's expectations can be repeatedly satisfied and secured. In short, the impact of music on the babies' personality and behaviour has good reason to be kicking and screaming as they enter the new world; for new world is acoustically unstable unpredictable and in a constant state of unharmonious disequilibrium from the sound of the mother's heartbeat in the womb to the sound of the world, they entered.

## 2. Music in relation with personality

Personality of a person seeks out the situation and environment that satisfies their psychological needs. In the same way our personality is also very much influenced by the kind of music we listen to and the type of music we avoid.

Music is an extension of our personalities. It is possible that as we age, predicting our personality according to the genres could be different in all. As we age, music tends to define us less and our taste varies more; and this could probably be due to the fact that our personality has changed and transformed. As we develop, our musical taste evolves along with us. But though we branch out in different musical genres, we all have that one inclination towards some particular, which carries more significance for us than others. That inclination could be due to the heartfelt lyrics, aggressive tempo, or the soft twang of the guitar. Anything we willingly incorporate into our lives could be considered a personality indicator, but most of us hold music a lot closer to our hearts than we do clothes, accessories etc. Music has strong ties

with emotion and can be very effective therapeutic tool. Music elicits strong emotion more consistently and frequently than other forms of art – (Frey 1985, Williams & Morris, 1996).

Dutta and Kanungo (1975), Rubin and Kozin (1984), and Gabrielson (1991) – have shown that as taste and smell is associated with strong emotions in life events in the same way music inclination also provide trigger to recall of these and their accompanying emotions.

*In terms of relationships between musical dimensions and personality characteristics in context with the inclination towards music are as follows:*

- *Rock dimensions found too correlate positively with ‘Openness’ and negatively with ‘Consciousness’. Negative correlation is found between rock dimension and ‘Extraversion’.*
- *Elite dimensions correlated positively with ‘Openness’ and ‘Agreeableness’ and negatively with ‘Emotional Stability’. Elite was also positively correlate with ‘Conscientiousness’.*
- *Urban and Pop Dance dimensions both positively correlated with ‘Agreeableness’ and ‘Extraversion’.*
- *The urban dimension correlated positively with ‘Conscientiousness’ and negative correlation between ‘Elite Music preference’ and ‘emotional stability’.*

Musical taste and personality types are closely related.

## **2.1. Music therapy & personality development**

As we have seen that how closely music taste and personality is related, it could be similar way be used as a form of therapy in music to develop a positive and strong personality. Music as therapy does not have any side effects but without a doubt have infinite benefits.

Music therapy is a type of expressive psychotherapy and it requires the use of music for therapeutic purposes. The difference between music therapy entertainment and music education is that music therapy aims to meet therapeutic goals.

If you think for a moment and remember your childhood, which is the most striking image that comes in your mind? Mother holding you in her arms while ...she’s singing a lullaby. And what was the effect? If you were crying, often you would calm down and fall asleep with an innocent smile on your face imprinted.

Music therapy addresses to a variety of needs such as physical, psychological, emotional, cognitive and social aspects of people of all ages, regardless of musical training they have. The therapist addresses the patient’s problem directly, through music, or through the relationship developed between the patient and therapist.

The most significant results obtained with melo-therapy were recorded in modern psychiatry, because music has a beneficial action helps and relieves nerve accesses, quite often, the patient’s healing is complete.

Using instrumental and vocal music, the therapist tries to obtain changes. Research confirms effectiveness of treatment in several areas, such as physical and motor recovery, motivation to follow the treatment, emotional support for patient and its family.

The most common problems are related to stress, anxiety, grief, feelings, communication, aggressive behaviour, lack of motivation, mood swings, emotional intimacy. Through musical involvement, skills and strengths of the patient are transferred to other areas of life.

## **2.2. Music and personality development**

Musical taste and personality types are closely related. During my experimentation and data collection I found out the relationship of personality and music type. Below is the description of 5 Personality traits and 4 music types, which I used for my research purpose.

### *A. 5 Personality Traits:*

#### *1. Extraversion*

“Extraversion is marked by pronounced engagement with the external world. Extraverts enjoy being with people, are full of energy, and often experience positive emotions. They tend to be enthusiastic, action-oriented, individuals who are likely to say “Yes” or “Let’s go”; to opportunities for excitement. In groups they like to talk, assert themselves, and draw attention to themselves”.

#### *2. Agreeableness*

“Agreeableness reflects individual differences in concern with cooperation and social harmony. Agreeable individuals”, value getting along with others. They are therefore considerate, friendly, generous, helpful and willing to compromise their interests with others. Agreeable people also have an optimistic view of human nature. They believe people are basically honest, descent and trustworthy.”

### 3. *Conscientiousness*

“Conscientiousness concerns the way in which we control, regulate, and direct our impulses. Impulses are not inherently bad; occasionally time constraints require a snap decision and acting on our first impulse can be an effective response. Also, in times of play rather than work, acting spontaneously and impulsively can be fun. Impulsive individuals can be seen by others as colourful, fun-to-be-with and zany”.

### 4. *Neuroticism*

“Freud originally used the term neurosis to describe a condition marked by mental distress, emotional suffering, and an inability to cope effectively with the normal demands of life. He suggested that everyone shows some signs of neurosis, but we differ in our degree of suffering and out specific symptoms of distress. Today neuroticism refers to the tendency to experience negative feelings”.

### 5. *Openness to New Experience*

“Openness to New Experience describes a dimension of cognitive style that distinguishes imaginative, creative people from down to earth, conventional people. Open people are intellectually curious, appreciative of art and sensitive to beauty. They tend to be, compared to closed people, more aware of their feelings. They tend to think and act in individualistic and non conforming ways.”

## 2.3. Four Music Types

### 1. Relative & Complex Music Type

- Blues, Classical, Folk, Jazz
- Open minded, Politically Liberal, Creative and Intellectual, Patient.

### 2. Energetic and Rhythmic Music Type

- Hip - Hop, Dance
- Confident, Liberal Minded, Gregarious, Feel s attractive and Athletic.

### 3. Upbeat and Conventional Music Type

- Religious, Country, Pop
- Politically conservative, Helpful, Hardworking, Trustworthy.

### 4. Intense and Rebellious Music Type

- Heavy Metal, Rock, Alternative
- Energetic, Adventurous, Impatient, Inquisitive.

In a way if you know person’s music preference you can tell what kind of person they are and this music taste-based personality analysis would even be more lucid than the face to face impressions and interaction.

- Similarities between fans of classical music and heavy metal are that they both are creative and at ease but not outgoing and are impatient.
- People who like upbeat and conventional music like country tend to be more conventional, honest and conservative compared with fans of other genres. People who like country and pop have found to be simplistic according to “Rentfrow”. They just avoid making things unnecessarily
- If one is studying or working efficiently while listening to music may depend how outgoing you are. Background music can help extroverts focus but tends to torment introverts.
- Motivational music can give weightlifter edge. Runners however don’t move faster with the help of motivational songs.
- People who like energetic music like dance and soul are more likely to impulsively blurt out their thoughts, compared with the people who prefer other genres.
- People for strong inclination for classical, folk and jazz, i.e. Reflective and complex music type are more likely to have personality traits associated with Openness and verbal ability. This means they have more creative bent and are quite open and imaginative.
- People who are interested in Upbeat and conventional music type tends towards the personality trait of Extroversion, Agreeableness, Conscientiousness and low level of Openness, verbal and analytic ability. This means they are more conventional than they're classical, jazz and folk music and have strong sociability and dependability.
- Stereotypes are usually to be taken with a grain of salt both physical and social stereotypes, actually have the connection to the actual personality traits of the individual.
- People who are more creative are drawn to jazz and classical music, although each person is different in what they’re interested in.

### 3. Experiment

An experiment that I conducted including both males and females between the teenagers up to seniors, to know the quality of time they give to music and in what conditions. The subjects were all from school, college, professionals, adults and retired seniors.

### 4. Procedure

The subjects were given out the TIPI questionnaire with the questions related to find out their personality and other was STOMP questionnaire for the choice of music they are more inclined towards and the last questionnaire was related to the amount of time they give to music and at what time they prefer listening music and for what reasons. There were a total 800 participants Amongst them 400 were males and 400 were females from the age group of 10- 80 + years After answering the questionnaire the data was analysed manually based on the comments and answers they have given.

### 5. Result and conclusion

Result indicated that these children between the age group of 10 to 14 years have shown the personality trait of Openness to new experience and Agreeableness.

For them listening to music was an important leisure activity, particularly for the children aged 10-14 years. Home music listening was correlated with enjoyment, emotional, mood, social relationships, while school music was linked with motivation for learning and being active and particular lesson content. 13- 19 years old adolescents and youth that are observed to have personality of Openness to new experience had more inclination towards intense and rebellious music. They show the characteristics of being curious, active physically, a risk takers, and intelligent.

20-40 years of adults and middle adulthood people with the personality trait of extraversion had inclination towards Upbeat and Conventional music type. These people tend to be outgoing, helpful to others, cheerful, had positive feelings about themselves, and were more conservative in their views.

40 – 80+ years of later adulthood and older people are found to have personality trait of Agreeableness and prefer Reflex and Complex music type. They possess the imaginative, inventive, tolerant, and had liberal political views.

Music is a medium to bring people together and has been proved a way to promote a sense of community in cultures.

Participants who appeared to answer the questionnaire have also said that classical and self-selected music significantly reduce anxiety and increased relaxation after exposure to a stressor when compared to heavy metal music and silence.

Particularly it is found in all the age groups that self-selected and self-interest music acts as a therapy and helps in coping with anxiety and stress as well and enhances relaxation response in people of all ages as well as in college students and teenagers. Music therapy is a kind of a self-therapy and just have to understand the correct way to enhance overall well-being.

### References

- Allport, G. W. (1937). *Personality: A psychological interpretation*. New York, NY: Holt, Rinehart, & Winston.
- Cattell, R. B. (1990). Advances in Cattellian personality theory. In L. A. Pervin (Ed.), *Handbook of personality: Theory and* (pp. 101–110). New York, NY: Guilford Press.
- Freud, S. (1923/1949). *The ego and the id*. London, England: Hogarth Press. (Original work published 1923).
- Maslow, A. (1970). *Motivation and personality* (2nd ed.). New York, NY: Harper.
- Misra, S., & Shastr, I. Paper published in *International Journal of Research and Scientific Innovation (IJRSI)* titled: Empirical Study: Impact of Music on Personality and Behaviour of Children: ISSN: 2321-2705.
- Misra, S., & Shastr, I. (2014). Paper published in *Asian Journal of Multidisciplinary Studies* titled: The Role of Music in Psychological and Emotional Development: ISSN: 2321-8819

- Misra, S. and Shastr, I. (2014). Paper published in Journal of International Academic Research for Multidisciplinary (JIARM) titled: Reflection of Music on the Personality from Infancy to Childhood: ISSN: 2320 -5083 P. Richard and M. Gary. (2011). The science & Psychology of music performance: Creative strategies for teaching and learning. Oxford Scholarship Online.
- Misra, S. & Shastri, I. (2016), Psychological Interpretation, Based on Statistical Analysis of Impact of Music on Rural and Urban People When Their Music Inclination Collides with Personality and Vice Versa - Comparative Study, International Journal of Indian Psychology, Volume 3, Issue 3, No. 7, DIP: 18.01.129/20160303, ISBN: 978-1-365- 12175-3
- Misra, S., & Shastri, I. (2016). Perceptual Experience and Auditory Inclination of Music According to the Sexuality. Psychology and Behavioral Sciences. Vol.5, pp-7-11. doi: 10.11648/j.pbs.20160501.12
- Olivola, C. Y., & Todorov, A. (2010). Fooled by first impressions? Reexamining the diagnostic value of appearance-based inferences. *Journal of Experimental Social Psychology*, 46(2), 315–324
- Phrenology and the neurosciences: Contributions of F. J. Gall and J. G. Spurzheim. *ANZ Journal of Surgery*, 75(6), 475– However, because careful scientific research did not validate the predictions of the theory, phrenology has now been discredited in contemporary psychology.
- Prochaska, J. O., & Norcross, J. C. (2007). *Systems of* (6th ed.). Pacific Grove, CA: Brooks/Cole; Yalom, I. (1995). Introduction. In C. Rogers, *Way of being*. (1980). New York, NY: Houghton Mifflin
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive (1), 5–14. *psychology: An introduction*. *American Psychologist*, 55
- Sheldon, W. (1940). *The varieties of human physique: An introduction to constitutional psychology*. New York, NY: Harper.

# INTEGRATIVE RESEARCH REVIEW OF THE IMPACTS OF UNILATERAL HAND CLENCHING ON BEHAVIOR: CLINICAL IMPLICATIONS

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## Abstract

Manipulations differentially activating the left or right cerebral hemisphere influence behavior in ways congruent with known theories of hemispheric lateralization of function. For example, rightward eye gaze increases positive mood via left hemisphere activity, and left unilateral nostril breathing increases right hemisphere spatial task performance. Determining under what conditions, and to what extent, simple techniques can be used to alter mental and emotional state holds considerable appeal because methods might be used as adjuncts to other tactics to mitigate negative affect in clinical situations, or to improve cognition in neurocognitive impairment. One method demonstrating promise for altering cognition and emotion, and that could be used in home-settings, is sustained unilateral hand clenching. The goal of the present paper was to analyze the literature to examine i. typical methods used for this manipulation; ii. in what manner such movements alter cognition and/or emotion; iii. whether one versus the other hemisphere, is particularly affected by manipulation. A literature search was conducted using relevant search terms, resulting in 24 articles. Across the literature, a wide range of domains was examined, including memory, decision making, creativity, language, emotion, and social perception, with many examining more than one domain. Nine included neurophysiological measures. Overall, 4 studies reported an impact of only unilateral right-hand clenching and 5 of only unilateral left-hand clenching, on behavior. Twelve reported an impact of both hand clenching conditions. Three reported no impact of hand clenching on performance. Future work should examine unilateral hand clenching in clinical populations.

**Keywords:** *Hemispheric lateralization, unilateral hand clench, emotion, cognition.*

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## 1. Introduction

Manipulations that differentially activate the left or right cerebral hemisphere influence behavior in predictable ways. For example, increasing left, relative to right, hemisphere activity results in increased language ability, memory encoding, approach motivations, risk-taking, and attention to local details. Conversely, increasing right, relative to left, hemisphere activity is associated with superior spatial navigation, memory retrieval, withdrawal motivational states, risk-avoidance, and attention to global aspects of information. Some methods used to differentially activate the left or right hemisphere include mood induction (e.g.; Gable & Harmon-Jones, 2010) dichotic or monaural listening (e.g.; McCormick & Seta, 2012), unilateral gaze (e.g.; Propper, Brunye, Christman, & Januszewski, 2012), bilateral alternating gaze (e.g.; Christman, Garvey, Propper, & Phaneuf, 2003), unilateral finger tapping (e.g.; McElroy & Seta, 2004), unilateral hand clenching (e.g.; Goldstein, et al, 2010), unilateral nostril breathing (e.g.; Jella & Shannahoff-Khalsa, 1993) and sideways body orientation (Drake, 1991).

Delineating under what conditions, and to what extent, simple techniques can be used to alter mental and emotional state holds considerable appeal; for example, such methods might be used as an adjunct to other tactics to mitigate negative affect in clinical situations, or to improve cognition in neurocognitive impairment. Even slightly effective methods that could be easily initiated and sustained in private and as needed by individuals, rather than only within a laboratory or clinical setting, could potentially dramatically improve mental health in some populations.

One method that has demonstrated promise for altering cognition and emotion, and that could theoretically be used in the home-setting, is sustained unilateral hand clenching. Via increased activity of one versus the other hemisphere, sustained unilateral hand clenching may result in a processing bias toward the more activated, contralateral, hemi-cortex, and to a hemisphere-concordant change in behavior. Neurophysiologically, it has been proposed that unilateral hand clenching increases

contralateral activity of cortical motor areas. This cortical activity has been suggested to spread beyond motor cortex, to frontal areas involved in emotion and cognition (e.g.: Harmon-Jones, 2006), resulting in a bias in performance and experience aligned with known lateralization of hemispheric functions associated with a given (more active) hemisphere (and the one that is contralateral to the hand that is engaging in unilateral clenching).

If simply clenching and unclenching one versus the other hand can effectively alter emotion and cognition, this technique could offer patients an opportunity for non-pharmaceutical self-regulation, and potentially to increased self-efficacy, which is known to positively impact treatment effects. The goal of the present paper was to analyze the literature to examine i. typical methods used for this manipulation; ii. if and in what manner such movements alter cognition and/or emotion; iii. whether one versus the other hemisphere, and resultant alterations in behavior, are particularly amenable to such manipulation.

## 2. Methods

A literature search was conducted using the search terms: “unilateral hand clench\*” in conjunction with “cognit\*”, “emotion\*”, “perception”, “behavior\*” brain\*, neuro\* and “emotion\* and cognit\*” in various databases. 47,989 non-duplicate studies were found. Earliest article found was from 1993, and end date was 2021. Articles referencing single unilateral forced nostril breathing, facial contractions, or contractions of other muscles or body parts, or that did not discuss the effects of unilateral hand contractions on cognition or/and emotion were excluded. Hand clenching must have been in neurotypical individuals, and articles had to have been written in English. Articles must have described empirical research, not be a review article, and must have been peer-reviewed. Articles were further screened by reading the abstract and looking for mention of domains of cognition such as perception, memory, decision making, learning, language ability and/or attention, or references to emotion, affect, or mood. Twenty-one articles were removed after a full text screen. Three articles were excluded during data extraction, as their research orientation was ambiguous, and they were ultimately excluded. A total of 47,941 articles were removed for relevance, with the final article count 24 (See Table 1). See Figure 1 for Prisma (Liberati et al., 2009) exclusion and inclusion application.

## 3. Results

Across the literature, a wide range of cognitive, perceptual and emotional tasks were used, over many different areas. The majority of studies examined more than one area. Nine included neurophysiological correlates of hand clenching. 6 used electroencephalograph (EEG), 1 used EEG and evoked response potentials, 1 used Functional Near-Infrared Spectrography (fNIRS), and 1 used Functional Magnetic Resonance Imaging (fMRI). Hand clenching typically resulted in contralateral hemispheric activity (6 studies), though some studies reported ipsilateral activity as well (3).

Specific techniques/instructions for unilateral hand clenching included squeezing/clenching an item (most frequently a ball, 21 studies). Participants were most frequently instructed to ‘clench as hard as you can’ (13 studies), though there were deviations in this instruction. Most commonly, participants squeezed the object for 45 seconds, followed by 15 seconds of rest, in a series of repetitions that varied from 2- 4 times per condition being examined (16 studies), though some seemingly idiosyncratic methods were also used (see Table 2).

Regarding emotion, 12 studies placed their findings within the context of affect. All significant findings were framed within known theories of hemispheric lateralization of emotion. 8 reported increased positive/approach emotions following right unilateral hand clenching, and 5 reported increased negative/withdrawal emotions following left unilateral hand clenching.

Regarding cognition, a wide range of domains were examined, including memory (4), attention (7), sports performance (3), language (1), creativity (3), social perception (4), and 2 that were unable to be classified. Much research examined more than one domain in a given article. Changes in these areas were consistent with known theories of lateralization of cortical functions.

Overall, 4 studies reported an impact of only unilateral right-hand clenching and 5 of only unilateral left-hand clenching, on behavior. Twelve reported an impact of both hand clenching conditions. Three reported no impact of hand clenching on performance.



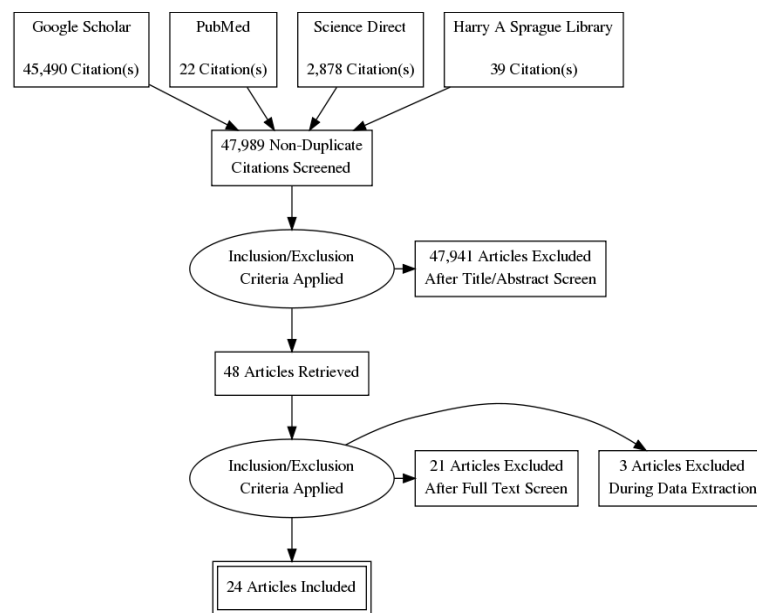
## 4. Discussion

Sustained unilateral hand clenching demonstrates an impact on cognition and emotion in a manner aligned with known hemispheric lateralization of functions. Neurophysiological mechanisms underlying the effects have been proposed, and have been replicated using different methodologies. Future research should examine the utility of unilateral hand clenching on cognition and emotion in clinical settings and populations. Sustained unilateral hand clenching might be a useful adjunct to traditional therapies in these circumstances.

*Table 1. Authors and methods for included studies.*

| Author(s)  | What was Clenched                              | How long they clenched   |
|--|--|--|
| Andreu & Batán, (2018).                                  | Two foam rubber balls (5 cm diameter)          | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>No instructions for squeeze strength  |
| Baumann, Kuhl & Kazén (2005).                            | Soft ball                                      | Experiment 1: Squeeze the ball for 1 minute<br>Experiment 2: Squeeze 3 minutes.<br>No instructions for squeeze strength  |
| Beckmann, Fimpel, & Wergin (2021)                        | Racket grip or tennis ball                     | Squeeze racket or ball for 10-15 seconds<br>Instructed to twice a second for 10-15 seconds with submaximal strength  |
| Cross-Villasana, Gröpel, Doppelmayr & Beckmann (2016)    | 6 cm diameter soft rubber ball                 | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze the ball completely with all fingers.   |
| Gable, Poole, & Cook (2013)                              | 2.8-inch diameter rubber ball                  | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Goldstein, Revivo, Kreitler, & Metuki (2010).            | 7-cm diameter rubber ball                      | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Harlé & Sanfey (2015).                                   | 2-in. diameter rubber ball                     | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Harmon-Jones (2006)                                      | 5-cm diameter ball                             | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Hoskens, Masters, Capio, Cooke, & Uiga (2021).           | Stress ball                                    | 45 seconds pre-task, ten blocks of 30 seconds during the task<br>Instructed to firmly contract a stress ball at a self-paced rate  |
| Mirifar, Cross-Villasana, Beckmann, & Ehrlenspiel (2020) | 6 cm diameter soft rubber ball                 | Squeeze for 45 seconds<br>Instructed to squeeze the ball completely with all fingers.  |
| Moeck, Thomas & Takarangi (2020)                         | A moderately hard stress ball 6.37 cm diameter | 45 seconds, 15-second rest<br>Instructed to "squeeze the ball on-and-off, as hard as you can"  |
| Nicholls, Bradshaw, & Mattingley (2001).                 | Just hand                                      | 2.5 - 3.5 seconds, during presentation of each stimulus<br>No instructions for squeeze strength  |
| Peterson, Shackman, & Harmon-Jones (2008)                | Ball   | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Peterson, Gravens, & Harmon-Jones (2010)                 | Toy ball                                       | 45 seconds, 15-second rest<br>Instructed to squeeze as hard as they could  |
| Propper, McGraw, Brunyá & Weiss (2013)                   | 5cm diameter rubber ball                       | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Propper, Dodd, Christman, & Brunyá (2017)                | Two pink, 5 cm diameter rubber racquetballs    | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Prunier, Christman, & Jasper (2018)                      | Hand dynamometer                               | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Randomly assigned to squeeze the hand dynamometer at 0%, 25%, 50%, 75%, or 100% of their baseline maximum squeeze strength. |
| Rominger, Papousek, Fink, & Weiss (2014).                | Customary training gripper                     | 60-seconds total, followed by 60-second relaxation period<br>No instructions for squeeze strength  |
| Schiff & Truchon (1993)                                  | 2.5in diameter Rubber ball                     | 45 seconds, relax for a few seconds, four times.<br>No instructions for squeeze strength   |
| Schiff & Lamon (1994)                                    | 2.5in diameter sponge ball                     | 45 seconds, then relax, four times with intervals of 10 to 15 seconds between each contraction.<br>Instructed to squeeze as hard as they could.  |
| Schiff, Guirguis, Kenwood & Herman (1998)                | 5.08-cm diameter rubber ball                   | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Stanković & Nešić (2020)                                 | Dynamometer                                    | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze "as firmly as possible"   |
| Turner, Hahn, & Kellogg (2017)                           | Tennis ball                                    | 45 seconds, relax for 15 seconds and then squeeze again for another 45 seconds.<br>Instructed to squeeze as hard as they could   |
| Walz, Doppl, Kaza, Roschka, Platz, & Lotze (2015)        | Rubber ball                                    | Instructed to press the ball with a target force of 33% MVC and 1 Hz clenching rate.   |

Figure 1. Prisma inclusion/exclusion application.



## References

- Andreau, J. M., & Torres Batán, S. (2018). Exploring lateralization during memory through hemispheric pre-activation: Differences based on the stimulus type. *Laterality: Asymmetries of Body, Brain and Cognition*, 24(4), 393–416.
- Baumann, N., Kuhl, J., & Kazén, M. (2005). Left-hemispheric activation and self-infiltration: Testing a neuropsychological model of internalization. *Motivation and Emotion*, 29(3), 135–163.
- Beckmann, J., Fimpel, L., & Wergin, V. V. (2021). Preventing a loss of accuracy of the tennis serve under pressure. *PLOS ONE*, 16(7). E0255060
- Christman, Stephen & Propper, Ruth & Phaneuf, Keri. (2003). Bilateral eye movements enhance the retrieval of episodic memories. *Neuropsychology*. 17. 221-9.
- Cross-Villasana, F., Gröpel, P., Doppelmayr, M., & Beckmann, J. (2016). Correction: unilateral left-hand contractions produce widespread depression of cortical activity after their execution. *PLOS ONE*, 11(2). e0150048
- Drake, R. (1991) Processing Persuasive Arguments: Recall and recognition as a function of agreement and manipulated activation asymmetry. *Brain and Cognition* 15, 83 – 94.
- Gable, P., & Harmon-Jones, E. (2010). The blues broaden, but the nasty narrows: Attentional consequences of negative affects low and high in motivational intensity. *Psychological Science*, 21, 211- 215.
- Gable, P. A., Poole, B. D., & Cook, M. S. (2013). Asymmetrical hemisphere activation enhances global–local processing. *Brain and Cognition*, 83, (3), 337-341.
- Goldstein, A., Revivo, K., Kreitler, M., & Metuki, N. (2010). Unilateral muscle contractions enhance creative thinking. *Psychonomic Bulletin & Review*, 17(6), 895–899.
- Harlé, K. M., & Sanfey, A. G. (2015). Unilateral hand contractions produce motivational biases in social economic decision making. *Neuropsychology*, 29(1), 76–81.
- Harmon-Jones, E. (2006). Unilateral right-hand contractions cause contralateral alpha power suppression and approach motivational affective experience. *Psychophysiology*, 43(6), 598–603.
- Hoskens, M., Masters, R. S. W., Capio, C. M., Cooke, A., & Uiga, L. (2021). The effects of unilateral hand contractions on conscious control in early motor learning. *The Journal of Sport and Exercise Science*, 5(1). 21-31
- Jella, S.A. & Shannahoff-Khalsa, D.S. (1993). The effects of unilateral forced nostril breathing on cognitive performance. *International Journal of Neuroscience*, 73, 61-68.
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gätzsche, P. C., Ioannidis, J. P. A. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *BMJ* 2009; 339:b2700
- McCormick, M., & Seta, J.J. (2011). A new method for selectively enhancing hemisphere processing: Voice frequency amplification influences the strength of attribute framing. *Laterality*, 17, 727-735.

- McElroy, T., & Seta, J. J. (2004). On the other hand am I rational? Hemispheric activation and the framing effect. *Brain and Cognition*, 55(3), 572–580
- Mirifar, A., Cross-Villasana, F., Beckmann, J., & Ehrlenspiel, F. (2020). Effects of the unilateral dynamic handgrip on resting cortical activity levels: A replication and extension. *International Journal of Psychophysiology*, 156, 40–48.
- Moeck, E. K., Thomas, N. A., & Takarangi, M. K. (2019). Using the landmark task to test the underlying assumptions of unilateral contraction research. *Laterality*, 25(3), 363–389.
- Nicholls, M. E., Bradshaw, J. L., & Mattingley, J. B. (2001). Unilateral hemispheric activation does not affect free-viewing perceptual asymmetries. *Brain and Cognition*, 46(1-2), 219-223.
- Peterson, C. K., Gravens, L. C., & Harmon-Jones, E. (2011). Asymmetric frontal cortical activity and negative affective responses to ostracism. *Social Cognitive and Affective Neuroscience*, 6(3), 277-285.
- Peterson, C. K., Shackman, A. J., & Harmon-Jones, E. (2008). The role of asymmetrical frontal cortical activity in aggression. *Psychophysiology*. Jan;45(1):86-92
- Propper, R. E., Dodd, K., Christman, S. D., & Brunyé, T. T. (2016). Relationship between sustained unilateral hand clench, emotional state, line bisection performance, and prefrontal cortical activity: A functional near-infrared spectroscopy study. *Laterality: Asymmetries of Body, Brain and Cognition*, 22(6), 671–689.
- Propper, R. E., McGraw, S. E., Brunyé, T. T., & Weiss, M. (2013). Getting a grip on memory: unilateral hand clenching alters episodic recall. *PLoS ONE*, 8(4). E62474
- Prunier, S., Christman, S., & Jasper, J. (2018). The effects of varying levels of hemispheric activation on episodic memory. *Laterality: Asymmetries of Body, Brain and Cognition*, 23(4), 409–421.
- Rominger, C., Papousek, I., Fink, A. & Weiss, E.M. (2014) Enhancement of figural creativity by motor activation: Effects of unilateral hand contractions on creativity are moderated by positive schizotypy, *Laterality: Asymmetries of Body, Brain and Cognition*, 19:4, 424-438
- Schiff, B. B., Guirguis, M., Kenwood, C., & Herman, C. P. (1998). Asymmetrical hemispheric activation and behavioral persistence: Effects of unilateral muscle contractions. *Neuropsychology*, 12(4), 526–532.
- Schiff, B. B., & Lamon, M. (1994). Inducing emotion by unilateral contraction of hand muscles. *Cortex: A Journal Devoted to the Study of the Nervous System and Behavior*, 30(2), 247–254.
- Schiff, B.B., Truchon, C. (1993). Effect of unilateral contraction of hand muscles on perceiver biases in the perception of chimeric and neutral faces. *Neuropsychologia*, Volume 31, Issue 12, 1993, Pages 1351-1365
- Stanković, M., & Nešić, M. (2020). No evidence of improved emotion perception through unilateral hand contraction. *Perceptual and Motor Skills*, 127(1), 126-141.
- Turner, C.E., Hahn, M.E., & Kellogg, R.T. (2017). Semantic processing in the left versus right cerebral hemispheres following unilateral hand contractions, *Laterality: Asymmetries of Body, Brain and Cognition*, Mar;22(2):219-232.
- Walz, A., Doppl, K., Kaza, E., Roschka, S., Platz, T., & Lotze, M. (2015). Changes in cortical, cerebellar and basal ganglia representation after comprehensive long term unilateral hand motor training. *Behavioural Brain Research*, 278, 393-403.

## DIFFERENCES IN CHILDREN EMOTIONAL VALENCE RATINGS OF WORDS AND PICTURES

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### Abstract

Words and pictures stimuli are often used in study of perception, language, and memory. More and more studies are being done on how emotional words or pictures influence different cognitive processing. However, the emotional rating process of these stimuli has rarely been studied in young children. Especially, no study has investigated emotional rating process on pre-schoolers. This research examines how young children process emotional words and pictures stimuli. More precisely, we measured age (4, 5, and 6-years-old) and sex differences (girls and boys) in emotional valence rating of pictures and words. A corpus of 90 words and 90 pictures was selected from among the emotional databases compiled by Alario & Ferrand (1999), Bonin et al. (2003), Cannard et al. (2006) Syssau & Monnier (2009). This corpus was rated by 92 French children (28 four-years-old children, 16 girls and 12 boys; 34 five-years-old children, 14 girls and 20 boys; and 30 six-years-old children, 13 girls and 17 boys). These ratings were made using a three points emotional valence rating scale (negative, neutral, and positive) based on AEJE scale (Largy, 2018). To keep the rating task simple for the children, the scale labels were using drawings of faces. The 90 Words and 90 pictures were divided in sets of 15 stimuli. Each child rated all sets of stimuli in separate sessions. These sessions were in a random order between words and pictures stimuli sets. Good response reliability was observed in the three age groups. We assessed age differences in the valence ratings: Four-year-old children shown lower mean scores in valence rating (positive, neutral, and negative) than did five-year-old ones who shown lower mean scores in valence rating than did six-year-old ones. Despite a lack of consensus in the literature, we found sex differences in the valence ratings. Girls in each age groups shown higher mean scores in valence rating than did boys. Moreover, results shown a significant difference between pictures and words ratings. Children better rated words than pictures in each age group and sex. Besides, analyses revealed significant differences in emotional valence rating between negative, neutral, and positive words and pictures stimuli. Positive words and pictures stimuli were better rated by children than negative ones which were better rated than neutral ones. Future research will compile this corpus in a database, and it could become a worthwhile tool to control emotional verbal and visual stimuli in experimental design for children.

**Keywords:** *Emotional rating, emotional valence, emotional pictures stimuli, emotional words stimuli.*

### 1. Introduction

More and more studies are being done on how emotional words or pictures influence different cognitive processes. Literature highlights influences of emotional words or pictures on a various of cognitive processes: For instance, emotional words and pictures modulated attention (Sutton & Lutz, 2018), are better remembered (Talmi & Moscovitch, 2004). But what is an emotional word or an emotional picture? According to Lang, Bradley and Cuthbert (1997) *dimensional theory*, emotional stimulus can be characterized by two main fundamental dimensions: valence (pleasant vs. unpleasant) which determines the polarity of emotional activation and arousal (calming vs. exciting) which determines its intensity. If influence of emotional words and pictures on complex cognitive processes is becoming a widely research' topic, only few studies examined emotional valence rating process itself. Especially, no study has investigated emotional valence rating process on pre-schoolers. Currently, only few studies established emotional words or pictures stimuli databases for older children. These databases indicated age or sex differences in emotional valence rating process of words and pictures.

For words, three studies investigated the differences between age or sex in children's emotional ratings in English and French languages. In English language, Vasa et al. (2006) provided emotional valence ranges for 81 words rated by 174 children (9-, 10- and 11-year-old). In French language, two

databases provided emotional valence ranges for 600 to 1031 words rated by 5-, 7-, 9-, 11- and 13-year-old children (Monnier & Syssau, 2009; FANChild; Monnier & Syssau, 2017, Monnier, Syssau et al., 2021). For age, Vasa et al. observed that children's emotional ratings were similar across the 3 age groups (9-, 10-, and 11-year-old). In contrary, Monnier and Syssau (2009, 2017, Monnier, Syssau et al., 2021) showed that with increasing age, the percentage of words rated positive decreased, and the neutral ones increased while negative ones remained stable (5-, 7-, 9-year-old). Moreover, with older children (7-, 9-, 11-, 13-year-old), the same findings are observed: the tendency to judge words positively decreased with age (Monnier, Syssau et al., 2021). For sex, Vasa et al. (2006) reported that girls provided more extreme valence ratings than did boys. However, Monnier and Syssau (2009, 2017, Monnier, Syssau et al., 2021) designs did not reveal sex differences in emotional valence ratings.

For pictures, three studies investigated age or sex differences on children's emotional ratings. For age, Zamora, et al. (2020) did not observed significant age-related differences in valence ratings between 8- to 10-year-old children and 10- to 12-year-old ones. McManis et al. (2001), observed that children (7- to 11-year-old) and teenagers (12- to 14-year-old) showed similar valence ratings of pictures than adults did. However, their results showed that younger children aged 7 rated negative valence pictures more positively and with less arousal than teenagers and adults. Cordon et al. (DAPS; 2013) showed age-related differences between children aged 7- to 9-year-old and young adults on valence ratings of pictures. Children tended to rate positive and neutral pictures more positive and arousing than did adults. No age differences were found for negative or aversive pictures. For sex, McManis et al. (2001) design indicated sex differences for children, girls were more reactive than boys to unpleasant material. No sex differences were assessed in the two other study.

There was a lack of consensus in the literature concerning age or sex differences in children's emotional valence rating process of words and pictures. Also, no published studies examined words and pictures influence on emotional valence rating in pre-schoolers aged 4- to 6-year-old. So, we anticipated a need of data for early childhood in the area.

## 2. Objectives

This research examines how young children process emotional words and pictures stimuli. More precisely, we measured age (4, 5, and 6-year-old) and sex differences (girls and boys) in emotional valence rating of pictures and words. We tested the hypothesis that age will influence valence rating and that no sex differences will occur according to Monnier and Syssau (2009) previous work on French children around the ages of the current study (5-, 7-, and 9-year-old).

## 3. Methods

### 3.1. Participants

92 French children participated in the study: 28 four-years-old children (16 girls and 12 boys, mean age: 4-year-old and 7 months,  $SD=0.35$ ); 34 five-years-old children (14 girls and 20 boys, mean age: 5-year-old and 8 months,  $SD=0.32$ ) and 30 six-years-old children (13 girls and 17 boys, mean age: 6-year-old and 6 months,  $SD=0.38$ ). The children were recruited from a variety of school located in Region Centre Val de Loire in France. This area included a broad range of socioeconomics strata. All children were native French speakers.

### 3.2. Materials

The emotional valence rating test contained a set of 90 words and 90 pictures corresponding. These words and pictures sets were divided into three emotional valences (i.e., 30 negatives, 30 neutrals and 30 positives for both words and pictures stimuli). Words were selected on the basis of age of acquisition (0- to 4-year-old) defined by Alario & Ferrand (1999) and subjective frequency defined by Bonin et al. (2003). Pictures were selected from among the emotional databases compiled by Bonin, Méot, Aubert, Malardier, Niedenthal and Capelle-Toczec (2003), Bonin, Peerman, Malardier, Méot and Chalard (2003), and from the identification and denomination norms (3-year-old) developed by Cannard, Bonthoux, Blaye, Scheuner, Schreiber and Trinquart (2006).

### 3.3. Rating scale

The most widely used emotional valence rating scale in the field is the Self-Assessment Manikin and its updates (SAM; Lang, 1980). This non-verbal tool using drawn characters consisted in a 9 points scale (very unpleasant to very pleasant). For young children, the number of points in the scale has to be chosen according to the age and development specificities. Following the procedure developed by Syssau

and Font (2005), a 3 points scale (i.e., negative, neutral, and positive) was used. To keep the rating task simple for the young children, the 3 points scale were labelled, using drawn faces showing respectively: sad mouth and eyes, a straight mouth and eyes and a smiling mouth and eyes. Drawn faces were selected from AEJE scale (Largy, 2018). AEJE scale is a French tool adapted specifically to the understanding of young children and non-readers ones.

### 3.4. Procedure

Words and pictures stimuli sets were divided into 12 sets of 15 stimuli. Each child rated all sets of stimuli in twelve separate sessions. Children were asking to finger point on the 3 points scale the face that best describe their initial feeling upon the stimulus presentation. The children were tested individually in a quiet room in their school. Each session lasted approximatively 2 minutes. Around two sessions for each child were conducted over a period of time ranging from 1 hour to 1 day. At the first rating testing session, the experimenter showed the drawn faces and said “This person is sulking, is unhappy”, “This person doesn’t care, is indifferent” and “This person is smiling, is happy”. Then three practice items were reviewed. A correct discrimination of the stimulus ‘emotional valence scores 1 point, an incorrect discrimination or a lack of response score 0 point.

## 4. Results

### 4.1. Children’s ratings reliability

In order to assess the reliability of the assignment of words and pictures to the three different emotional valence, tests of internal consistency were conducted on the rating data. In each modality (i.e., words or pictures), and for each kind of emotional valence (i.e., negative or neutral or positive), correlations were all significant ( $p < .05$ ). The stimuli are correlated with a significant level ( $\alpha = .82$ ). More precisely, negative stimuli were correlated with an alpha level of .76, neutral ones were correlated with an alpha level of .094 and the positive ones with an alpha level of .72. These fairly high and significant correlations indicated a good level of internal coherence in the three age groups. These results validated our categorization of stimuli sets in the three different emotional valences.

### 4.2. Children’s emotional valence ratings

First, mean scores from the three emotional valences (max. = 30) were computed for each stimulus modality (i.e., words or pictures) for each age (4-, 5- and 6-year-old) and each sex (boys and girls). The Table 1 presented children’s mean scores of emotional valence rating for each stimulus modality (i.e., words and pictures), age (4-, 5-, 6-year-old) and sex (boys and girls). Second, mean scores were analysed using repeated measures (General Linear) that included age group (4- vs. 5- vs. 6-year-old) and sex (boys vs. girls) as a between-subjects factor, and stimulus modality (words vs. pictures), and valence (negatives vs. neutral vs. positive) as within-subject factors. As expected, we observed age differences in the valence ratings [(F(2,87) = 12,518;  $p < .000$ )], ( $\eta^2 = 0,22$ ): Four-years-old children shown lower mean scores in valence rating (positive, neutral, and negative) than did five-years-old ones ( $p < .00$ ) who shown lower mean scores in valence rating than did six-years-old ones ( $p < .00$ ). Despite a lack of consensus in the literature, we found sex differences in the valence ratings. Girls shown higher mean scores in valence rating than did boys [(F(1,87) = 22,69;  $p < .000$ )], ( $\eta^2 = 0,20$ ). Moreover, results shown a significant difference between pictures and words ratings. Children better identified words valence than pictures valence in each age groups and sex [(F(1,87) = 4,61;  $p < .03$ )], ( $\eta^2 = 0,05$ ). Besides, analyses revealed significant differences in emotional valence rating between negative, neutral, and positive words and pictures stimuli [(F(2,17) = 231,84;  $p < .000$ )], ( $\eta^2 = 0,72$ ). Positive words and pictures stimuli were better identified by children than negative ones ( $p < .00$ ) which were better identified than neutral ones ( $p < .00$ ).

Table 1. Children's mean scores of emotional valence ratings for each stimulus modality (i.e., words and pictures), valence (i.e., negative, neutral, and positive) age (i.e., 4-, 5-, and 6-year-old) and sex (i.e., boys and girls).

| Stimulus modality | Age   | Sex   | Negative (Mean. SD) | Neutral (Mean. SD) | Positive (Mean. SD) |
|-------------------|-------|-------|---------------------|--------------------|---------------------|
| Words             | 4 ans | Boys  | 19 (3)              | 7 (6)              | 26 (3)              |
|                   |       | Girls | 22 (4)              | 4 (4)              | 29 (1)              |
|                   | 5 ans | Boys  | 19 (5)              | 8 (8)              | 27 (4)              |
|                   |       | Girls | 22 (4)              | 11 (7)             | 28 (4)              |
|                   | 6 ans | Boys  | 20 (4)              | 12 (8)             | 26 (3)              |
|                   |       | Girls | 22 (3)              | 17 (9)             | 27 (2)              |
| Pictures          | 4 ans | Boys  | 20 (5)              | 4 (6)              | 28 (2)              |
|                   |       | Girls | 22 (5)              | 2 (4)              | 29 (2)              |
|                   | 5 ans | Boys  | 17 (6)              | 7 (9)              | 25 (5)              |
|                   |       | Girls | 22 (3)              | 14 (9)             | 27 (2)              |
|                   | 6 ans | Boys  | 19 (6)              | 10 (9)             | 26 (4)              |
|                   |       | Girls | 21 (2)              | 20 (7)             | 27 (3)              |

## 5. Discussion and conclusion

Experimental paradigms are widely spread to study the relationships between cognitive processes and emotional stimuli. This is the first study to examine pre-schoolers' emotional valence discrimination of negative, neutral, and positive words, and pictures. Our work highlights that emotional valence discrimination is influenced by both individual (age, sex) and material (modality of the stimulus, kind of emotional valence) factors.

First, we observed as expected an effect of age on emotional valence ratings. Attribution of an emotional valence for a word or a picture increased with age from 4- to 6-year-old. This result indicates a crucial developmental period at these ages of emotional valence discrimination for words and pictures stimuli. In fact, Syssau & Monnier (2009) also report a period of change and instability in children valence discrimination of words between 5-, 7- and 9-year-old. Our results extending this period of age. On contrary to Zamora et al. (2020) and Cordon et al (2013) studies which did not report age-related differences, our study suggests a development of emotional valence discrimination also for pictures. In addition, our results indicated that emotional valence discrimination is modulated by the modality of the stimulus (i.e., words or pictures) and the kind of emotional valence to process (i.e., negative or neutral or positive). The modality of stimulus has an influence on 4- to 6-year-old children emotional valence ratings. Indeed, children better rated words than pictures. This may be explained by a dominance of the auditory modality in young children. More precisely the auditory stimuli are more salient than visual one for young children aged 4-year-old (Soultsky & Napolitano, 2003).

Second, we observed a sex difference in emotional valence ratings. Girls in each age groups and each modality of stimulus showed higher mean scores than did boys. This finding is in accordance with previous studies that show a better sensitivity of girls to emotional words or pictures (McManis, et al., 2001; Vasa et al., 2006).

Then, we observed significant differences in children's means scores for negative, neutral and positive stimuli. Positive words and pictures were better identified than negative and neutral ones. These results confirm that young children tend to be influenced by a positive bias while they identify emotional valence of words or pictures. This positive bias has been observed with children aged 5- to 7-year-old in processing emotional valence of words, and with children aged 7 in processing emotional valence of pictures (McManis et al., 2001; Monnier & Syssau, 2009). If attribution of positive valence is an easy task for young children, attribution of a neutral one seems to be difficult. Indeed, results indicated that neutral words and pictures are the most failed in the emotional valence rating test. Attribution of a neutral valence to a stimulus is age dependant. In their designs, Monnier and Syssau (2009) showed that attribution of neutral emotional valence for words especially increased between 7- and 9-year-old. Our work also indicates an increase of neutral valence attribution across 4- to 6-year-old for both words and pictures.

Our work opens perspectives in understanding emotional valence discrimination of verbal and visual stimuli in pre-schoolers. Future research will compile this corpus of words and pictures in a database, and it could become a worthwhile tool to control emotional verbal and visual stimuli in experimental design for children.

## References

- Alario, F. X., & Ferrand, L. (1999). A set of 400 pictures standardized for French: Norms for name agreement, image agreement, familiarity, visual complexity, image variability, and age of acquisition. *Behavior Research Methods, Instruments, & Computers*, *31*(3), 531-552. <https://doi.org/10.3758/BF03200732>
- Bonin, P., Méot, A., Aubert, L. F., Malardier, N., Niedenthal, P., & Capelle-Toczek, M. C. (2003). Normes de concrétude, de valeur d'imagerie, de fréquence subjective et de valence émotionnelle pour 866 mots. *L'année Psychologique*, *103*(4), 655-694. <https://doi.org/10.3406/psy.2003.29658>
- Bonin, P., Peereman, R., Malardier, N., Méot, A., & Chalard, M. (2003). A new set of 299 pictures for psycholinguistic studies: French norms for name agreement, image agreement, conceptual familiarity, visual complexity, image variability, age of acquisition, and naming latencies. *Behavior Research Methods, Instruments, & Computers*, *35*(1), 158-167. <https://doi.org/10.3758/BF03195507>
- Cannard, C., Bonthoux, F., Blaye, A., Scheuner, N., Schreiber, A. C., & Trinquart, J. (2006). BD2I: Normes sur l'identification de 274 images d'objets et leur mise en relation chez l'enfant français de 3 à 8 ans. *Année psychologique*, *106*, 375-396. (hal-00153698)
- Cordon, I. M., Melinder, A. M., Goodman, G. S., & Edelman, R. S. (2013). Children's and adults' memory for emotional pictures: Examining age-related patterns using the Developmental Affective Photo System. *Journal of experimental child psychology*, *114*(2), 339-356. <https://doi.org/10.1016/j.jecp.2012.08.004>
- McManis, M. H., Bradley, M. M., Berg, W. K., Cuthbert, B. N., & Lang, P. J. (2001). Emotional reactions in children: Verbal, physiological, and behavioral responses to affective pictures. *Psychophysiology*, *38*(2), 222-231. <https://doi.org/10.1111/1469-8986.3820222>
- Lang, P. J. (1980). Self-assessment manikin. *Gainesville, FL: The Center for Research in Psychophysiology, University of Florida*.
- Lang, P. J., Bradley, M. M., & Cuthbert, B. N. (1997). International affective picture system (IAPS): Technical manual and affective ratings. *NIMH Center for the Study of Emotion and Attention*, *1*(39-58), 3.
- Largy, P. (2018). De l'auto-évaluation de l'état émotionnel du jeune enfant : l'échelle AEJE. *A.N.A.E.*, *155*, 461-469.
- Martins, D. (1993). *Les facteurs affectifs dans la compréhension et la mémorisation de textes*. Paris: PUF.
- Monnier, C., & Syssau, A. (2017). Affective norms for 720 French words rated by children and adolescents (FANchild). *Behavior research methods*, *49*(5), 1882-1893. <https://doi.org/10.3758/s13428-016-0831-0>
- Sloutsky, V. M., & Napolitano, A. C. (2003). Is a picture worth a thousand words? Preference for auditory modality in young children. *Child development*, *74*(3), 822-833. <https://doi.org/10.1111/1467-8624.00570>
- Sutton, T. M., & Lutz, C. (2019). Attentional capture for emotional words and images: The importance of valence and arousal. *Canadian Journal of Experimental Psychology/Revue canadienne de psychologie expérimentale*, *73*(1), 47. <https://doi.org/10.1037/cep0000154>
- Syssau, A., Monnier, C. (2009). Children's emotional norms for 600 French words. *Behavior Research Methods* *41*, 213-219 <https://doi.org/10.3758/BRM.41.1.213>
- Syssau, A., Yakhoulfi, A., Giudicelli, E., Monnier, C., & Anders, R. (2021). FANCat: French affective norms for ten emotional categories. *Behavior Research Methods*, *53*(1), 447-465. <https://doi.org/10.3758/s13428-020-01450-z>
- Syssau, A., & Font, N. (2005). Evaluations des caractéristiques émotionnelles d'un corpus de 604 mots. *Bulletin de psychologie*, (3), 361-367. <https://doi.org/10.3917/bupsy.477.0361>
- Talmi, D., Moscovitch, M. (2004). Can semantic relatedness explain the enhancement of memory for emotional words?. *Memory & Cognition* *32*, 742-751 <https://doi.org/10.3758/BF03195864>
- Vasa, R. A., Carlino, A. R., London, K., & Min, C. (2006). Valence ratings of emotional and non-emotional words in children. *Personality and individual differences*, *41*(6), 1169-1180. <https://doi.org/10.1016/j.paid.2006.03.025>
- Zamora, E. V., Richard's, M. M., Introzzi, I., Aydmune, Y., Urquijo, S., Olmos, J. G., & Marchewka, A. (2020). The Nencki Affective Picture System (NAPS): A Children-Rated Subset. *Trends in Psychology*, *28*(4), 477-493. <https://doi.org/10.1007/s43076-020-00029-z>



## EXAMINING ATTITUDES TOWARDS AGEING

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### Abstract

The purpose of this study was to identify predictors of ageism. Ageism occurs when demeaning attitudes are directed toward individuals in a certain age group. Several theories have been postulated as to why ageism towards older adults occurs, such as contact theory (i.e., the quantity and quality of contact with older adults), terror management theory (i.e., anxiety and fear of mortality), and modernization theory (i.e., a belief that the skills of older adults are obsolete). Research in this area has selectively tested different theories of ageism; however, these studies have failed to examine multiple theories within one model. The current study examined contact theory, terror management theory, and modernization theory with respect to ageism. We examined survey data from 291 undergraduate students at a small university in Atlantic Canada. The survey was conducted online. Demographic characteristics, contact with grandparents and non-related older adults, and quality of interactions were measured using self-generated questionnaires. In addition, measures of personality, gratitude, ageing anxiety, and fear of death were administered. Also, older adults' knowledge, burden/contributions to family/society, and attitudes toward the elderly were measured. A hierarchical multiple linear regression analysis was conducted predicting ageist attitudes. The overall model was statistically significant and accounted for 63% of the variance. Both age and gender were found to be significant predictors; younger adults and men had higher scores on ageism. As well, participants who reported lower quality of contact with grandparents during childhood, and lower scores on their current quality of contact with older adults were more likely to endorse ageist attitudes. Of the five personality factors, lower scores on Agreeableness were a significant predictor. Finally, anxiety towards ageing (measuring terror management theory) and perceiving older adults as a burden (measuring modernization theory) predicted ageism. According to these findings, all ageism theories had an impact on ageist attitudes, but modernization theory contributed the most unique variance to the model. Overall, further research should continue to investigate the multidimensional construct of ageism.

**Keywords:** *Ageism, terror management, modernization theory, contact theory, personality.*

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### 1. Introduction

Due to the rapidly ageing population in Canada, people aged 65 and older are projected to comprise nearly a quarter of the Canadian population by 2030 (Government of Canada, 2014). Older adults in Canada often report having experienced ageism (Palmore, 2004). Butler (1969) defined ageism as a prejudicial bias by one age group towards another age group. Several theories have been postulated as to why ageism occurs, such as contact theory (i.e., the quantity/quality of contact with older adults), terror management theory (i.e., anxiety and fear of mortality), and modernization theory (i.e., skills of older adults are seen as obsolete). According to the literature, contact theory suggests that contact with older adults is negatively associated with ageist attitudes and emphasizes the importance of intergenerational contact (Boswell, 2012; Chonody et al., 2014). Terror management theory suggests that ageist attitudes arise when individuals have greater anxiety towards ageing (Allan et al., 2014; Boswell, 2012) and fear of death (Chonody et al., 2014; Galton et al., 2020). Modernization theory suggests that individuals who view older adults as a burden are more likely to engage in ageist attitudes compared to individuals who do not (Huang, 2013; Yoon et al., 2017).

Other research on ageist attitudes has focused on demographic, personality, and individual characteristics. For example, gender differences are noted in ageism research; cisgender men score higher on ageist attitudes than cisgender women (Boswell, 2012; Chonody et al., 2014; Galton et al., 2020). In addition, researchers have shown that ageist attitudes are most negative and prevalent among younger adults, including college and undergraduate students (Gellis et al., 2003; Kimuna et al., 2005). In terms of personality, some researchers have found agreeableness and openness are significant predictors of less

ageist attitudes (Allan et al., 2014; Galton et al., 2020), whereas other researchers have found that extraversion (Galton et al., 2020) and conscientiousness (Allan et al., 2014) are significant predictors of less ageist attitudes. In addition, significant negative correlations have been found between dispositional gratitude and ageist attitudes, and between gratitude and ageing anxiety (Allan et al., 2014). Given the prevalence of ageism and the rapidly ageing population in Canada, it is important to identify predictors of age-related attitudes so that it may be possible to reduce ageism through intervention and education.

The current study aimed to examine ageist attitudes among undergraduate students towards older adults. Previous research in this area has selectively tested theories of ageism among undergraduate and college students (i.e., contact theory, terror management theory, and modernization theory). However, these studies have failed to examine the multiple different theories of ageism in one model. The current study investigated three proposed theories of ageism, along with the influence of personality factors and gratitude, to facilitate a comprehensive understanding of the predictors of ageism towards older adults among undergraduate university students.

## 2. Method

### 2.1. Participants

A convenience sample from undergraduate psychology classes at a Canadian east coast university was recruited via in-class announcements. A total of 291 participants completed the online survey, which was administered using Qualtrics, an online survey platform. The sample consisted of 214 women (73.5%), 68 men (23.4%). The remaining 3.1% of participants identified as non-binary, transgender female, other, or chose not to disclose this information. Ages ranged from 18 to 48.58 years ( $M = 21.90$ ;  $SD = 6.09$ ). Within this sample, most participants reported having some university completed (51.5%). The majority of the sample reported being born in Canada (88.3%), whereas 11.7% of participants reported being born in another country. In addition, 70.8% of participants reported being born in a city, and the remaining participants reported being born in the countryside.

### 2.2. Measures

**Demographic Questionnaire.** Demographic variables (such as age, gender, religiosity) were measured using a self-developed questionnaire.

**Contact.** Frequency of contact with grandparents and non-related older adults (past and present), and quality of interactions were measured using self-generated questionnaires to assess contact theory.

**Big-Five Inventory-2 (BFI-2; Soto & John, 2017).** Personality factors were measured using the BFI-2. The BFI-2 includes 60 items in total and uses a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*strongly agree*). The BFI-2 demonstrated good reliability for the five personality factors, including Extraversion ( $\alpha = .87$ ), Agreeableness ( $\alpha = .75$ ), Open Mindedness ( $\alpha = .81$ ), Conscientiousness ( $\alpha = .85$ ) and Negative Emotionality ( $\alpha = .89$ ).

**Gratitude Questionnaire-6 (GQ-6; McCullough et al, 2002).** Gratitude was measured using the GQ-6. This measure contains 6 items that are scored using a 7-point Likert scale ranging from 1 (*disagree strongly*) to 7 (*strongly agree*). The GQ-6 demonstrated good reliability ( $\alpha = .80$ ).

**Terror Management.** The Collett-Lester Fear of Death Scale Version 3.0 (Lester & Abdel-Khalek, 2003) and the Anxiety About Aging Scale (AAS; Lasher & Faulkender, 1993) were used to measure terror management theory. The Collett-Lester Fear of Death Scale Version 3.0 contains 28 items and was modified to be scored using a 5-point Likert scale ranging from 1 (*Not at all*) to 5 (*Very*). This scale demonstrated excellent reliability overall ( $\alpha = .95$ ) and for each of the 4 subscales including: Your Own Death ( $\alpha = .91$ ), Your Own Dying ( $\alpha = .89$ ), The Death of Others ( $\alpha = .86$ ), and The Dying of Others ( $\alpha = .89$ ).

In turn, the AAS contains 20 items which are scored using a 5-point Likert scale ranging from 1 (*disagree strongly*) to 5 (*agree strongly*) and contains 4 factors: Fear of Old People, Psychological Concerns, Physical Appearance and Fear of Losses. Several items (items 1, 3, 4, 7, 9, 10, 11, 12, 13, 15, 16, 18, 19, and 20) on the AAS were reverse coded to indicate that higher scores meant more anxiety. This coding was a modification from the AAS scale (Lasher & Faulkender, 1993) because higher scores indicated lower anxiety on the original measure. Also, we reverse coded item 20 because it appeared to us to be necessary for the direction of the scale and it improved the total reliability of the scale from .78 to .83 and improved the reliability of factor Physical Appearance from .31 to .59. Each of the three remaining factors demonstrated acceptable reliability including: Fear of Old People ( $\alpha = .85$ ), Psychological Concerns ( $\alpha = .77$ ), and Fear of Losses ( $\alpha = .75$ ).

**Modernization Theory.** The Survey of Knowledge and Attitudes on Elderly Issues (NSO, 2011 as cited in Yoon et al., 2017) was used to measure modernization theory. Items on this measure were gathered in accordance with Yoon and colleagues' (2017) research. This measure consists of 18 items,

including 9 positively phrased statements and 9 negatively phrased statements about older adults. Positively phrased items were reverse coded to indicate that higher scores mean more modernization (i.e., the belief that the skills of older adults are outdated or obsolete). Item 5 was re-written from “Older people belong in temples” to “Older people belong in institutions” to accommodate for cultural relevance. The overall scale demonstrated good reliability ( $\alpha = .80$ ).

*The Fraboni Scale of Ageism (FSA; Fraboni et al., 1990)* was used to measure ageist attitudes. The FSA contains 29 items divided into 3 factors and is scored using a 4-point Likert scale ranging from 1 (*strongly disagree*) to 4 (*strongly agree*). The FSA demonstrated excellent total reliability ( $\alpha = .92$ ).

### 2.3. Procedure

Students were directed to the online survey platform if they wished to participate in the study. Before completing the survey, participants were given detailed information about the study (e.g., purpose and procedure), their rights (e.g., voluntary participation and confidentiality), their incentive (e.g., receive a half bonus mark in an eligible psychology class of their choosing), and were then asked to provide informed consent. Following informed consent, participants completed the demographic and contact measures, followed by the remaining measures in random order. The survey took about 20 minutes to complete and was anonymous.

## 3. Results

A hierarchical multiple linear regression analysis was conducted predicting ageist attitudes. On the first step age and gender (men and women only as there were too few members in other gender groups) were added to control for their effects. On the second step religiosity, quantity and quality of interactions with grandparents and with older adults in both the present and the past were added. On the third step, personality factors including Extraversion, Agreeableness, Open Mindedness, Conscientiousness, and Negative Emotionality were added. On the fourth step, gratitude, fear of death, ageing anxiety, and modernization scores were added. Tolerance and variance inflation factors were within acceptable limits. The overall model was statistically significant ( $F_{(20,210)} = 17.94, p \leq .001$ ) and accounted for 63% of the variance.

The first step was statistically significant ( $R^2 = .12; F_{(2, 228)} = 15.77, p \leq .001$ ) and accounted for 12% of the variance. Both age and gender were significant predictors of ageism. Older adults were found to have lower FSA scores compared to younger adults, indicating lower ageist attitudes ( $\beta = -.20, sr^2 = 0.04$ ). In addition, men had higher FSA scores compared to women, indicating higher ageist attitudes ( $\beta = .28, sr^2 = 0.08$ ).

The second step was statistically significant ( $\Delta R^2 = .17, F_{change(9, 219)} = 5.69, p \leq .001$ ). The significant predictors at this step were quality of contact with grandparents during childhood ( $\beta = -.25, sr^2 = 0.03$ ) and current quality of contact with older adults ( $\beta = -.18, sr^2 = 0.02$ ). Therefore, participants who reported lower quality of contact with grandparents during childhood and participants who reported lower current quality of contact with older adults were more likely to score higher on ageist attitudes.

On the third step, personality factors were added and made a statistically significant contribution to the model ( $\Delta R^2 = .10, F_{change(5, 214)} = 6.81, p \leq .001$ ). The significant predictor at this step was the personality factor Agreeableness ( $\beta = -.280, sr^2 = 0.05$ ). Participants who scored lower on Agreeableness scored higher on ageist attitudes.

The final step of the model was statistically significant ( $\Delta R^2 = .25, F_{change(4, 210)} = 34.87, p \leq .001$ ). Significant predictors at this step were anxiety about ageing ( $\beta = .29, sr^2 = 0.04$ ) and modernization ( $\beta = .48, sr^2 = 0.14$ ). Therefore, participants who scored higher on anxiety about ageing and participants who scored higher on modernization scored higher on ageist attitudes.

The adjusted  $R^2$  of .596 suggests that approximately 60% of the variance in ageism is attributed to being younger, cisgender male, having lower quality of contact with grandparents during childhood, having lower current quality of contact with older adults, lower Agreeableness, higher anxiety about ageing, and higher degree of modernization.

## 4. Discussion

The current study investigated multiple predictors of ageism. The influence of demographic characteristics, personality factors, and gratitude were explored in relation to ageist attitudes. In addition, the current study examined multiple theories of ageism (i.e., contact theory, terror management theory, and modernization theory) in one model. In our study, age and gender were found to be important predictors of ageism. In addition, lower scores on agreeableness predicted higher scores on ageism. As

well, all ageism theories had an impact on ageist attitudes, but modernization theory (the belief that the skills of older adults are obsolete) contributed the most unique variance to the model.

Researchers have found that demographic characteristics are significantly associated with ageist attitudes. For instance, individuals who are younger in age (Gellis et al., 2003; Kimuna et al., 2005) and who identify as cisgender men (Boswell, 2012; Chonody et al., 2014; Galton et al., 2020) are more likely to display ageist attitudes. In accordance with the literature, the current study found a significant negative correlation between age and ageist attitudes, and cisgender men scored higher on ageist attitudes compared to cisgender women. These results suggest that interventions targeting younger adults would be important to minimize ageist attitudes. In addition, interventions targeting ageist attitudes should consider the role of gender differences when addressing ageism.

Researchers have also found that personality factors and individual characteristics have been associated with ageist attitudes (Allan et al., 2014; Galton et al., 2014). The current study found that lower scores on agreeableness were a significant predictor of ageist attitudes, which is in accordance with the literature. In addition, previous researchers have found that lower scores on gratitude are a significant predictor of ageist attitudes (Allan et al., 2014). On the contrary, the results of the current study did not find significant correlations between gratitude and ageist attitudes. Future studies should continue to investigate the influence of interpersonal characteristics in relation to ageist attitudes as this may be an important area for intervention.

According to contact theory, intergenerational contact is negatively associated with ageist attitudes (Boswell, 2012; Chonody et al., 2014). The results of the current study support contact theory; however, our results emphasize the importance of the quality of intergenerational interactions as opposed to the frequency of contact. Some researchers have found that perceived quality of intergenerational contact, instead of frequency of intergenerational contact, is a stronger predictor of ageist attitudes (Drury et al., 2016). Although frequency of contact is highlighted as an important component of contact theory, the current study found no significant correlations between ageist attitudes and frequency of interactions with grandparents or older adults in childhood or currently in adulthood. What appears to be an important factor is the quality of interactions one has with grandparents and older adults. According to our results, lower quality of interactions with grandparents during childhood and with older adults during adulthood were significant predictors of ageist attitudes. These results highlight that having meaningful intergenerational interactions could be important factors to minimize ageist attitudes.

Terror management theory suggests that ageing anxiety (Allan et al., 2014; Boswell, 2012) and fear of death (Chonody et al., 2014; Galton et al., 2020) are positively associated with ageist attitudes. The results of the current study partially support terror management theory. Although no significant correlations were found between fear of death and ageist attitudes, ageing anxiety was found to be a significant predictor of ageist attitudes. These findings suggest that individuals who are more anxious towards the ageing process are more likely to display ageist attitudes. These findings are in accordance with current research on terror management theory and ageing anxiety; individuals tend to distance themselves from reminders of mortality that provoke anxiety, such as older adults (Allan et al., 2014). These findings suggest that strategies to minimize ageing anxiety would be important interventions to minimize ageist attitudes.

Modernization theory (i.e., perceiving older adults as outdated, irrelevant, and as a burden) contributed the most unique variance to ageist attitudes in the present study. However, current research surrounding modernization theory and ageist attitudes is relatively understudied using empirical approaches and appears to be complex. For instance, Yoon and colleagues (2017) found that living in a modernized area was associated with both positive and negative perceptions towards the elderly. In turn, Yoon and colleagues' postulate that living in a capitalistic environment may cause adults to become more opinionated towards the elderly in both directions. With the ageing population in Canada and the shift towards modern society, modernization theory should be further investigated in relation to ageist attitudes.

Overall, this research adds to the growing body of literature that accounts for why ageist attitudes may exist and suggests that ageism is a multidimensional construct that should be further investigated. Results of the current study may be useful for designing undergraduate curricula to better educate students and future employees to combat ageism. For instance, ageing courses may introduce intergenerational contact, such as through volunteer work or field placements for course credit; integrating extended contact theory into educational courses would be recommended (Lytle & Levy, 2019; Wright et al., 1997). Extended contact theory states that knowing an in-group member has a close relationship with an out-group member could lead to more positive intergroup attitudes without necessitating in-person contact with out-group members. Therefore, educational programs integrating extended contact theory could potentially serve to minimize ageist attitudes (Drury et al., 2016). In addition, intervention strategies surrounding ageing anxiety would also be beneficial to minimize ageist attitudes. Finally, future research should continue to investigate and test the effects of modernization theory, as well as contact theory and terror management theory, on ageist attitudes.

## References

- Allan, L. J., Johnson, J. A., & Emerson, S. D. (2014). The role of individual difference variables in ageism. *Personality and Individual Differences*, *59*, 32–37.
- Boswell, S. S. (2012). Predicting trainee ageism using knowledge, anxiety, compassion, and contact with older adults. *Educational Gerontology*, *38*(11), 733–741.
- Butler, R. N. (1969). Age-ism: another form of bigotry. *The Gerontologist*, *9*(4), 243–246.
- Chonody, J. M., Webb, S. N., Ranzijn, R., & Bryan, J. (2014). Working with older adults: Predictors of attitudes towards ageing in psychology and social work students, faculty, and practitioners. *Australian Psychologist*, *49*(6), 374–383.
- Drury, L., Hutchison, P., & Abrams, D. (2016). Direct and extended intergenerational contact and young people's attitudes towards older adults. *The British Journal of Social Psychology*, *55*(3), 522–543.
- Fraboni, M., Saltstone, R., & Hughes, S. (1990). The Fraboni Scale of Ageism (FSA): An attempt at a more precise measure of ageism. *Canadian Journal on Aging / La Revue Canadienne Du Vieillessement*, *9*(1), 56–66.
- Galton, N., Hammond, N. G., & Stinchcombe, A. (2020). Personality traits and fears of death and dying predict ageism. *Death Studies*, 1-7. doi: 10.1080/07481187.2020.1829746
- Gellis, Z. D., Sherman, S., & Lawrance, F. (2003). First year graduate social work students' knowledge of and attitude toward older adults. *Educational Gerontology*, *29*(1), 1-16.
- Government of Canada. (2014). *Government of Canada – Action for seniors report*. Retrieved February 2, 2022 from <https://www.canada.ca/en/employment-social-development/programs/seniors-action-report.html>
- Huang, C. S. (2013). Undergraduate students' knowledge about aging and attitudes toward older adults in East and West: A socio-economic and cultural exploration. *International Journal of Aging & Human Development*, *77*(1), 59–76.
- Kimuna, S. R., Knox, D., & Zusman, M. (2005). College students' perceptions about older people and aging. *Educational Gerontology*, *31*(7), 563-572.
- Lasher, K. P., & Faulkender, P. J. (1993). Measurement of aging anxiety: Development of the Anxiety about Aging scale. *International Journal of Aging & Human Development*, *37*(4), 247–259.
- Lester, D., & Abdel-Khalek, A. (2003). The Collett-Lester Fear of Death scale: A correction. *Death Studies*, *27*(1), 81–85.
- Lytle, A., & Levy, S. R. (2019). Reducing ageism: Education about aging and extended contact with older adults. *The Gerontologist*, *59*(3), 580–588.
- McCullough, M. E., Emmons, R. A., & Tsang, J.-A. (2002). The grateful disposition: A conceptual and empirical topography. *Journal of Personality and Social Psychology*, *82*(1), 112–127.
- Palmore, E. B. (2004). Research note: Ageism in Canada and the United States. *Journal of Cross-Cultural Gerontology*, *19*(1), 41-46.
- Soto, C. J., & John, O. P. (2017). The next Big Five Inventory (BFI-2): Developing and assessing a hierarchical model with 15 facets to enhance bandwidth, fidelity, and predictive power. *Journal of Personality and Social Psychology*, *113*(1), 117-143.
- Wright, S. C., Aron, A., McLaughlin-Volpe, T., & Ropp, S. A. (1997). The extended contact effect: knowledge of cross-group friendships and prejudice. *Journal of Personality and Social Psychology*, *73*(1), 73–90.
- Yoon, Y., Witvorapong, N., & Pothisiri, W. (2017). Perceptions towards the elderly among the Thai working-age population: A structural equation modeling analysis. *International Journal of Economics & Management*, *11*, 271-286.

# ART THERAPY WITH REFUGEE AND ASYLUM-SEEKING CHILDREN AND THEIR PARENTS: PRELIMINARY FINDINGS OF A THOROUGH LITERATURE REVIEW

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## Abstract

This paper seeks to explore the topic of art therapy interventions with refugee and asylum-seeking children and their parents, with a specific focus on how art therapists engage displaced parents in their child's therapy process. Preliminary literature review findings, in preparation for a comprehensive scoping review, suggest that there is a research-practice gap on the topic of engaging refugee and asylum-seeking parents in their children's art therapy processes. Flexible methods practiced in the field in the past 10 years, primarily funded and run by nongovernmental organizations (NGOs), are not necessarily reflected in the few research papers published about creative arts therapies interventions for refugee and asylum-seeking children. Out of 106 publications (including grey literature such as NGO manuals and reports, book chapters, case studies, and conference papers), a significant amount refers to creative arts therapies as part of multi-level and interdisciplinary interventions developed for refugees and asylum-seekers. Among these, most publications found are manuals and reports describing case vignettes or multi-level practice guidelines, rather than peer-reviewed publications about research. These literature review findings form the first stage of a larger research project which seeks to develop evidence-based guidelines regarding parent-child art therapy among refugees and asylum-seekers, using the first two phases of the Medical Research Council's (MRC) recommendations for complex intervention development. In doing so, the research seeks to address the global need for evidence-based, culturally humble, and resilience-focused psychosocial support interventions for displaced populations.

**Keywords:** *Displacement, art therapy, refugees, parents, multi-model approaches.*

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## 1. Introduction

In the year 2020, forcibly displaced people formed one percent of the population worldwide (UNHCR, 2020), the highest number since World War II (Varvin, 2018). An estimated 38-43% of these are children and adolescents. These numbers are predicted to increase (Maretti et al., 2019; Marsella & Ring, 2003). Mental health issues that may arise from experiences related to forced displacement include anxiety disorders, post-traumatic stress reactions, somatic complaints, depression, and complex grief reactions (Munz & Melcop, 2018; Shannon et al., 2015; Tay et al., 2020). Among circa 40% of refugee children, traumatizing experiences along the way to seek refuge have had a severe effect on the children's interpersonal skills (Baron & Flory, 2019). Considering the devastating effects of the COVID-19 pandemic, in which refugees have been especially vulnerable to the disease (Alemi et al., 2020), as well as ongoing and new conflicts and natural disasters worldwide, the need for effective mental health and psychosocial support interventions for displaced populations is expected to increase. However, rather than focus primarily on trauma-related symptoms (Malchiodi, 2020; van der Kolk, 2014), many experts advocate for the development of interventions for children that prevent and "buffer the effects of early resettlement conditions on asylum-seeking children's adjustment" (de Freitas Girardi et al., 2020, p. 484). As with any mental health intervention for children, it is important to involve refugee parents in their children's therapeutic processes and to listen to their points of view during the research development process (Yaylaci, 2018). The impact of family-level processes has, however, not been researched enough within the context of interventions for refugee children (Fazel & Betancourt, 2018).

The British Association of Art Therapists defines art therapy as "a form of psychotherapy that uses art media as its primary mode of expression and communication" (BAAT, 2020). Visual art is used, primarily, as a medium to address emotional issues rather than as a diagnostic tool. Visual art therapy forms part of the general Creative Arts Therapies which also include Dance Movement Therapy, Drama

Therapy, Music Therapy, and Bibliotherapy. A growing number of studies focus on creative arts therapies with refugees (Dieterich-Hartwell et al., 2020; Ely et al., 2017; D. L. Kalmanowitz & Ho, 2017) and with people who have experienced trauma (Eaton et al., 2007; Schouten et al., 2015, 2019). Approaches and influences range from a CBT-based (cognitive behavioral therapy, focused primarily on patterns of thoughts in the present moment) trauma-focused curriculum (Ely et al., 2017) to a studio-based setting combining free artistic expression with mindfulness-based meditative methodology (D. Kalmanowitz, 2016), among many others. The arts have been described as providing a sense of a temporary home (Dieterich-Hartwell & Koch, 2017).

While the importance of involving refugee parents in their children's mental health interventions has been reiterated (Bosqui & Marshoud, 2018; Ehntholt & Yule, 2006; Fazel & Betancourt, 2018; Pacione et al., 2013), not many descriptions of refugee parental engagement can be found in art therapy case studies and research. Parents have been described as unavailable for meetings due to their survival predicament (de Freitas Girardi et al., 2020; Kalaf & Plante, 2019), language barriers and logistic difficulties due to the need for interpreters (Schottelkorb et al., 2012), and culturally-related perceptions of therapy (O'shea et al., 2000), such as experiencing it as too intrusive (Baraitser, 2014; Kalaf & Plante, 2019) or not as important as academic achievements. Nonetheless, some art therapy and play therapy interventions have described involving parents in frameworks such as parental education groups to teach about trauma and post-traumatic stress symptoms (NCTS, 2005; Schottelkorb et al., 2012) or supporting them when accessing services that are "not always culturally sensitive" (de Freitas Girardi et al., 2020, p. 491). Despite the significant limitations, and the need to plan flexibly, some art therapists have asserted parental support and involvement to be important to incorporate in preventative mental health interventions for refugee and asylum-seeking children (Bonz et al., 2020; Rossi Ghiglione, 2018). This review seeks to understand how and in what research-related contexts does this engagement of refugee and asylum-seeking parents arise.

## **2. Design and methods**

Articles were procured using several search engines, such as Taylor and Francis Online, Web of Science, Science Direct, and Google scholar (with no date limitations) using the keywords art therapy, parent-child art psychotherapy, refugee, asylum-seekers, children, and parents. Further articles were obtained through recommendations by experts, searching for specific NGOs in the field and attaining their manuals, and through the references of relevant articles. A total of 106 articles were found, including grey literature such as NGO manuals and reports, book chapters, case studies, and conference papers. Data extraction was performed by the primary author. The primary author's clinical knowledge also informed the analysis of the literature that was reviewed, while constantly consulting with additional experts working in the field. The primary question throughout the thorough literature search was: "how are art therapists engaging refugee and asylum-seeking parents in their child's therapy processes?"

## **3. Preliminary literature review findings**

Preliminary literature review findings suggest a research-practice gap: flexible methods practiced in the field in the past 10 years, primarily funded and run by nongovernmental organizations (NGOs), are not necessarily reflected in the few research papers published about creative arts therapies interventions for refugee and asylum-seeking children. This gap is also mentioned in several of the publications (e.g., Kalaf & Plante, 2019; Rowe et al., 2017;). Out of the 106 publications, a significant amount refers to creative arts therapies as part of multi-level and interdisciplinary interventions developed for refugees and asylum-seekers. Among these, most publications found are manuals and reports describing case vignettes or multi-level practice guidelines, rather than peer-reviewed publications about research. While most research articles focus primarily on visual art therapy, most multi-level literature refers to combinations of different creative and expressive arts therapies, often crossing and interacting between modalities. This focus on multi-level and multimodal interventions is specifically significant to the question regarding how art therapists are engaging refugee parents in their child's therapy processes – it suggests the contribution of interdisciplinary staff to processes of continuous assessments of parents' needs and interests within specific communities. Most of these publications mention the importance of community-based activity, with five publications focused primarily on community-based arts that engage parents in an open and non-binding manner. This allows for the parents' concerns to gradually be verbalized and for other community members to offer their assistance.

Regarding the engagement of parents in creative arts therapies with refugees and asylum-seekers, most research papers mention parents only within the context of signing consent forms, filling out surveys, or taking part in multi-level services. This is, therefore, another significant knowledge gap, raising the question of “what techniques may not appear in literature, but are used in practice to engage refugee and asylum-seeking parents in creative arts therapies?” Furthermore, mechanisms of change are mentioned in several articles, often described through clinician’s perspectives, or as recommendations for future research (Quinlan et al., 2016), but not specific to parent-child artistic activities with refugees and asylum-seekers and how they may contribute to the child’s wellbeing and resilience. Therefore, four themes have been identified as significant to the development of a comprehensive art therapy intervention for refugee children and their parents: (1) Research-Practice Gap – funding and policy issues and complex ethical reconsiderations hinder the feasibility of standard research; (2) Community-Arts-Based methods help bridge transcultural and accessibility issues; (3) Multi-Model and Interdisciplinary approaches are employed by art therapists to attend to the multifaceted complex circumstances of the population; and (4) Mechanisms of Change specific to refugee parent-child artistic activities require deeper investigation.

#### 4. Conclusions

Children who experience displacement and war are a very large and diverse population with multifaceted needs. It is, naturally, hard to generalize about the needs of such a diverse group. While this review of the literature does not intend to pathologize such a large group or to assume that every child who experienced displacement necessarily requires psychotherapy, it is also clear from the reviewed research and practice descriptions that there are common concerns regarding displaced children and that creative and expressive activities could potentially be used as both preventative measures that encourage resilience as well as therapeutic interventions to reduce trauma-related symptoms. Fonagy and Campbell (2017) argue that resilience might be the outcome of the complex dynamics between the social environment and an individual’s reflective functioning. Thus, we have circles of support networks crucial for the mental health and resilience of refugee and asylum-seeking children – and these include the crucial aspect of involving parents in their children’s therapeutic processes. To explore what this means within the context of art therapy, existing practices, that may not appear in the literature, must be mapped out and their relevance and acceptability among all parties involved – clinicians, parents, stakeholders, and children – should be assessed.

#### 5. Limitations and implications for further research

These preliminary findings are naturally limited in nature, due to both the non-systematic character of the literature review and the limited amount of peer-reviewed research publications found on the topic. These, however, strengthen the notion that additional, more robust, evidence-based, and systematic research is warranted on this topic. Using the Medical Research Council’s complex intervention development process (Shahsavari et al., 2020) would encourage different phases of the research to focus on various perspectives and voices relevant to the development of an art therapy intervention with refugees and asylum-seeking children and parents. Incorporating parent focus groups, at the development phase of the intervention, together with an assessment of the intervention’s acceptability before any further implementation (Sekhon et al., 2017), would allow the parents to engage in the structuring of an intervention that may have a direct effect on the way practitioners approach them concerning their child’s mental health. Recommended research, therefore, includes following the MRC’s phased approach recommendations as steps leading to conducting a mixed-methods (qualitative and quantitative) feasibility study of a developed intervention protocol, followed by a larger-scale effectiveness study.

#### References

- Alemi, Q., Stempel, C., Siddiq, H., & Kim, E. (2020). Refugees and COVID-19: Achieving a comprehensive public health response. *Bulletin of the World Health Organization*, 98(8), 510-510A. <https://doi.org/10.2471/BLT.20.271080>
- BAAT. (2020). *About Art Therapy*. British Association of Art Therapists. <https://www.baat.org/About-Art-Therapy>
- Baraitser, M. (2014). *Reading and Expressive Writing with Traumatised Children, Young Refugees and Asylum Seekers: Unpack My Heart with Words*. Jessica Kingsley Publishers.



- Baron, J., & Flory, L. (2019). *Versorgungsbericht Zur psychosozialen Versorgung von Flüchtlingen und Folteropfern in Deutschland*. (5. Aktualisierten Auflage). Bundesweite Arbeitsgemeinschaft der Psychosozialen Zentren für Flüchtlinge und Folteropfer e.V. [BAfF; National association of psychosocial centres for refugees and torture victims]. [http://www.baff-zentren.org/wp-content/uploads/2019/11/BAfF\\_Versorgungsbericht-5.pdf](http://www.baff-zentren.org/wp-content/uploads/2019/11/BAfF_Versorgungsbericht-5.pdf)
- Bonz, A. G., Del Carmen Casas, S., & Arslanbek, A. (2020). Conflict and Displacement: Finding the Space for Creativity. In M. Berberian & B. Davis (Eds.), *Art therapy practices for resilient youth: A strengths-based approach to at-risk children and adolescents*. Routledge.
- Bosqui, T. J., & Marshoud, B. (2018). Mechanisms of change for interventions aimed at improving the wellbeing, mental health and resilience of children and adolescents affected by war and armed conflict: A systematic review of reviews. *Conflict and Health*, 12(1), 15. <https://doi.org/10.1186/s13031-018-0153-1>
- de Freitas Girardi, J., Miconi, D., Lyke, C., & Rousseau, C. (2020). Creative expression workshops as Psychological First Aid (PFA) for asylum-seeking children: An exploratory study in temporary shelters in Montreal. *Clinical Child Psychology and Psychiatry*, 25(2), 483–493. <https://doi.org/10.1177/1359104519891760>
- Dieterich-Hartwell, R., Goodill, S., & Koch, S. (2020). Dance/movement therapy with resettled refugees: A guideline and framework based on empirical data. *The Arts in Psychotherapy*, 69, 101664. <https://doi.org/10.1016/j.aip.2020.101664>
- Dieterich-Hartwell, R., & Koch, S. (2017). Creative Arts Therapies as Temporary Home for Refugees: Insights from Literature and Practice. *Behavioral Sciences*, 7(4), 69. <https://doi.org/10.3390/bs7040069>
- Eaton, L. G., Doherty, K. L., & Widrick, R. M. (2007). A review of research and methods used to establish art therapy as an effective treatment method for traumatized children. *The Arts in Psychotherapy*, 34(3), 256–262. <https://doi.org/10.1016/j.aip.2007.03.001>
- Ehnholt, K. A., & Yule, W. (2006). Practitioner Review: Assessment and treatment of refugee children and adolescents who have experienced war-related trauma: Practitioner Review: Assessment and treatment of refugee children and adolescents. *Journal of Child Psychology and Psychiatry*, 47(12), 1197–1210. <https://doi.org/10.1111/j.1469-7610.2006.01638.x>
- Ely, G. E., Koury, S., Bennett, K., Hartinger, C., Green, S., & Nochajski, T. (2017). “I Feel Like I Am Finding Peace”: Exploring the Use of a Combined Art Therapy and Adapted Seeking Safety Program with Refugee Support Groups. *Advances in Social Work*, 18(1), 103–115. <https://doi.org/10.18060/21130>
- Fazel, M., & Betancourt, T. S. (2018). Preventive mental health interventions for refugee children and adolescents in high-income settings. *The Lancet Child & Adolescent Health*, 2(2), 121–132. [https://doi.org/10.1016/S2352-4642\(17\)30147-5](https://doi.org/10.1016/S2352-4642(17)30147-5)
- Fonagy, P., & Campbell, C. (2017). Mentalizing, attachment and epistemic trust: How psychotherapy can promote resilience. *Psychiat Hung*, 32(3), 283–287.
- Hanania, A. (2018). A Proposal for Culturally Informed Art Therapy With Syrian Refugee Women: The Potential for Trauma Expression Through Embroidery (Une proposition d’art-thérapie adaptée à la culture de femmes réfugiées syriennes: le potentiel de la broderie pour l’expression du traumatisme). *Canadian Art Therapy Association Journal*, 31(1), 33–42. <https://doi.org/10.1080/08322473.2017.1378516>
- Kalaf, L., & Plante, P. (2019). The Lived Experience of Young Syrian Refugees with an Expressive Arts Workshop About Resilience (L’expérience vécue de jeunes réfugiés syriens dans un atelier d’arts expressifs sur la résilience). *Canadian Art Therapy Association Journal*, 32(1), 18–30. <https://doi.org/10.1080/08322473.2019.1600895>
- Kalmanowitz, D. (2016). Inhabited studio: Art therapy and mindfulness, resilience, adversity and refugees. *International Journal of Art Therapy*, 21(2), 75–84. <https://doi.org/10.1080/17454832.2016.1170053>
- Kalmanowitz, D. L., & Ho, R. T. H. (2017). Art therapy and mindfulness with survivors of political violence: A qualitative study. *Psychological Trauma: Theory, Research, Practice, and Policy*, 9(Suppl 1), 107–113. <https://doi.org/10.1037/tra0000174>
- Malchiodi, C. A. (2020). *Trauma and Expressive Arts Therapy: Brain, Body, and Imagination in the Healing Process*. Guilford Publications.
- Maretti, M., Tontodimamma, A., & Biermann, P. (2019). Environmental and climate migrations: An overview of scientific literature using a bibliometric analysis. *International Review of Sociology*, 29(2), 142–158. <https://doi.org/10.1080/03906701.2019.1641270>
- Marsella, A. J., & Ring, E. (2003). Human Migration and Immigration: An overview. In J. R. Kleiner (Ed.), *Migration: Immigration and Emigration in International Perspective*. Greenwood Publishing Group.

- Munz, D., & Melcop, N. (2018). The psychotherapeutic care of refugees in Europe: Treatment needs, delivery reality and recommendations for action. *European Journal of Psychotraumatology*, 9(1), 1476436. <https://doi.org/10.1080/20008198.2018.1476436>
- NCTS. (2005). *Mental health interventions for refugee children in resettlement – White Paper II*. National Child Traumatic Stress Network Refugee Trauma Task Force and International FACES Heartland Health Outreach. [https://www.nctsn.org/sites/default/files/resources/mental\\_health\\_interventions\\_refugee\\_children\\_resettlement.pdf](https://www.nctsn.org/sites/default/files/resources/mental_health_interventions_refugee_children_resettlement.pdf)
- O'shea, B., Hodes, M., Down, G., & Bramley, J. (2000). A School-Based Mental Health Service for Refugee Children. *Clinical Child Psychology and Psychiatry*, 5(2), 189–201. <https://doi.org/10.1177/1359104500005002004>
- Pacione, L., Measham, T., & Rousseau, C. (2013). Refugee Children: Mental Health and Effective Interventions. *Current Psychiatry Reports*, 15(2), 341. <https://doi.org/10.1007/s11920-012-0341-4>
- Quinlan, R., Schweitzer, R. D., Khawaja, N., & Griffin, J. (2016). Evaluation of a school-based creative arts therapy program for adolescents from refugee backgrounds. *The Arts in Psychotherapy*, 47, 72–78. <https://doi.org/10.1016/j.aip.2015.09.006>
- Rossi Ghiglione, A. (2018). *Psychosocial support and dialogue in Lebanon and the Syrian Arab Republic: The role of art-based interventions*. IOM - International Organization for Migration. [https://publications.iom.int/system/files/pdf/psychosocial\\_support\\_dialogue.pdf](https://publications.iom.int/system/files/pdf/psychosocial_support_dialogue.pdf)
- Rowe, C., Watson-Ormond, R., English, L., Rubesin, H., Marshall, A., Linton, K., Amolegbe, A., Agnew-Brune, C., & Eng, E. (2017). Evaluating Art Therapy to Heal the Effects of Trauma Among Refugee Youth: The Burma Art Therapy Program Evaluation. *Health Promotion Practice*, 18(1), 26–33. <https://doi.org/10.1177/1524839915626413>
- Schottelkorb, A. A., Dumas, D. M., & Garcia, R. (2012). Treatment for childhood refugee trauma: A randomized, controlled trial. *International Journal of Play Therapy*, 21(2), 57–73. <https://doi.org/10.1037/a0027430>
- Schouten, K. A., de Niet, G. J., Knipscheer, J. W., Kleber, R. J., & Hutschemaekers, G. J. M. (2015). The Effectiveness of Art Therapy in the Treatment of Traumatized Adults: A Systematic Review on Art Therapy and Trauma. *Trauma, Violence, & Abuse*, 16(2), 220–228. <https://doi.org/10.1177/1524838014555032>
- Schouten, K. A., van Hooren, S., Knipscheer, J. W., Kleber, R. J., & Hutschemaekers, G. J. M. (2019). Trauma-Focused Art Therapy in the Treatment of Posttraumatic Stress Disorder: A Pilot Study. *Journal of Trauma & Dissociation*, 20(1), 114–130. <https://doi.org/10.1080/15299732.2018.1502712>
- Sekhon, M., Cartwright, M., & Francis, J. J. (2017). Acceptability of healthcare interventions: An overview of reviews and development of a theoretical framework. *BMC Health Services Research*, 17(1), 88. <https://doi.org/10.1186/s12913-017-2031-8>
- Shannon, P. J., Wieling, E., Simmelink-McCleary, J., & Becher, E. (2015). Beyond Stigma: Barriers to Discussing Mental Health in Refugee Populations. *Journal of Loss and Trauma*, 20(3), 281–296. <https://doi.org/10.1080/15325024.2014.934629>
- Tay, A. K., Khat Mung, H., Badrudduza, M., Balasundaram, S., Fadil Azim, D., Arfah Zaini, N., Morgan, K., Mohsin, M., & Silove, D. (2020). Psychosocial mechanisms of change in symptoms of Persistent Complex Bereavement Disorder amongst refugees from Myanmar over the course of Integrative Adapt Therapy. *European Journal of Psychotraumatology*, 11(1), 1807170. <https://doi.org/10.1080/20008198.2020.1807170>
- UNHCR [The United Nations Refugee Agency]. (2020). *UNHCR – Refugee Population Statistics Database*. UNHCR. <https://www.unhcr.org/refugee-statistics/>
- UNICEF. (2020). *Mental Health and Psychosocial Support for Children in Humanitarian Settings: An Updated Review of Evidence and Practice*. UN Children's Fund. <https://reliefweb.int/report/world/mental-health-and-psychosocial-support-children-humanitarian-settings-updated-review>
- van der Kolk, B. (2014). *The Body Keeps the Score: Mind, Brain and Body in the Transformation of Trauma*. Penguin UK. [https://books.google.de/books?hl=en&lr=&id=FMPdAgAAQBAJ&oi=fnd&pg=PT6&dq=the+body+keeps+the+score&ots=KxRSoi7yiK&sig=eRP1tgFTtl8z\\_WeHFoP9gkx2CCU&redir\\_esc=y#v=onepage&q=the%20body%20keeps%20the%20score&f=false](https://books.google.de/books?hl=en&lr=&id=FMPdAgAAQBAJ&oi=fnd&pg=PT6&dq=the+body+keeps+the+score&ots=KxRSoi7yiK&sig=eRP1tgFTtl8z_WeHFoP9gkx2CCU&redir_esc=y#v=onepage&q=the%20body%20keeps%20the%20score&f=false)
- Varvin, S. (2018). Refugees, their situation and treatment needs. *International Journal of Applied Psychoanalytic Studies*, 15(3), 174–186. <https://doi.org/10.1002/aps.1585>
- Yaylaci, F. T. (2018). Trauma and resilient functioning among Syrian refugee children. *Development and Psychopathology*, 30(5), 1923–1936. <https://doi.org/10.1017/S0954579418001293>

## EMOTIONAL LANGUAGE-PEDAGOGY OF THE OPPRESSED 50 YEARS ON

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### Abstract

Paulo Freire popularized the Portuguese term *conscientização*, in his work *Pedagogy of the Oppressed* (1970). The term represents a growth mindset that is continually developing criticality through consciousness. Freire believed education would benefit from students questioning teachers to develop meaning-making and clarity of rationale. Paulo Freire coined the phrase, *Pedagogy of the Oppressed*, with his ground-breaking and inspirational view of the education system in 1970. His book noted students as oppressed by an education system by singling out the teacher-student relationship and offered insight into policy changes and approaches to teaching that considered student-centered education and the development of student discourse.

Fifty years later, this paper presents a critical investigation of the impact of technology devices used in education among vulnerable and marginalized populations as a highly significant and needed focus, given the rapidly increasing reliance on internet-based technologies across the increasingly diverse communities comprising our public educational system. Current school technology agreements and poorly worded surveillance policies may silence vulnerable and marginalized populations voice or agency for students challenged by past trauma, lived experiences, emotion dysregulation or specifically a Disruptive Mood Dysregulation Disorder (DMDD). Teachers, administrators, technology staff and school board members were asked questions related to their understanding of policies related to technology and surveillance of devices such as laptops, cell phones, iPads and school sponsored BYOD programs. The information collected served as an indicator for which to measure the content knowledge and experience of the participants as well as the individual perceived goals or intentions of the participants school in relation to surveillance of staff and students.

Data collected during the study indicated surveillance is attributed to five themes: well-being, assessment, policy, security, punitive. Key findings included: an assumption that school technology agreements included the use of personal devices and schools may not uniquely identify inappropriate behaviour. Additionally, assumptions informed the personal use of technology during school hours with administrators and IT staff referencing general larger district acceptable use policies assumed to be accepted as applicable to all technology equipment and general use. Assumptions regarding the enforcement of the technology agreement applications to personally owned cell phones at school, were enforced during tests; and considered generally accepted privacy concerns by students and staff related to the inappropriate recording of others through taking pictures; video; but extending to accessing social media. Finally, IT staff and administration shared parental concerns of the surveillance of students on Google and phones.

**Keywords:** *At-risk students, tracking, vocabulary, privacy, data collection.*

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### 1. Introduction

This research project analyzed employer policy documents, legal expectations (Hills, 2018; MacKenzie, 2016; Maxwell, 2018) and previous research conducted on the use of bring your own device policies (BYOD) for teacher and student laptops and mobile phones, teacher professional development with BYOD and the potential surveillance (Berg, 2015, Fuller, 2019; Goodyear et al., 2019; Hope, 2016; Monahan, 2006; Page 2017; Perry-Hazen & Brinhack, 2018; Taylor, 2013) of teachers and students while on personal devices on school property. In addition to qualitative semi-structured interview data collected between the years 2019-2020 from teachers, administrators, IT staff and policy makers. Specifically, this research is interested in changes in Canadian school curriculum that require teachers of all ages to integrate technology into their classroom and subsequent policy changes that offer cost saving measures (Harris et al., 2012) taken by school districts that have implemented BYOD policies. While the ability of

a teacher or student to use their own device may ease the use of technology (Zhang et al., 2019) and integration into the classroom, the ability of a teacher or a student to hold personal or confidential data on their own devices on school grounds may raise concerns, and a device that travels from work to home and used in both places is more likely to hold such data. The research findings shared here will enable scholars, educational institutions and public servants to understand the potential implications of the use of bring your own device (BYOD) for students and teachers and to critically reflect on the reasons for its use.

## 2. Theoretical framework

Education has been described by academics as a system of “totalitarianism of dictated education policy, surveillance and punitive accountability” (Ball, 2003, Ball & Olmedo, 2013; Gunter, 2014; Stevenson & Wood, 2013 as cited by Fuller, 2019, p. 32). Both themes of power and resistance are referred to by Foucault (2007) and Bourdieu (1998) in the use of speech as a form of resistance (Foucault, 2007) and the internal conflict that entraps those in power through societal pressure (Bourdieu, 1998). The use of surveillance and restrictions on students have been noted by academics as encouraging cynicism and indifference (Uitto, et al., 2016).

Paulo Freire popularized the Portuguese term *conscientização*, in his work *Pedagogy of the Oppressed* (1970) when he encouraged people in positions of power to help end cultures of silence for the illiterate colonized individuals who were ruled by dictatorships and often forced into slavery living in extreme poverty. The term represents a growth mindset that is continually developing criticality through consciousness and awareness of voices that are silenced, oppressed in need of sociopolitical action brought on through questioning of policies and normalities and introspection. Freire believed education would benefit from students questioning teachers to develop meaning-making and clarity of rationale.

Paulo Freire coined the phrase, *Pedagogy of the Oppressed*, with his ground-breaking and inspirational view of the education system in 1970. His book noted students as oppressed by an education system by singling out the teacher-student relationship and offered insight into policy changes and approaches to teaching that considered student-centered education and the development of student discourse. Fifty years later, this view of the education system is related to the use of technology and data collection in schools.

Vulnerable populations are often defined by the ability of a population to access resources (Aday, 1994; Flaskerud and Winslow, 1998). Thompson and Spacapan (1991) suggest vulnerable populations lack control of their situation, while Aday (1994) considers vulnerable populations to be “at-risk”. Marginalized populations are defined as individuals who are excluded socially (Montesanti, et al., 2017) and although an awareness of this exclusion exists more energy needs to be directed towards engaging marginalized populations in the very communities they are excluded from participating in (Baatiema et al., 2012). Montesanti et al. (2017) suggest there is a general consensus internationally that marginalized populations benefit from community participation, but there exists “little specificity about how” (p. 637). Stigma is defined as “the phenomenon whereby an individual with an attribute which is deeply discredited by his/her society is rejected as a result of the attribute (Goffman, 1963, p. 21 as cited by Bottorff et al., 2013). Bottorff et al., (2013) continue to note that stigma leads to marginalization.

## 3. Methodology

The study presented in this paper was created in response to an earlier study (Sadownik, 2018) noting the benefits to sharing thinking online in Google Classroom for the teaching of mathematics to students aged 10-12 years. In this original study (Sadownik, 2018), parental shared awareness of Google Classroom and teacher decision-making and/or curriculum planning was shown to increase parent engagement, which had an occasional commensurate effect on parent anxiety (Sadownik, 2018). It is inclusive of policy documents that participants voluntarily shared regarding their technology agreements and provincial mandates or policies used by the school in relation to personal devices and surveillance of personal devices on school electronic resources. Research presented in this paper represents qualitative semi-structured interview data collected between the years 2019-2020. Qualitative research focuses on answering research questions about why something occurs and how it is possible. “Qualitative inquiries involve asking the kinds of questions that focus on the why and how of human interactions” (Agee, 2009, p. 432). In these instances, qualitative research is selected as a way to reach an understanding of a phenomenon to create a situation that allows someone the opportunity to share their personal experiences. Agee (2009) notes “qualitative research questions, then, need to articulate what a researcher wants to know about the intentions and perspectives of those involved in social interactions” (p. 432). Semi-structured interview questions are less formal and rigid allowing the researcher to respond to the participants answers by asking questions in a fluid conversational pattern to further clarify responses

previously collected and recorded for validity and authenticity (Ritchie et al., 2013). In the education field, many researchers rely on structured and semi-structured interviews, participant observations, and the analysis of documents.

Four Canadian School Districts initially agreed to participate in person and online regarding the monitoring of vulnerable and marginalized populations with personal devices connected to school electronic resources. This participant pool has since grown to be inclusive of eight School Districts and spans across Canada in its third year of data collection. Interviews took place on-site at school board offices, and online through videoconferencing, over the phone and through emails at the participant's convenience and with the researcher bearing all costs. No participant was provided with an honorarium or gift for their participation. Coronavirus disease 2019 (COVID-19) protocols for Face-to-Face contact were followed and noted in this study, which was updated with COVID-19 protocols in October 2020.

Interview transcripts were reviewed with an open-coding format, which facilitated the consideration of emergent patterns. The information collected served as an indicator for which to measure the content knowledge and experience of the participants as well as the goals or intentions of the school in relation to the goals of the study. After each interview, the audiotape was transcribed, and the participants were given the opportunity to modify, amend, delete or edit any part of the transcript prior to analysis, coding and publication. Data collected during the study indicated surveillance in the participant's schools were attributed to five themes: well-being, assessment, policy, security, punitive. FOIPPA compliance, intent, test taking procedures and age are all considerations for the theme of policy. Security considers subcategories such as installing a footprint on a device, industry wide lists, blacklists and shares advantages for creating different networks for different devices and limiting access based on entry site. Punitive includes parent reports about teachers, administrative monitoring, students' behaviour, investigations and a reactive mindset without active monitoring. Few connections were made between the use of surveillance in schools and learning or assessment of learning. Similarly, few responses indicated the use of surveillance for measuring wellness in schools.

The information collected by the four School Districts represented in this paper set a framework for the literature and guided the direction of themes emerging from previous interviews, ones that aligned with the literature review as well as new ones that had yet to be mentioned such as considerations for well-being and assessment. Data collected during the study indicated inappropriate behaviour in schools, from the perspective of participants is often anything not assignment related, without the permission of the teacher and during instructional time, or on school wifi. Consent for taking pictures, videos, recording others, disrupting others, or interacting in a hurtful and harmful way was also indicative of inappropriate behaviour. Finally, concerns about the use of phones in class and the exchange of personal phone numbers lead to the perception of cheating with phones on math problems, or during tests, and privacy concerns. As of Nov 2019, the province of Ontario has issued an acceptable use policy to guide school principals in the application of the term in Ontario schools.

#### **4. Summary of key findings**

The information collected by the four School Districts represented in this paper set a framework for the literature and guided the direction of themes emerging from previous interviews, ones that aligned with the literature review as well as new ones that had yet to be mentioned. Triangulation of data was achieved through teacher review of interview questions and initial written response to the list of questions prior to interview, followed by teacher interview and clarification, followed by participant review of transcript data and School District review of final summary data and prior to external review with conference submissions and peer blind review.

Acceptable use of personal devices on schools may not be uniquely identified and may fall under general considerations of a larger district acceptable use policy. Depending on the school district, a policy that regulates the type of devices a student is allowed to bring in may exist, and an acceptable use policy for computer devices may exist, but an acceptable use policy for student personal devices may not, "So, I will say it isn't well defined right now and we actually are working on an administrative procedure on BYOD so what we do have right now is one procedure that has to do with the use of technology in the district, right". Both case studies with IT staff participants echoed the same response, "What we have is for the use of all communication devices, we essentially have a procedure that we put in place, that lets them know that anything and everything on their computer can and will be monitored if required. It is not specific to BYOD but it is just general use of all computing devices". Having a district wide acceptable use policy is strategic for IT staff "Especially from a FOIPPA compliance perspective, including their personal devices, if they use their personal devices in the classroom".

Cell phone use at school, in particular: during tests; taking pictures; video recordings; accessing social media and texting raised concerns for IT staff, parents, students, administrators and teachers. The

inappropriate use of a cell phone combined with social media lead to policy change for one participant “five years ago we had an incident (suicide), with what we as a staff deemed to be inappropriate use of cell phones and social media in schools and we developed a school policy and we have been under that school policy ever since”. From both an IT perspective and parent, participant concerns about cell phone use are seen as used for cheating, “you know I have another kid who has been told during a test to put the phone away” or for privacy related violations, “in terms of filming, I do know that our schools view for my students that taking a photo, taking a video of somebody without their knowledge is not allowed or frowned upon”.

Administrators have commented on the policy related to the use of cell phones for students and teachers. When dealing with staff members about inappropriate cell phone use, the conversation can go a bit differently but is still a concern, “The teachers, well, from time to time we have had to have conversations with staff around phone use in the school. We have had staff members that have been caught playing video games during instructional time. It has never gotten to a point where we have had to involve the union”. “For staff, I think it would be beneficial to have stricter policies about what devices (namely phones) should be used for and when”. While also noting that the use of personal devices on school grounds has legal implications, “I have one parent who is a lawyer, who clearly, she really didn’t have any ground to stand on but she was a parent that challenged me and this was four years ago. She said that phone is my property, I paid for that phone therefore you don’t have a right to look on that phone”.

## 5. Responsive measures

Scholars note various benefits to membership including greater access to resources (Brent et al., 2017); and a motivation to work as a collective with positive evaluations (De Cremer, 2002). Gray, Wright and Pascoe (2017) note Maslow’s (1962) example, “the need to belong to or be part of a social network is universal and operates only after lower-order needs such as food and security are met” (p. 271). This is in direct opposition to the immediate loss of membership that occurs at the institutional level for progressive discipline models related to infractions of technology agreements, or inappropriate behaviour that has been recorded for staff and students.

The concept of responsiveness has been referenced by both Human Rights activists and human computer interaction innovations; defined as ‘a capacity to change shape or direction in response to stakeholder and public values and changing circumstances’ (Owen et al. 2013, as cited in Steen et al. 2021, p. 513). The need for technology and surveillance policies in schools to become responsive to the changing climate of school populations has become an urgent matter given the rapidly increasing reliance on internet-based technologies across the increasingly diverse communities comprising our public educational system. Current school technology agreements and poorly worded surveillance policies may silence vulnerable and marginalized populations voice or agency for students challenged by past trauma, lived experiences, emotion dysregulation or specifically a Disruptive Mood Dysregulation Disorder (DMDD) who are in a greater need to belong or to be accepted as part of social network. Considerations for policymakers related to accommodations for vulnerable and marginalized populations, or review of surveillance policies related to what is considered appropriate use of technology is fast becoming a priority to provide a voice to students and develop awareness of a more inclusive school community.

## References

- Aday, L. (1994). Health status of vulnerable populations. *Annual review public health, 15*, 487-509.
- Agee, J. (2009). Developing qualitative research questions: A reflective process. *International journal of qualitative studies in education, 22*(4), 431-447.
- Baatiema, L., Skovdal, M., Rifkin, S., & Campbell, C. (2012). Assessing participation in a community-based health planning and services programme in Ghana. *BMC health services research, 13*, 233.
- Ball, S. J. (2003). The teacher's soul and the terrors of performativity. *Journal of education policy, 18*(2), 215-228.
- Ball, S. J., & Olmedo, A. (2013). Care of the self, resistance and subjectivity under neoliberal governmentalities. *Critical studies in education, 54*(1), 85-96.
- Berg, T. (2015). The pedagogy of the observed: How does surveillance technology influence dance studio education? *Research in Dance Education, 16*(3), 230-244.
- Bottorff, J. L., Bissell, L. J., Balneaves, L. G., Oliffe, J. L., Capler, N. R., & Buxton, J. (2013). Perceptions of cannabis as a stigmatized medicine: a qualitative descriptive study. *Harm Reduction Journal, 10*(1), 1-10.
- Bourdieu, P. (1977). *Outline of a theory of practice*. Cambridge, MA: Cambridge University Press.

- Brent, L.J.N., Ruiz-Lambides, A., Platt, M.L. (2017). Persistent social isolation reflects identity and social context but not maternal effects or early environment. *Scientific reports* 7(17791).
- De Cremer, D. (2002). Respect and cooperation in social dilemmas: The importance of feeling included. *Personality Soc Psychology Bull* 28(10) 1335-1341.
- Flaskerud, J.H., & Winslow, B. J. (1998). Conceptualizing vulnerable populations health-related research. *Nursing research*, 47(2). 69-78.
- Foucault, M. (2007). *Security, territory, population: lectures at the Collège de France, 1977-78*. Springer.
- Foucault, M. (2007). *Introduction to Kant's Anthropology*. Semiotext.
- Foucault M. (1984). The means of correct training. In P. Rabinow (Ed.), *The Foucault reader* (pp. 179-206). New York: Pantheon.
- Foucault, M. & Miskowicz, J. (1986). Of other spaces. *Diacritics*, 16(1), 22-27.
- Freire, P. (1970). *Pedagogy of the Oppressed*
- Fuller, K. (2019). "That would be my red line": an analysis of headteachers' resistance of neoliberal education reforms, *Educational Review*, 71(1), 31-50.
- Goffman, E. (1963; 2009). *Stigma: Notes on the management of spoiled identity*. Simon and Schuster.
- Goodyear, V.A., Kerner, C., & Quennerstedt, M. (2019). Young people's uses of wearable healthy lifestyle technologies; surveillance, self-surveillance and resistance. *Sport, Education and Society*, 24(3), 212-225.
- Gray, C., Wright, P., Pascoe, R. (2017). There's a lot to learn about being a drama teacher: Pre-service drama teachers' experience of stress and vulnerability during an extended practicum. *Teaching and Teacher Education*, 67, 270-277.
- Gunter, H. M. (2013). *Educational Leadership and Hannah Arendt*. Routledge.
- Harris, J., Ives, B., & Junglas, I. (2012). IT Consumerization: When Gadgets Turn into Enterprise IT Tools. *MIS Quarterly Executive*, 11(3), 99-112. Retrieved from
- Hills, A. (2018). Teachers privacy rights and cloud storage. *Education Law Journal*, 28(1), 123-130.
- Hope, A. (2016). Biopower and school surveillance technologies 2.0. *British Journal of Sociology of Education*, 37(7), 885-904.
- MacKenzie, B. (2016). #Inappropriate: Ramifications of teachers' off duty social media postings, *Education Law Journal*, 26(1), 53-72.
- Maslow, A. (1962). *Toward a psychology of being*. Princeton, NJ: D. Van Nostrand.
- Maxwell, B. (2018). When teachers' off-duty creative pursuits conflict with role model expectations: A critical analysis of Shewan. *Interchange*, 49(2), 161-178.
- Monahan, T. (2006). *The surveillance curriculum: Risk management and social control in the neoliberal school*. Routledge.
- Montesanti, S.R., Abelson, J., Lavis, J.N., & Dunn, J.R. (2017). Enabling the participation of marginalized populations: Case studies from a health service organization in Ontario, Canada. *Health promotion international*, 32(4), 636-649.
- Owen, R., Stilgoe, J., Macnaghten, P., Gorman, M., Fisher, E., & Guston, D. (2013). Developing a framework for responsible innovation. *Research Policy*, 42(9), 1568-1580.
- Page, D. (2017). Conceptualising the surveillance of teachers. *British Journal of Sociology of Education*, 38(7). 991-1006.
- Perry-Hazan, L. & Brinhack, M. (2018). The hidden human rights curriculum of surveillance cameras in schools: due process, privacy and trust. *Cambridge Journal of Education*, 48(1), 47-64.
- Ritchie, J., Lewis, J., Nicholls, C. M., & Ormston, R. (Eds.). (2013). *Qualitative research practice: A guide for social science students and researchers*. sage.
- Sadownik, S. A. (2018). *Under Construction: Developing Mathematical Processes and Discourse Through Dialogue in Computer Supported Collaborative Learning Environments* (Doctoral dissertation, University of Toronto (Canada)).
- Steen, M., Timan, T., & van de Poel, I. (2021). Responsible innovation, anticipation and responsiveness: case studies of algorithms in decision support in justice and security, and an exploration of potential, unintended, undesirable, higher-order effects. *AI and Ethics*, 1(4), 501-515.
- Stevenson, H., & Wood, P. (2014). Markets, managerialism and teachers' work: the invisible hand of high stakes testing in England. *International Education Journal: Comparative Perspectives*, 12(2).
- Taylor, E. (2013). *Surveillance schools: security, discipline and control in contemporary education*. Palgrave Macmillan: New York.
- Thompson, S.C. & Spacapan, S. (1991). Perceptions of control in vulnerable populations. *Journal of social issues*, 47(4), 1-21.
- Uitto, M., Kaunisto, S-L., Kelchtermans, G., Estola, E. (2016). Peer group as a meeting place: Reconstructions of teachers' self-understanding and the presence of vulnerability. *International Journal of Educational Research*, 75, 7-16.
- Zhang Zhang, L., Mouritsen, M. Miller, J.R., (2019). Role of perceived value in acceptance of "bring your own device" policy. *Journal of organizational and end user computing*, 31(2), 65-81.

# WHAT CHARACTERIZES THOSE WHO ARE WILLING TO PROVIDE ONLINE COUNSELING?

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## Abstract

The outbreak of the COVID-19 pandemic has accelerated the need for online counseling to preserve therapeutic processes that have begun face to face and to provide service to others in need during lockdowns. Previous studies have already indicated the benefits and effectiveness of online counseling. However, there is a lack of research concerning the therapist's characteristics who is the best fit to conduct online counseling. Therefore, this study is focused on several precursors of openness to provide online counseling: preference to communicate emotions online, identification of emotional expressiveness advantages in providing online counseling, innovative behavior, creativity, and future problem-solving thinking skills. The question at focus is which constructs would be found contributive to students' openness to provide online counseling. The sample was 277 undergraduate students (future counselors) who filled out questionnaires. Data were analyzed using Partial Least Squares Structural Equation Modeling. Our findings pointed to the centrality of students' preference to communicate their emotions online in explaining their openness to conducting online counseling. This study might help encourage students' openness towards providing online counseling. In addition, the current investigation may help pinpoint the adjustments curriculum designers should address to better reflect the intensive changes within the counseling field that necessitate transferring face-to-face skills to online settings.

**Keywords:** *Creativity, future thinking, innovation, online counseling, higher education.*

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## 1. Introduction

The outbreak of the COVID-19 pandemic has accelerated the need for online counseling to preserve therapeutic processes that have begun face to face and to provide service to others in need during lockdowns. Previous studies have already indicated the benefits and effectiveness of online counseling. However, there is a lack of research concerning the therapist's characteristics who is the best fit to conduct online counseling. Therefore, this study is focused on several precursors of openness to provide online counseling: preference to communicate emotions online, identification of emotional expressiveness advantages in providing online counseling, innovative behavior, creativity, and future problem-solving thinking skills.

## 2. The aims of the study

The questions at focus are which constructs would be found contributive to students' openness to provide online counseling. The hypothesis were:

H1: Students who prefer communicating their emotions online (Preference for Online Social Interaction) would tend to see more emotional expressiveness advantages in providing online counseling (Perceptions of Online Counseling) and would be more open to conduct online counseling.

H2: Students who tend to see more emotional expressiveness advantages in providing online counseling (Perceptions of Online Counseling) would be more open to conduct online counseling.

H3: Students who report exhibiting innovative behavior would be more open to conduct online counseling.

H4: Students who perceive themselves as creative (Perceived Creativity) would tend to see more emotional expressiveness advantages in providing online counseling (Perceptions of Online Counseling).

H5: Students who tend to be aware of future problems and ways to solve them (Awareness of Future Problems) would perceive themselves as creative and report exhibiting innovative behavior.



### 3. Methods

#### 3.1. Sample

Data were gathered from 277 Israeli third-year undergraduate students (future counselors). The mean age of the participants was 24.90 years ( $SD = 6.20$ ), and 81% were females. The distribution regarding ethnicity was: 59% Jewish students; 39.5% Arab (Muslim, Druze, Christian, and Bedouin) minority students, and 1.5% depicted their religion as “other”.

#### 3.2. Measurements

*Preference for Online Social Interaction* (Peter & Valkenburg, 2006). The measure includes three items on preference to communicate through the internet on personal issues rather than face to face. Each of the statements was measured on a 5-point Likert scale. The internal consistency of the scale yielded a satisfactory result:  $\alpha = 0.95$ .

*Openness to Conducting Online Counseling* (Teh et al., 2014). The participants were asked to respond to a single item, ‘How would you rate your openness to conducting online counseling?’ They were asked to select their answers from the following options coded on a 4-point scale: (1) “I think online counseling is not for me,” (2) “open, but with major reservations,” (3) “open, but with minor reservations,” and (4) “completely open.”

*Perceptions of Online Counseling Factors*. This eight-item scale (Teh et al., 2014; Centore & Milacci, 2008) was designed to measure the participants’ belief that the following components of therapy can be provided by online counseling. Each of the statements was measured on a 5-point Likert scale. The internal consistency result was  $\alpha = 0.90$ .

*Perceived Creativity*. The *Short Scale of Creative Self (SSCS)* was used to assess this variable. This 11-item scale (Karwowski, 2011, 2014) was used to measure the student’s belief s/he is creative and the belief that creativity is an essential element of her/his overall self-description. Each of the statements was measured on a 6-point Likert scale. The internal consistency of the scale was satisfactory:  $\alpha = 0.93$ .

*Awareness of future problems*. Based on the theoretical framework surveyed above, this scale was constructed for the purpose of the current study. This six-item scale corresponds to the six steps of the FPS program (Torrance & Cramond, 2002). The Cronbach’s alpha result was equal to 0.86.

*Innovative Behavior*. This 10-item scale was originally designed by De Jong and Den Hartog (2010) to measure innovative work behavior. The items were scored on a six-point Likert-style format scale. The Cronbach’s alpha result was equal to 0.88.

### 4. Findings

Preference for Online Social Interaction exerts a positive effect on Openness to Conducting Online Counseling and Perceptions of Online Counseling. Hence, students who preferred communicating their emotions online also acknowledged more emotional expressiveness advantages in providing online counseling and were inclined towards openness to conducting online counseling. H1 was confirmed.

Perceptions of Online Counseling increased the levels of Openness to Conducting Online Counseling. Meaning, participants who tended to see more emotional expressiveness advantages in providing online counseling were found more open to conducting online counseling. H2 was approved.

Innovative Behavior positively contributed to Openness to Conducting Online Counseling. Hence, students who report exhibiting innovative behavior reported being more open to conducting online counseling. H3 was corroborated. Perceived Creativity increased the extent of Perceptions of Online Counseling. Thus, students who perceive themselves as creative tended to see more emotional expressiveness advantages in providing online counseling. H4 was approved. Finally, as speculated in H5, both Perceived Creativity and Innovative Behavior were positively informed by students’ Awareness of Future Problems.

### 5. Discussion and conclusion

This study might help encourage students’ openness towards providing online counseling. In addition, the current investigation may help pinpoint the adjustments curriculum designers should address to better reflect the intensive changes within the counseling field that necessitate transferring face-to-face skills to online settings.

### References

- Centore, A. J., & Milacci, F. (2008). A Study of Mental Health Counselors' Use of and Perspectives on Distance Counseling. *Journal of Mental Health Counseling, 30*(3). <https://doi.org/10.1080/10503307.2016.1259533>
- De Jong, J., & Den Hartog, D. (2010). Measuring innovative work behaviour. *Creativity and innovation management, 19*(1), 23-36.
- Karwowski, M. (2011). It doesn't hurt to ask ... but sometimes it hurts to believe: Polish students' creative self-efficacy and its predictors. *Psychology of Aesthetics, Creativity, and the Arts, 5*, 154-164.
- Karwowski, M. (2014). Creative mindset: Measurement, correlates, consequences. *Psychology of Aesthetics, Creativity, and the Arts, 8*, 62-70.
- Peter, J., & Valkenburg, P. M. (2006). Research note: Individual differences in perceptions of Internet communication. *European Journal of Communication, 21*(2), 213-226.
- Teh, L. A., Acosta, A. C., Hechanova, M. R. M., Garabiles, M. R., & Alianan Jr, A. S. (2014). Attitudes of Psychology graduate students toward face-to-face and online counseling. *Philippine Journal of Psychology, 47*(2), 65-97.
- Torrance, E. P., & Cramond, B. (2002). Needs of creativity programs, training, and research in the schools of the future. *Research in the Schools, 9*(2), 5-14.

# CONSEQUENCES OF IMPRESSION MANAGEMENT- WHEN LOOKING GOOD ONLINE IS MORE ABOUT SADISM THAN TRUTH

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## Abstract

This research paper addresses ethical considerations for surveillance in education and the educational policy frameworks that regulate human computer interactions of vulnerable and marginalized groups with emerging and disruptive technologies for both punitive and well-being measures. Over the span of two years, qualitative data was collected in the form of semi-structured interviews and participant background surveys and reflections on practice, provided staff perspectives and knowledge about vulnerable and marginalized populations, and technology policies related to known surveillance of staff during work hours in schools. In 1959, Goffman proposed that human beings attempt to control other's impressions of them and that these impressions are often confined to spatially defined social establishments. As such, the concept of impression management and selective expression are the focus of this paper in an attempt to consider the how educational policy has evolved and areas of growth still needed or considered unattainable.

School policies have grown to encompass the creation of safe spaces (and brave spaces) for LGBTQ2 individuals to be welcomed into the profession and community. Changes reflect gender neutral bathrooms, and the identification of pronouns on name tags, and social media where individuals are asked to identify which gender they relate to (she/hers, he/his, they/them, undeclared). However, the message of concealment is still apparent in other ways. The need to separate personal emails from work/school life correspondence is one way school districts have communicated the need to conceal identity, associations, personal interests, thoughts and emotions. Of a similar theme is the concept of responsabilization. This paper considers Karaian's (2014) examination of responsabilization "through the lens of critical whiteness, queer, girlhood/young feminists and porn studies' theorizations of the politics of sexual respectability and sexual subjectification" in an effort to revisit colonization present in schools, the Canadian Centre for Child Protection (2011) "Respect Yourself" campaign and the role of surveillance for keeping students safe.

Results from the study indicate that seven of the eight participants in the study did not consider a person in the role of a teacher or administrator to be part of the vulnerable or marginalized population. Of the administrators polled, surveillance of colleagues (i.e. teachers) was often reported to them through students and parent reports of behaviour and included requests to IT staff for monitoring of teachers on site during work hours. IT staff also understood that policing 'sexting' was both difficult to do and the responsibility of teachers in the classroom.

**Keywords:** *Stress, coping, identity, citizenship, tracking.*

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## 1. Introduction

The vulnerability of teachers may come down to how closely their personal or professional identity aligns with the identity of the organization for which they are associated with. "Risk and protective factors in the environment are not deterministic, but rather are experienced as supports or stressors, and the resulting balance or imbalance is conceptualized as the individuals' vulnerability" (Velez and Spencer, 2018, 77). Abril et al. (2012) hypothesize that populations understand different social situations have different rules of decorum and different filters (p. 63-64). "Through these performances, Goffman posited, individuals create and tailor their social identities for particular audiences" (p. 63). Critical Social Theory posits, "Symbolic interactionism tends to confine itself to the immediate settings of social interaction such as schools, classrooms, staffrooms and communities – ones that are clearly bounded in time and space (...) to understand the world of teaching properly, we must therefore move to some extent beyond it (Goffman, 1975; Woods, 1977 as cited by Hargreaves, 1994, p. 3-4). As

educational policy has evolved, schools have taken great strides to create safe spaces (and brave spaces) for LGBTQ2 individuals to be welcomed into communities. Changes reflect gender neutral bathrooms and the identification of pronouns on name tags, and social media where individuals are asked to identify which gender they relate to (she/hers, he/his, they/them, undeclared). However, the message of concealment is still apparent in other ways.

The need to separate personal emails from work/school life in emails is one way school districts have communicated the need to conceal identity, associations, personal interests, thoughts and emotions. The message that work emails and personal emails should be separate has always been strong. One example of expected concealment in education for Canadian School Districts are requests from unions for personal email to communicate to teachers other than work emails. Research suggests that the power struggle between unions and employers has created tension when union matters are communicated through employee emails, with some employers blocking emails from unions to employees. In the United States, policy has been changing considering the use of employee emails.

“The Board’s review of access rights of third parties to an employer’s virtual space follows the filing of unfair labor practice charges by various unions seeking access to employer’s physical space and presents significant questions regarding the rights of employers to control the use of their property, both physical and virtual” -King, 2014, p. 21-22

Bandura’s (1989) notion that humans are not independent agents has grown to become inclusive of controlling the communication of teachers to the community outsider of the school. In an effort to help ease communication stressors various technological reforms have emerged for the profession. One example is present current suggestive text appearing at the bottom of emails that offer three possible responses and excited punctuation as a quick, positive response to a received email. Additionally, some schools have created positions such as communication officers to respond to parent emails for teachers with many school districts. These positions are offered to individuals with advanced degrees in communication or writing, and varying levels of diplomacy training who diffuse situations, limit confidential information and guide the recipient towards a positive outcome by framing the school as welcoming, and approachable. Communication officers present a professional written response. Finally, one third innovation has been the direction of schools to offer staff lists with a link to contact staff members without providing email addresses. Members of the public are directed to fill in an online form that is then directed to a member on staff. Report card comments are assessed by members of staff and administration prior to being sent home to parents and students. Additionally, many school districts have begun to increase their security and ability to contact, in some cases with security and elevator passes required to speak with any school board staff as a way to protect staff from impromptu meetings that may allow opportunities to present for communication that has not been regulated.

## 2. Theoretical framework

Karaian’s (2014) examination of responsabilization “through the lens of critical whiteness, queer, girlhood/young feminists and porn studies’ theorizations of the politics of sexual respectability and sexual subjectification” is a sharp contrast to the recent requirement for Ontario Teachers to gain certification from Canadian Child Protection Services (CCPS) for sexual abuse training. Karaian (2014) criticizes the ‘Respect Yourself’ campaign for attacking “white, middle-class teenage girls who ‘send, post and share’ rather than boys, who studies show are more likely to forward or redistribute” (Fleschler Peskin et al., 2013 as cited on Karaian, 2014, p. 286). Karaian (2014) goes further to suggest that the CCPS campaign suggests if girls respected themselves they would prevent the harm of sexting and cites a Canadian Centre for Child Protection, 2011 example activity (Karaian, 2014, p. 287) asking girls to reflect on if they think posting sexy pictures of themselves online will get them attention. From this perspective a different approach from “Respect Yourself” that acknowledges revenge porn as a criminal offence in Canada, and yet acknowledges the realities of the potential distribution of images is a message to “Protect Yourself”.

In a review of the temporal period from 1970-2021, the changes in approaches to surveillance by industries and acceptance of surveillance by the community have shown an incredible breadth and range in responses (Bennett, 2001). Noted psychological impacts have shown a range from fear or bias (Ajzen, 1991; Velez and Spencer, 2018) and compliance with game playing (Fuller, 2019) to complete acceptance (Nam, 2019). In the 1990’s tracking could be promised to offer organizations the ability to gain behavioural insight and could be used to help assess or guide individuals in their attempts to conduct cognitive self-regulation (Ajzen, 1991). University of Victoria political science professor, Collin Bennett’s (2001) review of surveillance systems comments on the once traditional approach of a discrete

and bounded databank with “clear boundaries” (p. 198) to that of an evolving structure, that characterizes the Internet as a form of life, “embedded in human consciousness and social practice, and whose architecture embodies an inherent valence that is gradually shifting away from the assumptions of anonymity upon which the Internet was originally designed” (Bennett, 2001).

### 3. Methodology

The objectives of the research presented were to address ethical considerations for surveillance in education and the educational policy frameworks that regulate human computer interactions of vulnerable and marginalized groups with emerging and disruptive technologies for both punitive and well-being measures. Over the span of two years, qualitative data was collected in the form of semi-structured interviews and participant background surveys and reflections on practice, provided staff perspectives and knowledge about vulnerable and marginalized populations, and technology policies related to known surveillance of staff during work hours in schools.

Two research applications were provided to participating School Districts for their review, approval or refinement. In the first application teachers, administrators, technology staff and school board members were asked questions related to their understanding of policies related to personal devices known as “bring your own device” (BYOD) programs inclusive of devices such as laptops, cell phones, iPads and school sponsored BYOD programs. Participants responded to questions related to their understanding of district policies for mechanisms of assurances of these personal devices on school grounds for security measures and to protect network infrastructure and user privacy. In addition to this, participants were asked questions ascertaining the participant’s understanding of how surveillance was conducted and communicated to stakeholders regarding personal devices or BYOD while at school and connected to school electronic resources.

In the second study teacher participants provided perceptions of the integration of technology by reflecting on school policies or procedures that encouraged their use of technology and responded to questions related to their personal use of technology, and personally identifying a typology of teachers who have an easy time integrating technology in their classroom. Participants were asked questions related to their understanding of bring your own device (BYOD) policies at school and away from school as well as their understanding of inappropriate behaviour as it is defined by their school and school board through indirect questions related to their use of technology in their personal life away from the classroom, level of comfort using technology in the classroom and were asked to identify specific ways they used technology in the classroom and at home to complete school tasks or read school information. In some cases, participants provided information related to beliefs, past experiences and common practices such as using an app on their phone or detailing how they prefer to communicate with others about school related business.

Background surveys asked participants to identify vulnerable and marginalized groups from a provided list (children 12 and under, teenagers 13-18, First People’s, visible minorities, English Learners, adults over the age of 40, adults over the age of 50, senior citizens, teachers, administrators, IT staff, other) in addition to rating their own experience or knowledge of personal devices and BYOD in education settings by selecting one or more options from a provided list (brand new, don’t know anything, still learning, feel comfortable using it in education settings, have questions, know a little, have more to learn, am an expert, help other people, other).

There are limitations to the present study. First, it should be acknowledged that the participants in the study were selected based on their technological background, and position within the participating School Districts. Second, the sample size is a limitation, in the initial study, there are four School Districts and a total of eight participants. Socio-economic status (SES) is a third consideration in this study due to the technology provided to the schools, and the experience with technology students and parents or caregivers had in the home. Criticism of case studies is mainly focused on possible subjective case selection and the potential for selection bias (Starman, 2013).

### 4. Results

Participants were asked if they believe marginalized and vulnerable populations were at risk for negative career consequences as a result of their poor understandings of surveillance and inappropriate use of BYODs during work and in what ways, for what reasons. Half of the teachers that responded were unsure, however all of the administrators replied definitively “yes”. Interestingly, administrators believed that teachers poor understandings included their responsibility to monitor students inappropriate use. IT staff, on the other hand, acknowledged the prevalence of texting at school by students and admittedly felt it was unfair for this type of surveillance to fall on teachers, because it is

difficult to police. Administrators that participated in the study also believed that teachers had a responsibility to model appropriate behaviour for students. This modelling was applicable during school hours and after school. Recent policy updates at one of the participating School Districts now include technology statements that inform teachers they are always considered to be a teacher and in that role outsider of school hours, therefore advising them personal social media accounts not linked to specific schools do not admonish their responsibility to model appropriate behaviour and are subject to investigations by the employer if found to diminish the moral exemplar status teachers are expected to uphold.

### References

- Abril PS, Levin A, Del Riego A. 2012. Blurred boundaries: Social media privacy and the twenty-first-century employee. *Am Bus Law J.* 49(1):63–124.
- Ajzen I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes.* 50(2):179–211.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist,* 44(9), 1175-1184.
- Bennett, C.J. (2001). Cookies, web bugs, webcams and cue cats: Patterns of surveillance on the world wide web. *Ethics and Information Technology,* 3, 197-210.
- Canadian Centre for Child Protection (2011) ‘Respect Yourself’ Grade 7/8 Activity Book. Available at: [http://respect-yourself.ca/pdfs/R\\_Y\\_ActivityBook\\_en.pdf](http://respect-yourself.ca/pdfs/R_Y_ActivityBook_en.pdf).
- Fleschler Peskin, M., Markham, C. M., Addy, R. C., Shegog, R., Thiel, M., & Tortolero, S. R. (2013). Prevalence and patterns of sexting among ethnic minority urban high school students. *Cyberpsychology, Behavior, and Social Networking,* 16(6), 454-459.
- Fuller, K. (2019). “That would be my red line”: an analysis of headteachers’ resistance of neoliberal education reforms, *Educational Review,* 71(1), 31-50.
- Goffman, E. (1963). *Stigma: Notes on the management of spoiled identity.* Prentice -Hall, Englewood Cliffs, NJ.
- Hargreaves, A. (1995). Development and desire. A post-modern perspective. In T.R. Guskey & M. Huberman (Eds.) *Professional development in education: new paradigms and perspectives* (pp. 9-34). New York: Teachers College Press.
- Karaian, L. (2014). Policing ‘sexting’: Responsibilization, respectability and sexual subjectivity in child protection/crime prevention responses to teenagers’ digital sexual expression. *Theoretical criminology,* 18(3), 282-299.
- Nam, T. (2019). What determines the acceptance of government surveillance? Examining the influence of information privacy correlates. *The Social Science Journal,* 56, 530-544.
- Starman, A. B. (2013). The case study as a type of qualitative research. *Journal of Contemporary Educational Studies/Sodobna Pedagogika,* 64(1), 28-43.
- Woods, 1977
- Velez, G., & Spencer, M. B. (2018). Phenomenology and intersectionality: Using PVEST as a frame for adolescent identity formation amid intersecting ecological systems of inequality. In C. E. Santos & R. B. Toomey (Eds.), *Envisioning the Integration of an Intersectional Lens in Developmental Science. New Directions for Child and Adolescent Development,* 161, 75–90.

# ALTERED STATES OF CONSCIOUSNESS IN GAMBLING AND INTERNET GAMING DISORDERS AS A RISK FACTOR FOR ADDICTION

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## Abstract

In GD and IGD, both at the preclinical level of problem game and at the clinical level of pathological game, altered states of consciousness are observed during the game and shortly before. In the scientific literature, they are called flow-state, dark flow, game trance, game intoxication, and so on. During these states, the person loses touch with reality, the real life situation completely detached from life's problems and concerns, and associated emotional experiences and is transformed into the space of the game. Self-identification is disrupted, as a result of which the player identifies with the game character, the avatar-hero of the game, or with the network character. In addition, the perception of time and memory of events during the game is disrupted. These states themselves become very desirable and attractive to players and contribute to the emergence of a pathological desire to constantly participate in the game in order to repeat an unusual experience. In this review of research, based on the materials of numerous researches and own clinical practice, it is demonstrated that such altered states of consciousness can contribute to the formation of addiction, lead to negative psychosocial consequences and comorbid psychopathology. It also shows how the game industry induces such states with certain psychotechnical methods. Materials from clinical and neurobiological studies were used for the analysis. Electronic literature search was conducted using PubMed, PsychINFO, ScienceDirect, Web of Science and Google Scholar.

**Keywords:** *Behavioural addictions, altered states of consciousness, gambling disorder, internet gaming disorder.*

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## 1. Introduction

Gambling disorder and Internet gaming disorder are behavioural addictions in the center of which is dependence from a certain type of the game behaviour over which the control is lost, both in frequency of involvement in the game, as well as in time. A pathological craving for play appears and eventually increases to a compulsive urge, which is constantly embodied almost without a struggle of motives. The dependent person continues to play despite the negative consequences for his mental and physical health, personality, relationships in the family, with friends and in the team, in the professional sphere or in school. The pathological need for the game becomes dominant and replaces all other interests, hobbies, forms of activity, relationships end even the basic needs: food, sleep, intimacy, child care, etc. (Chung et al., 2019). There are some cases when players ignored the deterioration of physical health and even severe pain, they did not hear loud sounds such as screaming and crying children or pets. Gamers and gamblers isolate themselves from the environment. Their relationships with family, friends, and work colleagues become conflicted, shallow, and consumering (Calado & Griffiths, 2016).

## 2. Objectives

The objective of the study was to determine the effect of altered states of consciousness (dark flow), which are observed in the clinical picture of patients with both GD and IGD, on the occurrence of addiction and comorbid psychopathology.

## 3. Methods

We selected and analysed 13 studies for our review. Seven studies have investigated changes in self-perception, self-identity, and perception of the surrounding reality in IGD. Six were neurocognitive

and based on fMRI neuroimaging techniques, and one was a systematic review of 18 differently designed studies of changes in self-perception and self-identity in IGD. Six other studies based on test questionnaires were designed to determine the relationship between the severity of altered states of consciousness (ASC) and the severity of addiction and comorbid psychopathology in GD. In addition, we took into account clinical observational data based on self-reports from patients with GD and IGD.

#### 4. Main results

From clinical observation, thanks to players' self-reports, we have learned that during the game, as the addiction develops, the person enters an altered state of consciousness, similar to a trance or hypnosis. Previous research also reveals this phenomenon. In the scientific literature, the term flows state, flow experience, or dark flow, but the definitions of game trance or hypnosis better characterize these states. During game trance, we can observe several clinically relevant effects, as they increase the addiction itself or increase the risk of addiction and the risk of adverse consequences of games (Dixon et al., 2019; Murch et al., 2020; Burleigh et al., 2018).

We observe detachment from problems, the disappearance of the entire surrounding world, and total immersion in the game process in persons with GD or in the world of a computer game with IGD, which becomes the only reality for the person. In addicted players, self-identity is altered by merging with the slot machine or game avatar, and the sharpness of perception of sounds and color effects in the game is increased (Lemenager et al., 2014; Kruger et al., 2022). Players cease to perceive flaws and imperfections in computer graphics when they are fully immersed in the game, and their imagination unconsciously draws out the missing details. Tachyornia develops - a change in the perception of time, and a person feels that he has spent much less time in the game than in reality. In casinos or gaming halls, daylight and clocks are excluded explicitly for the effect of losing time. The computer game introduces its daily cycle, and total immersion in the game world with such a density of events eliminates the realistic perception of time.

The memory of certain events and circumstances of the game becomes selective. For example, only winnings or near-winnings are remembered, which has been proven to motivate one to continue playing, while losses are forgotten or reduced to a minimum. As a result, one forgets how much one has lost or won and where, when, and how much one has borrowed (Green et al., 2020; Dixon et al., 2019).

Sometimes a player experiences a whole spectrum of emotions in a single game, from a peak positive to a peak negative. For example, excitement, the height of the emotional state of excitement, is set by the degree of risk. That is, the higher the stake, the higher degree of excitement. The dynamics of emotional fluctuations in internet video games are set by the game's events, the wins and losses, and what happens to the avatar due to partial or complete self-identification with the avatar (Burleigh et al., 2018; Dixon et al., 2018).

Neurobiological studies confirm that dependent internet gamers exhibit increased activation in brain regions such as the angular gyrus, inferior frontal gyrus, precuneus, and in the medial prefrontal cortex, during avatar reflection compared to self-reflection (Table 1). For reference, these brain regions are associated with the processing of identification, empathy, and the process of self-determination in healthy subjects. In research there was a decrease in bilateral brain activation in the AG and the middle occipital gyrus during self-perception and hyperactivity of the left angular gyrus during perception of avatar movement in the game and correlation with the severity of symptoms. Based on this, it was concluded that the stronger the player's identification with the avatar, the heavier the dependence.

Table 1. Neurobiological studies of avatar self-identification at IGD.

| Study                          | Task/Method                               | Sample                    | Main results  |
|--------------------------------|---|---------------------------|---|
| Kim, Y.R et al. (2012)         | A ball-throwing animation task in fMRI    | N = 17 IGDp<br>N = 17 HCs | - Activation in the thalamus, bilateral precentral area, bilateral middle frontal area, and the right temporal-parietal junction.<br>- Higher activation in the left temporal-parietal-occipital junction, right para-hippocampal area.<br>- The duration of internet use correlated with the activity of posterior area of left middle temporal gyrus. |
| Dong, G. et al. (2012 a,b,c,d) | The Stroop task and an event-related fMRI | N = 17 IGDp<br>N = 17 HCs | - Higher activations in the left AG during avatar-perception.<br>- A positive correlation between gender identity and brain activation in the left AG during self-perception.   |



|                             |  |                             |   |
|-----------------------------|--|-----------------------------|---|
| Leménager, T. et al. (2014) | Images of Massively Multiplayer Online Role-Playing Games (MMORPGs) during fMRI.   | N = 16 IGDp<br>N = 17 HCs   | - Decreased bilateral brain activations in the AG and the Middle Occipital gyrus during self-perception   |
| Liu, J. et al. (2016)       | Task-state in fMRI   | N = 19 IGDp<br>N = 19 HCs   | - IGD participants had increased activation in regions that are associated with visuo-spatial orientation, space, attention, mental imagery and executive function (right superior parietal lobule, insular lobe, pre-cuneus, cingulate gyrus, superior temporal gyrus, and left brainstem)   |
| Dieter, J. et al. (2015)    | FMRI while completing a Giessen -Test (GT) - derived paradigm assessing self-, ideal-, and avatar-related self-concept domains.  | N = 15 IGDp<br>N = 17 HCs   | - In all avatar-related contrasts, within-group comparisons showed addicted players to exhibit significantly higher brain activations in the left AG.<br>- The between-groups comparisons revealed avatar-related left AG hyperactivations in addicts.  |
| Choi, E.J. et al. (2018)    | The teenagers described themselves, a famous historical person or their own game character, undergoing a functional magnetic resonance imaging (FMRI).                     | N = 12 IGDp<br>N = 15 HCs   | - When addicted adolescents were thinking about their own game characters, more global and significant medial prefrontal (MPFC) and anterior cingulate (ACC) activations were observed, than even when compared to thinking about themselves.<br>- The ACC activation was correlated with the symptom severity.<br>- The activation patterns demonstrated that addicted adolescents were most attached to their game characters and equated their game characters to human. |
| Green, R. et al. (2020)     | This systematic review examined 18 quantitative studies of avatar- and self-related concepts and problematic gaming, including 13 survey-based and 5 neuroimaging studies. | N = 18 quantitative studies | Survey-based studies have consistently reported that negative self-concept, avatar identification, and large self-avatar discrepancies are significantly associated with problematic gaming. Poor self-concept appears to be a risk factor for GD, particularly for games that facilitate role-playing and identity formation.  |

The following shows the dark flow studies at GD (Table 2). The results of all these studies demonstrate a strong correlation between the severity of gambling addiction, depth of immersion in an altered state of consciousness, and comorbid psychopathology such as depression, anxiety, and stress.

Table 2. Studies of altered states of consciousness: immersion into the "dark flow" of the game in gamblers with GD.

| Study                               | Task/Method   | Sample  | Main results   |
|-------------------------------------|---|---|--|
| Tricker, C. et al. (2016)           | A community sample was assessed for the urge to gamble an altered state of consciousness (assessed by the Altered State of Awareness dimension of the Phenomenology of Consciousness Inventory) at baseline, after a neutral cue, and after a gambling cue. | N = 37 GDp<br>M age = 32<br>M PGSI = 5;<br>PGSI = Problem Gambling Severity Index                               | It was found that (a) problem-gambling severity (PGSI score) predicted an increase in urge and an increase in an altered state of consciousness, and (b) increase in an altered state of consciousness mediated the relationship between problem-gambling severity and increase in urge. |
| Trivedi, R.H. & Teichert, T. (2017) | Empirical data were collected by applying a structured questionnaire with established scales.   | N = 500 online gamblers   | The findings indicate that online gambling addiction is reinforced by time transformation and autotelic experience.  |
| Murch, W.S. et al. (2020)           | Researchers presented data from three separate experiments conducted between 2015 and 2018 in which self-reported gambling flow and cardiac pre-ejection period (PEP; a measure of sympathetic nervous system arousal) were examined                        | N1 = 121, age M = 21.25, SD = 2.91;<br>N2 = 80, age M = 20.55, SD = 2.37;<br>N3 = 106, age M = 20.80, SD = 2.39 | It was found that self-reported flow states were associated with significant decreases in PEP during the first five minutes of EGM use. Thus, participants who experienced flow showed a greater sympathetic nervous system response to the onset of gambling.                           |

|                            |  |  |  |
|----------------------------|--|--|--|
| Dixon, M.J. et al. (2018)  | In this study, a realistic slot machine simulator equipped with a force sensor was used to measure how hard players pressed the spin button after different outcomes.<br>The severity of gambling addiction, stress, anxiety and depression were measured using test questionnaires    | N = 150 gamblers<br>M = 91<br>F = 62                 | This measure of arousal showed that LDWs (loss disguised as a win) were treated similarly to small wins. Additionally, depression symptomatology and dark flow were strongly correlated in the multiline game, with significant relationships between depression and gambling expectancy, and gambling expectancy and dark flow ratings also emerging              |
| Dixon, M.J. et al. (2019)  | Gamblers were assessed for mindfulness problems (using the Mindful Attention Awareness Scale), gambling problems (using the Problem Gambling Severity Index), and depressive symptoms (using the Depression Anxiety and Stress Scale).   | N = 129 gamblers                                     | Our key results were that mindfulness problems outside of the gambling context were positively correlated with depression, problem gambling status, and most importantly, dark flow within the gambling context. Dark flow was positively correlated with positive affect during play and the combination of dark flow and depression predicted gambling problems. |
| Kruger, T.B. et al. (2022) | Gamblers were assessed for mindfulness (using the Mindful Attention Awareness Scale), gambling problems (using the Problem Gambling Severity Index), depressive symptoms (using the Depression, Anxiety, and Stress Scale), and boredom proneness (using the Boredom Proneness Scale). | N = 110 gamblers<br>F = 56<br>M = 53<br>1 non-binary | Using hierarchical multiple regression, we found that dark flow accounted for unique variance when predicting problem gambling severity (over and above depression, mindfulness, and boredom proneness).   |

## 5. Discussion

In GD and IGD, both at the preclinical level of the problematic game and the clinical level of the pathological game, altered states of consciousness are observed during play and shortly before it, called flow-state, dark flow, game trance, and so on (Kruger et al., 2022; Leménager et al., 2016). During these states, the person loses touch with reality. The real-life situation completely removes himself from life problems and worries and related emotional experiences and moves into the virtual world of games. Self-identification is disturbed because the player identifies with the game character, the avatar-hero of the game, or the online image (Choi et al., 2018; Dieter et al., 2015; Tricker et al., 2016). In addition, the perception of time and memory of events during the game is impaired. These conditions become highly desirable and appealing to players and contribute to a pathological desire to continually engage in the game to repeat the unusual experience. The state of dark flow with the effect of detachment from life's problems and negative emotional feelings about them, followed by a stimulating and euphoric effect (or immersive pleasure), becomes very desirable for the addict and stimulates the urge to play, and thus the development of addiction (Trivedi & Teichert, 2017; Kruger, 2022; Dong et al., 2012). After returning from this illusionary free state, problems return, new debts and difficulties are added, and depression, anxiety, aggression, etc. (Dixon et al., 2018, 2019; Choi et al., 2018).

A limitation of this study is the small number of studies selected and their heterogeneity in design. The phenomenon of altered states of consciousness in GD and IGD is still very poorly understood, as is its clinical significance in the pathogenesis of addiction and comorbid psychopathology. Extensive research in this area is necessary for the future.

## 6. Conclusions

As a result of our clinical observations and a review of scientific research have concluded that altered states of consciousness during gambling and internet video games contribute to addiction, negative psychosocial consequences, and comorbid psychopathology. The game industry induces such states by using specific of various psycho-technical methods. For example, the methods of close wins or losses disguised as winnings while gambling on a slot machine. For this purpose, the design of games is constantly being improved, various sound and visual effects invented, etc.

## References

- Burleigh, T. L., Stavropoulos, V., Liew, L. W., Adams B. L., Griffiths M. D. (2018). Depression, internet gaming disorder, and the moderating effect of the gamer-avatar relationship: an exploratory longitudinal study. *Int. J. Ment. Health Addict.* 16 102–124. 10.1007/s11469-017-9806-3
- Calado, F., & Griffiths, M. D. (2016). Problem gambling worldwide: An update and systematic review of empirical research (2000-2015). *Journal of behavioral addictions*, 5(4), 592–613. <https://doi.org/10.1556/2006.5.2016.073>
- Choi, E. J., Taylor, M. J., Hong, S. B., Kim, C., Kim, J. W., McIntyre, R. S., & Yi, S. H. (2018). Gaming-addicted teens identify more with their cyber-self than their own self: Neural evidence. *Psychiatry research. Neuroimaging*, 279, 51–59. <https://doi.org/10.1016/j.psychresns.2018.05.012>
- Chung, T., Sum, S., Chan, M., Lai, E., & Cheng, N. (2019). Will esports result in a higher prevalence of problematic gaming? A review of the global situation. *Journal of behavioral addictions*, 8(3), 384–394. <https://doi.org/10.1556/2006.8.2019.46>
- Dieter, J., Hill, H., Sell, M., Reinhard, I., Vollstädt-Klein, S., Kiefer, F., Mann, K., & Leménager, T. (2015). Avatar's neurobiological traces in the self-concept of massively multiplayer online role-playing game (MMORPG) addicts. *Behavioral neuroscience*, 129(1), 8–17. <https://doi.org/10.1037/bne0000025>
- Dixon, M. J., Gutierrez, J., Stange, M., Larche, C. J., Graydon, C., Vintan, S., & Kruger, T. B. (2019). Mindfulness problems and depression symptoms in everyday life predict dark flow during slots play: Implications for gambling as a form of escape. *Psychology of addictive behaviors: journal of the Society of Psychologists in Addictive Behaviors*, 33(1), 81–90. <https://doi.org/10.1037/adb0000435>
- Dixon, M. J., Stange, M., Larche, C. J., Graydon, C., Fugelsang, J. A., & Harrigan, K. A. (2018). Dark Flow, Depression and Multiline Slot Machine Play. *Journal of gambling studies*, 34(1), 73–84. <https://doi.org/10.1007/s10899-017-9695-1>
- Dong, G., Huang, J. & Du, X. (2012). Alterations in regional homogeneity of resting-state brain activity in internet gaming addicts. *Behav Brain Funct* 8, 41. <https://doi.org/10.1186/1744-9081-8-41>
- Green, R., Delfabbro, P. H., & King, D. L. (2020). Avatar- and self-related processes and problematic gaming: A systematic review. *Addictive Behaviors*, 108, Article 106461. <https://doi.org/10.1016/j.addbeh.2020.106461>
- Kim, Y. R., Son, J. W., Lee, S. I., Shin, C. J., Kim, S. K., Ju, G., Choi, W. H., Oh, J. H., Lee, S., Jo, S., & Ha, T. H. (2012). Abnormal brain activation of adolescent internet addict in a ball-throwing animation task: possible neural correlates of disembodiment revealed by fMRI. *Progress in Neuro-psychopharmacology & Biological Psychiatry*, 39(1), 88-95. <https://doi.org/10.1016/j.pnpbp.2012.05.013>
- Kruger, T. B., Dixon, M. J., Graydon, C., Larche, C. J., Stange, M., Smith, S. D., & Smilek, D. (2022). Contrasting Mind-Wandering, (Dark) Flow, and Affect During Multiline and Single-Line Slot Machine Play. *Journal of gambling studies*, 38(1), 185–203. <https://doi.org/10.1007/s10899-021-10027-0>
- Leménager, T., Dieter, J., Hill, H., Hoffmann, S., Reinhard, I., Beutel, M., Vollstädt-Klein, S., Kiefer, F., & Mann, K. (2016). Exploring the Neural Basis of Avatar Identification in Pathological Internet Gamers and of Self-Reflection in Pathological Social Network Users. *Journal of behavioral addictions*, 5(3), 485–499. <https://doi.org/10.1556/2006.5.2016.048>
- Leménager, T., Dieter, J., Hill, H., Koopmann, A., Reinhard, I., Sell, M., Kiefer, F., Vollstädt-Klein, S., & Mann, K. (2014). Neurobiological correlates of physical self-concept and self identification with avatars in addicted players of Massively Multiplayer Online Role-Playing Games (MMORPGs). *Addictive Behaviors*, 39(12), 1789–1797. doi:10.1016/j.addbeh. 2014.07.017
- Liu, J., Li, W., Zhou, S., Zhang, L., Wang, Z., Zhang, Y., Jiang, Y., & Li, L. (2016). Functional characteristics of the brain in college students with internet gaming disorder. *Brain imaging and behavior*, 10(1), 60–67. <https://doi.org/10.1007/s11682-015-9364-x>
- Murch, W. S., Ferrari, M. A., McDonald, B. M., & Clark, L. (2020). Investigating Flow State and Cardiac Pre-ejection Period During Electronic Gaming Machine Use. *Frontiers in psychology*, 11, 300. <https://doi.org/10.3389/fpsyg.2020.00300>
- Tricker, C., Rock, A. J., & Clark, G. I. (2016). Cue-Reactive Altered State of Consciousness Mediates the Relationship Between Problem-Gambling Severity and Cue-Reactive Urge in Poker-Machine Gamblers. *Journal of gambling studies*, 32(2), 661–674. <https://doi.org/10.1007/s10899-015-9549-7>
- Trivedi, R.H., & Teichert, T. (2017). The Janus-Faced Role of Gambling Flow in Addiction Issues. *Cyberpsychology, Behavior, and Social Networking*. 20(3): 180-186. doi: 10.1089/cyber.2016.0453.

## FACTORS OF DISTRESS IN ENDOMETRIOSIS: THE INTERPLAY BETWEEN TRAIT EMOTIONAL INTELLIGENCE AND PAIN

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### Abstract

*Introduction:* Endometriosis is a gynecological condition characterized by the presence of endometrial-like tissue outside of the uterus. Several studies shown the importance of pain-related symptomatology in endometriosis, which has been linked to high levels of depression, anxiety, and stress. Furthermore, consistent findings revealed that pain symptoms do not always correlate with the severity of endometriosis, showing that other factors such as psychological and emotional factors may influence pain perception. In this regard, Trait Emotional Intelligence (Trait EI) was found to be a relevant antecedent for adjustment to one's medical condition.

The current study sought to verify whether the association between Trait Emotional Intelligence and General distress (depression symptoms, anxiety symptoms, and stress) in people with endometriosis would be mediated by Pain (intensity and interference with enjoyment of life, and general activity).

*Methods:* In a sample of 276 women with endometriosis aged between 18 and 40 years old ( $M=30.28$ ;  $SD=6.07$ ) instruments were administered to measure Trait EI, Pain and General Distress.

*Results:* Results of this study showed that Trait EI was negatively related to Pain and General distress, whereas General distress was positively associated to Pain. Furthermore, Pain has shown a mediation role in the relation between Trait EI and General distress.

*Discussion:* Individuals with a low trait EI may have difficulty requesting support from significant others or physicians, as well as engaging in healthy activities while dealing with pain-related symptomatology, which may foster the onset of internalizing symptomatology. Intervention programs for individuals with endometriosis may implement modules aimed at fostering Trait EI to successfully cope with pain and should carefully screen for internalizing symptomatology to improve their clinical efficacy.

**Keywords:** *Endometriosis, emotional intelligence, pain, distress.*

### 1. Introduction

Endometriosis is a long-term gynecological condition, mainly characterized by growth of endometrial-like tissue outside the uterine cavity (Johnson et al., 2016). Previous findings highlighted the central role of pain-related symptomatology in endometriosis (Evans et al., 2020), which may be associated with impaired quality of life and higher levels of stress, anxiety and depression (Warzecha et al., 2020). When compared to patients with milder symptoms or controls, individuals reporting higher degrees of pain generally experience more severe internalizing symptomatology (Friedl et al., 2015). At the same time, subjective perceptions of pain vary among individuals with endometriosis and do not always correlate with clinical severity of the illness (Chapron et al., 2012; Vercellini et al., 2006). This may suggest that other components, such as psychological and emotional dimensions may account for individual variation in pain perception. Among psychological factors, previous studies emphasized the role of trait emotional intelligence when dealing with emotionally taxing situations in medical settings (Sarrionandia & Mikolajczak, 2020).

Trait EI is in fact a set of dispositions and self-perceptions related to one's emotional abilities (Petrides, Pita, & Kokkinaki, 2007) that past findings have pointed to as closely linked to one's adjustment to chronic illnesses. Specifically, the meta-analysis conducted by Sarrionandia & Mikolajczak (2020) comprising 106 different studies and observing a broad spectrum of clinical populations suggested

that trait EI is a key predictor of both subjective and objective health indicators. Given that poor understanding of one's and others' emotions hinder individuals' ability to manage daily stressors (Baudry et al., 2018) lower ability to manage and cope with pain is likely to occur. Furthermore, people with low trait EI are more likely to have psychological and interpersonal problems (Petrides et al. 2016), which may foster distress symptoms (Russo et al. 2011; Andrei & Petrides, 2013).

In light of the above findings, the present study sought to test the hypothesis that an association between trait EI and General distress (anxiety, depression, and stress) in individuals with endometriosis would be mediated by Pain. Specifically, the goal of this research was to test a model in which lower Trait EI predict higher levels of Pain and General Distress, whilst higher pain predicts higher General distress.

## 2. Method

### 2.1. Participants

The sample consisted 276 women with endometriosis aged between 18 and 40 years old ( $M=3028$ ;  $SD=6.07$ ).

### 2.2. Measures

**2.2.1. Trait emotional intelligence.** The Trait Emotional Intelligence Questionnaire- Short Form (Petrides, 2009) is a 30-item self-report form to assess Trait EI. Participants are required to rate, on a 7-point scale, their level of agreement with each item (e.g.: "I usually find it difficult to regulate my emotions"). Higher scores indicate higher trait EI. In the present study, internal consistency was good (Table 1).

**2.2.2. Pain perception.** The Pain Intensity and Interference scale (PEG; Krebs et al., 2009) is a 3-item self-report questionnaire used to assess perceived pain intensity and to what extent it interferes with one's life. Participants are required to rate, on a 11-point scale, their level of agreement with each item (e.g.: What number best describes your pain on average in the past week?). Higher scores represent higher levels of pain intensity and interference. In the present study, internal consistency was good (Table 1).

**2.2.3. General distress.** The Depression Anxiety Stress Scales-21 in its Italian validation (DASS21; Bottesi et al., 2015) is a 21-item self-report questionnaire used to assess components of distress (depression, anxiety, and distress). Participants are required to rate, on a 4-point scale, their level of agreement with each item (e.g.: I couldn't seem to experience any positive feeling at all). Higher scores represent higher levels of pain intensity and interference. In the present study, internal consistency was good (Table 1).

### 2.3. Procedure

Participants were enrolled through social groups of women's associations with endometriosis via targeted advertisements. The inclusion criteria were: age of majority, Italian nationality and having a diagnosis of endometriosis. Women filled an online survey, with consent implied by submission. All questions in the electronic survey had been set as mandatory and therefore no data was missing. Participants were guaranteed the anonymity of their data. The data were then analyzed using IBM SPSS and the lavaan Package for R with the integration of RStudio.

## 3. Results

### 3.1. Descriptive results and correlations

The Means, Standard Deviations, Skewness and Kurtosis of scores of each variable are shown in Table 1. Furthermore, Table 1 illustrates the correlations among the observed variables (Table 2).

### 3.2. Mediation model

Structural Equation Modelling with latent variables was conducted to test a model with Trait EI as predictor variables, Pain as mediator, General Distress as outcome. For Trait EI and Pain latent constructs a parceling approach was used, while for General Distress latent variable the three scales that rate Anxiety, Depression and Stress were used. The model showed adequate fit indices,  $\chi^2(24) = 64.16$ ;  $p < .01$ , CFI = .98, SMSR = .04, RMSEA = .08 (90% CI = .06 – .10). Trait EI was associated with Pain ( $\beta = -.14$ ) and General Distress ( $\beta = -.61$ ), moreover, Pain related with General Distress ( $\beta = .22$ ). In addition, a significant indirect path was found from Trait EI to General Distress by Pain ( $\beta = -.03$ ).

#### 4. Discussion

The purpose of this study was to test a mediation model in which the relationship between Trait EI and General distress is mediated by Pain. As expected, results of this study showed that Trait EI is negatively correlated with both pain and symptoms of distress. As suggested by Petrides et al. (2007) individuals who have more negative perceptions of their emotion-related abilities and behaviors have more negative perceptions of their emotion-related abilities and behaviors, and this may turn into a source of internalizing distress. In a similar vein, underdeveloped Trait EI would render individuals vulnerable to greater pain intensity and interference because of an inability to comprehend and utilize affect-laden informations and to cope with stressors (Baudry et al., 2018).

In line with the expectations, Pain was positively associated with General distress, because long-term exposure to aversive events like painful symptomatology associated with endometriosis may be viewed as inescapable or unavoidable, thereby leading to a sense of uncontrollability (Trindade, Mendes, & Ferreira, 2020). As a result, individuals may be predisposed to depressive-like symptomatology in the long run.

Moreover, Pain showed a mediation role in the relationship between Trait EI and General distress. In other words, a lack of awareness of one's own and others' emotions may render difficult to understand and use emotion-related information to cope with difficult situations (Baudry et al., 2018), such as seeking support from others or engaging in healthier behaviors, thereby lowering individuals' motivation to adhere to treatments and, in turn, fostering the onset of distressing states. This study is in line with previous insights suggesting that Trait EI may be a relevant dimension in medical settings (Sarrionandia Mikolajczak, 2020) but extended those finding by assessing a burdening gynecological condition like endometriosis.

Of note this study is cross-sectional, and thus future studies with a longitudinal design are needed to disentangle the relationship between the observed variables. Despite this limitation, there findings have several clinical implications. First of all, individuals with endometriosis may develop symptoms of distress. Clinicians should carefully screen for the presence of internalizing symptomatology to improve their clinical interventions. Second, the current findings suggest that fostering Trait EI may have a desirable effect on reducing psychological distress, intervention programs for individuals with Endometriosis should thus include a module aimed at fostering one's Trait EI to improve their clinical efficacy.

Finally, the current study provides a contribution regarding the psychological underpinnings of pain in Endometriosis, which may help Finally, integrating a more nuanced description of the psychological factors related to pain in Endometriosis may provide a broader understanding of this burdening disease.

Table 1. Descriptive analyses and correlations between the observed variables.

|                     | $\alpha$ | M    | SD   | Skew | Kurt  | 1      | 2      | 3      | 4      | 5    |
|---------------------|----------|------|------|------|-------|--------|--------|--------|--------|------|
| 1. Depression       | .87      | 1.38 | .86  | .29  | -1.10 |        |        |        |        |      |
| 2. Anxiety          | .85      | 1.15 | .77  | .58  | -.45  | .66**  |        |        |        |      |
| 3. Stress           | .90      | 1.74 | .74  | -.11 | -.92  | .75**  | .68**  |        |        |      |
| 4. General distress | .95      | 1.42 | .71  | .31  | -.84  | .91**  | .87**  | .90**  |        |      |
| 5. Pain             | .96      | 4.69 | 2.79 | -.36 | -1.08 | .26**  | .28**  | .25**  | .30**  |      |
| 6. Trait EI         | .89      | 4.67 | .84  | -.04 | -.36  | -.59** | -.36** | -.43** | -.52** | -.12 |

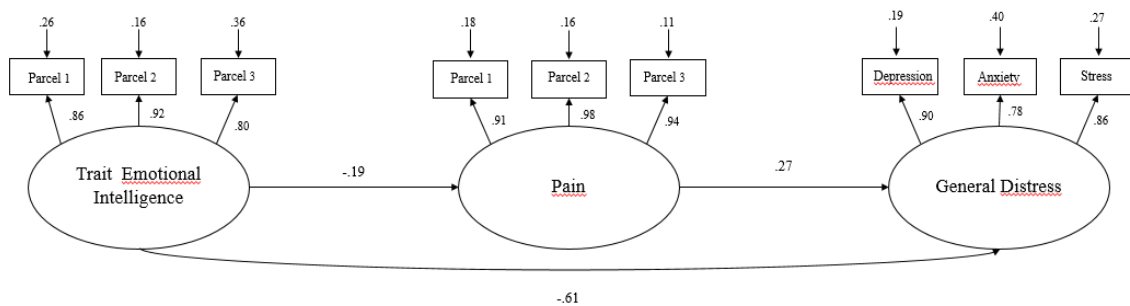
Note: \* $p < .05$ . \*\* $p < .01$ .

Table 2. Path estimates, SEs and 95% CIs.

|                                    | $\beta$ | SE  | Lower bound (BC)<br>95% CI | Upper bound (BC)<br>95% CI |
|------------------------------------|---------|-----|----------------------------|----------------------------|
| Trait EI → Pain                    | -.19    | .17 | -.88                       | -.23                       |
| Pain → General distress            | .27     | .01 | .04                        | .09                        |
| Trait EI → General distress        | -.61    | .04 | -.51                       | -.36                       |
| Trait EI → Pain → General distress | -.05    | .01 | -.07                       | -.02                       |

Note: SE = standards errors; BC 95% CI = Bias Corrected-Confidence Interval.

Figure 1. Mediation model between the observed variables. Coefficients shown are standardized path coefficients.



## References

- Andrei, F., & Petrides, K. V. (2013). Trait emotional intelligence and somatic complaints with reference to positive and negative mood. *Psihologija*, 46(1), 5–15.
- Baudry, A. S., Grynberg, D., Dassonneville, C., Lelorain, S., & Christophe, V. (2018). Sub-dimensions of trait emotional intelligence and health: A critical and systematic review of the literature. *Scandinavian Journal of Psychology*, 59(2), 206–222.
- Bottesi, G., Ghisi, M., Altoè, G., Conforti, E., Melli, G., & Sica, C. (2015). The Italian version of the Depression Anxiety Stress Scales-21: Factor structure and psychometric properties on community and clinical samples. *Comprehensive Psychiatry*, 60, 170–181.
- Chapron, C., Santulli, P., De Ziegler, D., Noel, J., Anaf, V., Streuli, I., ... Borghese, B. (2012). Ovarian endometrioma: Severe pelvic pain is associated with deeply infiltrating endometriosis. *Human Reproduction*, 27(3), 702-711.
- Evans, S., Mikocka-Walus, A., Olive, L., Seidman, L. C., Druitt, M., & Payne, L. A. (2020). Phenotypes of Women with and Without Endometriosis and Relationship with Functional Pain Disability. *Pain Medicine*, 22(7), 1511–1521.
- Friedl, F., Riedl, D., Fessler, S., Wildt, L., Walter, M., Richter, R., ... Böttcher, B. (2015). Impact of endometriosis on quality of life, anxiety, and depression: An Austrian perspective. *Archives of Gynecology and Obstetrics*, 292(6), 1393-1399.
- Johnson, N. P., Hummelshoj, L., Adamson, G. D., Keckstein, J., Taylor, H. S., Abrao, M. S., ... Giudice, L. C. (2016). World Endometriosis Society consensus on the classification of endometriosis. *Human Reproduction*, 32(2), 315–324.
- Krebs, E. E., Lorenz, K. A., Bair, M. J., Damush, T. M., Wu, J., Sutherland, J. M., ... Kroenke, K. (2009). Development and Initial Validation of the PEG, a Three-item Scale Assessing Pain Intensity and Interference. *Journal of General Internal Medicine*, 24(6), 733–738.
- Petrides, K. V. (2009). *Technical manual for the Trait Emotional Intelligence Questionnaires (TEIQue)*. London: London Psychometric Laboratory.
- Petrides, K. V., Mikolajczak, M., Mavroveli, S., Sanchez-Ruiz, M. J., Furnham, A., & Pérez-González, J. C. (2016). Developments in trait emotional intelligence research. *Emotion Review*, 8, 335–341.

- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, *98*(2), 273–289.
- Russo, P. M., Mancini, G., Trombini, E., Baldaro, B., Mavroveli, S., & Petrides, K. V. (2011). Trait Emotional Intelligence and the Big Five. *Journal of Psychoeducational Assessment*, *30*(3), 274–283.
- Sarrionandia, A., & Mikolajczak, M. (2020). A meta-analysis of the possible behavioural and biological variables linking trait emotional intelligence to health. *Health Psychology Review*, *14*(2), 220–244.
- Trindade, I. A., Mendes, A. L., & Ferreira, N. B. (2020). The moderating effect of psychological flexibility on the link between learned helplessness and depression symptomatology: A preliminary study. *Journal of Contextual Behavioral Science*, *15*, 68–72.
- Vercellini, P., Fedele, L., Aimi, G., Pietropaolo, G., Consonni, D., & Crosignani, P. (2006). Association between endometriosis stage, lesion type, patient characteristics and severity of pelvic pain symptoms: A multivariate analysis of over 1000 patients. *Human Reproduction*, *22*(1), 266–271.
- Warzecha, D., Szymusik, I., Wielgos, M., & Pietrzak, B. (2020). The Impact of Endometriosis on the Quality of Life and the Incidence of Depression—A Cohort Study. *International Journal of Environmental Research and Public Health*, *17*(10), 3641.



## QUALITY OF LIFE AND COPING WITH DISEASE-RELATED STRESS IN PATIENTS AFTER AMPUTATION OF A LOWER LIMB

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### Abstract

In theoretical terms, the concept of health-related quality of life (HRQoL, QoL) and the concept of adaptation are based on the biopsychosocial paradigm. In this regard, there is a need for a combined study of the patients' QoL indicators in the situation of illness and the psychological mechanisms of adaptation to it. A specific cohort is represented by patients who underwent amputation due to tumor lesions of the bones and soft tissues of the lower extremity. They have not been sufficiently studied in terms of psychology. The foregoing determined the purpose of this research: to study the clinical and psychological status, strategies and personal resources for coping with stress, and QoL of patients who underwent lower limb amputation due to cancer in comparison with patients who underwent amputation due to non-cancer diseases. An empirical study is carried out using clinical and psychodiagnostic methods, including the QLQ-C30, WCQ, Big V questionnaires. Two groups of patients were studied: those who underwent amputation due to an oncological disease (group 1, n=24), and those who underwent amputation due to other –non-oncological– diseases (group 2, n=15).

The results obtained indicate patients' rather high adherence to postoperative treatment and rehabilitation in a hospital setting, and a pronounced decrease in the QoL of patients. Patients of both groups rated their physical and role activity as low, as well as their financial situation. Among the symptoms limiting vital functioning, all emphasize fatigue; the differences between the groups were determined according to three symptomatic scales: fatigue ( $p=0,071$ ) and pain ( $p=0,093$ ) are more troubling for patients with oncological pathology, shortness of breath ( $p=0,047$ ) for patients with other chronic somatic diseases. When studying the mechanisms of psychological adaptation to the disease, it was found that among patients of group 1, the coping strategies "Distancing" ( $p=0,056$ ) and "Escape-avoidance" ( $p=0,098$ ) prevail, as well as the strategy "Positive reappraisal" ( $p=0,025$ ), the indicators of which, however, are lower than the average normative values.

The studied cohort of patients are in a situation of chronic stress associated with the loss of a limb and with cancer; they require psychological support at all stages of treatments taking into account the specifics of their reactions to the disease stress and the potential coping resources that are available to them.

**Keywords:** *Lower limb amputation, cancer of bones and soft tissues, health-related quality of life, adherence to treatment, coping.*

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### 1. Introduction

In theoretical terms, both the concept of health-related quality of life (HRQoL, QoL) and the concept of adaptation in medicine and clinical psychology are based on the biopsychosocial paradigm. In practical terms, the study of QoL essentially means the study of those objective restrictions that the disease imposes on the patient's functioning, and those subjective reactions, emotional states, motivational and behavioral characteristics that are formed in the conditions of the disease and provide psychological adaptation to the disease.

In this regard, there is a need for a combined study of the patients' QoL indicators in the situation of illness and the psychological mechanisms of adaptation to it (Shchelkova et al., 2018). This largely applies to oncological diseases due to their chronic and life-threatening nature, complex treatment and the associated stress.

A specific cohort is represented by patients who underwent amputation due to tumor lesions of the bones and soft tissues of the lower limb. They have not been sufficiently studied in terms of

psychology, although it is evident that they are in a situation of chronic intense stress associated with cancer and the loss of a limb. A few studies have shown a decrease not only in the patients' activity level and working ability after amputation, but also in psychological and social adaptation, as well as in QoL in general (Balk et al., 2019; Davie-Smith et al., 2019; Young et al., 2019; Shchelkova et al., 2021). The psychological aspects of patients undergoing amputation require further study. A comparison of psychological adaptation and QoL of patients who underwent amputation due to cancer and other somatic diseases, which, however, are not accompanied by an actual vital threat related to cancer, may be one of the emerging areas of research. The present study is aimed at obtaining preliminary (due to the limited sample) data in this direction.

Thus, the foregoing determined the purpose of this research: to study the clinical and psychological status, strategies and personal resources for coping with stress, as well as the main parameters of QoL of patients who underwent lower limb amputation due to cancer in comparison with patients who underwent amputation due to non-cancer diseases.

## 2. Methods

In accordance with the objectives of the study, a set of methods for clinical and psychological diagnostics was used.

Clinical diagnostics, along with other methods used in onco-orthopedics, included the use of a 10-degree visual analogue scale of pain intensity (VAS Pain), a five-point scale for an objective medical assessment of the severity of the pain syndrome (Watkins' scale), the Karnofsky scale, the "Musculoskeletal Tumor Society" (MSTS) scale.

The psychological diagnostic included a preliminary interview, during which informed consent was obtained from each patient; a structured interview was also used to study the socio-demographic characteristics of patients, their attitudes towards the disease and adherence to treatment after surgery.

The following questionnaires were used: the "Ways of Coping Questionnaire" (WCQ), the "Big Five Inventory" (BIG V), the "EORTC Core Quality of Life Questionnaire" (QLQ-C30).

The differences in psychodiagnostic parameters between two groups were determined using a one-way analysis of variance ANOVA; a frequency analysis was carried out using Pearson's  $\chi^2$ .

39 inpatients of the Department of General Oncology at the National Medical Research Center of Oncology named after N.N. Blokhin were included in the study. In accordance with the objectives of the study, patients were divided into two groups: group 1 – patients who underwent amputation due to cancer; group 2 – patients who underwent amputation due to a non-cancer disease. The groups were studied during the period of rehabilitation treatment and inpatient rehabilitation after amputation.

Table 1 shows the main demographic characteristics of the patients who made up the comparison groups.

*Table 1. Demographic characteristics of the studied patients.*

| Demographic characteristics | Group 1 (n=24) |       | Group 2 (n=15) |       |
|-----------------------------|----------------|-------|----------------|-------|
|                             | N              | %     | N              | %     |
| Male                        | 15             | 62.50 | 14             | 93.30 |
| Female                      | 9              | 37.50 | 1              | 6.70  |
| Mean age                    | 47.25±3.17     |       | 59.67±2.27     |       |

## 3. Results

### 3.1. Social and clinical characteristics

At the time of hospitalization, a small number of patients in groups 1 and 2 retained their previous professional status (12.5% and 13.3%, respectively); in both studied groups, most patients lost their ability to work due to the underlying disease. More than half of the patients are married, more than 60% of patients in each group have children. Differences between groups in these parameters are not significant.

The cause of amputation in group 1 was oncological lesions of long bones and soft tissues of the extremities: osteosarcoma of the femur and lower leg bones, chondrosarcoma, liposarcoma of the soft tissues of the lower leg, sarcoma of the soft tissues of the thigh, etc. The cause of amputation in group 2 was a variety of diseases and pathological conditions: atherosclerosis of the arteries of the lower extremities, chronic osteomyelitis, diabetes mellitus, varicose veins of the lower extremities and venous thrombosis.

The average values of the subjective assessment of pain severity according to the VAS Pain scale and the average values of the expert assessment of the severity of the pain syndrome (by the attending physician) according to the Watkins scale, as well as the differences between groups 1 and 2 are shown in Table 2.

Table 2. Mean values of the severity of pain syndrome.

| Scales         | Group 1 |      | Group 2 |      | p-value |
|----------------|---------|------|---------|------|---------|
|                | M       | SD   | M       | SD   |         |
| VAS Pain scale | 5.37    | 1.60 | 2.57    | 2.14 | p=0.000 |
| Watkins scale  | 1.79    | 0.79 | 0.64    | 0.84 | p=0.000 |

There were no significant differences between the patients in terms of their general condition according to the Karnofski scale (76.00, 3.06 vs 82.50, 6.48).

According to the MSTs scale, patients differ in five out of six aspects characterizing the functional result of treatment and rehabilitation after amputation: pain (p=0.006), function (p=0.000), supports (p=0.001), walking (p=0.003), gait (p=0.000). In all cases, the functional result was worse in the group of patients with oncological pathology (group 1). However, patients did not differ in the aspect of emotional reaction to the amputation.

Thus, the analysis of indicators of the general condition of patients, the severity of pain syndrome and the quality of the functional result of treatment and rehabilitation of patients who underwent amputation showed a significant decrease in several of the studied parameters in the group of patients with oncological lesions compared with the group of patients with other chronic diseases.

### 3.2. Psychological characteristics

The majority of patients in both groups undergo all the necessary examinations, they follow the physician's prescriptions regarding drug treatment; show interest in information about the disease, prognosis, treatment options. At the same time, with a generally compliant attitude of patients to inpatient treatment and rehabilitation after amputation, a slightly higher level of adherence to the recommendations on regimen and limiting physical activity was revealed in group 1, as well as a more trustful relationship with the attending physician ( $\chi^2=3.378$ ; p=0.066).

Patients' coping strategies were studied using the WCQ. Its mean values are presented in Table 3.

Table 3. WCQ mean values in patients of two clinical groups.

| WCQ scales               | Group 1 |       | Group 2 |       | p-value |
|--------------------------|---------|-------|---------|-------|---------|
|                          | M       | SD    | M       | SD    |         |
| Confrontive              | 47.41   | 6.23  | 43.38   | 18.61 | –       |
| Distancing               | 45.41   | 9.70  | 36.25   | 12.44 | p=0.056 |
| Self-controlling         | 47.59   | 13.71 | 42.38   | 13.21 | –       |
| Seeking social support   | 49.94   | 10.45 | 40.88   | 8.74  | –       |
| Accepting responsibility | 47.77   | 9.97  | 48.87   | 18.47 | –       |
| Escape – avoidance       | 44.82   | 9.06  | 37.87   | 10.11 | p=0.098 |
| Planful problem-solving  | 47.41   | 10.21 | 43.13   | 11.83 | –       |
| Positive reappraisal     | 40.18   | 16.09 | 26.25   | 2.66  | p=0.025 |

Few differences were observed between two groups of patients in terms of their coping strategies. Thus, patients who underwent amputation due to an oncological lesion tend to use cognitive and behavioral strategies (giving a positive meaning to an objectively unfavorable situation associated with gaining new experience or post-traumatic personal growth, devaluing the situation, mentally switching to pleasant or neutral topics, avoiding the reality) aimed at relieving disease-related emotional stress to a greater extent.

The study of patients' personality traits was carried out using the BIG V inventory. Statistical analysis showed significant differences between groups on one scale – “conscientiousness” (p=0.010), with higher values in group 1 (34.33, 4.90 vs 27.88, 6.51).

The main parameters of patients' QoL were studied using the QLQ-C30, and although patients in group 2 suffer from other (non-oncological) diseases, the estimated QoL parameters are relevant to their condition, since they reflect the objective limitations and subjective attitude associated with a severe somatic disease. The mean values of the QLQ-C30 are presented in Table 4.

Table 4. The QLQ C-30 mean values in patients of two clinical groups.

| QLQ-C30 scales     |                        | Group 1 |       | Group 2 |       | p-value |
|--------------------|------------------------|---------|-------|---------|-------|---------|
|                    |                        | M       | SD    | M       | SD    |         |
| QL-2               | General health         | 47.37   | 17.18 | 51.28   | 26.53 | –       |
| Functional scales  |                        |         |       |         |       |         |
| PF-2               | Physical functioning   | 54.73   | 30.27 | 55.39   | 22.01 | –       |
| RF-2               | Role functioning       | 39.47   | 37.77 | 57.69   | 33.36 | –       |
| EF                 | Emotional functioning  | 74.12   | 20.01 | 67.30   | 25.56 | –       |
| CF                 | Cognitive functioning  | 78.07   | 19.29 | 74.35   | 25.11 | –       |
| SF                 | Social functioning     | 51.75   | 29.34 | 64.10   | 28.74 | –       |
| Symptomatic scales |                        |         |       |         |       |         |
| FA                 | Fatigue                | 52.04   | 24.58 | 36.75   | 19.45 | p=0.071 |
| NV                 | Nausea and vomiting    | 8.77    | 14.02 | 8.97    | 18.77 | –       |
| PA                 | Pain                   | 50.88   | 31.66 | 32.05   | 27.60 | p=0.093 |
| DY                 | Dyspnea                | 15.79   | 23.22 | 35.90   | 31.80 | p=0.047 |
| SL                 | Insomnia               | 43.86   | 24.98 | 30.77   | 31.81 | –       |
| AP                 | Appetite loss          | 33.33   | 27.21 | 33.33   | 30.43 | –       |
| CO                 | Constipation           | 22.81   | 33.43 | 28.21   | 35.61 | –       |
| DI                 | Diarrhea               | 8.77    | 18.73 | 15.38   | 25.87 | –       |
| FI                 | Financial difficulties | 43.86   | 31.53 | 46.15   | 28.99 | –       |

Note. In functional scales of the QLQ-C30 a higher score corresponds to a higher QoL level; in symptomatic scales a higher QoL level corresponds to lower scale indexes.

The overall QoL in both groups corresponds to an average level. There were no significant differences in functional scales between the groups. In each group, patients most highly rate cognitive and emotional activity, the lowest – physical and role activity; the only significant difference was established in the symptomatic scale “shortness of breath” (dyspnea) ( $p=0.047$ ), which disturbs patients from group 2 to a greater extent.

#### 4. Discussion

Given the favorable prognosis in many of the cases, patients with tumors of the musculoskeletal system have to be included in specific programs for functional, social and psychological rehabilitation to improve their quality of life and to help them adapting to their new condition. At the same time, in recent studies of QoL, not only the clinical and social aspects of the patient’s functioning in a situation of oncological disease are discussed; the emphasis is placed on the subjective, personal experience related to the disease and the psychological coping with it (Sirota et al., 2016).

The present study revealed several patterns in the coping behaviour of patients with oncological lesions. Data on the mutual influence of the level of QoL and the characteristics of coping can also be found in other studies of oncological patients after amputation (Silva et al., 2019). The discrepancy between a relatively high level of QoL (assessed subjectively by patients) and an objective assessment of their state of health and vitality is indirectly confirmed by their greater adherence to treatment and emotional attachment to the attending physician compared to the control group, since existing studies have shown that deterioration in QoL significantly affects adherence to restorative treatment after amputation (Padovani et al., 2015). Amputated patients are subjected to an enormous stress, pain and grief, but they have hope of regaining independence after amputation (Norlyk et al., 2013).

The results of the present study confirmed the need for a combined research of the mechanisms of psychological adaptation and QoL of onco-orthopedic patients, since their indicators potentiate and concretize each other, allowing to see a holistic picture of the patient’s personality in conditions of a life-threatening disease and amputation.

#### 5. Conclusion

In conclusion, despite the preliminary nature of the presented study results, the obtained psychological data can now be integrated into the general scheme of treatment and rehabilitation of onco-orthopedic patients. Research in this direction will be continued on a larger sample to accumulate existing data.

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### References

- Balk, E. M., Gazula, A., Markozannes, G., Kimmel, H. J., Saldanha, I. J., Trikalinos, T. A., & Resnik, L. J. (2019). Psychometric Properties of Functional, Ambulatory, and Quality of Life Instruments in Lower Limb Amputees: A Systematic Review. *Arch Phys Med Rehabil*, 100(12), 2354–2370. <https://doi.org/10.1016/j.apmr.2019.02.015>.
- Davie-Smith, F., Paul, L., Stuart, W., Kennon, B., Young, R., & Wyke S. (2019). The influence of socio-economic deprivation on mobility, participation, and quality of life following major lower extremity amputation in the West of Scotland. *Eur J Vasc Endovasc Surg*, 57(4), 554–560. <https://doi.org/10.1016/j.ejvs.2018.10.011>.
- Norlyk, A., Martinsen, B., & Kjaer-Petersen, K. (2013). Living with clipped wings—Patients' experience of losing a leg. *Int J Qual Stud Health Well-being*, 8, 21891. <https://doi.org/10.3402/qhw.v8i0.21891>.
- Padovani, M. T., Martins, M. R., Venâncio, A., & Forni, J. E. (2015). Anxiety, depression and quality of life in individuals with phantom limb pain. *Acta Ortop Bras*, 23(2), 107–110. <https://doi.org/10.1590/1413-78522015230200990>.
- Shchelkova, O. Yu., Iakovleva, M. V., Usmanova, E. B., Sofronov, D. I., Ryl'nikov, P. A., Sarzhevskaya, Ya. A., & Salkov, A. G. (2021). The development of quality of life psychosocial model in cancer patients after lower limb amputation. *Voprosy onkologii*, 67(4), 559–568. <https://doi.org/10.37469/0507-3758-2021-67-4-559-568>.
- Shchelkova, O. Yu., Usmanova, E. B., Gorbunov, I. A., & Sushentsov, E. A. (2018). Psychological adjustment and quality of life in patients with bone tumor. *Uchenye zapiski Sankt-Peterburgskogo gos. medits. un-ta im. akad. I. P. Pavlova*, 25(3), 62–72. <https://doi.org/10.24884/1607-4181-2018-25-3-62-72>.
- Silva, R. S., Guilhem, D. B., Batista, K. T., & Tabet, L. P. (2019). Quality of life of patients with sarcoma after conservative surgery or amputation of limbs. *Acta Ortop Bras*, 27(2), 276–280. <https://doi.org/10.1590/1413-785220192705219143>.
- Sirota, N. A., Moskovchenko, D. V., Yaltonskiy, V. M., & Yaltonskaya, A. V. (2016). Concern about the progression of cancer: modern theoretical concepts and approaches. *Meditsinskaya psikhologiya v Rossii: elektron. nauch. zhurn.*, 6(41). Retrieved February 14, 2022, from [http://mprj.ru/archiv\\_global/2016\\_6\\_41/nomer03.php](http://mprj.ru/archiv_global/2016_6_41/nomer03.php).
- Young, M., McKay, C., Williams, S., Rouse, P., & Bilzon, J. L. J. (2019). Time-related changes in quality of life in persons with lower limb amputation or spinal cord injury: protocol for a systematic review. *Syst Rev*, 8(1), 191. <https://doi.org/10.1186/s13643-019-1108-3>.

# RELEVANCE OF EDUCATION AND ENVIRONMENT ON RELIGIOSITY, QUALITY OF LIFE AND HAPPINESS

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## Abstract

Religiosity is an inclination to find meaning and purpose of life in order to live an integrated life. Religiosity provides goals and value system, which shapes different aspects of life and enhances mental health and happiness. The objective of this paper is to review the relevance of education for mental health, happiness and religiosity in different Indian environmental context.

Four hundred subjects from rural and urban population residing in various location of India were administered Oxford Happiness inventory test, WHO-QOL questionnaires and Religious orientation questionnaire. Multivariate ANOVA performed on differentiation scores revealed significant effects. Findings reveal that significant differences emerged in QOL, Happiness and Religiosity as a function of education, where less educated have higher degree of happiness and religiosity than highly educated participants.

Education effect was statistically significant on Religiosity, Quality of Life and Happiness. The data suggests a strong trend in the expected direction. The findings have been discussed in terms of the characteristic education patterns of Indian subcontinent.

**Keywords:** *Education, environment, religiosity, quality of life, happiness.*

## 1. Introduction

The persona of an individual is a reflection of his education. The process by which an individual acquires new skills, behaviour or understanding, often in a formal or informal setting is education. Learning skills and knowledge helps us to build opinion and have our own point of view on different things in life; way of thinking and behaviour, decision making and develops moral values & ethics. This always impacts our personality in a positive way.

Education gives knowledge and skills and religiosity provides moral values and ethics. The combination of education and religiosity make a person's value, goal of life and quality. For the overall holistic development of both character and personality, it is very important to excel in all types of education.

Religious behaviour and beliefs give life a meaning. Some behaviour such as trust in God, worship, pilgrimage etc. can cause inner peace by creating hope and encouraging positive attitude (Alimardani *et al.* 2014). It is also claimed that religious students fare better in their studies or academic life (Glass and Jacobs, 2005).

Religious commitment, religious involvement, religiousness, religious orientation and religiosity are terms often used to refer to the same concept (Khenfer an. Rouse, 2012).

## 2. Method

A cross-sectional descriptive design was used to explore the relationships among quality of life, happiness, religious orientation and education.

**Sample:** The sample consisted of 400 randomly selected people from different religions in rural and urban population residing in various locations of India. Of the total sample 50% (n=200) were from rural background and 50% (n=200) were from urban background.

**Measures:** For measuring quality of life WHOQOL-100 & WHOQOL SRPB-32 instrument was used. This scale was developed and standardized by a team of Department of mental health and substance, World Health Organization (WHO), Geneva, Switzerland in 2002. Both these scales consist of a total of 132 items. These items are divided into six domains. The questionnaires were translated in

simple Hindi language. Statements were made small and easy to understand. It was checked by six subject experts and proved to be good in the pilot study.

Happiness was measured by using Oxford happiness questionnaire developed and revised by psychologists Hills & Argyle (2002). The questionnaire had 29 items and discrimination power (DP) of 0.91. This questionnaire was self-translated in Hindi language. The statements were made simple & short and were converted into a four point rating scale for precise concept and accurate scoring.

For measuring religious orientation a 50 items five point Likert scale having 17 dimensions was self-developed during the course of investigation. The domains included are: Intrinsic religiosity i.e.; prayer & worship, future life, spirit and spirit world, general religiosity, personal religious belief, God as judge, universal truths, religious practices (yoga and meditation), and personal religion. Extrinsic religiosity i.e.; Nature of God, formal religion, attitude towards priests, civil and social religion, the daily and occasional rituals, religious education, attitude towards scriptures, attitude towards religious places. The DP of the scale was found to be 0.84.

*Procedure:* All the participants were contacted personally and provided a consolidated questionnaire having WHOQOL, Oxford happiness questionnaire and Religious orientation questionnaire (self-developed). Since all the participants were literate, there was no problem in their understanding the questions. The data was collected individually. The subjects were interviewed to make the observations more precise and accurate. They were also asked to express their views and suggestions.

The filled protocol was re-examined and the scoring was done as per manual instruction for each questionnaire. Master chart was prepared and the data was analysed statistically.

### 3. Result

Table 1 reports the means & SD of quality of life, happiness and religiosity as a function of education and environmental setting. Table 2 shows the summary of MANOVA. It is evident from the tables that main effect of education reached the significance level ( $F(2,395) = 4.88, p < .01, \eta^2 = .024$ ) for QOL suggesting that the QOL of low ( $M=528.75$ ) was significantly better than their counterparts moderate ( $M=493.36$ ) and highly educated group ( $M=473.26$ ). For happiness the main effect of education reached the significance level ( $F(2,395) = 5.48, p < .01, \eta^2 = .027$ ) suggesting that the happiness of low educated group ( $M=98.50$ ) is significantly low than moderate ( $M=90.22$ ) and high educated group ( $M=89.16$ ). For religiosity also the main effect of education reached the significance level ( $F(2,395) = 42.88, p < .001, \eta^2 = .178$ ) suggesting that the religiosity of low educated group ( $M=165.00$ ) is significantly better than moderate ( $M=204.60$ ) and high ( $M=189.25$ ) educated group.

The main effect of location reached the significance level ( $F(1,395) = 12.83, p < .001, \eta^2 = .031$ ) for QOL suggesting that the QOL of rural low education group ( $M=528.75$ ); moderate education group ( $M=499.29$ ) and high education group ( $M=588.94$ ) is significantly better than their counterpart urban moderate education group ( $M=473.68$ ) and high education group ( $M=468.42$ ) (no low educated subject participated in this study in urban population). For happiness also the main effect of education could not reach the significance level ( $F(1,395) = 1.28, p > .05, \eta^2 = .003$ ) for location suggesting that the happiness of rural low education group ( $M=98.50$ ); moderate education group ( $M=91.74$ ) and high education group ( $M=86.84$ ) is significantly better than their counterpart urban moderate education group ( $M=85.18$ ) and high education group ( $M=89.87$ ). For religiosity the main effect of education reached the significance level ( $F(1,395) = 75.24, p < .001, \eta^2 = .160$ ) in location showing that the religiosity of rural low educated group ( $M=165.00$ ); moderate education group ( $M=209.97$ ) and high education group ( $M=207.28$ ) is significantly better than their counterpart urban moderate education group ( $M=186.82$ ) and high education group ( $M=183.68$ ).

The interaction of education and location could not reach significance level ( $F(1,395) = .156, p > .05, \eta^2 = .000$ ) for QOL and religiosity ( $F(1,395) = .007, p > .05, \eta^2 = .000$ ). However, happiness reached significance ( $F(1,395) = 9.48, p < .01, \eta^2 = .023$ ).

Table 1. Mean scores of Quality of Life, Happiness & Religiosity as a function of Education and environment.

|                 | Income   | RURAL  |       | URBAN  |       | TOTAL  |       |
|-----------------|----------|--------|-------|--------|-------|--------|-------|
|                 |          | Mean   | SD    | Mean   | SD    | Mean   | SD    |
| Quality of Life | Low      | 528.75 | 28.02 | -      | -     | 528.75 | 28.02 |
|                 | Moderate | 499.29 | 52.83 | 473.68 | 56.82 | 493.56 | 54.68 |
|                 | High     | 488.94 | 39.52 | 468.42 | 56.92 | 473.56 | 53.95 |
|                 | TOTAL    | 500.24 | 48.57 | 469.42 | 56.79 | 484.83 | 54.98 |
| Happiness       | Low      | 98.50  | 1.53  | -      | -     | 98.50  | 1.53  |
|                 | Moderate | 91.74  | 13.10 | 85.18  | 16.29 | 90.22  | 14.12 |
|                 | High     | 86.84  | 13.27 | 89.87  | 12.06 | 89.15  | 12.39 |
|                 | TOTAL    | 91.32  | 12.76 | 88.98  | 13.05 | 90.15  | 12.94 |
| Religiosity     | Low      | 165.00 | 4.39  | -      | -     | 165.00 | 4.39  |
|                 | Moderate | 209.97 | 19.08 | 186.81 | 18.24 | 204.60 | 21.23 |
|                 | High     | 207.28 | 20.73 | 183.68 | 26.21 | 189.24 | 26.92 |
|                 | TOTAL    | 203.90 | 23.35 | 184.27 | 24.88 | 194.08 | 26.02 |

Table 2. Summary of Multivariate ANOVA for effect of EDUCATION and location (R/U) for quality of life, happiness, religiosity.

| Source          | Dependant Variable | Sum of square | Mean square | df  | F        | η <sup>2</sup> |
|-----------------|--------------------|---------------|-------------|-----|----------|----------------|
| R/U             | QOL                | 35216.27      | 35216.27    | 1   | 12.23*** | .031           |
|                 | Happiness          | 205.46        | 205.46      | 1   | 1.28     | .003           |
|                 | Religiosity        | 36175.10      | 36175.10    | 1   | 75.24*** | .160           |
| Education       | QOL                | 26803.29      | 13410.64    | 2   | 4.88**   | .024           |
|                 | Happiness          | 1758.38       | 879.19      | 2   | 5.48**   | .027           |
|                 | Religiosity        | 41231.41      | 20615.71    | 2   | 42.88*** | .178           |
| R/U x Education | QOL                | 428.63        | 428.63      | 1   | .15      | .000           |
|                 | Happiness          | 1520.19       | 1520.19     | 1   | 9.48**   | .023           |
|                 | Religiosity        | 3.33          | 3.33        | 1   | .01      | .000           |
| Error           | QOL                | 1084539.12    | 2745.67     | 395 |          |                |
|                 | Happiness          | 63369.07      | 160.43      | 395 |          |                |
|                 | Religiosity        | 189904.97     | 480.77      | 395 |          |                |
| Total           | QOL                | 9.52          |             | 400 |          |                |
|                 | Happiness          | 3317847.00    |             | 400 |          |                |
|                 | Religiosity        | 1.53          |             | 400 |          |                |

\* p< .05; \*\* p< .01; \*\*\* p< .001

#### 4. Discussion

The present findings reveal that education emerged as a significant predictor of QOL, happiness and religiosity (Table 2).

One does not have to look far to find plenty of evidence of the influence of education on many important aspects of people’s lives. So, if ‘happiness’ is understood in the robust sense of overall QOL and human wellbeing, then education evidently has an enormous impact. Without providing any particular order or categorization, here is a brief sample of impact statements drawn from Hayward *et al.* (2005) and others as indicated which support the present findings.

- “the well-being of modern society is dependent not only on traditional capital and labour but also on the knowledge and ideas possessed and generated by individual workers. Education is the primary source of this human capital” (Crocker, 2002).

- “Using panel data analysis for 35 developing countries for the years 1990, 1995 and 2000 it was shown that, the set of functionings enabled by educational attainment – being able to read, count, communicate, make informed choices, have a sense of selfworth, have greater degree of control over one’s life and so on – have a substantial impact on life expectancy. Significantly, the direct effect of those educational functionings on longevity is almost equivalent to their effect by way of resource accumulation” (Wigley & Wigley, 2006).

Notwithstanding all the well-supported and publicized information as above, the most frequently told story about the influence of education on happiness is that there is little, if any, influence. Educational attainment accounts for between 1% and 3% of the variance in adult subjective well-being (Witter *et al.*, 1984). In their broad overviews of things that contribute to happiness or wellbeing, Myers & Diener (1995) and Diener & Seligman (2004) did not even mention education. Layard (2005) wrote



that “education has only a small direct effect on happiness, though of course it raises happiness by raising a person’s income.” His cited source was Helliwell (2003).

It is important to notice that most of the studies of the influence of education on happiness or some form of subjective wellbeing only measure direct effects, although the possibility of indirect effects is often mentioned. It seems that, to construct an allegedly causal model that posits some measure of happiness or subjective wellbeing as simply the direct effect of highest level of formal education attained is to create a seriously mis-specified model. At a minimum, one ought to consider and search for indirect and total effects.

Results from Table 1, show the mean scores of religiosity as a function of education and environment. It shows that religiosity is inversely related with educational level. This finding is supported by the findings of Albrecht & Heaton (1984) who examined the secularization thesis in terms of the relationship between level of education and various measures of religiosity. Their data also indicated a negative relationship: the most educated were the least religious.

Educational level and religiosity may be related to the development of a person's ethical standards. Scientists have explored the relationship between intelligence and religiosity, as well as between education level attained and religiosity for many decades. Unfortunately, for religious people, the news is not good. IQ and religiosity are negatively correlated. Religiosity and educational attainment are also negatively correlated. Amongst the educated classes, professors are the least likely to be religious, and finally within the academe, the more eminent the professor is, the less he/she is likely to be religious. The evidence could not be any clearer. Nyborg, 2008, an intelligence researcher examined whether IQ relates to religious belief. His results, demonstrated that on average, Atheists scored 1.95 IQ points higher than Agnostics, 3.82 points higher than Liberal persuasions, and 5.89 IQ points higher than Dogmatic persuasions. "I'm not saying that believing in God makes you dumber. My hypothesis is that people with a low intelligence are more easily drawn toward religions, which give answers that are certain, while people with a high intelligence are more sceptical.

Lynn *et al.* (2008) investigated the link between religiosity and intelligence on a country level. Among the sample of 137 countries, only 23 (17%) had more than 20% of atheists, which constituted “virtually all the higher IQ countries.” The authors reported a correlation of 0.60 between atheism rates and level of intelligence, which is “highly statistically significant.”

Religiosity requires that one suspends rational thought and instead take the proverbial leap of faith. Hence, that which is considered a hallmark of intelligence namely the ability to arrive at veridical conclusions based on the presented evidence is denigrated as irrelevant when it comes to swallowing whole religious narratives.

The above findings prove my hypothesis that education level will have impact on the religiosity level to be true.

Quality-of-life measures in rural and urban areas reflect actual perceptions by location. The individuals who are more likely to out-migrate would be those who have greater career opportunities and stronger incentives for higher educational achievement (Broomhall, 1995). Such individuals tend to come from high-level socioeconomic backgrounds that correlate highly with mental abilities (Charters, 1963). Thus, individuals with higher cognitive skills would be expected to have out-migrated from both highly rural and highly urban areas to other areas of the state. This out-migration leaves those areas with resources that are potentially less mobile and individuals who exhibit lower socioeconomic characteristics. These individuals have generally been considered not to place a high regard on education because of their inability to foresee high returns to education within such regions (Broomhall & Johnson, 1994).

Finally, highly rural and highly urban areas that have low associated quality-of-life measures may translate into an apparent low expected return to education for individuals in school (Broomhall, 1995; Broomhall & Johnson, 1994). Given a low expected return to education, low student achievement scores relative to those in other areas would be expected. Such results imply that the relationship between student educational achievement and population density is inverted U-shaped.

The persons who receive higher education always have high life expectation and a variety of demands (Zhang, 2010). But it is difficult to realize these expectations. All these caused them to lower their satisfaction degree. On the contrary, those with low educational level probably have not so many demands for life, and are apt to satisfy, so their life satisfaction is relatively high.

Human being always acts in pursuit of what they think will give them the greatest balance of pleasure over pain. This is called as ‘psychological hedonism’. Here I intend to discuss ‘evaluative hedonism’ or ‘prudential hedonism’, according to which happiness consists in the greatest balance of pleasure over pain. Education is certainly a determinant of happiness. It gives a person great inner contentment.

Taking into account socio-economic background, for people with low levels of education and income there is great effect of green surroundings (Mass *et al.*, 2009). The city dwellers living near parks are healthier and suffer fewer bouts of depression. In my research also, this reason can be attributed to some extent. As the rural areas are comparatively greener so the level of happiness might be more as compared to urban habitat.

Inkeles & Smith (1974) have also found that although urbanization did seem to have a slight negative effect on religious practices, education was positively related to religiosity measures. In their view, "overall it is at least too simple and probably one could say wrong to conclude that urbanization is lessening religious commitment". They concentrated on the issue: among religious people how does urbanization affect their use of religion. There are several reasons to believe that urbanization adversely affects the use of religion in daily life. In an urban environment and especially among the educated, religion runs into several new competitors for control of people's lives- the medical and political and educational institutions (Inkeles & Smith, 1974). Even among the personally religious, then, found a negative relation between both urbanization and education and functional religiosity. However, I doubt that urbanisation leads to religious decline because I found no evidence that urban life and jobs negatively affect religiosity.

### References

- Alimardani, A., Alimardani, M., Beni, M. A., & Shajie, K. (2014). Relationship between religious attitude and happiness of physical education students of University of Qom. *International Journal of Sport Studies*, 4(7), 783–788.
- Albrecht, S. L., & Heaton, T. (1984). Secularization, higher education, and religiosity. *Review of Religious Research*, 26, 43-58.
- Broomhall, D. E. (1995). "Educational Performance in Virginia's Rural Schools," Rural Economic Analysis Program, Department of Agricultural Economics, VPI State University.
- Broomhall, D. E. and T. G. Johnson (1994). "Economic Factors that Influence Educational Performance in Rural Schools," *American Journal of Agricultural Economics*, 76:3.
- Charters, W. W., Jr. (1963). "The Social Background of Teaching," *Handbook of Research on Teaching*, N. L. Gage, editor. Chicago: Rand McNally and Co.
- Crocker, R.K. (2002). *Learning Outcomes: A Critical Review of the State of the Field in Canada*, Canadian Education Statistics Council, Ottawa.
- Diener, E. and M.E.P. Seligman (2004). "Beyond Money: Toward an Economy of Well-Being", *Psychological Science in the Public Interest*, 5(1), pp.1-31, American Psychological Society, Washington.
- Glass, J., & Jacobs, J. (2005). Childhood religious conservatism and adult attainment among black and whitewomen. *Social Forces*, 84, 555–579.
- Hayward, K., Panno L. and Colman R. (2005). Draft: Developing Indicators for the Educated Populace Domain of the Canadian Index of Wellbeing, Interim Report, GPI Atlantic, Halifax.
- Helliwell, J.F. (2003). "How's life? Combining individual and national variables to explain subjective well-being", *Economic Modeling*, 20, pp.331-360.
- Inkeles, Alex and David H. Smith. (1974). *Becoming Modern*. Cambridge: Harvard.
- Khenfer, J., & Roux, E. (2012). How does religion matter in the marketplace for minority settings? The case of Muslim consumers in France. Paper presented at EMAC 42 nd Conference, May 2012, Lisbonne, Portugal. pp. 1–7, 2012
- Layard, R. (2005). *Happiness: Lessons from a New Science*, Penguin Books, London.
- Lei Zhang (2010). Urbanites' Life Satisfaction Research in China: A Case Study of Quality of Life in Eight Cities. *Asian Social Science* Vol. 6, No. 5. pp. 19-26.
- Lynn, R., Harvey, J., & Nyborg, H. (2008). Average intelligence predicts Atheism rates across 137 nations. *Intelligence*, 37(1), 11-15. (doi:10.1016/j.intell.2008.03.004).
- Maas J, Verheij RA, de Vries S, Spreeuwenberg P, Schellevis FG, Groenewegen PP. (2009) Morbidity is related to a green living environment. *J Epidemiol Community Health*. Dec;63(12):967-73. doi: 10.1136/jech.2008.079038. Epub 2009 Oct 15. PMID: 19833605.
- Myers, D.G. and E. Diener (1995). "Who is happy?", *Psychological Science*, 6(1), pp.10-19.
- Nyborg, H. (2008). The intelligence-religiosity nexus: A representative study of white adolescent Americans. *Intelligence*, 37(1), 81-93. (doi:10.1016.j.intell.2008.08.003).
- Wigley, S. and A. Akkoyunlu-Wigley (2006). "Human capabilities versus human capital: gauging the value of education in developing countries", *Social Indicators Research*, 78(2), pp.287-304.
- Witter, D., M.A. Okun, W.A. Stock and M.J. Haring (1984). "Education and subjective well-being: a meta-analysis", *Educational Evaluation and Policy Analysis*, 6, pp.165-173.

## LOVE AND INTIMATE RELATIONSHIPS IN ADOLESCENTS AND ADULTS WITH AUTISM SPECTRUM DISORDERS

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### Abstract

Autism Spectrum Disorder (ASD) is a neurodevelopmental disorder characterized, among other criteria, by the presence of repetitive/stereotypical behavior, interests, or activities, and by difficulties in interpersonal relationships and verbal and non-verbal communication with interference in various areas of functioning, such as intimate relationships and sexuality. Preliminary studies reveal that although most wish to relate to other people on an intimate level, several people with ASD tend to isolate themselves and engage in lonely sexual behaviors. Despite the importance of the subject, few studies have looked at it in depth, nor included the meanings of people with ASD about love relationship and sexuality. The main objective of this study is to explore the experience of love relations and intimacy in teenagers and adults with ASD. The design is qualitative, cross-sectional and exploratory. The study included 22 teenagers and adults diagnosed with ASD (63,6% female), to which a semi-structured interview was applied individually, specifically constructed for this study. The interviews were analyzed using thematic analysis. The results highlight the presence of three main themes: Love relationships, Sexuality and Sexual education. Understanding the difficulties and needs of people with ASD will enrich assessment and interventions with teenagers and adults in this area, as well as identifying sex education themes and tools adapted to these populations. The main results show that ASD symptoms negatively affect experiences in love/intimate relationships and in their sexuality. In this way, it becomes imperative to develop a more adequate Sex education program directed to the difficulties presented.

**Keywords:** *Autism, relationships, sexuality, sexual education.*

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### 1. Introduction

Autism Spectrum Disorder (ASD) is chronic neurodevelopmental condition, characterized by deficits in two central areas – social communication and repetitive and restricted patterns of behavior, interests, or activities (Hosseini & Molla, 2021). Deficits in social communication encompass problems in reciprocity, relationship development and maintenance, and nonverbal communication, while restricted and repetitive patterns should cover at least two of the following: highly restrictive interests, insistence on monotony, hyper- or hyposensitivity to sensory stimuli, or stereotyped movements (American Psychiatric Association [APA], 2014). The diagnostic criteria for ASD in the Diagnostic and Statistical Manual of Mental Disorders – fifth edition (DSM-5) are divided into three levels of intensity: mild, moderate, and severe. In the present study, the emphasis will be on mild autism, also considered as well-functioning autism or Asperger's Syndrome, as it was called in the previous version of the diagnostic manual. This disorder is associated with clinically significant difficulties in social, occupational, or other important areas of current functioning (APA, 2014). Namely, in romantic and intimate relationships and that is why this is the focus of the present study. Consequently, this difficulty can negatively affect the adequate expression of sexuality (Pecora et al., 2016) and therefore the importance of addressing sex education in this study.

In romantic and intimate relationships, the literature has shown that there are usually difficulties in initiating and maintaining romantic and intimate relationships (Bennett et al., 2018). Compared to the neurotypical population, people with ASD show similar levels of interest in relationships (Soares et al., 2021). However, several studies highlighted some differences in this population, such as a delay in the beginning of love relationships (Barnett & Maticka-Tyndale, 2015), their duration seems to be shorter and they are more concerned with their ability to establish and maintain romantic and intimate relationships (Hancock et al., 2020). The difficulties in romantic relationships in this population seem to be due to weak social skills, such as the difficulty in interpreting and responding to communicative signals, language specifics, avoidance of eye contact and the social anxiety that is often felt (Parchomiuk, 2019).

Other difficulties include not knowing how to differentiate intimacy within different types of relationships, uncertainty, or lack of exploration of sexual orientation and difficulty in identifying and expressing one's emotions (Sala et al., 2020).

Regarding sexuality, preliminary studies demonstrate that individuals with ASD were thought to be predominantly “asexual”, as they did not show sexual interest when questioned by researchers (Sala et al., 2020). However, there is growing evidence that most people with ASD, especially those without cognitive impairment, are interested in sexuality (Pecora et al., 2020). Plus, various studies have consistently shown that sexual orientation in people with ASD varies significantly more than in the neurotypical population, with a predominance of non-heterosexual orientations (Dewinter et al., 2015). Gender identity seems to be related to autistic traits, and this population has higher percentages of discomfort with the sex at birth (Turban & van Schalkwyk, 2018).

According to the literature, this population has been harmed in terms of Sexual Education (SE), especially at younger ages. It appears that young people with ASD are getting less education about sexuality, both formally, through school or support services, or informally, through family or social networks. However, some improvements in information about sexual education and health in adults with ASD at an average age of 35 years have been urging, which suggests that sexual knowledge is only being acquired after adulthood (Hancock et al., 2020). In the study by Barnett and Maticka-Tyndale (2015), participants revealed that received SE tends to be thought of for the heterosexual population with neurotypical development. Knowledge about sexuality tends to be characterized by this population as selective and confusing, sometimes creating a distorted image of sexuality (Parchomiuk, 2019). In addition, there is a tendency to use non-formal information such as the internet, television, and pornography, which might reinforce even more distorted and unrealistic representations of sexuality (Teti et al., 2019).

In short, people with ASD, especially those without cognitive deficits, are interested in romantic relationships and sexuality, and difficulties in this area negatively affect the individual and psychosocial well-being of these individuals. Nonetheless, few studies have included the perceptions and personal opinions of ASD youth regarding their love and sexual experiences. The present study aims to improve knowledge about the experiences of romantic relationships and intimacy of people with ASD, to enrich the evaluation and intervention with young people and adults, as well as identify themes and tools of SE adapted to this population, with the intention of providing more positive experiences in these areas that are so important in human life.

## 2. Methods

The present empirical study has a qualitative, cross-sectional and exploratory design. A non-probabilistic convenience sampling was used, with the following inclusion criteria: a) being at least 15 years old; b) have a diagnosis of well-functioning ASD (level 1); c) without cognitive and/or language impairments.

Participated in the study 22 people diagnosed with ASD, five males (22,7%), 14 females (63,6%), one non-binary (4,5%), one undefined (4,5 %) and a demigirl (4,5%), aged between 15 and 45 years ( $M = 23,73$ ;  $SD = 9,89$ ) recruited in clinical center for autism and in autistic associations from the community. Another relevant sociodemographic characteristic is that almost half of the participants (40,9%) do not feel completely comfortable with the sex they were born into. Regarding sexual orientation, 50% of the sample identifies as heterosexual. It was also explored whether the participants were in a romantic relationship to which 10 participants (45,5%) answered yes.

### 2.1. Measures

A sociodemographic questionnaire was applied to collect information on age, gender, satisfaction with sex at birth, sexual orientation, location, schooling, marital status, cohabitation, among other relevant data. Subsequently, a semi-structured interview script was used, specifically developed to respond to the objectives of this investigation. The construction of this interview had the collaboration of a psychologist specializing in autism. This interview contained a set of open-ended questions that aimed to explore diverse areas such as the development of sexuality, aspects related to the body and nudity, the relationship with touch, experiences of intimate contacts and sexual behaviors, the development and maintenance of relationships, the characteristics of interest in a partner and the exploration of aspects related to sex education. The interview had an average duration of 40 minutes.

### 2.2. Procedures

The study was approved by the Scientific Research Ethics and Deontology Committee. It was later publicized in the PIN Autism Center and in the Voz do Autista Association, to bring the participants

together. Initially, assent was requested and then sent an email containing more information about the study and later, informed consent was sent with all ethical and deontological issues, both for young people and their legal representatives and for adults. Before starting the data collection, training in the application of the interviews was carried out. In turn, a pilot interview was carried out with a voluntary participant with ASD, to assess the validity, structure and effectiveness of the list and questions contained in the basic script. Consequently, some questions were adjusted, as well as the reformulation of questions to include clearer, more concrete and inclusive language.

The interviews were carried out from February to July of 2021, by two members of the research team through the Zoom. Before starting the interview, participants were reinforced that they could withdraw at any time and that they did not have to answer all the questions. A maximum limit of participants was not defined a priori, and the collection ended when an acceptable theoretical saturation point was reached.

### **2.3. Data analysis**

The method used was the thematic analysis of Braun and Clarke (2006) as it is a method that allows to identify, analyze, and report patterns in the data, to organize and minimally describe the data set in rich detail and to interpret various aspects of the topic of the investigation (Souza, 2019).

The first step of the analysis was to ensure the familiarization of the data, which was carried out through the transcription and repeated reading of the interviews, to generate relevant initial codes of characteristics of interest in the data, which were later grouped by themes (Braun & Clarke, 2006). Codes were created only for excerpts of interest from the transcripts, there was no coding of the transcripts in full since theoretical thematic analysis was used to capture aspects of interest for the purposes of the study. The themes were reviewed by the second author of the study to check the agreement of the codes with the themes and consequently the relevance of each theme according to the objectives of the study and the existing literature (Braun & Clarke, 2006).

It was verified if the themes worked in relation to the excerpts and the data, to create the thematic map of the analysis (Braun & Clarke, 2006). Themes have been improved, with clear definitions and names. That said, and so that there was agreement in the results, a new analysis was carried out using the NVivo 12 program (QSR International), which confirmed the relevance of the chosen themes to the data.

### **3. Results**

The answers given by the participants were globally rich and often included different themes and sub-themes, so the results do not represent different topics, but interconnected. Three main themes emerged from the thematic analysis - Love relationships, Sexuality and Sex education. On the topic of love relationships, the sub-themes of Development of relationships emerged, PEA has an impact on relationships, Benefits of the relationship, Characteristics of relationships, End of relationships, Characteristics of the partner and Maintenance of relationships. On the topic of sexuality, the sub-themes of (Dis)Interest, Masturbation, Touch, Hyper or hypo sensitivities and Sexual activity were addressed. On the topic of Sexual Education, the sub-themes of Sexual Knowledge, Sources of Information, Sexual Education aimed at people with neurodevelopmental disorders and Intervention in sexuality emerged.

### **4. Discussion**

The majority of our participants revealed great interest in getting involved in romantic and intimate relationships, which is in line with exploratory studies carried out in other countries that pointed to the similarities between people with ASD and neurotypical people in relation to the need, motivation, appreciation of romantic relationships and of intimacy for their quality of life (Hancock et al., 2020). In addition, the results seem to show benefits, that is, the positive and probably protective role of romantic and intimate relationships in the individual well-being of people with ASD. For many of our participants, romantic and intimate relationships have an impact on the improvement of anxiety symptoms and are important reinforcers of their self-esteem. This result is in line with previous studies that have already verified that social support works as a moderator for depression levels in this population (Radoeva et al., 2021).

Participants are also aware of the impact that their ASD-associated characteristics have on romantic and intimate relationships. Weak social skills, namely difficulty in reading and meaning social cues, difficulty in interpreting other's (dis)interest, or problems in reciprocity, were described as obstacles to the development and maintenance of intimate relationships. These results are in line with results from previous qualitative studies that showed that autistic individuals have a different understanding of the

processes and mechanisms associated with social interactions (Hogan & Micucci, 2020), which reduces the proximity with peers and, consequently, with possible loving and intimate partners (Stokes et al., 2007). Participants were concerned about their difficulties in approaching the person of interest, in the process of flirting and dating. This result had also been evidenced in a preliminary study, demonstrating that people with ASD present higher levels of concern with the ability to develop and maintain romantic relationships, experiencing higher levels of anxiety in the first meeting and when they start a relationship with the person of interest when compared to neurotypical people (Hancock et al., 2020).

In fact, the results show that, in most cases, there is anxiety involved in the process of developing love relationships, specifically in the processes inherent to initiating a relationship (Mehzabin & Stokes, 2011). This anxiety seems to be interfering in the romantic and intimate relationships of people with ASD, reducing the attempts of loving approximations, as suggested by Glickman and Le Greca (2004), making it imperative to develop an intervention aimed at anxiety and flirt and dating processes, with the aim of helping this population in the processes of development and maintenance of romantic and intimate relationships.

Another difficulty found in the present study is the maintenance of romantic and intimate relationships, as the participants reveal that they have difficulty in decentering themselves, their activities, tastes and routines, facing the acceptance and integration of the other as the main challenge. The literature indicates that reciprocal likes/interests are a determining factor that people with ASD consider when choosing a loving partner (Yew et al., 2021). Our participants point out in this regard having a neurodivergent partner can be a facilitator. This evidence suggests that people with ASD look for characteristics in romantic partners that are like their own, making this contribute to the maintenance, duration and satisfaction of the romantic and intimate relationship, even if it is not a guarantee of longevity of the relationship (Hancock et al., 2020).

In terms of sexuality, although there seems to be difficulty in identifying this interest, there was a relationship between humor and sexual interest insofar as humor influences (dis)interest. The results also demonstrate that there is discomfort with touch. The most frequent behavioral responses to touch are avoidance or strategies to withstand touch, and these responses are influenced by touch predictability, intentionality and mood. These results are consistent with the literature, that avoidance and aversion to social touch are associated with ASD traits, which seems to be a consequence of hypersensitivities, thus causing aversion to touch and possible stereotyped behaviors (Ujii & Takahashi, 2022). However, if it is a touch in an intimate context, it is already better accepted by these individuals, probably due to their underlying ideas of social norms and what is accepted/expected by society. Hypersensitivities also affect sexuality (e.g., intimate contact and masturbation) and intimate/sexual relationships (e.g., contraception). In parallel, masturbation was addressed and the associated feelings were shame, discomfort and dissatisfaction.

The results show that people with ASD have little knowledge about higher education, and the information they have was acquired through non-formal information sources. Higher education programs continue to focus on the mechanics of sex and contraception rather than on socio-emotional skills and intimacy. With these results, it was realized the need for a SE directed to this population, in which the specific difficulties of the diagnosis, such as social communication, non-verbal language interpretation, signs of reciprocity were addressed (Yew et al., 2021), processes underlying flirt, reduction of anxiety in approaching the person of interest, the process of initiating a romantic relationship and moving to the intimate/sexual part, if they so desire, as well as including the discovery of sexual and gender identity.

#### **4.1. Limitations, future directions, and implications of the study**

This study has some limitations, namely in terms of the characteristics of the sample and the possibility of reactivity to the assessment, as this is a sensitive and intimate topic. As this is a topic that has not yet been studied and there are many gaps in the literature, we suggest that further qualitative investigations be carried out. It would also be pertinent to explore these issues with more specific age groups, since our study included people at different stages of development. However, this study is already an important contribution to scientific research and clinical practice, in the sense that it allows the understanding of experiences related to romantic relationships and sexuality, the identification of the main difficulties in these areas and the pertinent themes to address for the intervention in sexuality among this population.

#### *References*

American Psychiatric Association [APA] (2014). *DSM-5: Manual diagnóstico e estatístico de transtornos mentais*. Artmed Editora.

- Barnett, J. P., & Maticka-Tyndale, E. (2015). Qualitative exploration of sexual experiences among adults on the autism spectrum: implications for sex education. *Perspectives on sexual and reproductive health*, 47(4), 171-179. <https://doi.org/10.1363/47e5715>
- Barnett, J. P., & Maticka-Tyndale, E. (2015). Qualitative exploration of sexual experiences among adults on the autism spectrum: implications for sex education. *Perspectives on sexual and reproductive health*, 47(4), 171-179. <https://doi.org/10.1363/47e5715>
- Bennett, M., Webster, A. A., Goodall, E., & Rowland, S. (2018). Intimacy and romance across the autism spectrum: Unpacking the “Not Interested in Sex” myth. In *Life on the Autism Spectrum* (pp. 195-211). [https://doi.org/10.1007/978-981-13-3359-0\\_10](https://doi.org/10.1007/978-981-13-3359-0_10)
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Dewinter, J., Vermeiren, R., Vanwesenbeeck, I., Lobbetael, J., & Van Nieuwenhuizen, C. (2015). Sexuality in adolescent boys with autism spectrum disorder: Self-reported behaviours and attitudes. *Journal of autism and developmental disorders*, 45(3), 731-741. <https://doi.org/10.1007/s10803-014-2226-3>
- Glickman, A. R., & La Greca, A. M. (2004). The Dating Anxiety Scale for Adolescents: Scale development and associations with adolescent functioning. *Journal of Clinical Child and Adolescent Psychology*, 33(3), 566-578. [https://doi.org/10.1207/s15374424jccp3303\\_14](https://doi.org/10.1207/s15374424jccp3303_14)
- Hancock, G., Stokes, M. A., & Mesibov, G. (2020). Differences in romantic relationship experiences for individuals with an autism spectrum disorder. *Sexuality and Disability*, 38(2), 231-245. <https://doi.org/10.1007/s11195-019-09573-8>
- Hosseini, S. A., & Molla, M. (2021). Síndrome de Asperger. Em StatPearls. StatPearls Publishing. <https://pubmed.ncbi.nlm.nih.gov/32491480/>
- Mehzabin, P., & Stokes, M. A. (2011). Self-assessed sexuality in young adults with high-functioning autism. *Research in autism spectrum disorders*, 5(1), 614-621. <https://doi.org/10.1016/j.rasd.2010.07.006>
- Oliveira, G. G. D. (2005). *Epidemiologia do autismo em Portugal: um estudo de prevalência da perturbação do espectro do autismo e de caracterização de uma amostra populacional de idade escolar* (Doctoral dissertation). <http://hdl.handle.net/10316/848>
- Parchomiuk, M. (2019). Sexuality of persons with autistic spectrum disorders (ASD). *Sexuality and Disability*, 37(2), 259-274. <https://doi.org/10.1007/s11195-018-9534-z>
- Pecora, L. A., Mesibov, G. B., & Stokes, M. A. (2016). Sexuality in high-functioning autism: A systematic review and meta-analysis. *Journal of autism and developmental disorders*, 46(11), 3519-3556. <https://doi.org/10.1007/s10803-016-2892-4>
- Radoeva, P. D., Ballinger, K., Ho, T., Webb, S. J., & Stobbe, G. A. (2021). Brief Report: Risk and Protective Factors Associated with Depressive Symptoms among Autistic Adults. *Journal of Autism and Developmental Disorders*, 1-6. <https://doi.org/10.1007/s10803-021-05085-7>
- Sala, G., Pecora, L., Hooley, M., & Stokes, M. A. (2020). As Diverse as the Spectrum Itself: Trends in Sexuality, Gender and Autism. *Current Developmental Disorders Reports*, 1-10. <https://doi.org/10.1007/s40474-020-00190-1>
- Soares, L. S., Alves, A. L. C., Costa, D. D. S., Malloy-Diniz, L. F., Paula, J. J. D., Romano-Silva, M. A., & Miranda, D. M. D. (2021). Common Venues in Romantic Relationships of Adults with Symptoms of Autism and Attention Deficit/Hyperactivity Disorder. *Frontiers in Psychiatry*, 12, 958. <https://doi.org/10.3389/fpsy.2021.593150>
- Teti, M., Cheak-Zamora, N., Bauerband, L. A., & Maurer-Batjer, A. (2019). A qualitative comparison of caregiver and youth with autism perceptions of sexuality and relationship experiences. *Journal of Developmental & Behavioral Pediatrics*, 40(1), 12-19. <https://doi.org/10.1097/DBP.0000000000000620>
- Turban, J. L., & van Schalkwyk, G. I. (2018). “Gender dysphoria” and autism spectrum disorder: Is the link real?. *Journal of the American Academy of Child & Adolescent Psychiatry*. <https://doi.org/10.1016/j.jaac.2017.08.017>
- Ujiie, Y., & Takahashi, K. (2022). Associations between self-reported social touch avoidance, hypersensitivity, and autistic traits: Results from questionnaire research among typically developing adults. *Personality and Individual Differences*, 184, 111186. <https://doi.org/10.1016/j.paid.2021.111186>
- World Health Organization [WHO]. (2019). Autism spectrum disorders. <https://www.who.int/news-room/fact-sheets/detail/autism-spectrum-disorders>
- Yew, R. Y., Samuel, P., Hooley, M., Mesibov, G. B., & Stokes, M. A. (2021). A systematic review of romantic relationship initiation and maintenance factors in autism. *Personal Relationships*. <https://doi.org/10.1111/pere.12397>

## GENDER, AGE, AND CHILDREN AT HOME INFLUENCE RISKY BEHAVIOR IN ADULTS

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### Abstract

Extant research in risk-taking and self-harm behaviors has indicated that gender, age, and certain socioeconomic factors are associated with risk-taking behaviors. Our study tested the connection between gender, age, having children at home, and risk-taking behavior among adults. We predicted that having children at home would be associated with reduced risky behavior for both women and men, but more so in women than men. More than 450 ( $N = 454$ ) American adults ( $M$  age = 33.3 years,  $SD = 11.9$ ) were recruited from Prolific. Participants identified as male (54.4%), female (45.4%) or transgender (0.2%). Ethnicity was self-identified as Caucasian/White (80.4%), African American/Black (7.7%), multiracial (4.4%), Latinx (4%), Asian/Asian American (3.1%), Native American or Alaskan Native (0.2%), and other (0.2%). Participants completed the Risky, Impulsive, and Self-Destructive Behavior Questionnaire (Sadeh & Baskin-Sommers, 2016) to measure engagement in various forms of risky behavior throughout their lifetime including illegal risky behavior and risky sexual behavior. Differences in illegal behavior, risky sexual behavior, and other types of risky behavior were found between men and women,  $F(3, 441) = 9.09, p < .0001$ , partial  $\eta^2 = .06$ , with men reporting more risky behavior of all types. ANCOVAs were used to further assess the relationships between gender identity and having children (IVs) and total risky behavior and illegal behavior (DVs); age was covaried. Significant interactions between IVs revealed that male participants with children at home engaged in significantly more risky sexual behavior,  $F(1, 441) = 4.24, p = .04$ , overall risky behavior,  $F(1, 441) = 3.89, p = .049$ , and illegal behavior,  $F(1, 441) = 3.59, p = .059$ , than those without children at home. For women, there was no relationship between having children at home and risky behavior, illegal behavior, or risky sexual behavior. The results may inform parenting education and law enforcement.

**Keywords:** *Gender effects, risky behavior, illegal behavior, risky sex, children.*

### 1. Introduction

According to Trimpop (1994), risk-taking is consciously or unconsciously-controlled behavior where there is an uncertainty about: (a) outcome, (b) potential costs, or (c) potential benefit to the economic, physical, or psychosocial wellbeing for the self or others. Prior research suggested that adolescent and young adult males are more likely to engage in risky behaviors than females (Harris et al., 2006; Sohrabivafa et al., 2011). Important factors in risk-taking behaviors such as certain socioeconomic factors, like affordability and access to risky activities, have been identified (Asamoah & Agradh, 2018; Javier Garcia-Castilla et al., 2020; Sohrabivafa et al., 2011; Zahran et al., 2007). Sensation seeking among youths is another factor whereby youths seek to feel alive similarly to how social media influencers and celebrities present their lives as exciting (Branley & Covey, 2018). However, existing literature has focused primarily on adolescent youth (13-18) or young adult (19-24) college students (Asamoah & Agradh, 2018; Leigh, 2002; Pharo et al., 2011; Sohrabivafa et al., 2011). The purpose of this study was to examine the association between gender, the presence of children at home, and engagement in risky behaviors among adults.



## 2. Adolescent and adult risky behaviors

As measured by the Risky, Impulsive, and Self-Destructive Behavior Questionnaire (RISQ; Sadeh & Baskin-Sommers, 2017), adult risky behavior can include alcohol use, risky sex, aggression, illegal behavior, self-harm, impulsive eating, gambling, and impulsive driving or spending. Given that these behaviors are dangerous, and can merit consequences, such as death or injury, relationship struggles, and financial or legal consequences, it is important to understand the factors involved, such as age, relationship status, gender, and presence of children at home, to inform parenting education and law enforcement. In the extensive literature available on risky behavior, males are often more likely to engage in the behavior than females (Wang et al., 2020). Further, age is a predictor of risky activities. Adolescent youths and young adults (19-24) in particular are more likely than older adults to engage in these behaviors which can in part be explained by neurodevelopmental factors (Vijayakumar et al., 2018).

### 2.1. Relationship status and risky behaviors

In previous research (Ray et al., 2021), we examined the connection between relationship status and risky behavior. In that study, we found that relationship status and gender were significant predictors of total risky behavior. Trends in the data indicated that men, particularly men living with a partner, engaged in more risky behaviors than other groups. These results extended prior research showing that males are more likely to engage in risky behaviors than females (Harris et al., 2006; Wang et al., 2020), yet now relationship status may be an important factor in the process. It may be that women in relationships assume socially responsible roles and men feel more privileged to engage in risky behavior (Stronge et al., 2019). In our research, men in the living-with-a-partner group were more likely to engage in risky behavior; conceivably, men exhibiting high levels of risky behavior are viewed as less suitable partners for marriage (Valentine et al., 2019). There remains a gap in the literature as to whether another type of relationship status – having children who live at home -- predicts adult risky behavior.

## 3. Children at home and risky behaviors

Whether the risky behavior of a parent can impact the wellbeing of children at home is lacking in research attention. However, when children are involved, parental risky behaviors can have wide ranging implications for the child. For example, having an incarcerated parent has numerous short- and long-term consequence for children, such as depression, aggressive behavior, hyperactivity, attention issues, withdrawal, obesity, asthma, migraine headaches, and hypertension (Dallaire, 2007; Huebner & Gustafson, 2007; Lee et al., 2012; Murray & Farrington, 2008; Wildeman & Western, 2010). Additionally, risky behavior on the part of a parent in a partnership can result in relationship conflict and emotional or physical violence. Children become susceptible to further instability, such as parent substance abuse and mental illness, impoverished living conditions, maltreatment, exposure to violence, and unstable housing (Lee et al., 2012; McCaskill, 2014). These outcomes, not surprisingly, are associated with youth risky behavior (Asamoah & Agardh, 2018; Pharo et al., 2011). Although the potential negative impact of parental risky behavior on children seems apparent, prior research has not examined whether parents with children at home are more or less likely to engage in risky behavior. Our research helped fill this gap by examining the association between having children at home and risky behavior in adult women and men. We predicted that having children at home would be associated with reduced risky behavior for both women and men, with a larger effect in women than men.

## 4. Method

More than 450 ( $N = 454$ ) American adults ( $M$  age = 33.3 years,  $SD = 11.9$ ) were recruited through Prolific. Participants identified as male (54.4%), female (45.4%) or transgender (0.2%). Ethnicity was self-identified as Caucasian/White (80.4%), African American/Black (7.7%), multiracial (4.4%), Latinx (4%), Asian/Asian American (3.1%), Native American or Alaskan Native (0.2%), and other (0.2%). Less than one-third (29.1%) had children at home. Participants completed an anonymous online survey that included a demographic questionnaire and the Risky, Impulsive, and Self-Destructive Behavior Questionnaire (Sadeh & Baskin-Sommers, 2016) to measure engagement in total risky behavior, illegal risky behavior, and risky sexual behavior throughout their lifetime.

## 5. Results

MANCOVA revealed differences in illegal behavior, risky sexual behavior, and other types of risky behavior between men and women,  $F(3, 441) = 9.09, p < .0001$ , partial  $\eta^2 = .06$ , with men reporting more risky behavior of all types. Three ANCOVAs were conducted to further assess the relationships between gender identity and having children at home (IVs) and total risky behavior, risky sexual behavior, and illegal behavior (DVs); age was covaried due to significant correlations with risky behavior. As expected based on the MANCOVA, significant main effects were found for gender on total risky behavior,  $F(1, 441) = 13.15, p < .0001$ , partial  $\eta^2 = .03$ , risky sexual behavior,  $F(1, 441) = 4.73, p = .03$ , partial  $\eta^2 = .01$ , and illegal behavior,  $F(1, 441) = 23.57, p < .0001$ , partial  $\eta^2 = .05$ . For each DV, men reported engaging in more risky behavior than women. In addition, a significant main effect was found for children at home on risky sexual behavior,  $F(1, 441) = 5.11, p = .02$ , partial  $\eta^2 = .01$ . The effect of children at home on total risky behavior approached significance,  $F(1, 441) = 3.07, p = .08$ , partial  $\eta^2 = .01$ . For both DVs, having children at home was associated with more risky behavior. Children at home did not show a main effect for illegal behavior,  $F(1, 441) = 1.85, p = .18$ , partial  $\eta^2 = .01$ .

The main effects are better understood by examining interactions between gender and children at home. Significant interactions showed that male participants with children at home engaged in significantly more risky sexual behavior,  $F(1, 441) = 4.24, p = .04$ , overall risky behavior,  $F(1, 441) = 3.89, p = .049$ , and illegal behavior,  $F(1, 441) = 3.59, p = .059$ , than those without children at home. For women, there was no relationship between having children at home and risky behavior, illegal behavior, or risky sexual behavior.

Table 1. Association of Children at Home and Total Risky Behavior.

| Variable | Children at home |           | No Children at Home |           | Total    |           |
|----------|------------------|-----------|---------------------|-----------|----------|-----------|
|          | <i>M</i>         | <i>SD</i> | <i>M</i>            | <i>SD</i> | <i>M</i> | <i>SD</i> |
| Male     | 14.13            | 10.28     | 10.58               | 7.16      | 11.62    | 8.34      |
| Female   | 9.95             | 6.60      | 9.53                | 6.05      | 9.65     | 6.20      |
| Total    | 12.25            | 9.03      | 10.10               | 6.68      |          |           |

## 6. Discussion

Overall, men with children at home reported engaging in more total risky behavior, illegal behavior, and risky sexual behavior compared to men without children at home. Given that risky behavior can have consequences, such as death or injury, financial challenges, relationship discord, legal issues, and health concerns, these actions can create instability and conflict in the home. Living situation destabilization and conflict that may include neglect or exposure to abuse can increase children's risk of engaging in risky behavior themselves. Limitations of our study are that less than one-third of the sample had children at home (29.1%,  $n = 132$ ) and we are unaware of the specific ages, genders, and number of children the participants had. Additional research with larger samples of individuals with children living in the home will clarify our findings. The number of children at home and the ages and gender of those children may play a role in parents' choices about engaging in risk-taking behaviors. Further study with the inclusion of diverse sexual orientations, gender identities, and types of partnerships would elucidate further these initial findings by increasing inclusivity and resultant generalizability.

## 7. Conclusion

There is an adage that individuals can settle down or mellow out in their behaviors, including risky behaviors, with partnership, marriage, and family. The findings here suggest that this is not the case for men in our sample. Because the presence of risky behavior in a child's home by their parents can be a destabilizing factor and can lead to children reenacting the behavior in adolescence, it is important that these results inform policy, education, and social programs. For example, findings may support parenting-education programs, social service practices, and may inform law enforcement regarding the complexities involved in adult risky behavior.

## References

- Asamoah, B. O., & Agardh, A. (2018). Individual- and family-level determinants of risky sexual behavior among Swedish- and foreign-born young adults 18-30 years of age, residing in Skåne, Sweden. *Archives of Sexual Behavior, 47*(2), 517-528.
- Branley, D. B., & Covey, J. (2018). Risky behavior via social media: The role of reasoned and social reactive pathways. *Computers in Human Behavior, 78*, 183-191.
- Dallaire, D. H. (2007). Incarcerated mothers and fathers: A comparison of risks for children and families. *Family Relations, 56*(5), 440-453.
- Harris, C. R., Jenkins, M., & Glasser, D. (2006). Gender difference in risk assessment: Why do women take fewer risks than men? *Judgement and Decision Making, 1*(1), 48-63.
- Javier Garcia-Castilla, F., Martinez Sanchez, I., Campos, G., & Arroyo Resino, D. (2020). Impact of gender and relationship status on young people's autonomy and psychological wellbeing. *Frontiers in Psychology, 11*, 1735.
- Lee, R. D., Fang, X., & Luo, F. (2013). The impact of parental incarceration on the physical and mental health of young adults. *Pediatrics, 131*(4), e1188-e1195.
- Leigh, B. C. (2002). Peril, chance, adventure: Concept of risk, alcohol use, and risky behavior in young adults. *Addiction, 94*(3), 371-383.
- Murray, J., & Farrington, D. P. (2005). Parental imprisonment: Effects on boys' antisocial behaviour and delinquency through the life-course. *Journal of Child Psychology and Psychiatry, 46*(12), 1269-1278.
- Pharo, H., Sim, C., Graham, M., Gross, J., & Hayne, H. (2011). Risky business: Executive function, personality, and reckless behavior during adolescence and emerging adulthood. *Behavioral Neuroscience, 125*(6), 970-978.
- Ray, J. M., Kats-Kariyanakatte, P., Moore, L.R., Jacquin, K. M. (2021). *Impact of relationship status on risky behavior in adults* [Poster presentation]. Association for Psychological Science, virtual session.
- Sadeh, N., & Baskin-Sommers, A. (2017). Risky, Impulsive, and Self-Destructive Behavior Questionnaire (RISQ): A validation study. *Assessment, 24*(8), 1080-1094.
- Sohrabivafa, M., Tosang, M. A., Zadeh, S. Z. M., Goodarzi, E., Asadi, Z. S., Alikhani, A., Khazaei, S., Dehghani, S. E., Beiranvand, R., & Khazaei, Z. (2017). Prevalence of risky behaviors and related factors among students of Dezful. *Iranian Journal of Psychiatry, 12*(3), 188-193.
- Stronge, S., Overall, N. C., & Sibley, C. G. (2019). Gender differences in the associations between relationship status, social support, and wellbeing. *Journal of Family Psychology, 33*(7), 819-829.
- Trimpop, R. (1994). *The psychology of risk-taking behavior*. Philadelphia: Elsevier Science.
- Valentine, K. A., Li, N. P., Meltzer, A. L., & Tsai, M. (2019). Mate preferences for warmth-trustworthiness predict romantic attraction in the early stages of mate selection and satisfaction in ongoing relationships. *Personality & Social Psychology Bulletin, 46*(2), Article e01461672198 5504311.
- Vijayakumar, N., de Macks, Z. O., Shirtcliff, E. A., & Pfeifer, J. H. (2018). Puberty and the human brain: Insights into adolescent development. *Neuroscience & Biobehavioral Reviews, 92*, 417-436.
- Wang, C., Zhang, W., Feng, Z., Wang, K., & Gao, Y. (2020). Exploring factors influencing the risky cycling behaviors of young cyclists aged 15-24 years: A questionnaire-based study in China. *Risk analysis, 40*(8), 1554-1570.
- Wildeman, C., & Western, B. (2010). Incarceration in fragile families. *The Future of Children, 20*(2), 157-177.
- Zahran, H. S., Zack, M. M., Vernon-Smiley, M. E., & Hertz, M. F. (2007). Health-related quality of life and behaviors risky to health among adults aged 18-24 years in secondary or higher education, 2003-2005. *Journal of Adolescent Health, 41*(4), 389-397.
- Asamoah, B. O., & Agardh, A. (2018). Individual- and family-level determinants of risky sexual behavior among Swedish- and foreign-born young adults 18-30 years of age, residing in Skåne, Sweden. *Archives of Sexual Behavior, 47*(2), 517-528.

## **THE RECONSOLIDATION OF TRAUMATIC MEMORIES (RTM) PROTOCOL FOR PTSD: A TREATMENT THAT WORKS**

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### **Abstract**

PTSD treatments occupy five systemic levels—chemical, biological, neurophysiological, phenomenal, and cognitive. Pharmacological treatments bridge the chemical and biological levels. They are often imprecise in effect, and drugs imply brokenness. Direct neurophysiological manipulations include Stellate ganglion block, deep brain stimulation, transcranial magnetic stimulation, etc. These are new, often invasive, and sparsely attested. EMDR and RTM employ imaginal manipulation of internal images. Cognitive manipulations work with conscious responses. Cognitive interventions may expose patients to cultural issues, especially when performed in a group context. These include hyper-masculinized expectations, military culture, shame as self-blame, etc. EMDR, cognitive, and pharmacological approaches have shown equivalent efficacy. RTM modifies the imaginal structure of trauma memories, reimagining them as nonthreatening, past events. RTM may be employed without disclosure of trauma content. We hypothesize that changes to imaginal images directly and lastingly impact neurology via the reconsolidation updating mechanism. Four published RCTs of RTM will be presented with information about a fifth unpublished study of trainee results. All studies found effect sizes exceeding 0.08 SMDs with high patient satisfaction.

**Keywords:** *PTSD, RTM, reconsolidation of traumatic memories, reconsolidation, trainees.*

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### **1. Interventions and levels of inquiry**

The analytical mindset that drives modern science has often led us to look at mental disease from a Newtonian perspective; we fully expect to find a single cause for any observed effect. This has led us to simplistic and invasive approaches to treating mental and emotional disorders that do not adequately address the complex systemic interactions from which problems and blessings both arise.

From this perspective, the discovery of neurotransmitters and neuromodulators, the complex machinery of their expression, reabsorption, and their effects and interactions at any brain locus hold forth the possibility of a pharmacological intervention that might cure our ills. Pharmacological interventions bridge the interface between chemistry and biology, and in many cases, they are marvelously effective. However, drugs for PTSD only work about as well as psychological treatments (Bisson et al., 2013; Steenkamp, Litz, Hoge, & Marmar, 2015) and their effects largely end when they are no longer taken. Psychopharmacology often neglects the observation that neurotransmitters do not just drive behavior; they are also the products of behavior. When we adjust their levels, are we responding to input or output; intra-cellular levels, extra-cellular levels, or both? In the hands of most physicians, the approach is stochastic at best, hit and miss at worst. Beyond this chicken-egg problem, drugs are often expensive, and their actions are often nonspecific.

The siren call of cognitive neuroscience tempts us with the idea that finding the right set of neurons, the correct brain locus, perhaps even the right network would allow its direct modification and so rid us of mental disorders. Trans-Cranial Magnetic Stimulation (TCMS) uses strong magnetic fields to selectively activate or inactivate targeted brain loci (Belsher et al., 2021). Deep Brain Stimulation, involving the implantation of electrodes in the targeted brain centers, would hope to accomplish the same thing: direct control of neural responding (Lavano et al., 2018). Stellate Ganglion Block (Olmstead et al., 2019) seeks to end the expression of PTSD symptoms by modifying the tone of cortisol and adrenaline related to fear and anxiety as an adjunct to CBT. This general perspective has also led to the limited use of ablative surgery to control various conditions. Like the chemo-biological approach of psychopharmacology, there is a chicken and egg problem. Are the observed brain changes the cause of the problem or a manifestation of normal plasticity in aberrant circumstances? In general, these attempts

to heal PTSD by directly manipulating the brain are expensive experimental approaches, requiring special equipment or invasive surgery.

Current psychotherapies for PTSD are often less effective than expectations allow. Frontline treatments include Prolonged Exposure (PE) in its various forms, Cognitive Processing Therapy (CPT), and Eye Movement Desensitization and Reprocessing (EMDR; VA, 2014). Two of these (PE & CPT) operate at the cognitive-behavioral level. All three have equivalent efficacy in reducing symptom severity scores, with pharmacological interventions similarly effective (Bisson et al., 2013; Goetter et al., 2015; Steenkamp, Litz, Hoge, & Marmar, 2015). None of them has been fully effective in treating PTSD. (Kitchiner et al., 2019; Steenkamp et al., 2015). Although often effective for treating mild or moderate PTSD, most studies report between 60% and 72% of participants in these treatment regimens retain the diagnosis after treatment, especially in combat-related trauma (Steenkamp et al., 2015).

Cognitive-behavioral interventions often rely upon verbal procedures seeking to understand and reprocess the fear memory on a conscious level. Others, depending upon Pavlovian extinction paradigms, establish blocking memories. These memories are often fragile and susceptible to relapse as the underlying trauma image re-emerges through the hallmark patterns of extinction decay—spontaneous recovery, contextual renewal, reinstatement, and rapid reacquisition (Bouton & Moody, 2004). One problem many cognitive approaches face is a failure to appreciate the hierarchical nature of neural structures and their multiple levels of integration (Buzsáki, 2010) This failure leads to efforts to change the more fundamental affective, subcortical responses from the cognitive level of language. Arntz (2020) observes that cognitive scientists would do well to move their level of analysis to the imaginal level as images are more fundamental to the processes of human experience than words. He makes the important point that images drive emotions, and shape their expression at the cognitive level.

## 2. The RTM Protocol

The Protocol is a fairly straightforward intervention with multiple opportunities to individualize its application. The basic steps of the RTM protocol are as follows:

*Table 1. Treatment outline: Reconsolidation of Traumatic Memories.*

|   |
|---|
| <ol style="list-style-type: none"> <li>1. The client is asked to briefly recount the target trauma.</li> <li>2. At any display of autonomic arousal, the narrative is stopped and the client reorient to the present.</li> <li>3. Elicit SUDS (Subjective Units of Distress) rating.</li> <li>4. The clinician aids the client in choosing a recognizable but neutral name for the event.</li> <li>5. The clinician assists the client in choosing “bookends:” a time before they knew the event would occur, and another when they knew that the event was over and that they had survived.</li> <li>6. The client creates an imaginal movie theater in which the pre-trauma bookend is on screen in black and white.</li> <li>7. As if from above and behind the client watches their own responses as a black and white movie of the target trauma plays from bookend to bookend. The movie is repeated and structural alterations made until the client is comfortable.</li> <li>8. The client steps into the last frame of the movie, turns on the sound, color, and dimensionality, and experiences the event backwards, as a fast rewind lasting 2 seconds or less. It begins with the post-trauma bookend and ends with the pre-trauma bookend. This is repeated until they are comfortable and show no perceptible sighs of autonomic arousal.</li> <li>9. The clinician elicits the trauma narrative and probes for responses to stimuli that previously elicited a fast arising, autonomic response. If the response is significant, earlier steps of the process are repeated.</li> <li>10. SUDS ratings are elicited.</li> <li>11. When the client is free from emotions in recounting the event, or sufficiently comfortable (SUDS = 1 or 2), they are invited to proceed to the next phase of treatment. If SUDS <math>\geq</math> 3, trending upward, the client should repeat the protocol beginning either with the rewind or the black and white movies.</li> <li>12. The client is invited to design and imagine living through several alternate, non-traumatizing versions of the event, and rehearses these several times.</li> <li>13. The client is again asked to relate the trauma, and their previous triggers are probed.</li> <li>14. SUDS ratings are elicited.</li> <li>15. When the trauma cannot be evoked, and the client can recount the event without significant autonomic arousal, the procedure is over.</li> </ol> |
| <p>Note: Gray, R., Budden-Potts, D., Schwall, R., Bourke, F. (2020). An Open-Label, Randomized Controlled Trial of the Reconsolidation of Traumatic Memories Protocol (RTM) in Military Women [Accepted Manuscript]. <i>Psychological Trauma: Theory, Research, Practice, and Policy</i>. <a href="https://doi.org/10.1037/tra0000986">https://doi.org/10.1037/tra0000986</a> and is used with permission. Modifications by the author.</p>   |

### 3. Theoretical considerations

The Reconsolidation of traumatic memories protocol (RTM) is an intervention for PTSD focusing on the imaginal level of consciousness (Gray, 2022). It assumes the mind-body system operates as a complex system in accordance with Bertalanffyian General Systems Theory and later models (Capra & Luisi, 2017; Gray, Fidler, & Battista, 1982). Thus, changes in a currently dominant subsystem can change the nature of the whole. As trauma responses are often mediated by visual imagery, subjective visual images may be understood to drive PTSD symptoms (Arntz, 2020)

Depending on a hypothesized reconsolidative mechanism, RTM affects functioning at the cognitive and biophysical levels through its impact on the images that drive symptom expression. The impact of those images is determined by structural dimensions which create the feeling that these subjective images are important, or their impact immanent. The same perceptual dimensions draw attention to significant environmental stimuli via retinotopic feature maps in the midbrain (Knudsen, 2018; Veale, Hafed, & Yoshida, 2017; White et al., 2017). Salience, importance, is determined in part by the following perceptual dimensions in each of the major sensory systems (visual, auditory, and kinesthetic): intensity (brightness, volume, pressure), complexity (hue, timbre, texture), contrast (granularity, frequency contrast, textural disparity); foreground-background (all sensory systems), frequency (color, pitch, felt distinctions of type: emotions, temperature, hedonic impact; Gray 2022). When the structure of the image is changed, symptom expression is likewise changed.

Reconsolidation of long-term memories refers to the observation that when a long-term memory is briefly activated, new information relevant to that memory may be incorporated into its structure. Changes are fast and appear to be permanent. Unlike extinction, reconsolidation modifies the underlying memory (Lee, Nader & Schiller, 2017).

The hypothesized association between RTM and reconsolidation is derived from observed homologies between the two processes. Both require a brief exposure to the target stimulus to activate the target memory. After a brief pause, or following a distractor stimulus, new, relevant information is introduced. After one sleep period, the memory is tested and the changes are typically found to be fully consolidated. There are several boundary conditions that ensure that reconsolidation occurs as intended. These include 1) the brevity of the stimulus presentation: it must be long enough to activate the memory but not so long as to create an extinction memory. 2) There must be a mismatch between learned expectations and the new elements in the learning context. 3) Only information that is relevant to the target memory will be incorporated. 3) New learning must be presented within a window of labilization, lasting one or more hours (Forcato, Fernandez, & Pedreira, 2014; Gray 2022).

#### 3.1. RTM at multiple systemic levels

RTM, through its targeting of the imagic processes that drive symptom expression, gains access to every level of systemic organization. At the level of physiology, we have observed the reduction of observable physiological symptoms of stress (tears, tensing, flushing, changes in breath rate, etc.). Lewine and colleagues, in an unpublished study (Lewine et al., nd) have identified a biomarker for PTSD: the persistence of high-frequency beta waves in the right temporal lobe. Chronic activation of that area has also been associated with PTSD by Engdahl and associates (Engdahl et al., 2010). In the Lewine study, patients treated with RTM showed significant symptom reductions, loss of diagnosis, and loss of right temporal lobe activation in the high beta range.

At the cognitive level, patients who complete the intervention, develop increasing verbal fluidity at each successive step in treatment. By the end of treatment, they are able to relate the entire trauma narrative, with full details, often with forgotten details re-emerging. We believe that 1) This integration is mediated by the lessened salience of the trauma memory, resulting in enhanced access to trauma-related details. 2) As a further result of that lessened intensity, RTM clients spontaneously integrate the previously avoided event into their life narrative in an act of personal redemption (Gray & Bourke, 2015; Gray et al., 2019; Gray et al., 2020; Gray, Davison & Bourke, 2021; Tylee et al., 2017;). By focusing upon the imaginal, RTM operates at the level of structure, not content. Taking advantage of the neurology that connects the structure of subjective images to the experienced affect, RTM can intervene at the level of neurology, using a simple, directive approach.

### 4. Studies of the RTM protocol

The RTM Protocol was evaluated in four randomized controlled trials (RCTs; Gray & Bourke, 2015; Tylee et al., 2017; Gray et al., 2019; Gray et al., 2020), using standard measures of symptom severity. These included the PTSD Symptom Scale-Interview version (PSS-I) and the Posttraumatic Stress Disorder Checklist-Military Version (PCL-M), administered at intake and two weeks

post-treatment. The pilot study used PCL-M only (Gray & Bourke, 2015). Three studies investigated RTM with male veterans (Gray & Bourke, 2015; Tylee et al., 2017; Gray et al., 2019). The fourth (Gray et al., 2020), used the protocol to treat thirty service-related women, 21 of whom suffered from some degree of Military Sexual Trauma (MST). All studies obtained high effect sizes (SMDs > 2.0) and significant loss of diagnosis.

Among completers from the three replication studies, about 74% reported a loss of diagnosis using the most stringent criteria. When less conservative criteria were used (scoring below the clinical thresholds for military PTSD; PSS-I  $\leq$  20, PCL-M  $\leq$  45; while showing no fast autonomic responding and reporting a total loss of nightmares and flashbacks), loss of diagnosis was above 90% for all three studies. Positive results extended to one full year for the three replication studies (Gray et al., 2019; Tylee et al., 2017; Gray et al., 2020). In each study, successful completers spontaneously reappraised and reintegrated the previously traumatizing memories into a coherent life narrative.

Between 2018 and 2020, 18 licensed mental health professionals participated in certification trainings in the Reconsolidation of Traumatic Memories (RTM) protocol. After certification, participants collected and reported back anonymized data on clients treated with RTM, including pre-post PSSI-5 (n = 74) or PCL-5 (n = 11) statistics for each client. We hypothesized that trainee results would match or exceed those reported in published RTM studies; the protocol's utility would extend to more trauma types than previously reported; and that their results would validate the efficacy of the training.

Between 2018 and 2020, those clinicians treated 90 patients diagnosed with PTSD. Patients averaged slightly more than one trauma each and averaged about 3 sessions per trauma. Data collection beyond symptom severity scores was limited by the exigencies of the COVID-19 epidemic. 85 of the RTM patients completed treatment for at least one trauma. Pre- post- PSSI-5 or PCL-5 results found that 80 (95%) scored below minimal diagnostic criteria for PTSD, exceeding previously reported success rates for the intervention. Trainees also extended the range of treated traumas beyond military contexts to include family violence, first responder trauma exposure, sexual abuse, school-related traumas, and traffic accidents (Gray et al 2021).

## 5. Conclusions

The RTM Protocol has now been shown to successfully treat PTSD in both military and civilian contexts. It has surpassed the efficacy of mainline treatments in the permanent resolution of PTSD and its symptoms. Trainee results extend the availability of RTM to civilian populations with both simple and complex trauma histories. We look forward to further evaluations of the protocol and its extended use among clinical populations.

## References

- Arntz, A. (2020). A plea for more attention to mental representations. *Journal of Behavior Therapy and Experimental Psychiatry*, 67, 101510. <https://doi.org/10.1016/j.jbtep.2019.101510>
- Belsher, B. E., Beech, E. H., Reddy, M. K., Smolenski, D. J., Rauch, S. A. M., Kelber, M., Issa, F., Lewis, C., & Bisson, J. I. (2021). Advances in repetitive transcranial magnetic stimulation for posttraumatic stress disorder: A systematic review. *Journal of Psychiatric Res*, 138, 598-606. <https://doi.org/10.1016/j.jpsychires.2021.05.011>
- Bisson, J. I., Roberts, N. P., Andrew, M., Cooper, R., & Lewis, C. (2013). Psychological therapies for chronic post-traumatic stress disorder (PTSD) in adults. *The Cochrane database of systematic reviews*, 2013(12), Cd003388. <https://doi.org/10.1002/14651858.CD003388.pub4>
- Bouton, M. E., & Moody, E. W. (2004). Memory processes in classical conditioning. *Neurosci Biobehav Rev*, 28(7), 663-674. <https://doi.org/10.1016/j.neubiorev.2004.09.001>
- Buzsáki, G. (2010). Neural syntax: cell assemblies, synapsembles, and readers. *Neuron*, 68(3), 362-385. <https://doi.org/10.1016/j.neuron.2010.09.023>
- Capra, F., & Luisi, P. L. (2017). *A Systems View of Life*. Cambridge, UK: Cambridge Univ. Press.
- Engdahl, B., Leuthold, A. C., Tan, H. R., Lewis, S. M., Winkowski, A. M., Dikel, T. N., & Georgopoulos, A. P. (2010). Post-traumatic stress disorder: a right temporal lobe syndrome? *Journal of Neural Engineering*, 7(6), 066005. <https://doi.org/10.1088/1741-2560/7/6/066005>
- Forcato, C., Fernandez, R. S., & Pedreira, M. E. (2014). Strengthening a consolidated memory: the key role of the reconsolidation process. *Journal of physiology, Paris*, 108(4-6), 323-333. <https://doi.org/10.1016/j.jphysparis.2014.09.001>

- Gray, R. M. (2022). The Reconsolidation of Traumatic Memories protocol (RTM) for PTSD – An emerging evidentiary treatment. In L. De Rijk, R. M. Gray, and F. F. Bourke (Eds.), *Neurolinguistic Programming in Clinical Settings: Theory and evidence-based practice* (1 ed., pp. 35-66). Routledge. <https://doi.org/https://doi.org/10.4324/9781003198864-3>
- Gray, R., Budden-Potts, D., Schwall, R., Bourke, F. (2020). An Open-Label, Randomized Controlled Trial of the Reconsolidation of Traumatic Memories Protocol (RTM) in Military Women [Accepted Manuscript]. *Psychological Trauma: Theory, Research, Practice, and Policy*. <https://doi.org/10.1037/tra0000986>
- Gray, R., & Bourke, F. (2015). Remediation of intrusive symptoms of PTSD in fewer than five sessions: A 30- person pre-pilot study of the RTM Protocol. *Journal of Military, Veteran and Family Health*, 1(2), 85-92. <https://doi.org/10.3138/jmvfh.3119>
- Gray, R., Budden-Potts, D., & Bourke, F. (2017). Reconsolidation of Traumatic Memories for PTSD: A randomized controlled trial of 74 male veterans. *Psychotherapy Research*, 1-19. <https://doi.org/10.1080/10503307.2017.1408973>
- Gray, R. M., Davison, A., and Bourke, F. (2021, August 25). Reconsolidation of Traumatic Memories, The RTM Protocol: Albuquerque trainee results. PsyArxiv. DOI 10.17605/OSF.IO/PFQG4 Retrieved from [osf.io/pfqq4](https://osf.io/pfqq4).
- Gray, W., Fidler, J., & Battista, J. (1982). *General Systems Theory and the Psychological Sciences*. Seaside, CA: Intersystem Publications.
- Kitchiner, N. J., Lewis, C., Roberts, N. P., & Bisson, J. I. (2019). Active duty and ex-serving military personnel with post-traumatic stress disorder treated with psychological therapies: systematic review and meta-analysis. *European journal of psychotraumatology*, 10(1), 1684226-1684226. <https://doi.org/10.1080/20008198.2019.1684226>
- Knudsen, E. I. (2018). Neural Circuits That Mediate Selective Attention: A Comparative Perspective. *Trends Neurosci*, 41(11), 789-805. <https://doi.org/10.1016/j.tins.2018.06.006>
- Lavano, A., Guzzi, G., Della Torre, A., Lavano, S. M., Tiriolo, R., & Volpentesta, G. (2018). DBS in Treatment of Post-Traumatic Stress Disorder. *Brain Sciences*, 8(1). <https://doi.org/10.3390/brainsci8010018>
- Lee, J. L. C., Nader, K., & Schiller, D. (2017). An Update on Memory Reconsolidation Updating. *Trends Cogn Sci*, 21(7), 531-545. <https://doi.org/10.1016/j.tics.2017.04.006>
- Olmstead, K. L. R., Bartoszek, M., Mulvaney, S. et al. (2019). Effect of Stellate Ganglion Block Treatment on Posttraumatic Stress Disorder Symptoms: A Randomized Clinical Trial. JAMA November 6, 2019. DOI:10.1001/jamapsychiatry.2019.
- Pedreira, M. E., Perez-Cuesta, L. M., & Maldonado, H. (2004). Mismatch Between What Is Expected and What Actually Occurs Triggers Memory Reconsolidation or Extinction. *Learning & Memory*, 11(5), 579-585. <https://doi.org/10.1101/lm.76904>
- Steenkamp, M. M., Litz, B. T., Hoge, C. W., & Marmar, C. R. (2015). Psychotherapy for Military-Related PTSD: A Review of Randomized Clinical Trials. *Jama*, 314(5), 489-500. <https://doi.org/10.1001/jama.2015.8370>
- Tylee, D. S., Gray, R., Glatt, S. J., & Bourke, F. (2017). Evaluation of the reconsolidation of traumatic memories protocol for the treatment of PTSD: a randomized, wait-list-controlled trial. *Journal of Military, Veteran and Family Health*, 3(1), 21-33. <https://doi.org/10.3138/jmvfh.4120>
- VA National Center for PTSD. (2014). Using the PTSD Checklist for DSM-IV (PCL) [Internet]. 2014 Jan. Washington, DC: US. Department of Veterans Affairs. <http://www.ptsd.va.gov/professional/pages/assessments/assessment-pdf/PCL-handout.pdf> Published January. 2014. Updated March 2016. Accessed July 4, 2016.
- Veale, R., Hafed, Z. M., & Yoshida, M. (2017). How is visual salience computed in the brain? Insights from behaviour, neurobiology and modelling. *Philos Trans R Soc Lond B Biol Sci*, 372(1714). <https://doi.org/10.1098/rstb.2016.0113>
- White, B. J., Itti, L., & Munoz, D. P. (2019). Superior colliculus encodes visual saliency during smooth pursuit eye movements. *Eur J Neurosci*. <https://doi.org/10.1111/ejn.14432>



# THE GOOD AND THE BAD OF BORDERLINE PERSONALITY PRESENTED SYMPTOMS: OVERLAPS WITH THE TRANSGENDER JOURNEY OF SELF-ACTUALIZATION

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## Abstract

Transgender youth experience societal stigma, rejection, and other psychosocial stressors associated with the crisis of their gender identity. Due to these struggles, the youth can present with suicidality, mood swings, fear of abandonment, identity disturbances – features that are similar to borderline personality disorder (BPD) traits. We interviewed four transgender youths who were labelled as potentially borderline or were diagnosed with the disorder. The data was analyzed using thematic analysis of qualitative interview data where several important themes emerged. One theme across participants was anger at the mislabeling that slowed the investigation into their transgender concerns and affirmation journey. Another theme was that the BPD label can be helpful at times to externalize symptoms for these youth. All participants acknowledged that the symptoms that match with BPD subsided with gender-affirming treatment and social transition. Findings can inform clinicians about the potential symptom overlap and raise awareness about the both the extreme harm and some good that the label of BPD carries for transgender youth.

**Keywords:** *Borderline personality disorder, transgender experiences, misdiagnoses, mislabeling.*

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## 1. Introduction

A small body of recent research indicates that gender diverse and sexual-preference minorities can present with borderline personality disorder (BPD) at higher levels than their cisnormative, and more sexually straight or conservative counterparts (Anzani et al., 2020; Goldhammer et al., 2019; Rodriguez-Seijas et al., 2021). The prevalence is concerning, because other types of mental illness, like post-traumatic stress disorder, can also present as BPD (Mizock & Brubaker, 2021). Trans youth experience psychosocial stressors and minority stress that can inspire strong reactions, sensitivity, fear of abandonment, identity confusion, among other BPD traits from the DSM-5 (Wong & Chang, 2015). Given these ideas, we wanted to learn about trans youth's experiences with clinicians regarding their presentation of BPD or BPD-like symptoms.

The clinical assessment and treatment of gender-variant children and youth can prove complex due to their developmental stage and complicated by minority pressures (Kaltiala-Heino et al., 2018; Meyer-Bahlburg, 2019; Wong & Chang, 2015). Many trans individuals struggle with mood swings, suicidality, irritability, and youth have ranging ideas about their BPD-like traits or diagnosis. Due to the complexity, we sought to understand the nuances of their lived experience to identity factors of the youth's experience of their trans and BPD identities. To our knowledge, there are no studies that address the clinical needs, perspectives, and experiences of gender variant-adults with an active, contested diagnosis or suspected traits of BPD. To offer effective clinical services for trans youth (Korpaisarn & Safer, 2018), it is critical to appreciate insider perspectives and experiences of the population. The present qualitative inquiry provides insight into the experiences of trans youth with BPD and BPD-like symptoms.

## 2. Participants and methods

Table 1. Participant Demographics.

| Participant   | Age | Gender Identity    | Diagnosis   |
|---------------|-----|--------------------|---|
| Participant 1 | 21  | Transgender Female | Former Borderline Personality Disorder (contested)                    |
| Participant 2 | 17  | Transgender Male   | Borderline Personality Disorder                                       |
| Participant 3 | 20  | Transgender Male   | Autism Spectrum Disorder, Borderline Personality Disorder (contested) |
| Participant 4 | 16  | Transgender Male   | Suspected Borderline Personality Disorder                             |

Four participants were recruited from a community-based mental health services clinic in the Lower Mainland of British Columbia, Canada. All participants identified as gender diverse and had either a diagnosis of borderline personality disorder currently, in the past, or medical professionals suspect the presence of the disorder. Informed consent was obtained from each participant and their legal guardian to take part in the study. This study was conducted in December 2021 through March 2022, using a qualitative semi-structured individual interview format. All interviews were audio recorded transcribed, and analyzed (stored locally on researcher’s hard drive) by each of the authors for emergent themes using qualitative thematic analysis (Braun & Clarke, 2006). Twelve subthemes emerged from the analysis (see results figure 1), and four broad themes that capture the meaning of the youths’ experiences. The headings are included in the below along with the participants’ words to contextualize and give voice to the findings.

## 3. Results

Figure 1. Organization of Themes.

| Broad Themes | Diagnostic collaboration versus labels (false positive harmful).   | BPD diagnosis can impact the provision of trans support services and feeling affirmed.                          | Clinician lack of understanding of trans experience affects judgement and timely intervention.                                 | Regardless of BPD or not, gender affirmation treatment improved BPD traits and symptoms.  |
|--------------|--|---|--|---|
| Sub-themes   | Youth feel best when they are treated like the expert in their own experience                                | Can negatively undermine youth’s gender dysphoria symptoms  | Clinician’s lacking in cultural competency with trans youth can cause harm   | Treatments that affirm gender identity, such as medical intervention and social transitions alleviate some BPD-like presentations |
|              | When the youth welcomed the dx, it helped externalize their symptoms   | May create doubt in caregivers and professionals about trans identity, thus delay in providing care and support | Minority stress of trans youth can overlap with other mental health issues – training is required to be helpful and discerning | Those that accepted the BPD dx found DBT helpful in conjunction with their gender affirmation journey (not in its absence)        |
|              | When the youth disagreed (disclaim, unacknowledged) with the dx, they found it invalidating and stigmatizing | Clinicians can overly-focus on BPD treatment before gender dysphoria- prolonging gender dysphoria suffering     | Delays in helpful treatment and intervention can lead to increased self-harm and suicidality                                   | Youth that rejected the BPD dx felt gender affirmation was the sole instrument of positive change for them                        |

### **3.1. Diagnostic collaboration versus labels (false positive harmful)**

*Youth feel best when they are treated like the expert in their own experience.* Participant 1 described how belittling it felt to be treated like they were not part of their diagnosis and psychological evaluation, “I saw a doctor ..[at a local hospital] who I would describe as antagonistic ...[and] she had a very set idea of what was up and anything that I said that conflicted with what she believed was really taken as further evidence that she was right and that I was wrong. It was it was that approach in medicine where it's *I am the Doctor and I know things and you are the patient and therefore stupid and don't know anything. So please listen, while I tell you what is wrong with you.*” Further, participant 3 felt invalidated and like they did not matter when they were assigned a BPD diagnosis and were deemed unable to make decisions about his gender due to this. He stated that clinicians would imply that, “maybe you don't have the mental capacity to make decisions for yourself.”

*When the youth welcomed the dx, it helped externalize their symptoms.* Participant 2 discussed that, “in the past (before the BPD dx), I felt like a bad person, and I didn't have the best personal relationship skills. But now I tell myself that [it] was the best that could, so I can forgive myself. I can't say that what I did was right. But I can say I forgive what I did. And I just understand a lot of things [now].” He went on to state, “I reject the stigma, and things are improving for people with personality disorders.” He even found social connections and formed friendship through BPD support groups and DBT-skills groups.

*When the youth rejected the dx, they found it invalidating and stigmatizing.* Participant 1 stated, “It felt like [the psychologist] was really trying to get me a diagnosis so that she could push me off onto someone else. Rather than actually addressing the reasons ...like why I wanted was to commit suicide and work out why I was feeling this way, and why I was feeling bad, and why unless something changed in my life. I wasn't going to stop trying to do this.”

### **3.2. BPD diagnosis can impact the provision of trans support services and feeling affirmed**

*Negatively undermines youth's gender dysphoria symptoms.* Participant 1 stated, “psychologists and doctors were convinced that I just had borderline personality disorder thing” and they negated her gender dysphoria as a result. Participant 3 stated, that they felt “manipulated to believe that he was borderline” and like his trans identity or “what I was going through wasn't real.”

*Creates doubt in caregivers and professionals about trans identity.* Due in part to her BPD diagnosis, Participant 1 stated that “the rest of the world can give you ... hollow validation of who you are when the person that you see and experience and live as is not strictly speaking accurate...my parents were very against the idea of me medically transitioning,” and this resistance on the part of her parents contributed to much suffering for the participant.

*Clinicians can choose to treat BPD before gender dysphoria- prolonging suffering.* Because Participant 1's treatment was delayed due to the BPD diagnosis, she was hospitalized three times for suicide attempts. She described how she felt at the time, “I would rather just call it quits now cut my losses and get out...I'm not sure if I want to live with this suffering and then the lifelong suffering because of this [remaining in a body and gender that did not match her experience].”

### **3.3. Clinician lack of understanding of trans experience affects judgement and timely intervention.**

*Clinician's lacking in cultural competency with trans youth can cause harm.* Participant 3's hospital psychiatrist diagnosed him with BPD rather quickly. He stated, “considering the fact that I was diagnosed within two sessions of seeing the psychiatrists and then immediately being discharged by him...I should have noticed that was a red flag.” Participant 3 went on to state, “I'm so exhausted and tired of having to deal with this, and I'm tired of having to advocate for myself and be an advocate for myself every single time.”

*Minority stress of trans youth can overlap with other mental health issues – training is required to be helpful and discerning.* Many trans youth can present with multiple issues, such as Autism Spectrum Disorder, trauma and post-traumatic stress disorder, and learning difficulties. Participant 3 explained that “it is a double-edged sword, especially in my clinical context because I'm autistic and I have a female phenotype...there's also past experience of trauma in both my childhood and adolescence. And considering that in the fact that I'm trans, it gives room for a lot of misinterpretation.”

*Delays in helpful treatment and intervention can lead to increased self-harm and suicidality.* Participant 3's gender-affirming treatment was delayed due his unwelcomed BPD diagnosis until he was an adult. He stated, “It was heartbreaking because, here I am struggling, and I'm still struggling now, because I've had a lot of problematic symptoms that weren't addressed properly, that weren't even understood correctly. And I have had to deal with this over the years.”

### 3.4. Regardless of BPD or not, gender affirmation treatment improved BPD traits and symptoms

*Treatments that affirm gender identity, such as medical intervention and social transitions alleviate BPD-like presentations.* Participant 1 stated, “all of the external validation in the world is not going to help the trans kid who is dysphoric at the end of the day when they're alone at night.” The participant stated that socially transitioning was like “a band aid over like a large wound across your chest. It doesn't do much and you need stitches, and a band aid might make you feel a little better. Because someone's trying something but ...it's not an adequate support really. There are some people that really need to medically transition because their dysphoria is rather severe.” Medically transitioning, in participant 1's case was critical to alleviating her gender dysphoria. Participant 4 shared, “when I was dysphoric, it would be like the only thing on my mind like I would like...I could do things, but it would always ruin the things that could make me happy potentially. But it would always come back to that, even when I tried to ignore it, and it would just ruin everything pretty much. I can never feel good, because there is always the biggest problem of not feeling comfortable in my own body.”

*Those that accepted the BPD dx found DBT helpful in conjunction with their gender affirmation journey (not in its absence).* Participant 4 said, “I wasn't upset about it [the BPD diagnosis] ...I actually felt like happy ...because I finally felt like it made sense like, why I was feeling the way I was ... for me...it was like finally it just seemed like everything just sort of made sense.” Participant 2 discussed how he does not feel stigmatized by the BPD label, and it is part of his identity now. He shared, “I reject the stigma, and things are improving for people with personality disorders.” He even found social connections and formed friendship through BPD support groups and DBT-skills groups.

*Youth that rejected the BPD dx felt gender affirmation treatment was the sole instrument of positive change for them.* Participant 4 explained, “Most of the [BPD] traits that I was described with, they immediately stopped when I finally started the...HRT [hormone] treatment, a little too late (delayed due to suspected BPD), and also [increasingly so after] eventually getting my top surgery.”

## 4. Discussion

The voices of trans youth were prioritized in this study. The participants found gender-affirmation treatment to be the most helpful in alleviating their different BPD or BPD-like symptoms. Thus, it may be helpful for clinicians to address gender dysphoria before or simultaneously with the BPD or BPD-like symptoms with trans youth. The youth all experienced clinicians who lacked awareness in trans issues and were overwhelmed with relief when trans-competent clinicians expressed understanding of the kinds of struggles that they experienced and supported them. They made it clear that when they felt heard and included in their evaluations, or treated like the expert in their own experiences, they felt empowered, validated, and like the support was more appropriate. The opposite was true when clinicians did not listen to or respect the perspective of the youth. This may indicate that the medical and clinical staff need to have more training, understanding and exposure to working with transgender youth. Understanding their unique stressors and how they may overlap with other mental health disorders may help make accurate diagnoses and provide trans support in a timely fashion. Lastly, youth had strong views as to whether a BPD label felt like an accurate expression of their experiences and behavior or not. Those that accepted the label felt empowered by it. Those that rejected the diagnosis felt invalidated and undermined by it.

### 4.1. Limitations

The study is limited in that there is a small sample size ( $N = 4$ ) – even for qualitative standards – and thus the experiences may not reflect the general population. Along similar lines, the youth were patients of our clinic, and met the criteria of both BPD and trans identity. Further, youth that access our clinic often have means to seek private psychological services, and while we do offer sliding scale rates to help limit barriers, the participants are of a socio-economic level where they can afford these fees; again, limiting the generalizability.

### 4.2. Conclusion

Trans youth indicated that they want to be included in their psychological evaluations, felt strongly about whether BPD fit them as a label or not, and BPD diagnosis could be helpful to those who are true-positive or harmful to those who are false positive. Reception of the BPD label also depended on how the youth felt about it. Importantly, provision of gender-affirming treatments support all four of the youth in feeling more comfortable in their bodies and led to a reduction of BPD or BPD-like symptoms. It is critical that these findings reach clinicians - particularly those working in hospitals that receive suicidal youth. Further studies should expand these interviews, and perhaps include quantitative data to help substantiate and further provide evidence for these results and conclusions.

## References

- Anzani, A., De Panfilis, C., Scandurra, C., & Prunas, A. (2020). Personality disorders and personality profiles in a sample of transgender individuals requesting gender-affirming treatments. *International journal of environmental research and public health*, 17(5), 1521.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative research in psychology*, 3(2), 77-101.
- Goldhammer, H., Crall, C., & Keuroghlian, A. S. (2019). Distinguishing and addressing gender minority stress and borderline personality symptoms. *Harvard Review of Psychiatry*, 27(5), 317-325.
- Kaltiala-Heino, R., Bergman, H., Työlajärvi, M., & Frisé, L. (2018). Gender dysphoria in adolescence: current perspectives. *Adolescent health, medicine and therapeutics*, 9, 31-41.
- Korpaisarn, S., & Safer, J. D. (2018). Gaps in transgender medical education among healthcare providers: a major barrier to care for transgender persons. *Reviews in Endocrine and Metabolic Disorders*, 19(3), 271-275.
- Meyer-Bahlburg, H. F. L. (2019). Introduction to the special section on clinical approaches to adolescents with gender dysphoria. *Archives of Sexual Behavior*, 48, 1981-1982.
- Mizock, L., & Brubaker, M. (2021). Treatment experiences with gender and discrimination among women with serious mental illness. *Psychological services*, 18(1), 64.
- Rodriguez-Seijas, C., Morgan, T. A., & Zimmerman, M. (2021). Is there a bias in the diagnosis of borderline personality disorder among lesbian, gay, and bisexual patients? *Assessment*, 28(3), 724-738.
- Strang, J. F., Meagher, H., Kenworthy, L., de Vries, A. L. C., Menvielle, E., Leibowitz, S., ... Anthony, L. G. (2018). Initial clinical guidelines for co-occurring autism spectrum disorder and gender dysphoria or incongruence in adolescents. *Journal of Clinical Child and Adolescent Psychology*, 47(1), 105-115.
- Wong, W., & Chang, S. (2015). Implementing social transitions within the school system for gender variant children. *International Journal of Arts & Sciences*, 8(3), 637-646.
- Wallace, W. & Semchuk, J. (2018). Balancing competing agendas: Considerations when providing psychological treatment for transgender children and adolescents. *Psychological Applications and Trends*, 9-13.

## DIGITAL DISTRACTIONS: LEARNING IN MULTITASKING ENVIRONMENT

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### Abstract

Modern learning environment is filled with digital distractions. Distractions lead students to engage in multitasking, i.e., task-switching, during the teaching and learning process - to shift attention from learning content to non-course-related activities. Psychological research is mostly focused on examining the negative effects of multitasking in three areas: cognition and academic performance; health; and interpersonal relationships. This paper deals with the field of academic achievement - specifically the effects that digital distractions have on students and the learning process. An analysis of articles published in scientific journals in the last five years has been done. Articles were searched through the EBSCO Discovery Service, and the searched terms were 'multitasking', 'digital distraction' and 'learning', in the title, abstract and/or keywords. In order for the article to be included in the analysis, it was necessary for it to deal with the learning process at least in part. Thus, 11 articles that were the results of empirical studies and 4 review/theoretically oriented articles were selected. The results of empirical studies show that multitasking may reduce learners' capacity for cognitive processing causing poor academic performance. Multitasking is more common in those media that provide instant emotional gratification, such as social media applications and sites. College instructors notice that digital distractions in the classroom negatively affect the teacher-student relationship, impair their job satisfaction, as well as the integrity of the classroom learning environment. Review studies, among other things, show that digital self-control interventions, which have been developed to alleviate the negative impact of digital distractions, are not effective enough. Banning the use of mobile devices in the classroom is not a good solution either, because banning the use of phones can encourage nomophobia, which will also negatively affect concentration and learning. For older students, banning the use of laptops leads to absenteeism from classes. What teachers can do is encourage students to write lecture notes by hand - in addition to making students more active, it has been confirmed that handwritten notes are more detailed than digital ones and lead to a more permanent recall. Technology breaks can also be effective in reducing multitasking: after a period of learning without multitasking, there is a break in which students can check text messages or social media.

**Keywords:** *Multitasking, digital distractions, learning, students.*

### 1. Digital distractions and multitasking

The term 'multitasking' implies that a person does several things at the same time. However, people cannot multitask at all - multitasking is a myth (Nass, 2013). We don't do multiple things at once because our brains don't have the capacity to function like that (Wagner, 2018). What we actually do is task-switching. "Thus, what people really mean when they say that a person is able to or are even good at multitasking is that this person, be it children, adolescents or young adults have, through practice, developed the ability to quickly switch between carrying out different tasks or using different media." (Kirschner & De Bruyckere, 2017, p. 139). Despite this knowledge, the term multitasking has become omnipresent in psychological research and is still used today.

The environment the modern man lives in is filled with digital distractions, which have attracted special attention with the outbreak of the Covid-19 pandemic and the transition to work and learning from home. People often have several devices switched on at the same time: smartphones, desktop or laptop computers, and maybe even a smart TV. The devices themselves have several active applications, and the notifications shift attention from the task to the distraction, which becomes a new task - until the next distraction appears. As Aagard notes (2019, p.88), this kind of "media multitasking is not a matter of attention divided, but of attention diverted". The studies are mostly focused on examining the negative

effects of multitasking in three areas: cognition and academic performance; health; and interpersonal relationships (Zamanzadeh, 2021). This paper deals with the field of academic achievement - specifically the effects that digital distractions have on students and the learning process.

The problem of media use, i.e., multitasking, during class lectures was examined even before the pandemic, regardless of online instruction. Students often justify their use of mobile phones or laptops during lectures with course-related searches. However, older studies have already shown that non-course-related, 'distractive' multitasking is highly prevalent in such conditions, and students significantly underestimate the time distractions take up (Kraushaar & Novak, 2010). In the research conducted by Kraushaar and Novak (2010), in addition to self-report measures, students agreed to use activity monitoring spyware. Thus, the precise data was obtained that applications unrelated to the course were used about 42 percent of the time. Students did engage in course-related, 'productive' multitasking, which was associated with greater academic success (Kraushaar & Novak, 2010). Very similar data were obtained for learning at home. Observations of 263 students during 15-minute study periods showed that average time on task was less than six minutes before they switched their focus, most often to a technological distraction such as social media or texting (Rosen, Carrier & Chever, 2013). Students who preferred to task-switch had more distracting technologies available and those who accessed Facebook had lower grades than those who avoided it while learning at home (Rosen, Carrier & Chever, 2013).

The subject of this paper is to summarize the results of recent studies dealing with multitasking, i.e., digital distractions in the learning process.

## 2. Method

An analysis of articles published in scientific journals in the last five years has been done. Articles were searched through the EBSCO Discovery Service, and the searched terms were 'multitasking', 'digital distraction' and 'learning', in the title, abstract and/or keywords. In order for the article to be included in the analysis, it was necessary for it to deal with the learning process at least in part. Thus, 11 articles that were the results of empirical studies and 4 review/theoretically oriented articles were selected. We will present a summary of the findings that the researchers obtained.

## 3. Results

### 3.1. Results of empirical research

In offline settings, experiments have shown that students who have the opportunity for non-lecture-related multitasking using mobile phones achieve lower academic success than students who do not use any digital technological tools, and take notes with pen and paper (Demirbilek & Talan, 2017). During online lectures, students themselves estimate that multitasking (watching TV, checking social media sites, texting, gaming) negatively affects self-efficacy, which jeopardizes academic performance (Alvarez-Risco et al, 2021; Wu & Cheng, 2018). Engaging in social media use while trying to follow instruction or learn may reduce learners' capacity for cognitive processing causing poor academic performance (Demirbilek & Talan, 2017). At the same time, media multitasking occurs more often in relation to those media that provide instant emotional gratification: primarily social media applications and sites (Baumgartner & Wiradhany, 2021). A strong motivator to use social media also comes from the desire not to miss anything that is happening (the phenomenon called fear of missing out, FoMO). Media multitasking is associated with attention distraction and learning disengagement (Al-Furiah & Al-Awidi, 2020). An environment in which the student is increasingly interrupted by competing media while learning leads to fragmented reading (Liu & Gu, 2019).

Researchers have shown that when information is fragmented, decreased reading comprehension occurs, which is very unfavourable for content adoption (Liu & Gu, 2019). Students interrupt their work on the assignment even without external distractions (such as media) - mind wondering happens, intentionally or unintentionally (Ralph et al, 2020). Opportunity to media multitask does increase overall reports of being off-task, but the role of the media may be more complex. Researchers believe that an increased tendency to have an off-task locus of attention occurs because of intentionally shifting attention away from the primary task (Ralph et al, 2020). In an environment where multiple sources of information are constantly competing for our attention, it is possible that we have created a habit of interrupting what we do, taking frequent breaks and finding content that offers instant gratification - if we do not have ICT devices, we will create non-digital distractions on our own. This would mean that one-time removal of media multitasking capabilities does not completely solve the problem of focusing on the task.

College instructors have noticed that digital distractions in the classroom negatively affect the teacher-student relationship, impair their job satisfaction, as well as the integrity of the classroom learning environment (Flanigan & Babchuk, 2020).

Although it is possible that media multitasking occurs in a cognitively adaptive manner - that students choose combinations that require lower cognitive demands and do not lead to cognitive overload (Baumgartner & Wiradhany, 2021), it is still a phenomenon with negative effects. If media multitasking is intense and/or occurs over long periods of time, cognitive overload will occur, leading to insufficient message processing and stress response (Baumgartner & Wiradhany, 2021). All of this jeopardizes academic performance. One of the ways to reduce multitasking among students during lectures is technology breaks (Guinness, Beaulieu & MacDonald, 2018). If there is an agreement that, after a period of learning without multitasking, there will be a break in which students can check text messages or social media, the frequency of multitasking decreases. In two out of the eleven studies analysed, no connection was found between media multitasking and the learning approach or academic achievement/performance (Law & Stock, 2017; Wiradhany, van Vugt & Nieuwenstein, 2019).

### 3.2. Conclusions from theoretical and review papers

In a theoretical paper exploring the concept of multitasking, Aagard (2019) concludes that distractions in the learning process do not lead to cognitive overload; the real problem is attention directed towards educationally irrelevant activity. He believes that there is no point in asking whether this activity impairs learning because the answer is obvious. It should be examined when it happens, how it is experienced, and why it occurs so frequently (Aagard, 2019). Dontre (2020) presents a literature review of the effects of three forms of technology on student distraction: laptops, smartphones, and social media use. Many students are used to coming to lectures with laptops and taking notes that way. However, studies show that off-task activities will also take place, which are disruptive for both the off-task students as well as their neighbouring students. The solution can only be more responsible use of laptops, because, in case they are not allowed to use a laptop, many students choose not to come to class at all, which is an even less favourable option (Elliot-Dorans, 2018; according to Dontre, 2020). As far as smartphones are concerned, the results of the research speak in favour of negative effects on learning. The use of social media can increase engagement and communication between students and teachers, but the use of social media in the classroom is largely disruptive and generally increases academic distraction (Dontre, 2020). Zamanzadeh and Rice (2021) present selected empirically established negative effects of multitasking in three areas: academic, health, and interpersonal. These authors find several studies, conducted between 2009 and 2017, that speak of adverse consequences in three academic subfields: cognition, performance, reading and studying. The last, fourth paper from this group talks about digital self-control interventions, which are intended to alleviate the negative impact of digital distractions (Biedermann, Schneider & Drachsler, 2021). However, the results obtained are not very encouraging. The analysed “interventions showed varying degrees of effectiveness, and especially interventions that relied purely on increasing the participants’ awareness were barely effective. For those interventions that sanctioned the use of distractions, the current literature indicates that the sanctions must be sufficiently difficult to overcome, as they will otherwise be quickly dismissed.” (Biedermann, Schneider & Drachsler, 2021, p.1). However, the authors conclude that digital self-control interventions are one of the ways to address the problem, but there are still many open issues related to them.

### 4. Conclusion

The results of the vast majority of papers speak of the negative effects of digital distractions, i.e., multitasking, on the learning process. The mobile phone seems to be the most distractive device, and for older students, who come to lectures with laptops, it is the laptop itself; social networking apps and websites stand out in regard to the applications. Students engage in off-task activities in order to gain instant emotional gratification. Simply put, distractions lead to positive emotions, they are fun. However, these fun activities also lead to poorer reading comprehension, poorer content adoption, and lower grades. How should distractions be fought? Banning devices cannot be the answer. As noted by Al-Furiah and Al-Awidi (2020), a restrictive policy towards the use of smartphones can encourage nomophobia (fear of having no mobile phone), which will also negatively affect concentration and learning. For older students, the ban on the use of laptops leads to absenteeism (Elliot-Dorans, 2018; according to Dontre, 2020). Self-monitoring interventions and restriction-based interventions show insufficiently good results (Biedermann, Schneider & Drachsler, 2021). It is especially difficult to determine which content should be banned, because learners may need to communicate with their peers on a social media site or watch learning-related content on the same platform where they watch entertaining videos. What teachers can do is encourage students to write lecture notes by hand - in addition to making students more active, it has been confirmed that handwritten notes are more detailed than digital ones and lead to a more permanent recall. Technology breaks can also be effective in reducing multitasking: after a period of learning without multitasking, there is a break in which students can check text messages or social media. The only thing that is certain is that digital content will not become less distractive - we need to be more resilient.



## References

- Aagaard, J. (2018). Multitasking as distraction: A conceptual analysis of media multitasking research. *Theory & Psychology*, *095935431881576*. doi:10.1177/0959354318815766
- Al-Furaih, S. A. A., & Al-Awidi, H. M. (2020). Fear of missing out (FoMO) among undergraduate students in relation to attention distraction and learning disengagement in lectures. *Education and Information Technologies*, *26*(2), 2355–2373. doi:10.1007/s10639-020-10361-7
- Alvarez-Risco, A., Estrada-Merino, A., Anderson-Seminario, M.M., Mlodzianowska, S., García-Ibarra, V., Villagomez-Buele, C. & Carvache-Franco, M. (2020). Multitasking behavior in online classrooms and academic performance: case of university students in Ecuador during COVID-19 outbreak. *Interactive Technology and Smart Education*, *18*(3), 422-434.
- Baumgartner, S. E., & Wiradhany, W. (2021). Not all media multitasking is the same: The frequency of media multitasking depends on cognitive and affective characteristics of media combinations. *Psychology of Popular Media*. doi: 10.1037/ppm0000338
- Biedermann, D., Schneider, J., & Drachslar, H. (2021). Digital self-control interventions for distracting media multitasking - A systematic review. *Journal of Computer Assisted Learning*, *37*(5), 1217–1231. doi:10.1111/jcal.12581
- Demirbilek, M., & Talan, T. (2017). The effect of social media multitasking on classroom performance. *Active Learning in Higher Education*, *19*(2), 117–129. doi:10.1177/1469787417721382
- Dontre, A. J. (2020). The influence of technology on academic distraction: A review. *Human Behavior and Emerging Technologies*, *3*(3), 379–390. doi:10.1002/hbe2.229
- Flanigan, A. E., & Babchuk, W. A. (2020). Digital distraction in the classroom: exploring instructor perceptions and reactions. *Teaching in Higher Education*, *1–19*. doi:10.1080/13562517.2020.1724937
- Guinness, K. E., Beaulieu, L., & MacDonald, J. M. (2018). Effects of technology breaks on media multitasking with college students. *Behavioral Interventions*. doi:10.1002/bin.1529
- Kirschner, P., & Karpinski, A. (2010). Facebook® and academic performance. *Computers in Human Behavior*, *26*(6), 1237–1245. doi: 10.1016/j.chb.2010.03.024
- Kraushaar, J.M. & Novak, D.C. (2010). Examining the effect of student multitasking with laptops during the lecture. *Journal of Information Systems Education*, *21*(2), 241-251.
- Law, A. S., & Stock, R. (2017). Learning approach and its relationship to type of media use and frequency of media-multitasking. *Active Learning in Higher Education*, *146978741773561*. doi:10.1177/1469787417735612
- Liu, Y., & Gu, X. (2019). Media multitasking, attention, and comprehension: a deep investigation into fragmented reading. *Educational Technology Research and Development*. doi:10.1007/s11423-019-09667-2
- Nass, C. (2013a). Are You Multitasking Your Life Away? Clifford Nass at TEDxStanford. Retrieved December 7th, 2021 from [https://www.youtube.com/watch?v=PriSFBu5CLs&ab\\_channel=TEDxTalks](https://www.youtube.com/watch?v=PriSFBu5CLs&ab_channel=TEDxTalks)
- Ralph, B. C. W., Smith, A. C., Seli, P., & Smilek, D. (2020). Yearning for distraction: Evidence for a trade-off between media multitasking and mind wandering. *Canadian Journal of Experimental Psychology/Revue canadienne de psychologie expérimentale*, *74*(1), 56–72. doi: 10.1037/cep0000186
- Rosen, L.D., Carrier, L.M. & Chever, N.A. (2013). Facebook and texting made me do it: Media-induced task-switching while studying. *Computers in Human Behavior*, *29*(3), 948-958. doi: 10.1016/j.chb.2012.12.001
- Wagner, A. (2018). A decade of data reveals that heavy multitaskers have reduced memory. Retrieved December 7th, 2021 from <https://news.stanford.edu/2018/10/25/decade-data-reveals-heavy-multitaskers-reduced-memory-psychologist-says/>
- Wiradhany, W., van Vugt, M. K., & Nieuwenstein, M. R. (2019). Media multitasking, mind-wandering, and distractibility: A large-scale study. *Attention, Perception, & Psychophysics*. doi:10.3758/s13414-019-01842-0
- Wu, J.-Y., & Cheng, T. (2018). Who is better adapted in learning online within the personal learning environment? Relating gender differences in cognitive attention networks to digital distraction. *Computers & Education*. doi:10.1016/j.compedu.2018.08.016
- Zamanzadeh, N. N., & Rice, R. E. (2021). A theory of media multitasking intensity. *Journal of Media Psychology: Theories, Methods, and Applications*, *33*(4), 226–239. doi: 10.1027/1864-1105/a000316

# THE DEVELOPMENT OF INFANT LANGUAGE IN THE FIRST 12 TO 42 MONTHS OF LIFE: A THEMATIC REVIEW OF PROTECTIVE AND RISK FACTORS

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## Abstract

The development of an infant is both invulnerable and vulnerable. Infant development can be either typical or atypical. Growth is accompanied by a variety of challenges throughout pregnancy, childbirth, infancy, childhood, and the adult years. The factors which may contribute to typical development are termed protective factors, while those which may contribute to atypical development are termed risk factors. This may lead to the assumption that different forms of infant development could be parallel due to their influence on protective or risk factors. This study synthesized research on the development of typical and atypical language in infants between 12 and 42 months using a thematic review method. Early diagnosis and intervention are crucial in infants when atypical development is noticed or documented. The study incorporates recent and past evidence and is structured by topics, such as infant development, risk factors, protective factors, and infant language development. The evidence is summarized, accompanied by data collection that describes key characteristics of risk and protective factors related to infant (language) development. The study is directed towards researchers, practitioners, clinicians, speech-language pathologists, psychologists in the field of early childhood education, as well as parents and educators.

**Keywords:** *Infant language, infant development, protective factors, risk factors, early diagnosis.*

## 1. Introduction

In many respects, both the 20th and 21st centuries have witnessed remarkable progress in the study of infant development (Bremner & Fogel, 2001; Fitzgerald et al., 2002). The emergence of several theories has established concrete foundations for the scientific investigation of the early life of infants (Bremner & Slater, 2004, p. vi). While the 20th century was marked by the shift from “mechanistic to organismic paradigms” (Fitzgerald et al., 2002), the 21st century is probably marked by the change from general system theory to the interdisciplinary examination of infant development. The validity of theoretical contribution depends on evidence either consolidating or refuting its assumption(s). The early assumptions include, but not limited to, infant development due to ontogenetical changes (Hopkins, 2005), cognitive changes (Mascolo & Fischer, 2005), the interaction between innate and acquired functions (Bolhuis & Hogan, 2005), learning and learning environment (Watson, 2005), and observation and analysis of child behaviour and occurring disorders (Fonagy, 2005). Recent theories propose systematic models for the study of infant development concerning the early theories. These include the infant’s capacity to understand itself and the world around it as in the Theory of Mind (Freeman, 2005; Rakoczy, 2017), the interaction of subsystem to form a system as in the Zürich model of social motivation (Gubler & Bischof, 1991), the prediction of infant development based on its present stage as in the dynamical systems (Schöner, 2005).

A large number of theories has emerged, leading to increased complexity of the study of human infancy. Research in this area has shifted towards a category system approach. This category system includes cognitive development, be it in infancy, such as object knowledge (Bremner, 2005), or beyond infancy, such as the interaction of biological factors and socio-cultural experiences (Callaghan, 2005), perceptual development (Johnson et al., 2005), motor development (Vereijken, 2005), social development (Ross & Spielmacher, 2005), emotional development (Fox & Stifter, 2005), moral development (Turiel, 2005), speech development (Kent, 2005), language development (MacWhinney, 2005), and even more specific aspects like abstract and higher-level thinking—referred to as executive functions (Hughes, 2005).

To sum up, theories and different methods of research that have resulted in the variable outcome indicated the need to shift the study of infant development from diagnosis, description, and analysis, to attempts to reveal the causes that led, or could lead, to atypical infant development (Feldman, 2016; Henderson, 2015; Suci & Robertson, 1992).

## 2. Methods

A thematic approach was used to conduct this review study. We identified two major themes (variables) in our study: risk and protective factors concerning infant development, and risk and protective factors concerning infant language development. To search for previous literature, we used the University of Verona database (UNIVERSE). We examined the literature using the following keywords: 'infant development' OR 'infant language development' AND 'risk factors' OR 'protective factors'. All databases were activated and limited to English and to articles, review articles, book chapters, and books. A total of 70 documents were reviewed, of which 32 were tabulated for evidence in the two targeted themes.

## 3. Synthesis

### 3.1. Infant language development

Language development remains the most mysterious ability being developed by humans starting from prenatal stages (E. K. Johnson, 2016) to early infancy and adolescence (Ornat, 2012). When approaching the language development of infants, a distinction is made between speech development and language development. The former is specific to the development of the sound system, including phonological aspects (Kent, 2005) and even the debatable premimetic and mimetic capacities (Vihman & Depaulis, 2009). The latter refers to all elements of language, including the auditory system, articulation, words, grammar (MacWhinney, 2005), and pragmatics which ensure typical social interaction and communication (Coplan & Weeks, 2009). Recently, researchers have paid more attention to the first three years as the milestone period to understand the nature and the direction of language development, be it typical or atypical (Spencer & Koester, 2016). Infant development and language development operate interactively. *Table 1* summarizes 20 studies approaching other elements of language and mediators that may be conducive to infant language development. Age is shown in months.

*Table 1. A Summary of Studies Using Different Predictors to Examine Infant Language Development.*

| No. | Predictor/mediator  | Method        | Age   | Implication  | Citation                      |
|-----|---|---------------|-------|--|-------------------------------|
| 1   | Home stimulation and maternal variables                           | Experimental  | 10-12 | Maternal language contributes to overall infant language development                     | (Psarras, 1973)               |
| 2   | Infant categorical discrimination and closure duration.           | Experimental  | 7.5   | Application of this model to speech perception of infants                                | (Cohen et al., 1992)          |
| 3   | Maternal generation of mothers, fathers' educational level        | Experimental  | 22    | Environmental context affects receptive and expressive communication                     | (Montgomery et al., 1999)     |
| 4   | Mothers' views on infant language development                     | Interviews    | 13-14 | The need for family integration in the study of overall infant language development      | (Hammer & Weiss, 2000)        |
| 5   | Babbling as linguistic and non-linguistic                         | Observational | 6-12  | Typical babbling could be an indicator for typical infant language development           | (Oller, 2001)                 |
| 6   | Shared book reading   | Observational | 12-24 | Parents and home visitors conduce to overall infant language development                 | (Christiansen, 2003)          |
| 7   | Parenting intervention for young mothers at risk                  | Intervention  | 4-7   | The intervention of mothers increase expressive language                                 | (McGowan et al., 2008)        |
| 8   | Maternal ADHD symptoms of mothers and maternal language           | Correlational | 2-12  | Mothers' maternal health either increases or decreases infant language development       | (Kryski et al., 2010)         |
| 9   | Distributional and phonological regularities affect word learning | Observational | 14    | Phonological and distributional cues marking word categories promote early word learning | (Tafuro, 2011)                |
| 10  | Mother-infant early interactions                                  | Experimental  | 22    | Parents' behaviour help regulate infant language development, mainly phonology           | (Lany & Saffran, 2011)        |
| 11  | Maternal depression and bilingual households                      | Observational | 6-10  | Poor mental health and bilingual households influence early language acquisition         | (Women's Health Weekly, 2012) |
| 12  | Fatty acid composition of breast milk and language development    | Experimental  | 9-12  | A higher level of this acid could increase receptive language development                | (Toro-Ramos et al., 2013)     |

| No. | Predictor/mediator                                     | Method                     | Age          | Implication  | Citation                          |
|-----|--|----------------------------|--------------|--|-----------------------------------|
| 13  | Walking and language development                       | Longitudinal               | 10-13.5      | Walking involves communicative understanding, cognitive development, parents attribution, and neurological development, which all contribute to language development | (Walle & Campos, 2014)            |
| 14  | Mothers' attachment levels and types of verbal control | Correlational              | 24-35        | Attachment levels, mothers' status and verbal control affect infant language development   | (Nam & Jahng, 2015)               |
| 15  | Exposure to cigarette smoking                          | Cohort follow-up study     | 6, 12, 30    | Prenatal nicotine exposure influence cognitive development including language  | (Hernández-Martínez et al., 2017) |
| 16  | Educating mothers                                      | Intervention               | Newly born   | Intervention plays a role in language acquisition for mothers of all socioeconomic status  | (Suskind et al., 2018)            |
| 17  | Neonatal maturation and receptive language development | Diffusion-weighted imaging | 12           | Neonatal receptive language development could be used to indicate either typical or atypical language development  | (Sket et al., 2019)               |
| 18  | Beliefs of young educators                             | Interviews                 | Under 24     | Qualifications and skills of young educators may support infant language development   | (Degotardi & Gill, 2019)          |
| 19  | Parent coaching intervention                           | Intervention               | 6, 10, 14    | Parentese style enhances social language skills of infants   | (Ramírez et al., 2020)            |
| 20  | Conceptions of infant language development             | Interviews                 | Preschoolers | Well-qualified educators can enhance infant language development   | (Han & Degotardi, 2020)           |

### 3.2. Risk factors, protective factors, and language development

Several researchers reviewed risk and protective factors that could help predict the nature of infant language development. Having done so, they suggest that this could help researchers, clinicians, parents, and policy-makers make decisions and provide early intervention (if needed) for infants. These reviews resulted in a different list of factors and findings on the degree of impact of each of the elements for language development (i.e., for the protective factors) and language delay (i.e., for the risk factors) (Laasonen et al., 2018; Sania et al., 2019; Short et al., 2019).

As a salient argument, a review concluded that “perinatal, postnatal and environmental factors influence language development,” and breastfeeding enhances language development (Chaimay et al., 2006, p.1080). Another reviewer found that risk factors include “family dynamics ... interaction with parents, immediate social environment, and encouragement” and characteristics like “brain injury, persistent otitis media, and cardiac surgery, besides the type of food and parental counseling, may be related to language disorders” (Gurgel et al., 2014, p. 350). Another review identified eleven biological and eight environmental factors of which gender parents' social status were the most influential predictors for infant language development (Korpilahti et al., 2016).

Another factor causing language delay is associated with different prenatal factors. Reported findings indicated that prenatal exposure to cocaine affects discourse-pragmatic, semantic, and form components of language (Mentis & Lundgren, 1995), prenatal and perinatal factors (e.g., mothers' anaemia) influence all levels of speech and language development (Cabarkapa et al., 2012), and impact of prenatal alcohol exposure on language and speech communication development (Hendricks et al., 2019). Other studies used biological or environmental risk factors to predict typical or atypical language development (See Table 2).

Table 2. A Summary of Studies Using Different Risk Factors to Predict Typical/Atypical Language Development.

| No. | Example risk factor  | Language development                           | Implication   | Citation                     |
|-----|--|--|---|------------------------------|
| 1   | Family factors (e.g., low family income, the inadequacy of family resources) | Expressive language and comprehension measured | The home environment is a mediator between language development and risk factors      | (Park, 2002)                 |
| 2   | Family history   | Specific language impairment                   | Family history mediates language development  | (Choudhury & Benasich, 2003) |
| 3   | History of metal lead exposure   | Overall language development                   | Lead exposure increase chances of language delay                                      | (Jorge et al., 2008)         |
| 4   | Gender, gestational age, and birth weight                                    | Oral language development                      | Early detection of hearing loss can decrease chances of language delay                | (Fernandes et al., 2011)     |
| 5   | Assessment markers   | Specific expressive language delay             | Assessment markers can help predict language delay                                    | (Everitt et al., 2013)       |
| 6   | Language delay   | Overall language development                   | Family contact is essential, and three months is not enough to predict language delay | (Wilson et al., 2013)        |

|    |   |                                  |   |                            |
|----|---|----------------------------------|---|----------------------------|
| 7  | Maternal Non- English Speaking Background, low school readiness, and maternal mental health distress                                      | Receptive vocabulary development | social gradients in children's developmental outcomes increase over time                                    | (Taylor et al., 2013)      |
| 8  | Birth weight  | Overall language development     | Responsive parenting as a protective factor could decrease the impact of birth weight risk                  | (Madigan et al., 2014)     |
| 9  | Gestational 25(OH)D status  | Receptive language development   | The amount of this vitamin is related to receptive language skills but not cognitive or expressive language | (Tylavsky et al., 2015)    |
| 10 | Urban residence, low birth weight, male gender, delivery by Caesarean section, parent consanguinity, and presence of cyanosis after birth | Overall language development     | Awareness of risk factors can increase the chance of delayed language occurrence                            | (Aboufaddan & Ahmed, 2018) |
| 11 | Maternal responsive and intrusive communicative behaviours  | Overall language development     | Mother-baby interaction and connection affect positively/negatively language development                    | (Conway et al., 2018)      |
| 12 | Family variables (e.g., positive family history) and birth weight   | Language development disorder    | Early identification of risk factors decreases chances of LDD   | (Nasiri et al., 2019)      |

#### 4. Conclusion

Risk factors and protective factors stand in a relation of mutual dependence. While risk factors increase the chances of atypical language development, protective factors ensure typical language development. Dissimilarly, while the absence of risk factors indicates typical language development, the absence of protective factors increases the chances of atypical language development. The examination of both is vital for the early identification as well as the consecutive early intervention.

#### References

- Bolhuis, J. ., & Hogan, J. A. (2005). Ethological theories. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 64–69). Cambridge University Press.
- Bremner, G. (2005). Cognitive development in infancy. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 195–203). Cambridge University Press. <https://doi.org/10.4324/9780203482834>
- Bremner, G., & Fogel, A. (Eds.). (2001). *Blackwell Handbook of Infant Development*. Blackwell Publishers Ltd.
- Bremner, G., & Slater, A. (Eds.). (2004). *Theories of Infant Development*. Blackwell Publishing Ltd.
- Cabarkapa, N., Buzganovic, I., & Bobic Gece, B. (2012). The influence of prenatal and perinatal risk factors on speech and language development. *Neuropsychiatrie de l'Enfance et de l'Adolescence*, 60(5), S166. <https://doi.org/10.1016/j.neurenf.2012.04.234>
- Callaghan, T. C. (2005). Cognitive development beyond infancy. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 204–209). Cambridge University Press. <https://doi.org/10.1016/B978-0-12-397045-9.00059-8>
- Chaimay, B., Thinkhamrop, B., & Thinkhamrop, J. (2006). Risk factors associated with language development problems in childhood - A literature review. *Journal of the Medical Association of Thailand*, 89(7), 1080–1086.
- Feldman, R. S. (2016). *Child Development* (7th ed.). Pearson.
- Fitzgerald, H. E., Karraker, K., & Luster, T. (Eds.). (2002). *Infant development: ecological perspectives*. RoutledgeFalmer. <https://doi.org/10.5860/choice.39-6733>
- Fonagy, P. (2005). Psychoanalytical theories. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 77–83). Cambridge University Press.
- Fox, N. A., & Stifter, C. A. (2005). Emotional Development. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 234–241). Cambridge University Press. <https://doi.org/10.4135/9781412963848.n86>
- Freeman, N. H. (2005). Theories of the child's mind. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 84–88). Cambridge University Press.
- Gubler, H., & Bischof, N. (1991). A Systems Theory Perspective. In M. E. Lamb & H. Keller (Eds.), *Infant Development: Perspectives from German- Speaking Countries* (pp. 35–52). Lawrence Erlbaum Associates, Publishers.
- Gurgel, L. G., Vidor, D. C. G. M., Joly, M. C. R. A., & Reppold, C. T. (2014). Risk factors for proper oral language development in children: A systematic literature review. *Codas*, 26(5), 350–356. <https://doi.org/10.1590/2317-1782/20142014070>

- Henderson, A. (Ed.). (2015). *Prenatal and Maternal Diagnosis, Screening and Infant Development Implications*. Nova Science Publishers, Inc.
- Hendricks, G., Malcolm-Smith, S., Adnams, C., Stein, D. J., & Donald, K. A. M. (2019). Effects of prenatal alcohol exposure on language, speech and communication outcomes: A review longitudinal studies. *Acta Neuropsychiatrica*, *31*(2), 74–83. <https://doi.org/10.1017/neu.2018.28>
- Hopkins, B. (2005). Neuromaturational theories. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development2* (pp. 37–48). Cambridge University Press.
- Hughes, C. (2005). Executive Functions. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 313–316). Cambridge University Press. <https://doi.org/10.4324/9781315111568-12>
- Johnson, S. P., Hannon, E. E., & Amso, D. (2005). Perceptual development. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 210–216). Cambridge University Press. <https://doi.org/10.4324/9781315742113-8>
- Kent, R. D. (2005). Speech development. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (Issue 1, pp. 249–256). Cambridge University Press. [https://doi.org/10.1016/S0094-1298\(20\)31264-5](https://doi.org/10.1016/S0094-1298(20)31264-5)
- Korpilahti, P., Kaljonen, A., & Jansson-Verkasalo, E. (2016). Identification of biological and environmental risk factors for language delay: The Let's Talk STEPS study. *Infant Behavior and Development*, *42*, 27–35. <https://doi.org/10.1016/j.infbeh.2015.08.008>
- Laasonen, M., Smolander, S., Lahti-Nuutila, P., Leminen, M., Lajunen, H. R., Heinonen, K., Pesonen, A. K., Bailey, T. M., Pothos, E. M., Kujala, T., Leppänen, P. H. T., Bartlett, C. W., Geneid, A., Lauronen, L., Service, E., Kunnari, S., & Arkkila, E. (2018). Understanding developmental language disorder -The Helsinki longitudinal SLI study (HelSLI): A study protocol. *BMC Psychology*, *6*(1), 1–13. <https://doi.org/10.1186/s40359-018-0222-7>
- MacWhinney, B. (2005). Language development. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 257–264). Cambridge University Press. <https://doi.org/10.2307/1167159>
- Mascolo, M. F., & Fischer, K. W. (2005). Constructivist theories. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 49–63). Cambridge University Press. <https://doi.org/10.1017/9781316216491.005>
- Mentis, M., & Lundgren, K. (1995). Effects of prenatal exposure to cocaine and associated risk factors on language development. *Journal of Speech and Hearing Research*, *38*(6), 1303–1318. <https://doi.org/10.1044/jshr.3806.1303>
- Rakoczy, H. (2017). Theory of Mind. In B. Hopkins, E. Geangu, & S. Linkenauger (Eds.), *The Cambridge Encyclopedia of Child Development* (pp. 505–512). Cambridge University Press. <https://doi.org/10.4324/9781315105406-3>
- Ross, H. S., & Spielmacher, C. E. (2005). Social development. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 227–233). Cambridge University Press. <https://doi.org/10.1109/MCI.2006.1672987>
- Sania, A., Sudfeld, C. R., Danaei, G., Fink, G., McCoy, D. C., Zhu, Z., Fawzi, M. C. S., Akman, M., Arifeen, S. E., Barros, A. J. D., Bellinger, D., Black, M. M., Bogale, A., Braun, J. M., Van Den Broek, N., Carrara, V., Duazo, P., Duggan, C., Fernald, L. C. H., ... Fawzi, W. (2019). Early life risk factors of motor, cognitive and language development: A pooled analysis of studies from low/middle-income countries. *BMJ Open*, *9*(10). <https://doi.org/10.1136/bmjopen-2018-026449>
- Schöner, G. (2005). Dynamical systems approaches. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 89–97). Cambridge University Press. <https://doi.org/10.1017/9781316216491.009>
- Short, K., Eadie, P., & Kemp, L. (2019). Paths to language development in at risk children: a qualitative comparative analysis (QCA). *BMC Pediatrics*, *19*(94), 1–17.
- Suci, G. J., & Robertson, S. S. (Eds.). (1992). *Future Directions in Infant Development Research*. Springer-Verlag. <https://doi.org/10.1007/978-1-4612-2818-9>
- Turiel, E. (2005). Moral Development. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 242–248). Cambridge University Press. <https://doi.org/10.1016/B978-0-12-373932-2.00180-0>
- Vereijken, B. (2005). Motor development. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development2* (pp. 217–226). Cambridge University Press. <https://doi.org/10.1037/13350-004>
- Watson, J. S. (2005). Learning \_ Theories Learning \_ Theories. In B. Hopkins (Ed.), *The Cambridge Encyclopedia of Child Development* (pp. 70–76). Cambridge University Press.

## **BOREDOM AND ONLINE LEARNING MOTIVATED ATTENTION AND REGULATION STRATEGIES DURING COVID-19**

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### **Abstract**

During online classes, teachers face the challenges of keeping the students focused and motivated in the online environment. The results of the research showed that students who get bored during online classes are less motivated and achieve poorer academic results. The initial assumption that this paper makes is that in relation to the level of boredom that students experience during online lessons, it is possible to predict which strategies of attention regulation and direction students will use. The research sample consists of 198 students, between 18 and 39 years of age ( $AM = 21.03$ ;  $SD = 2.43$ ), 84.9% of which are female. The sample included survey participants who stated that class attendance was mandatory during online classes due to the Coronavirus pandemic. The instruments used were the Online Learning Motivated Attention and Regulation Strategies (OLMARS) questionnaire, dimension of Boredom from the Achievement Emotions Questionnaire - Short version (AEQ-S). The results of simple regression analysis showed that boredom during online lessons is a predictor for four statistically significant strategies of attention regulation and direction: Perceived attention discontinuity ( $R^2=.21$ ;  $F(1,196)=53,442$ ;  $p=.000$   $\beta=.463$ ;  $p=.000$ ), Lingering thought ( $R^2=.16$ ;  $F(1,196)=39,350$ ;  $p=.000$   $\beta=.409$ ;  $p=.000$ ) and Social media notification ( $R^2=.17$ ;  $F(1,196)=40,975$ ;  $p=.000$   $\beta=.416$ ;  $p=.000$ ) Behavioral strategies ( $R^2=.05$ ;  $F(1,196)=12,574$ ;  $p=.000$   $\beta=-.246$ ;  $p=.000$ ). The results indicate that when boredom happens, students reach for various digital distractors to which they direct their attention to. We can see that the highest percentage of variance is explained by strategies aimed at drawing attention to stimuli from the environment. Moreover, it should be kept in mind that the research was conducted under specific circumstances, at the beginning of the Coronavirus pandemic, although the results obtained were in line with the findings of other researchers according to whom attention deficit is caused by the presence of negative emotions during lessons. Given the tendency to continue with online education, these results can be useful for understanding the needs of students who attend classes on online platforms.

**Keywords:** *Boredom, learning motivated attention and regulation, covid-19.*

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### **1. Introduction**

When the state of emergency due to the Covid-19 pandemic was declared, it has led to regular lectures to be switched to distance learning and the Internet became the main resource for learning activities - from direct lecture streaming, to communication and sharing materials via social media, emails, drives. Although there is an opinion that online instruction due to lack of face-to-face contact with students cannot replace traditional instruction, it still represents an educational shift from traditional to modern approach to learning (Mishra, Gupta, Shree, 2020). The use of information and communication technology in the classroom and at home during learning is widespread among students, as evidenced by numerous studies (eg Rosen, Carrie & Cheever, 2013; Flanigan & Babchuk, 2015). In addition to numerous advantages, this environment also offers plenty of distractors.

Some studies suggest that students are more prone to digital distractions such as checking social media, sending messages when watching lectures online than live (Lepp et al., 2019) or when using a computer for learning activities (Judd & Kennedy, 2011). The use of social media during lectures happens as a conscious and reflexive decision, where learning activities are intentionally interrupted in order to "check" Facebook or it is seen as a type of reflexive activity (Flanigan, Babchuk, 2015). There are studies that claim that students are attracted to social media mainly through the usual distraction in the form of notifications that tempt them to check what is happening on the networks (Aagaard, 2015). The results of a survey conducted in the United States on 1,774 students suggest that while engaged in academic obligations outside of lectures, students spend an average of 60 minutes a day on Facebook, 43 minutes

browsing and 22 minutes e-mailing. Moreover, students state that they send an average of 71 messages a day while studying for the exam (Junco, Cotten, 2012). Students in the online environment may have a strong desire to use social media because they are constantly waiting for information from social media or wondering what is happening there, because previous experiences on social media were pleasant and thus increased their desire to use them.

During online lectures, teachers face the challenges of keeping the attention and motivation of students in the online environment. The results of some studies showed that students who become bored during online lectures are less motivated and achieve poorer academic results. Reinhard Pekrun (Pekrun, Goetz, & Titz, 2002; Pekrun, 2006) proposes a theory in which emotions play a primary role in activating, maintaining, or reducing student motivation and related processes (Pekrun, Goetz, & Titz, 2002). As part of his Control-value theory, he introduces the notion of academic emotions, which refers to emotions related to teaching, learning and achievement. On the one hand, boredom as an academic emotion does not disrupt teaching too much, while from a clinical perspective it has no psychopathological importance. However, boredom seems to be experienced often and plays an important role in the teaching process, especially when it comes to achievement (Spacks, 1995; Tze, Klassen, Daniels, 2014; Tze, Daniels, Klassen, 2016). Boredom occurs as a consequence of a non-stimulating situation, and is most often defined as an affective state of relatively low physiological arousal, decreased desire to act, tendency to escape from a situation that causes boredom behaviorally or mentally (e.g., daydreaming) (Goetz & Frenzel, 2006). Boredom reduces the self-regulation of achievement activities, which is defined by active goal setting, strategy selection and tracking of outcomes. As a consequence of the negative effects of boredom on attention, motivation, cognition, boredom aims to divert attention from activities that lack value and to direct attention to activities that are more stimulating and supportive (Pekrun, 2006; Zeidner, 1998).

In order for students to be able to follow lectures and process information cognitively, they must first focus on the content, so the issue of focus and remain engaged is fundamental to the major cognitive learning activities (Petersen & Posner, 2012). That is, learners' awareness of and willful regulation of their attention are essential for achieving focused attention (Reisberg & McLean, 1985). Persistence in learning in an online environment probably depends on multiple and complex factors (Berge & Huang, 2004; Tiler-Smith, 2006). Understanding the state of students' attention as well as their regulation of attention during the learning process has become a critical issue in the age of digital distraction.

Guided by previous research that students are prone to multitasking and the use of social media and other digital distractors that are not related to instruction in the online environment, we were interested in whether the level of boredom can predict whether and which regulation strategies and attention will be used by students during online lectures.

## 2. Methods

### 2.1. Sample and procedure

The research sample consists of 198 students, between 18 and 39 years of age ( $M = 21.03$ ;  $SD = 2.43$ ), 84.9% of which were female. The sample included participants who stated that class attendance was mandatory during online lectures due to the coronavirus pandemic. The data were collected through computer-adapted testing, one year after the Covid-19 pandemic was declared, or one year from the beginning of online lectures. The participants previously confirmed that they were familiar with their rights and testing rules, and then moved on to the questions section. Also, they were given the opportunity to withdraw at any time, so that the answers would be saved only when the participants entered all the necessary data and sent them to the database, and in case of withdrawal, no traces of their participation were recorded.

### 2.2. Instruments

**A Short Version of the Achievement Emotions Questionnaire (AEQ-S, Bieleke, et al., 2021) - Boredom Subscale** is related to the experience of boredom during the lectures. The boredom subscale consists of 4 items and measures an individual's boredom experience. The answers are given on a five-point Likert-type scale (1- I do not agree, 5- I completely agree). The average value of the answers is calculated, where higher results indicate a greater level of boredom.

**Revised Online-Learning Motivated Attention and Regulation Scale (OL-MARS v.2, Wu, 2017)** is an instrument based on meta-attention theory that assesses the level of students' attention and the use of regulation strategies during online learning. The instrument has two factors - Perceived Attention Problems (PAP) which contains subfactors that represent students' awareness of their distractions and behavior on social media during learning: awareness of the problem with attention caused by Lingering Thoughts (LT), distraction by Social Media Notifications (SMN) about events such as waiting for a friend



to comment on a post on social media, leading to a perception of Perceived Attention Discontinuity (PAD). The second factor is the Attention Self-Regulation Strategy (SRS), which contains the following subfactors: the use of Behavioral Strategies (BS) and mental strategies by students, such as Outcome Appraisal (OA), which helps students control and regulate their attention. Answers are given using a Likert-type scale (1- does not apply to me at all, 5 - applies to me completely).

### 2.3. Results

Table 1 shows the descriptive-statistical indicators of the variables used in the research. Also, correlations between variables are presented, as well as measures of reliability of the instruments used.

*Table 1. Descriptive-statistical indicators of variables used in the research, reliability of scales and intercorrelation of the dimensions used.*

| Variables    | 1 BL       | 2 PAD      | 3 LT       | 4 SMN      | 5 BS      | 6 OA       |
|--------------|------------|------------|------------|------------|-----------|------------|
| 1            | -          |            |            |            |           |            |
| 2            | .463***    | -          |            |            |           |            |
| 3            | .409***    | .665***    | -          |            |           |            |
| 4            | .416***    | .601***    | .651***    | -          |           |            |
| 5            | -.246***   | -.039      | -.201***   | -.104      | -         |            |
| 6            | .096       | .272***    | .129       | .310***    | .430***   | -          |
| <i>M(SD)</i> | 2.58(1.31) | 2.92(1.12) | 2.59(1.03) | 3.24(1.19) | 3.43(.92) | 3.63(1.02) |
| <i>α</i>     | .95        | .90        | .73        | .84        | .75       | .66        |

\*\*\* $p < .001$ ; BL - Boredom during the Lectures; PAD - Perceived Attention Discontinuity; LT - lingering thoughts; SMN - Social Media Notifications; BS - Behavioral Strategies; OA - Outcome Appraisal

The results indicate that there is a statistically significant correlation between predictors and criteria. Measures of curvature and elongation indicate that there is no excessive deviation from the normal distribution for all variables. The Cronbach's alpha coefficient of internal consistency indicates that the reliability of all scales is satisfactory, ranging from low to high.

The results of simple regression analysis showed that Boredom during online lessons is a predictor for four statistically significant strategies of attention regulation and direction: Perceived Attention Discontinuity ( $R^2=.21$ ;  $F(1,196)=53,442$ ;  $p=.000$   $\beta=.463$ ;  $p=.000$ ), Lingering Thought ( $R^2=.16$ ;  $F(1,196)=39,350$ ;  $p=.000$   $\beta=.409$ ;  $p=.000$ ) and Social Media Notification ( $R^2=.17$ ;  $F(1,196)=40,975$ ;  $p=.000$   $\beta=.416$ ;  $p=.000$ ) Behavioral Strategies ( $R^2=.05$ ;  $F(1,196)=12,574$ ;  $p=.000$   $\beta=-.246$ ;  $p=.000$ ).

### 3. Discussion

Guided by previous studies which have shown that students are prone to multitasking and the use of social media and other digital distractors that are not related to online lectures, we were interested in whether the level of boredom can predict whether and which regulation strategies and attention focus strategies students will use during online lectures.

The results have shown that there is a positive correlation between boredom and students' perceived attention is directed to content that is not relevant to the learning process, i.e., that boredom largely predicts discontinuity in attention. Boredom, to a large extent, statistically significantly predicts all subfactors that belong to the factor of awareness about the perceived attention discontinuity. Students who perceive online instruction as non-stimulating tend to run away from such a situation behaviorally or mentally, and their attention is drawn to sounds, notifications from social media or digital devices and to wait and think that something new will happen on social media and will they receive a notification.

Students often state that boredom during lectures leads them to use the Internet that is irrelevant to lectures, such as social media (Rosen, Carrier & Cheever, 2013; Terry, Mishra & Roseth, 2016). According to the Control-value theory (Pekrun, Goetz and Titz, 2002; Pekrun, 2006) boredom aims to divert attention from activities that lack value and to direct attention to activities that are more stimulating and supportive and it is related to the emergence of thoughts irrelevant for the assignment (Pekrun, Goetz, & Titz, 2002). During online lectures, students may feel less in control of their academic engagement and performance due to the specifics of online lectures, which can often be hampered by poor connection. Moreover, they may underestimate the assignments they receive during online lectures, since they know that the teacher does not have a clear insight into their engagement. In the online environment, the teacher does not have a clear insight into whether students follow him or not, as is the case in live classes, he cannot make eye contact or ask a question to a specific student in order to engage him and thus prevent boredom.

Because of the above-mentioned, instead of the lecture topics, students start thinking about things happening on the Internet/social media and may be more receptive to the sound of notifications on the phone, because these activities are perceived as more pleasant and "valuable" at that time. It is well-known that nowadays students are used to being connected with their peers at all times (Felisoni, Godoi, 2018) and the most common activity during lectures is staying in touch with friends through social media and messaging applications, which is in line with the developmental period of our sampled group - late adolescence and the beginning of early adulthood in which loyalty to the group is most valued and the need for closeness is expressed. Other studies confirm that students who have more faith in their academic abilities will use strategies to resist multitasking, i.e., digital distractions and thus obtain better learning outcomes (Zhang, 2015).

The results of our research also show that there is a negative correlation between boredom and self-regulation strategies, namely behavioral strategies. In our sample, students who experience boredom will not use self-regulation behavioral strategies such as turning off sounds or log out from applications irrelevant to learning. It is known that notifications often tempt students to check what is happening online (Aagaard, 2015). But, the decision to stay logged in on social media or to leave the sound for notifications on, as well as the decision to (not) resist thoughts and activities irrelevant to learning is a conscious decision and responsibility of the student himself. In the context of education, theoretical approaches (Pekrun, 2006) and empirical results (Goetz, Pekrun, Hall, & Haag, 2006) suggest that boredom negatively affects motivation, cognitive activation and self-regulation of learning. Previous studies have confirmed the connection between academic emotions and self-regulation or learning strategies (Artino & Jones, 2012; Marchand & Gutierrez, 2012; Pekrun, Goetz, Daniels, Stupnisky, & Perry, 2010; Pekrun, Goetz, Titz, & Perry, 2000), specifically, students who experience boredom often have difficulty with self-regulation activities (Wegmann et al., 2018; Ralph et al., 2014).

#### 4. Conclusion

Results of our research have confirmed the assumption that there is a positive correlation between boredom and students' awareness that they focus on content that is not relevant to the learning process, i.e., that boredom largely predicts discontinuity in attention. Boredom largely statistically significantly predicts all subfactors that belong to the awareness that there is a discontinuity in attention. Also, the results show that there is a negative correlation between boredom and self-regulation strategies, primarily strategies related to behavior. In our sample, students who experience boredom will not use self-regulation behavioral strategies such as turning off sounds or log out from applications irrelevant to lectures.

These findings are in line with the Control-value theory of achievement emotions, which states that environmental factors such as assignment requirements, support for autonomy, and goal structure influence control and assessment of student values, which provoke certain academic emotions, and emotions further influence the use of student learning strategies and self-regulation strategies. The theory suggests that boredom negatively affects motivation, cognitive activation, self-regulation of learning and academic outcomes, which in our case represents multitasking during lectures, i.e., not responding to digital distractors (e.g., social media).

Limitations in the methodology blur the picture of whether students really (do not) get hard assignments, perceive lectures as insufficiently stimulating or perceive their academic control over achievements as small and therefore turn to social media, or it might happen that due to screen addiction or fear of missing out students use the internet and social media during lectures, which leads to the perception of classes as boring. Given the small number of variables included, the data presented here cannot provide a full account of the topic, so the recommendation for future research is to explore possible sources of boredom in online set-ups, such as teacher skills for conducting such lectures, conditions in which students learn, adaptation of the learning material used, etc. Also, a comparison with live lectures would be very useful.

#### References

- Aagaard, J. (2015). Drawn to distraction: A qualitative study of off-task use of educational technology. *Computers & Education*, 87, 90-97.
- Artino Jr, A. R., & Jones II, K. D. (2012). Exploring the complex relations between achievement emotions and self-regulated learning behaviors in online learning. *The Internet and Higher Education*, 15(3), 170-175.

- Berge, Z. L., & Huang, Y. P. (2004). 13: 5 A model for sustainable student retention: A holistic perspective on the student dropout problem with special attention to e-Learning. *Doesnews* (online), 13(5).
- Bieleke, M., Gogol, K., Goetz, T., Daniels, L., & Pekrun, R. (2021). The AEQ-S: A short version of the Achievement Emotions Questionnaire. *Contemporary Educational Psychology*, 65, 101940.
- Felisoni, D. D., & Godoi, A. S. (2018). Cell phone usage and academic performance: An experiment. *Computers & Education*, 117, 175-187.
- Flanigan, A. E., & Babchuk, W. A. (2015). Social media as academic quicksand: A phenomenological study of student experiences in and out of the classroom. *Learning and Individual Differences*, 44, 40-45.
- Goetz, T., Frenzel, A. C., Pekrun, R., & Hall, N. C. (2006). The domain specificity of academic emotional experiences. *The Journal of Experimental Education*, 75(1), 5-29.
- Goetz, T., Pekrun, R., Hall, N., & Haag, L. (2006). Academic emotions from a social-cognitive perspective: Antecedents and domain specificity of students' affect in the context of Latin instruction. *British Journal of Educational Psychology*, 76(2), 289-308.
- Judd, T., & Kennedy, G. (2011). Measurement and evidence of computer-based task switching and multitasking by 'Net Generation' students. *Computers & Education*, 56(3), 625-631.
- Junco, R., & Cotten, S. R. (2012). No A 4 U: The relationship between multitasking and academic performance. *Computers & Education*, 59(2), 505-514.
- Lepp, A., Barkley, J. E., Karpinski, A. C., & Singh, S. (2019). College students' multitasking behavior in online versus face-to-face courses. *Sage Open*, 9(1), 2158244018824505.
- Marchand, G. C., & Gutierrez, A. P. (2012). The role of emotion in the learning process: Comparisons between online and face-to-face learning settings. *The Internet and Higher Education*, 15(3), 150-160.
- Mishra, L., Gupta, T., & Shree, A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, 1, 100012.
- Pekrun, R. (2006). The control-value theory of achievement emotions: Assumptions, corollaries, and implications for educational research and practice. *Educational psychology review*, 18(4), 315-341.
- Pekrun, R., Goetz, T., Daniels, L. M., Stupnisky, R. H., & Perry, R. P. (2010). Boredom in achievement settings: Exploring control-value antecedents and performance outcomes of a neglected emotion. *Journal of educational psychology*, 102(3), 531.
- Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational psychologist*, 37(2), 91-105.
- Petersen, S. E., & Posner, M. I. (2012). The attention system of the human brain: 20 years after. *Annual review of neuroscience*, 35, 73-89.
- Ralph, B., Thomson, D., Eastwood, J., & Smilek, D. (2014). Individual differences in media multitasking are associated with trait-level boredom. *Canadian Journal of Experimental Psychology*, 68(4).
- Randelović, K., Minić, J., (2021). Academic control and achievement: the mediating role of boredom during online teaching. In: I., Janković, M., Spasić Šnele (eds.). *Psychology in the function of the well-being of the individual and society*, (117-118). Niš : Faculty of Philosophy
- Reisberg, D., & McLean, J. (1985). Meta-attention: Do we know when we are being distracted?. *The Journal of general psychology*, 112(3), 291-306.
- Rosen, L. D., Carrier, L. M., & Cheever, N. A. (2013). Facebook and texting made me do it: Media-induced task-switching while studying. *Computers in Human Behavior*, 29(3), 948-958.
- Spacks, P. M. (1995). *Boredom: The literary history of a state of mind*. University of Chicago Press.
- Terry, C. A., Mishra, P., & Roseth, C. J. (2016). Preference for multitasking, technological dependency, student metacognition, & pervasive technology use: An experimental intervention. *Computers in Human Behavior*, 65, 241-251.
- Tyler-Smith, K. (2006). Early attrition among first time eLearners: A review of factors that contribute to drop-out, withdrawal and non-completion rates of adult learners undertaking eLearning programmes. *Journal of Online learning and Teaching*, 2(2), 73-85.
- Tze, V. M., Daniels, L. M., & Klassen, R. M. (2016). Evaluating the relationship between boredom and academic outcomes: A meta-analysis. *Educational Psychology Review*, 28(1), 119-144.
- Tze, V. M., Klassen, R. M., & Daniels, L. M. (2014). Patterns of boredom and its relationship with perceived autonomy support and engagement. *Contemporary Educational Psychology*, 39(3), 175-187.
- Wu, J. Y. (2017). The indirect relationship of media multitasking self-efficacy on learning performance within the personal learning environment: Implications from the mechanism of perceived attention problems and self-regulation strategies. *Computers & Education*, 106, 56-72.
- Zhang, W. (2015). Learning variables, in-class laptop multitasking and academic performance: A path analysis. *Computers & Education*, 81, 82-88.

## UNDERSTANDING METAPHORS: GETTING STARTED WITH TCM JUNIOR

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### Abstract

Our purpose is to present the first results of the application of a resource to analyze the ability to understand metaphors, with a group of 36 Portuguese children, from 4 to 6 years old.

The instrument is the adaptation to European Portuguese of the TCM Junior, a metaphor comprehension test for children, from 4 to 6 years old, of Italian origin, which exists in circulation and with standardized data.

At the moment, the material used is properly adapted for the Portuguese population, having followed all the rules of linguistic and cultural adaptation, and it is in the application phase, with a view to its measurement and loyalty, by meeting normative data.

However, according to the tests carried out, the resource seems to us to have great potential: it is well accepted by children, it is discriminatory, within and between ages, the averages obtained are close to those of Italian counterparts, thus, the promising results are predictors a valid and necessary resource for the national context.

The inexistence of adapted and available resources for European Portuguese on this subject is a fact. Moving forward with this task, a necessary and urgent task was looming, with guarantees of construct, theoretical and even content validity, based on the evidence of the original authors.

We will also try, although briefly and not completely, for obvious reasons, to account for the instrument's architecture.

We also consider, given its characteristics and evidence, and even as an initial project, that the resource in question can and should work as intervention material in terms of promoting the awareness of figurative and metaphorical language, it can be used by psychologists and other educators.

**Keywords:** *Figurative language, metalinguistic awareness, understanding.*

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### 1. Introduction

As part of a broader project, to validate assessment and intervention resources in terms of understanding figurative language, metaphors, we applied a tool, adapted for European Portuguese, the Junior TCM, for children from 4 to 6 years of age, instrument validated in Italian, its origin.

In fact, we believe that work in this area is justified for two reasons:

- absence of valid assessment and intervention resources, on this dimension, for European Portuguese;

- relevance of investigating and intervening at the level of understanding, or metalinguistic ability, in general, and, in general, and, in this case, the understanding of figurative, metaphorical language.

We assume that metalinguistic ability can be defined as the ability to reflect on language as an object of thought and intentional manipulation of language (Garton & Pratt, 1989). According to Figueira, Pinto and Ojeda (2019), metalinguistic awareness or metalinguistic capacity is the ability to reflect and elaborate analyzes on language.

As for figurative language, such as metaphors, we consider that it evokes comparisons and distances itself from the literal meaning of words (Figueira, Pinto & Ojeda, 2019). Figurative language differs, therefore, from literal language, since the latter uses words with their true meaning, while figurative language “expresses an idea using other terms, thus appealing to a similarity, whether real or imaginary”. (Figueira, Pinto & Ojeda, 2019).

Based on the work of Pinto, Figueira, Andrade, Pinto and Melogno (forthcoming) they consider three necessary criteria for metalinguistic behavior, which are developed between 4-5 and 6 years of age.

According to the authors, the first necessary criterion of the child will be to dissociate, in the word, the form of the meaning and to relate the similarities and differences that connect the words to the others; it is essential for the child to be able to divide the words into syllables and to identify the relevant morphemes; Finally, the third criterion requires the child to be able to distinguish the objective aspects of words related to the fact that they are inserted in a code shared by the linguistic community from what is, on the contrary, an individual and psychological variation of it.

It is on the basis of all this research that the Italian version of the TCM Júnior (Pinto, Melogno & Iliceto, 2008) appears, in a work of fundamentals of the appeal, in which the instrument measured for children from 4 to 6 years is also presented. In this document, which narrates the entire study (Pinto, Melogno & Iliceto, 2008), the authors record a development in the understanding of metaphors over the age range. The authors reported a relationship between increasing TCM Junior scores and age, that is, younger children have a lower score compared to older children (6 years). That is, younger children (4 years old) give more level zero responses, revealing non-comprehension, and fewer level 2 responses, revealing full understanding of the metaphor, although the presence of level 1 responses is frequent, translators of partial understanding of metaphors.

## 2. Method

### 2.1. Sample

Sample found and used in 2021, meaning that the chronological ages correspond, 4 years (range 4-4.11 months), 5 years (range 5-5.11 months) and 6 years (range 6-6.11 months).

The sample therefore consists of 36 subjects, 24 males and 12 females, aged between 4 and 6 years: 14, 4-year-olds, 17, 5-year-olds and 5, 6-year-olds (see Table 1). All subjects in the sample speak European Portuguese as their mother tongue.

*Table 1. Sample distribution by age and sex.*

| Age    | Male | Female | Total |
|--------|------|--------|-------|
| 4 year | 10   | 4      | 14    |
| 5 year | 10   | 7      | 17    |
| 6 year | 4    | 1      | 5     |
| total  | 24   | 12     | 36    |

### 2.2. Instrument

The TCM Junior, in its original Italian version (Pinto, Melogno & Iliceto, 2008), is an instrument that allows analyzing the understanding of figurative language, metaphors, of the ages targeted by the test, from 4 to 6 years old (Figueira, Andrade, Pinto & Melogno, in press). To date, it is in the process of being measured, having gone through all the adaptation phases (Figueira, Andrade, Pinto & Melogno, in press). TCM Junior is an individual, oral administration resource, consisting of 25 items, metaphors, of which 12 are presented in the form of simple sentences (M-FR) and the remaining (13) are presented in the context of short stories, in that, for each story, there are 3/4 questions about the narratives (M-HS).

The administrator must have a protocol for each child, where he transcribes the answers given, and may have the help of a recorder so that the answers can be transcribed later.

For the analysis and rating of TCM Junior (Figueira, Andrade, Pinto & Melogno, in press), each item is analyzed according to three levels of semantic conflict resolution, thus the maximum test score is 50 points, or that is, the potentials to be reached can vary between 0 and 50 points. The three levels are: level 0 - deficient or null understanding of the metaphor, no understanding; level 1 - partial understanding of the metaphor; and level 2 - full understanding of the metaphor.

*Table 2. Potential raw data (range of potential points).*

| Age    | range items phrases<br>12 items | range items in stories<br>13 items | total range<br>25 items |
|--------|---------------------------------|------------------------------------|-------------------------|
| 4 year | 0-24                            | 0-26                               | 0-50                    |
| 5 year | 0-24                            | 0-26                               | 0-50                    |
| 6 year | 0-24                            | 0-26                               | 0-50                    |

### 2.3. Procedures

Before administering the instruments, a statement of informed consent was requested from the guardians of each child. After collecting the duly signed authorizations, the instrument application sessions were scheduled with the educators.

## 3. Results

### 3.1. Presentation

The data obtained are presented as a percentage, item by item, from the TCM Junior, and as a function of age. We will also provide examples of responses, depending on the 3 categorized levels.

Table 3. Averages obtained by this sample.

| age/N       | Average items in sentences<br>[Potential sum (0-24), average<br>(12)] | Average items in stories<br>[Potential sum (0-26),<br>average (13)] | Total average<br>[Potential sum (0-50),<br>average (25)] |
|-------------|---|---|--|
| 4 year (14) | 5.43  | 4.57  | 10.00  |
| 5 year (17) | 6.12  | 6.47  | 12.59  |
| 6 year (5)  | 6.40  | 4.20  | 10.40  |

### 3.2. Analysis of the most salient data

Regardless of the age of the subjects:

- . the total averages, and even the partial ones (depending on the type of metaphor) are below the potential average

- . the item averages in sentences fall short of the potential average

- . item averages in stories fall short of potential average

Also, and yet

- . there is an increase in the average, as a function of age, for items in sentences

- . there is an increase in average, regarding items in stories, from 4 to 5 years old, not happening for 6 years old.

## 4. Conclusions, final remarks

The main limitation of this investigation will be, therefore, the small size of the sample (N=36). However, the acceptance of the resource by the children is quite good and even the results are promising. In this sense, it will be necessary to use more representative and significant samples, so that there is equity in relation to age groups, which will allow us to carry out more sophisticated analyses. However, the results, as described above, should not be underestimated, since the study constitutes a test for the use and validation of the Júnior TCM (Figueira, Andrade, Pinto & Melogno, in press), until confronted with the studies with its original Italian version (Pinto, Melogno & Iliceto, 2008).

We also consider, given the characteristics and procedures used in its adaptation, that the junior TCM resource can and should continue to be used, either in the context of dynamic, universal assessment, or in the context of psychological intervention, initiating studies leading to its validation psychometric.

### References

- Amante, L., & Morgado, L. (1994). O desenvolvimento da compreensão da metáfora na criança. *Discursos: estudos de língua e cultura portuguesa*, 89-111. Obtido em 22 de 9 de 2021, de <https://repositorioaberto.uab.pt/bitstream/10400.2/4046/1/L%C3%BAcia%20Amante%20e%20Lina%20Morgado.pdf>
- Asch, S. E., & Nerlove, H. (1960). The Development of Double Function Terms in Children. In Kaplan, B., and Wagner, S. (eds.), *Perspectives in psychological theory, Essays in Honor of Heinz Werner* (pp. 283–295). International Universities Press: New York,
- Black, M. (2019). *Models and metaphors*. Cornell University Press.
- Clark, E. V. (1978). Awareness of language: Some evidence from what children say and do. In *The child's conception of language* (pp. 17-43). Springer, Berlin, Heidelberg.

- Figueira, A. P., & Pinto, M. A. (2018). *Consciência Metalinguística Teoria, desenvolvimento e instrumentos de avaliação*. Oeiras: Psiclínica.
- Figueira, A. P., Andrade, L., Pinto, M. A., & Melogno, S. (in press). *TCM Júnior*
- Figueira, A. P., Pinto, M. A., & Ojeda, N. (2019). *Consciência metalinguística e Linguagem figurativa*. Novas Edições Académicas.
- Garton, A., & Pratt, C. (1989). *Learning to be Literate. The development of Spoken & Written Language*. Oxford: Basil Blackwell.
- Hill, M. M. & Hill, A. (2005). *Investigação por questionário* (2.<sup>a</sup> ed.). Lisboa: Edições Sílabo.
- Lakoff, G., & Johnson, M. (2008). *Metaphors We Live By*. University of Chicago Press.
- Melogno, S., D'Ardua, C., Pinto, M. A., & Levi, G. (2012). Metaphor comprehension in autistic spectrum disorders: Case studies of two high-functioning children. *Child Language Teaching and Therapy*, 28(2), 177–188. <https://doi.org/10.1177/0265659011435179>
- Melogno, S., Pinto, M., & DiFilippo, G. (2017). Sensory and psychophysiological metaphor comprehension in children with ASD: A preliminary study on the outcomes of a treatment. *Brain Sciences*, 7, 85.
- Mota, M. M. P. E. (2012). Considerações metodológicas e conceituais sobre a construção de instrumentos de avaliação das habilidades metalinguísticas. *Avaliação Psicológica*, 11(1), 77-82.
- Pinto, M. A., Melogno, S., & Iliceto, P. (2008). *TCM Junior: testi di comprensione delle metafore Scuole dell'infanzia e scuola primaria*. Carocci Faber.
- Pouscoulous, N. (2011). Metaphor: For adults only? *Belgian Journal of Linguistics*, 25, 64-92.
- Reyna, V. F. (1985). Figure and fantasy in children's language. In *Cognitive learning and memory in children* (pp. 143-179). Springer, New York, NY.
- Reynolds, R. E., & Ortony, A. (1980). Some issues in the measurement of children's comprehension of metaphorical language. *Child Development*, 1110-1119.
- Santos, C. (2021). *Compreensão Das Metáforas. Contributo para a Validação um de Recurso de Avaliação E Intervenção Para Crianças Dos 4 Aos 6 Anos*. Tese de Mestrado apresentada à FPCE.uc.pt.
- Seixas, N. S. (2017). A Linguagem nas crianças além do sentido literal. *Movendo Ideias*, 16(2).
- Winner, E. (1979). New names for old things: The emergence of metaphoric language. *Journal of Child Language*, 6, 469–491.
- Winner, E., Rosenstiel, A., & Gardner, H. (1976). The development of metaphoric understanding. *Developmental Psychology*, 12, 289-297.

## DARK TRIAD CHARACTERISTICS AMONG STUDENTS OF MANAGEMENT AND TEACHING DISCIPLINES

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### Abstract

Professions with increased demands on personal qualities include teachers and managers. The aim of the contribution was to explore professional and gender differences in personality among managers and students of teaching disciplines.

The sample consisted of 585 participants (34.9% of men; Mage=20,07, SD=1.848). Students of the University of Presov participated in the research in spring 2020; 27.5% students of teaching disciplines and 72.5% students of management. Personal qualities were explored by Dark Triad Questionnaire (Jones, Paulhus, 2014), which consists of three factors - Machiavellianism, narcissism, and psychopathy. Multivariate analysis of variance (gender, field of study, gender x field of study) was conducted to compare the factors of personality qualities. Using Pillai's trace, there was significant effect of gender,  $V = .060$ ,  $(F(3, 579) = 12.344, p < .001)$ ; field of study,  $V = .045$ ,  $(F(3, 579) = 9.048, p < .001)$ . There was no significant effect of interaction of gender x field of study  $V = .007$ ,  $(F(3, 579) = 1.360, p = .254)$ . The higher level of Machiavellianism, narcissism and psychopathy were found among men and among managers.

The results point to the need to develop students' personality in professions where there are demands in terms of interpersonal relationships, as well as the need to include psychological tests in the entrance exams.

**Keywords:** *Personality, dark triad, university students, teachers, managers.*

### 1. Theoretical background

Nowadays, the need for personal training of students of professions with increased demands for interpersonal functioning is growing. People management is one of the key competencies of managers and teachers. Their personal qualities are directly linked to job success and satisfaction (Binti Rusbadrol, Mahmud, & Arif, 2015; Perera, Granziera & McIlveen, 2018; Mahlamäki, Rintamäki & Rajah, 2019). Personality of teachers has an effect on students' intrinsic motivation (Khalilzadeh & Khodi, 2021). Personality of managers is linked with employees' emotional and organizational commitment (Abedi, Mahali, Mirzaian & Ghara, 2009). Personality becomes a working tool, and its knowledge should be also crucial for vocational training.

One of the ways to track the negative aspects of a personality is the Dark Triad concept. The authors of the concept are Jones and Paulhus (2011). The Dark Triad consists of Machiavellianism, narcissism, and psychopathy. The individual personality characteristics overlap empirically and each of them predicts self-promotion, emotional coldness and aggression. The common core of individual personality characteristics is associated with the fact that individuals are indifferent to the damage they cause to others in achieving their own goals. All personality characteristics of the Dark Triad include selfishness, emotional coldness and manipulation (Furtner, Maran, Rauthmann 2017).

The authors Christi and Geis (1970) feature Machiavellianism as a cynical worldview, lack of morality and manipulation. Machiavellians plan ahead, form alliances, and do their best to create the best possible image in society (Jones, Paulhus 2014). According to researcher Lykken (1995), personality traits are characterized by two key traits - lack of emotions (numbness) and self-control (impulsivity).



The personality trait of psychopathy is manifested by numbness in the short term (Jones, Paulhus, 2011). According to Spain et al. (2014) defined as impulsivity and the search for excitement combined with low empathy and anxiety. Psychopathy has two key elements: affect deficit (callousness) and self-control deficit (impulsivity).

Personality trait narcissism can be defined as the intersection between grandiose identity and basic uncertainty. Narcissistic behavior is also associated with narcissism itself (Jones, Paulhus 2014). The narcissistic personality is characterized by grandeur, a sense of legitimacy and, last but not least, a lack of empathy (Cohen, 2016). Wu and Lebreton (2011) point to a sign of narcissism, where narcissists tend to perceive themselves as victims, believe in interpersonal interactions that this is a negative intent, and are particularly sensitive to interpersonal interactions.

The aim of the contribution is to explore professional and gender differences in negative personality characteristics among managers and students of teaching disciplines in Slovakia. Gender differences in Dark Triad variables were also confirmed (Jonason, Davis, 2018; Szabó, Jones, 2019). Among students, differences in Dark Triad variables were found in relation to the choice of profession (Čopková, 2020). Research on the sample of students of management and teaching was selected due to the issue of psychological and personal training of these professions.

## 2. Methods

Research sample consisted of 585 participants (34.9% of men; Mage=20.07, SD=1.848). Students of The University of Presov in Slovakia participated in the research. Among students of teaching disciplines (N=161; 27.5%), there were 112 women (69.5%). Among managers there were 296 (61.8%) women.

Students of The University of Presov participated in the research in spring 2020. Data collection took place during the lessons.

Personality characteristics were explored by the Dark Triad Questionnaire (Jones, Paulhus, 2014), which consists of three factors - Machiavellianism, narcissism, and psychopathy. Each dimension is measured by 10 items and assessed on a five-point Lickert scale. Cronbach alpha values are satisfactory: all items (Cronbach  $\alpha = 0.816$ ), Machiavellianism (Cronbachova  $\alpha = 0.663$ ), narcissism (Cronbachova  $\alpha = 0.640$ ) a psychopathy (Cronbach  $\alpha = 0.611$ ). Item examples: "It is not wise to divulge your secrets."; "It is necessary to get important people on your side at all costs".

Multivariate analysis of variance (gender, field of study, gender x field of study) was conducted to compare the factors of personal qualities. The software IBM SPSS Statistics was used for analysis.

## 3. Results

Table 1. Descriptive analysis of Dark Triad among managers and teacher students.

|                  | Gender | Profession | M      | SD    |
|------------------|--------|------------|--------|-------|
| Machiavellianism | male   | teacher    | 31.429 | 4.528 |
|                  |        | manager    | 33.755 | 5.634 |
|                  | female | teacher    | 30.286 | 4.896 |
|                  |        | manager    | 30.981 | 4.805 |
| narcissism       | male   | teacher    | 27.714 | 4.628 |
|                  |        | manager    | 30.361 | 4.982 |
|                  | female | teacher    | 26.554 | 5.088 |
|                  |        | manager    | 27.781 | 4.848 |
| psychopathy      | male   | teacher    | 22.082 | 5.028 |
|                  |        | manager    | 25.452 | 5.561 |
|                  | female | teacher    | 19.804 | 5.764 |
|                  |        | manager    | 21.502 | 5.773 |

In all dimensions of Dark Triad, students of management and men scored higher (Table 1). The highest level of variable was reached in Machiavellianism among man, managers and the lowest level in psychopathy among women. Machiavellianism was the most manifested variable, followed by narcissism and psychopathy.

Table 2. Multivariate analysis of variance (gender).

|                  | Pillai's trace | F      | df    | sig.  | Gender | M      | SE    | 99.9% confidence Interval |             |
|------------------|----------------|--------|-------|-------|--------|--------|-------|---------------------------|-------------|
|                  |                |        |       |       |        |        |       | lower bound               | upper bound |
| Machiavellianism | 0,6            | 12.344 | 3.000 | 0.001 | male   | 32.592 | 0.232 | 31.782                    | 33.402      |
|                  |                |        |       |       | female | 30,634 | 0.283 | 30.078                    | 31.189      |
| narcissism       |                |        |       |       | male   | 29.038 | 0.403 | 28.247                    | 29.828      |
|                  |                |        |       |       | female | 27.167 | 0.276 | 26.625                    | 27.710      |
| psychopathy      |                |        |       |       | male   | 23.767 | 0.464 | 22.856                    | 24.667      |
|                  |                |        |       |       | female | 20.653 | 0.318 | 20.028                    | 21.277      |

Using Pillai's trace, there was significant effect of gender (Table 2;  $V = .060$ ,  $(F(3, 579) = 12.344, p < .001)$ ). The higher level of all Dark Triad variables was found among men.

Table 3. Multivariate analysis of variance (field of study).

|                  | Pillai's trace | F     | df    | sig.  | Field of study | M      | SE    | 99.9% Confidence Interval |             |
|------------------|----------------|-------|-------|-------|----------------|--------|-------|---------------------------|-------------|
|                  |                |       |       |       |                |        |       | lower bound               | upper bound |
| Machiavellianism | 0,6            | 9.048 | 8.000 | 0.001 | teachers       | 30.857 | 0.431 | 30.010                    | 31.704      |
|                  |                |       |       |       | managers       | 32.368 | 0.254 | 31.870                    | 32.867      |
| narcissism       |                |       |       |       | teachers       | 27.134 | 0.421 | 26.308                    | 27.960      |
|                  |                |       |       |       | manager        | 29.071 | 0.248 | 28.584                    | 29.557      |
| psychopathy      |                |       |       |       | teachers       | 20.943 | 0.484 | 19.991                    | 21.894      |
|                  |                |       |       |       | managers       | 23.477 | 0.285 | 22.916                    | 24.037      |

Using Pillai's trace, there was significant effect of field of study (Table 3;  $V = .045$ ,  $(F(3, 579) = 9.048, p < .001)$ ). The higher level of Machiavellianism, narcissism and psychopathy were found among managers.

There was no significant effect of interaction gender x field of study  $V = .007$ ,  $(F(3, 579) = 1.360, p = .254)$ .

#### 4. Discussion

The aim of the contribution was to explore professional and gender differences in negative personality characteristics among university students (future managers and teachers in Slovakia). Results point to the higher level of Machiavellianism, narcissism and psychopathy among men and among students of managerial field of study.

Čopková and Jendrejáková (2020) found similar results. In their research, significantly higher psychopathy was shown by students oriented to the area of production compared to students oriented to education. Also, in dimension of psychopathy, students oriented towards the area of business scored higher than students oriented towards the area of art and education.

In this research, we found that the level of Machiavellianism is the highest from the Dark Triad characteristics among teachers but also managers. Čopková (2020) interprets similar results in the context of the need for power, status, authority and obtaining benefits from others, that teaching profession, but also managerial profession fulfills.

The higher level of Machiavellianism, narcissism and psychopathy was found among men. Similar results were found by Jonason and Davis (2018). In their research masculinity was strongly associated with Dark Triad characteristics than femininity. However, in our research sex differences were explored. Self-perceived femininity and masculinity, in relation to personality characteristics may be the subject of further research.

The peculiarity is that most research shows that women's self-esteem is lower than men's self-esteem (Casale, 2020). In this case, women expressed fewer negative characteristics. Ludwig, Fellner-Röhling and Thoma found that self-assessment of woman is influenced by shame. The shame is associated with the fact that others could find that they overestimate themselves. Self-assessment in negatively formulated items may be distorted.

Further research should focus on other personality traits in relation to Dark Triad variables, Gender moderates the association between Machiavellianism and impulsivity. Szabó and Jones (2019) found that men, but not women, high in Machiavellianism were non-impulsive and high in planning. Thus, the very content of the terms Machiavellianism, narcissism and psychopathy may be different in relation to gender or sex differences.

The research points to the importance of monitoring the personal assumptions of employees. Kurhajcová (2009) emphasizes social maturity as one of the prerequisites for management professions. Characteristics that relate to the work activity performed, such as determination, conscientiousness, time management and perseverance, are important.

Mathieu (2012) proposes screening, in the selection of employees. We would recommend screening when selecting students, which is not common in Slovakia.

Furthermore, Mathieu (2012) emphasizes the importance of the ability to give, as well as receive feedback. This ability presupposes maturity of social skills, which may be affected to some extent by training. We recall the Bronfenbrenners model of the social environment (1977) and Hirshis model of social control (1969). Individual components of social environment interact, and the behavior of teachers and managers should be subject to social control in the form of assertive reactions of the environment.

The recommendation for practice is the psychological preparation of students of teaching as well as management professions, with an emphasis on recognizing their own positive and negative reactions, receiving feedback and self-regulation.

On the other hand, we can talk about the benefits of the characteristics of the Dark Triad for the organization. Majors (2016) describes on other examples that narcissism predicts more frequent changes in organizational strategy and Machiavellianism predicts skillful negotiation tactics and political prowess. For this reason, it is important to understand how managers with higher or lower levels of Dark Triad personality characteristics respond to stimuli within interpersonal relationships and conflict resolution.

The unevenness of the samples of managers and teachers, men and women, can be included among the limits of research. Also simplifying the understanding of gender / sex.

## References

- Abedi, G., Mahali, Q. A. M., Mirzaian, B., & Ghara, A. N. (2009). The effect of managers and supervisors personality traits on the employees' organizational commitment. *Arth Prabhand: A Journal of Economics and Management*, 3(6), 52-59.
- Binti Rusbadrol, N., Mahmud, N., & Arif, L. S. M. (2015). Association between personality traits and job performance among secondary school teachers. *International Academic Research Journal of Social Science*, 1(2), 1-6.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32, 513-531.
- Casale, S. (2020). Gender Differences in Self-esteem and Self-confidence. *The Wiley Encyclopedia of Personality and Individual Differences: Personality Processes and Individual Differences*, 185-189.
- Christie, R. & ve Geis, F. (1970). *Studies in Machiavellianism*. New York: Academic Press
- Cohen, A. (2016). Are they among us? A conceptual framework of the relationship between the Dark Triad personality and counterproductive work behaviors (CWBs). *Human Resource Management Review*, 26(1), 69-85.
- Čopková, R. (2020). The Dark Triad in Helping Professions—Comparison of Teachers and Pedagogy Students. *JWEE*, (1-2), 125-141.
- Čopková, R., & Jendrejáková, A. (2020). Dark Triad in the context of career choice. *Sociální Pedagogika*, 8(2).
- Furtner, M. R., Maran, T., & Rauthmann, J. F. (2017). Dark leadership: The role of leaders' Dark Triad personality traits. In *Leader development deconstructed* (pp. 75-99). Springer, Cham.
- Hirschi, T. (1969). Key idea: Hirschi's social bond/social control theory. *Key ideas in criminology and criminal justice*, (1969), 55-69.
- Jonason, P. K., & Davis, M. D. (2018). A gender role view of the Dark Triad traits. *Personality and Individual Differences*, 125, 102-105.

- Jones, D. N., & Paulhus, D. L. (2011). The role of impulsivity in the Dark Triad of personality. *Personality and Individual Differences, 51*(5), 679-682.
- Jones, D. N., & Paulhus, D. L. (2014). Introducing the short Dark Triad (SD3) a brief measure of dark personality traits. *Assessment, 21*(1), 28-41.
- Mahlamäki, T., Rintamäki, T., & Rajah, E. (2019). The role of personality and motivation on key account manager job performance. *Industrial Marketing Management, 83*, 174-184
- Majors, T. M. (2016). The interaction of communicating measurement uncertainty and the Dark Triad on managers' reporting decisions. *The Accounting Review, 91*(3), 973-992.
- Mathieu, C. (2012). How Can Managers' Personality and Behaviors Affect Employees' Well-Being?. *International Journal of Science in Society, 3*(3).
- Khalilzadeh, S., & Khodi, A. (2021). Teachers' personality traits and students' motivation: A structural equation modeling analysis. *Current Psychology, 40*(4), 1635-1650.
- Kurhajcová, L. (2009). Kľúčové kompetencie manažéra. *Economics and management, 1*, 31-35.
- Ludwig, S., Fellner-Röhling, G., & Thoma, C. (2017). Do women have more shame than men? An experiment on self-assessment and the shame of overestimating oneself. *European Economic Review, 92*, 31-46.
- Lykken, D. T. (1995). *The antisocial personalities*. Mahwah, NJ: Erlbaum.
- Perera, H. N., Granziera, H., & McIlveen, P. (2018). Profiles of teacher personality and relations with teacher self-efficacy, work engagement, and job satisfaction. *Personality and Individual Differences, 120*, 171-178.
- Spain, S. M., Harms, P., & LeBreton, J. M. (2014). The dark side of personality at work. *Journal of organizational behavior, 35*(S1), S41-S60.
- Szabó, E., & Jones, D. N. (2019). Gender differences moderate Machiavellianism and impulsivity: Implications for Dark Triad research. *Personality and Individual Differences, 141*, 160-165.
- Wu, J., & Lebreton, J. M. (2011). Reconsidering the dispositional basis of counterproductive work behavior: The role of aberrant personality. *Personnel Psychology, 64*(3), 593-626.

## ATYPICAL SOCIAL COGNITION IN BULLYING: HOW PRE-ADOLESCENTS MENTALIZE EMOTIONS

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### Abstract

Mentalizing is a mental activity that allows perceiving human behavior in terms of mental states like emotions, beliefs, needs, feelings, and goals. A reduced mentalizing ability is a risk factor for a variety of psychological issues in the domain of interpersonal social relationships. Numerous studies indicated deficits in social cognition in bullies and victims and highlighted that, aggressive children are less accurate in identifying emotions compared to control groups. However, only a few studies investigated mentalizing abilities related to anger and happiness in pre-adolescence. Our study tries to fill this gap in the literature, by investigating possible differences in the ability to mentalize anger and happiness in bullies and victims, compared to a control group of peers. To achieve this aim, we interviewed 100 students, aged between 13 to 14 years ( $M = 13.48$ ;  $SD = .86$ ), attending Italian lower secondary school, and balanced by gender. We administered the Olweus questionnaires to identify bullies and victims. We also applied a narrative approach to investigate the mental state language referred to anger and happiness. The results indicated a reduced ability to mentalize anger in bullies and victims compared to the control group. The 34.6% of bullies' responses considered anger as a mere behavioral or physical state, compared to controls (26.3%;  $\chi^2 = 15.97$ ,  $\alpha \leq 0.05$ ) who in turn considered anger as a mental state (38.6%). Also, victims were less likely to refer to anger as a mental state (12.5%) compared to the control group (38.6%;  $\chi^2 = 30.72$ ,  $\alpha \leq 0.05$ ). These results highlight that both bullies and victims seem to have difficulty in defining anger and happiness as a mental state. The results of our study point to the need to define effective intervention programs to prevent bullying by promoting appropriate mentalization of emotions in pre-adolescents. We also highlight the need to train teachers and parents about the importance of awareness of emotions to be understood as a valuable "ally" of the cognitive and social processes involved in school and family education.

**Keywords:** *Theory of mind, mentalization, bullying, emotional competence, social cognition.*

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### 1. Introduction

Mentalizing is the reflective function of the Theory of Mind, which is the ability to think about one's own and others' mental states (Bateman & Fonagy, 2012). This kind of reflection is possible both about epistemic cognitive states and about non-epistemic states such as emotions. The ability to mentalize emotions includes both either the "emotional awareness" and the "ability to use the emotional vocabulary" (Saarni, 1999). Some studies investigated the ability to mentalize emotions in children and adolescents. These studies indicated a developmental transition occurring between 3 years old and 11 years old, from a behavioral understanding of emotions to a more advanced level of mentalization, namely the reflective understanding of emotions. Grazzani Gavazzi et al. (2008) analyzed, in a sample of 14 years old pre-adolescents, the ability to mentalize anger and happiness. This sample has been compared with old adolescents (19 years old). The results indicated that older participants were able to consider anger and happiness in terms of mental states more than pre-adolescents, which in turn tended to use more terms related to behaviors. Few studies analyzed the mentalizing emotions in bullies and victims.

Bullying has been defined as a deliberate and ongoing misuse of power in relationships through verbal, physical, and/or social behavior that intends to cause physical, social, and/or psychological harm (Olweus, 1996). The model of the "Social skills deficit" (Dodge, 1986; Crick & Dodge, 1994) indicates that bullies and victims show an atypical social information processing: they tend to apply some attributional bias when they interpret social information. The selection of the goals of actions is influenced by anger or by a lack of empathy toward the victim (Lemerise & Arsenio, 2000). Several

studies indicated significant differences in the ability to mentalize emotions in bullies, victims, and controls. Aggressive children are less accurate in identifying emotions compared to prosocial and altruistic classmates (Fonzi, 1999). Children with conduct disorders show low levels of mentalization. Hypo-mentalization reflects an inability to consider complex models of mental states, with a consequent limited ability to understand others and the self. Hypo-mentalization might rise from reduced affective sensitivity of parents, due to various reasons like high levels of stress, anxiety, or parental conflict (Davies, et al. 2004). Studies of bully families indicate that domestic violence and family conflict, characterized by high emotional manipulation, coercion, and unpredictability, put children at risk of developing emotional dysregulation and impulsivity (Bowers, et al. 1994; Cook, et al. 2010). Therefore, bullies learn to use anger in an instrumental and maladaptive way to reach their goals. In these situations, happiness might be associated mainly with the satisfaction to win a fight, which may lead to an increased perception of personal power. Victims' families are instead characterized by high levels of overprotection (Bowers, et al. 1994; Cook, et al. 2010) and low levels of conflict. This could contribute to developing high levels of family dependency, fear of the outside world, social isolation, and difficulty relating to peers. Since mentalization is a key ability in successful social interactions, bullies and victims might lack the ability to mentalize emotions like anger and happiness. However, few studies investigated mentalizing abilities related to anger and happiness in bullies and victims.

## 2. Objectives

Our study aims to fill this gap in the literature, by investigating possible differences between bullies, victims, and controls (students not involved in bullying in any role) in the ability to attribute mental states referred to the emotion of anger and happiness. We hypothesize that as compared to controls, bullies and victims will be less able to mentalize these emotions.

## 3. Methods

This study involved 100 students, 42% males (N=42) and 58% females (N=58), aged between 13 to 14 years (M = 13.48; SD=.86) attending Italian lower secondary school.

The anonymous questionnaires have been administered in randomly selected classes and the research was conducted according to the APA guidelines for ethical research in psychology.

### 3.1. Procedure

To identify the bullies, the victims, and the comparison group, we applied The Olweus Bully/Victim Questionnaire (Olweus, 1996). The Olweus Bully/Victim Questionnaire (OBVQ) is an anonymous self-report questionnaire. It starts with two global questions where students could identify themselves as victims or bullies. Children who had been bullied "2 to 3 times a month or more" were classed as victims. Those who had bullied others "2 to 3 times a month or more" were classed as bullies. Whereas those who had responded that they "have not" been bullied/not bullied other students or have been bullied/have bullied other students "only once or twice" are considered "non-victims or non-bullies" (Solberg, & Olweus, 2003). Those last were often considered as a comparison group (controls) because they are not involved in bullying in any role (Olweus, 1996; Solberg, & Olweus, 2003).

To analyze the narrative episodes linked with the emotions of anger and happiness we applied a narrative approach [55], aimed to collect the description of the episodes associated with the emotions of our participants. The narrative approach used by Grazzani, Antoniotti, Ornaghi (2008) focuses on techniques of the written narration of personal experiences (Atkinson, 1998). The narrative tool of Grazzani Gavazzi, Antoniotti and Ornaghi (2008) included four items:

- 1) Describe an episode of your life in which you have been angry.
- 2) Describe what is anger for you.
- 3) Describe an episode of your life in which you have been happy.
- 4) Describe what is happiness for you.

We coded the participants' answers according to the method used by Montiroso, Pupino, Borgatti (2004), which allows us to identify the specific terms used by the participants to describe the emotions. In line with this method, we counted the "total number of words used to define happiness", the "total number of words used to define anger", the "mental states predicates related with happiness", "the behavioral predicates related to happiness", "the mental states predicates related to anger" and "the behavioral predicates related with anger". The behavioral predicates also included the physical states. Coding was done by two independent researchers, with an inter-rater agreement (Cohen Kappa coefficient) of 90% in behavioral predicates and 94% in mental predicates. Differences between categories were analyzed by a  $\chi^2$  test with a level of significance of 0.05.

## 4. Results

The results indicated that bullies were the 26% (N=26), victims were 16% (N=16), and students "non-victims or non-bullies" (controls) were the 58% (N=58). Responses to the first question "Describe an episode of your life in which you have been angry" highlighted that, as compared to the control group, far more bullies' responses (37.1% vs. 18.9%) indicated problems with classmates ( $\chi^2= 22.67$ ,  $\alpha \leq 0.05$ ). On the contrary, as compared to controls, fewer victims reported having problems with their classmates (7.1% vs. 18.9%;  $\alpha \leq 0.05$ ). It seems that, within the context of the social relationships with classmates, bullies experience more anger compared with victims and controls. Victims tend to feel less angry compared with bullies and with peers not involved in bullying (controls). It might be of interest to explore in detail how the three groups mentalize anger.

### 4.1. Anger and happiness in bullies and victims

**4.1.1. Anger as a mental state in bullies and victims.** Here we indicated the definitions of anger in bullies and control groups (Table 1).

Table 1. Percentage of lexicon referred to the definition of anger in bullies, victims, and controls.

| Definition of anger        | Bullies<br>% | Victims<br>% | Controls<br>% |
|----------------------------|--------------|--------------|---------------|
| Feeling or emotion         | 19.2         | 12.5         | 38.6          |
| Behavior or physical state | 34.6         | 37.5         | 26.3          |
| Thing or moment            | 30.8         | 31.3         | 24.6          |
| Other                      | 15.4         | 18.3         | 10.5          |
| Total                      | 100          | 100          | 100           |

*Responses to the question "Describe what is anger for you"*

Bullies tended to define anger mainly in terms of behavior or physical state (34.6% vs 26.3%;  $\alpha \leq 0.05$ ) and as "thing or moment", compared to controls (30.8% vs. 24.6%;  $\alpha \leq 0.05$ ). As compared to controls, fewer bullies attributed anger to mental states (19.2% vs. 38.6%;  $\alpha \leq 0.05$ ). Similarly, victims also considered anger more in terms of behavior or physical state (37.5% vs 26.3%;  $\alpha \leq 0.05$ ) or as "thing or moment" (31.3% vs 24.6%;  $\alpha \leq 0.05$ ), compared to controls. Like bullies, victims also considered anger less of a mental state than controls (12.5% vs. 38.6%;  $\alpha \leq 0.05$ ). Below are some examples of the definition of anger in bullies:

- "When someone makes me angry, I want to *hit him*" (anger as behavior state).
- "When I'm angry *I feel like bursting*" (anger as a behavioral state).
- "Anger is a moment when I feel like smashing everything when I feel like smashing everything" (anger as a thing or moment).
- "Anger is an emotion that occurs when *I believe* others want to boss me around" (anger as a mental state). Below are some examples of the definition of anger in victims:

- "Anger leads me to distance myself from certain companions" (anger as behavior state).
- "Anger is an ugly thing" (anger as a thing or moment).
- "I think it's not right to feel angry" (anger as a mental state).

Here is now an example of the definition of anger in a student not involved in bullying:

- "Anger is an emotion that makes me believe I am right when *I believe* I am experiencing injustice". These results highlight the difficulty in many bullies and victims in metalizing anger.

**4.1.2. Happiness as a mental state in bullies and victims.** Here we indicated the definitions of happiness in bullies, victims, and control groups (Table 2).

Table 2. Percentage of lexicon referred to the definition of happiness in bullies, victims, and controls.

| Definition of happiness    | Bullies<br>% | Victims<br>% | Controls<br>% |
|----------------------------|--------------|--------------|---------------|
| Feeling or emotion         | 15.4         | 25.0         | 37.9          |
| Behavior or physical state | 34.6         | 31.3         | 22.4          |
| Thing or moment            | 26.9         | 18.8         | 19.0          |
| Other                      | 23.1         | 25.0         | 20.7          |
| Total                      | 100          | 100          | 100           |

*Responses to the question "Describe what is happiness for you"*

Bullies tended to refer more to happiness as a "behavior or physical state" (34.6% vs. 22.4%;  $\alpha \leq 0.05$ ) and as "thing or moment" (26.9% vs. 19%;  $\alpha \leq 0.05$ ) compared to controls. As compared to controls, fewer bullies attributed happiness to mental states (15.4% vs. 37.9%;  $\alpha \leq 0.05$ ). Similarly, victims also considered happiness more in terms of behavior or physical state compared to controls (31.3% vs. 22.4%;  $\alpha \leq 0.05$ ).

Like bullies, victims also considered happiness less of a mental state than controls (25% vs. 37.9%;  $\alpha \leq 0.05$ ). This can be understood as a difficulty of bullies and victims in mentalizing happiness. Below are some examples of the definition of happiness in bullies:

- "When I'm happy I feel like *screaming*" (happiness as behavior state).
- "Happiness *is something* that rarely happens to me" (happiness as a thing).
- "I *think* I'm happy when others respect me" (happiness as a mental state).

Below are some examples of the definition of happiness in victims:

- "When I'm happy I want to *tell everyone*" (happiness as behavior state).
- "When I'm happy I *feel light*" (happiness as a physical state).
- "Being happy is a *great thing!*" (happiness as a thing or a moment).
- "When I'm happy, I *think* everything will be fine" (happiness as a mental state).

Here is now an example of the definition of happiness in a student not involved in bullying:

- "Happiness is a beautiful *emotion* that makes me *think* I'm in tune with the world".

These results highlight the difficulty in many bullies and victims in mentalizing happiness.

## 5. Discussion

The results indicated atypical social cognition both in bullies and victims but not in controls. Regarding bullies, Morosan et al. (2020) interpreted this phenomenon by indicating that bullies are not able to mentalize anger and therefore tend to use it in a non-functional and instrumental way with their peers. It is in line with the higher number of behavioral and physical terms that they use to refer to this emotion. Previous studies indicated that the phenomenon of hypo-mentalization might arise from an inability of the bullies' parents to be emotionally attuned to their children, maybe due to higher levels of stress and/or familiar conflicts (Ferrerias Picazo, 2021). Our results also showed that victims exhibited the same difficulty as bullies in mentalizing anger. They tended to refer to this emotion in terms of a "thing" or a "moment". It is possible that victims learned to avoid anger with their classmates, probably because it is perceived as dangerous outside of their family. Previous studies on the familiar background of the victims (Bowers, et al. 1994; Cook, et al. 2010) showed higher levels of hyper protection compared to the familiar background of bullies. Victims also show a higher tendency of internalizing problems rather than externalizing ones, which in turn are more common in bullies (Copeland et al. 2013; Pedditzi & Lucarelli, 2014). Mentalizing emotions is therefore important for victims to recognize the emotional signals of anger in relationships with bullies and peers and to develop assertiveness. In bullies, instead, is important to promote awareness of anger and teach them how to handle aggressive behavior. In summary, the results of our study integrate the data already present in the literature, which highlights difficulties in mentalizing emotions in adolescence, specifically in individuals with conduct disorders and impulsivity (Ferrerias Picazo, et al. 2021). Our results also confirm what was found in previous studies about the development of emotions in adolescence (Grazzani Gavazzi, et al. 2008; Montiroso, et al., 2004) and the theory of mind in bullies and victims. In line with these studies, we found that bullies and victims are characterized by a "behavioral" knowledge of their emotions. On the contrary, the control group showed a mentalistic understanding of emotions. Our study complements the previous ones but is different because extends these results by using a narrative approach. This approach is easy to use in educational settings and it might have important implications for possible intervention at school to promote social-emotional competencies in pre-adolescents. Of course, our study has some limitations. In future research, it will be necessary to obtain additional data about the socioeconomic and family background of bullies and victims to better understand some of the findings. It would also be interesting to use other quantitative tools to explore the role of other important emotions such as fear and shame in victims and guilt in bullies.

## 6. Conclusions

Our study has practical implications for the prevention of distress in preadolescents and the promotion of well-being at school. It is necessary therefore to apply practical guidelines in terms of addressing the bullies' and victims' limitations of mentalizing emotions, through the socio-affective education at school. We also highlight the need to train teachers and parents about the importance of awareness of emotions to be understood as a valuable "ally" of the cognitive and social processes involved in school and family education.



## References

- Atkinson, R. (1998). *The Life Story Interview. Qualitative Research Methods*. New York: SAGE.
- Bateman, A. W., & Fonagy, P. (2012). *Handbook of mentalizing in mental health practice*. Arlington: American Psychiatric Publishing.
- Bowers, L., Smith, P.K., & Binney, V. (1994). Perceived Family Relationships of Bullies, Victims and Bully/Victims in Middle Childhood. *Journal of Social and Personal Relationships*, 11, 2, 215-232.
- Cook, C. R., Williams, K. R., Guerra, N. G., Kim, T. E., & Sadek, S. (2010). Predictors of bullying and victimization in childhood and adolescence: A meta-analytic investigation. *School Psychology Quarterly*, 25, 2, 65–83.
- Copeland, W.E., Wolke, D., Angold, A., & Costello, E.J. (2013). Adult Psychiatric Outcomes of Bullying and Being Bullied by Peers in Childhood and Adolescence. *Jama Psychiatry*, 70, 419-426.
- Crick, N.R., & Dodge, K.A. (1994). A review and reformulation of social information-processing mechanisms in children's social adjustment. *Psychological Bulletin*, 115, 1, 74–101.
- Davies, P. T., & Cummings, E. M. (1994). Marital conflict and child adjustment: An emotional security hypothesis. *Psychological Bulletin*, 116, 3, 387–411.
- Dodge, K.A. (1986). A social information processing model of social competence in children. In M. Perlmutter (Ed.), *In the Minnesota Symposium on Child Psychology (77-125)*. Hillsdale: Erlbaum.
- Fonzi, A. (1999). *Il gioco crudele: studi e ricerche sui correlati psicologici del bullismo*. Firenze: Giunti.
- Grazzani Gavazzi I., Antoniotti, C., & Ornaghi, V. (2008). Emozioni e adolescenza: proposte di uno strumento di indagine, primi risultati e possibili applicazioni in ambito educativo. *Psicologia Clinica dello Sviluppo*, 2, 397-388.
- Lemerise, E.A., & Arsenio, W.F. (2000). An integrated model of emotion processes and cognition in social information processing. *Child Development*, 71, 1, 107– 118.
- Montiroso, R., Pupino, C., & Borgatti, R. (2004). Mentalizzazione delle emozioni in adolescenza: analisi dei processi narrativi. In I. Grazzani Gavazzi (Ed.). *La competenza emotiva. Studi e Ricerche nel Ciclo di Vita (243-273)*. Milano: Unicopli.
- Morosan, L., Fonseca-Pedrero, E., & Debbane, M. (2020). Network Analysis of Reflective Functioning and Conduct Problems During Adolescence. *Psychology and Violence*, 10, 3, 300-311.
- Olweus, D. (1996). *The Revised Olweus Bully/Victim Questionnaire*. Mimeo, Bergen, Norway: Research Center for Health Promotion.
- Pedditz, M.L., & Lucarelli, L. (2014). Bullying and depressive risk: an exploratory survey in a sample of students in early adolescence. *Medico e Bambino*, 33, 8, 533-534.
- Sarni, C. (1999). *The development of emotional competence*. New York: Guilford Press.
- Solberg, M.E., & Olweus, D. (2003). Prevalence estimation of school bullying with the Olweus Bully/Victim Questionnaire. *Aggressive Behaviour*, 29, 239–268.

# PSYCHOLOGICAL WELL-BEING AND SELF-CARE AMIDST COVID-19 PANDEMIC AMONG BACHELOR OF SCIENCE IN PSYCHOLOGY STUDENTS OF WORLD CITI COLLEGES

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## Abstract

This study aims to provide an understanding of the psychological well-being and self-care of the Psychology students from World Citi Colleges, primarily during the ongoing COVID 19 Pandemic. The main source of data came primarily from the students of Psychology of the World Citi Colleges from first year to fourth year whose age ranges from 17- 30 years old of the Academic Year 2020-2021. Two sets of instruments were utilized in this study; the validated questionnaire of the Six Factor Model of Psychological Well- Being by Carol Ryff which consist of 18 items with 7 point scale that will measure the level of psychological well- being of respondents in terms of self-acceptance, environmental mastery, personal growth, purpose in life, positive relations and autonomy and the self -made questionnaire derived from Seligman's theory which was validated by experts to determine how the respondents' maintain self-care amidst pandemic. This points five factors in leading to self- care are positive emotions, engagement, relationships, meaning, and accomplishments. Findings of the study revealed that students are considered to be high on psychological well-being in terms of personal growth. On the other five psychological well-being, Self-Acceptance, environmental mastery, purpose in life, positive relations and autonomy, the respondents are considered to be moderate on well-being. In an over-all view, students are moderately practicing self -care on all areas of consideration. However, highest among the self-care considered is on accomplishments, followed by relationships, meaning, positive emotions and engagement. Based on the results, The null hypothesis was rejected, there exists significant negative low correlation between psychological well- being and self-care ( $r$  value = -0.440;  $p$ -value = 0.01). The overall findings of this study indicated that the self-care has a significant relationship to their psychological well-being. This means that as psychological well- being increases, the self-care of the students decreases.

**Keywords:** *Psychological well-being, self-acceptance, personal growth, positive emotions, engagement.*

## 1. Introduction

In this life, psychological, physical, and social health is vital and interwoven strands of life. As time passes, our understanding of this concept grows; it becomes clearer that psychological health is crucial to the overall well-being of individuals, the society that they coexist with. In this generation, we are now giving importance on how we will achieve psychological well -being and, especially this difficult time of Pandemic. A lot of people experienced tragic circumstances in their lives which cause emotional distress, and challenge the different aspects of our lives; our beliefs, personal goals or achievements, relationships and engagements. Several stressors have been identified as key factors affecting the students' anxiety and psychological well-being (Ghebreyesus, 2020).

Psychological well-being refers to inter- and intra-individual levels of positive functioning that can include one's relatedness with others and self-referent attitudes that include one's sense of mastery and personal growth. Subjective well-being reflects dimensions of affect judgments of life satisfaction. (Burns, 2016).

Moreover, Psychological well-being refers to how individuals control their life and activities. Psychological well-being does not just make us feel good all the time but also involves negative emotions such as frustration, failure, and grief which are normal things in life. Therefore, managing negative emotions are important for long-term well-being. (Udhayakumar, P. & Illango, P. (2018)

In terms of self-care, Self-care practice may be defined as engagement in behaviors that maintain and promote physical and emotional well-being and may include factors such as sleep, exercise, use of

social support, emotion regulation strategies, and mindfulness practice (McKinzie et al., 2006). In addition, Self-care is broadly defined as the everyday process of being aware of and attending to one’s elementary physical and emotional needs through engaging in helpful behaviors including the shaping of one’s daily routine, relationships, and the environment as needed to promote self-care. When practiced frequently it maintains and enhances both short- term and long-term well-being holistically. Mindful self-care involves nurturing and tending to one’s needs through critical awareness and purposefully engaging in activities that fulfill one’s needs and sustain a sense of comfort and well-being. (Catherine & Cook, 2020). This study is theoretically anchored on the Theory of Psychological Well-Being by Carol Ryff and Theories on Self- Care by Seligman.

## 2. Objectives

This research aims to describe and further understand if there is a significant correlation that exists on the psychological well-being and self-care of the Psychology Students from World Citi Colleges.

## 3. Methods

The study used a descriptive correlational design and quantitative approach. Descriptive research was used to described characteristics of a population or phenomenon being studied. Moreover, the correlation Research strategy was used to measure a relationship between two variables without the researcher controlling either of these. An adopted questionnaire was used and administered to the respondents and the data gathered were subjected to statistical treatment for analysis and interpretation. The instruments are anchored on the Six Factors of Psychological Well-Being which is composed of six subscales on positive functioning namely autonomy, environmental mastery, personal growth, purpose in life, positive relations with others, and self- acceptance and a self- made instrument anchored on the Five Factors of Self-Care (PERMA) namely, positive emotions, engagement, relationship, meaning and accomplishment. Seligman believes that these five elements can help people work towards a life of fulfillment, happiness, and meaning. (Pascha, 2020). The self- made instrument was subjected to validity and reliability test. Chronbach’s alpha of 0.85 were obtained which indicated that the instrument is reliable.

The respondents of the study were the Bachelor of Science in psychology students of World Citi Colleges. Their ages range from 17-30 years old and belonged to 1<sup>st</sup> to 4<sup>th</sup> year, with gender differences.

The self-made instrument on self-care is structured in a four= point likert. Each item presents the respondents with four alternative responses (**4-always, 3-frequently, 2-rarely, and 1-never**). The questionnaire is composed a total of 50-items, which is divided into 5 categories: These categories include 10-items that determine the result of each category.

Table 1.

| Score Range  | Interpretation              |
|--------------|-----------------------------|
| 1.50 to 2.49 | Low self-care practice      |
| 2.50 to 3.49 | Moderate self-care practice |
| 3.50 to 4.49 | Average self-care practice  |
| 4.50 to 5.0  | High self-care practice     |

The researchers gathered data using google form wherein the demographic profile, psychological well- being and self- care of the respondents are taken. Individual raw scores can range from 2.6 to 4.9 with higher scores indicating the maintained self-care and raw score that range from 4.50 to 6.9 indicating the maintained psychological well-being which is interpreted by the agreeing and disagreeing of the respondent on the categories and indicators given.

Table 2.

| Score Range  | Interpretation             |
|--------------|----------------------------|
| 1.00 to 1.86 | Strongly Disagree          |
| 1.87 to 2.72 | Somewhat Disagree          |
| 2.73 to 3.58 | A little Disagree          |
| 3.59 to 4.44 | Neither Agree nor Disagree |
| 4.45 to 5.30 | A little Agree             |
| 5.31 to 6.16 | Somewhat Agree             |
| 6.17 to 7.02 | Strongly Agree             |

#### 4. Results

The results of the study indicated that in terms of the demographic profile of the respondents, most of the respondents are on the age bracket of 17- 20 years old, female, and first year students.

Psychological studies on the psychological well-being of respondents seem to have moderate to high score and it shows that the respondents were able to maintain self-care frequently amidst pandemic. In this study, the researchers addressed the problems (the psychological well-being and self-care of the respondents and the relationship between these two variables) as it collected data through the self-made questionnaire, processed it and obtained certain and finite results. The assessment of respondent's psychological well-being indicates that personal growth is high and schools play an essential role in supporting students in their personal growth to make healthy life choices and make them understand the effects of their choices on their health and well-being (SPARKS, 2021). In terms of self-care, the lowest among the indicators is on the engagement and this is inevitably tied to students' experienced interaction with other individuals in order to feel connected amidst COVID-19 pandemic, indicating that respondents are rarely able to adapt to self-care in terms of engagement and manage the challenges brought by the pandemic. In the study of Seligman, he believes that the five elements PERMA can help people work towards a life of fulfillment, happiness, and meaning. (Pascha, 2020). Based on the findings gathered by the researchers, it can be seen that the responses reveal areas of levels on the respondents' psychological well-being and self-care that can be used to enhance the programs and online learning needed to improve the students' psychological well-being and self-care. On the other hand, according to Sakan, et al., (2020) when fundamental psychological demands were unfulfilled because of the pandemic setting, even individuals who felt more optimistically were more vulnerable to depression, anxiety, and stress while individuals who are struggling already had significantly greater distress during the crisis, particularly those who felt incompetent.

#### 5. Conclusion and Recommendation

The overall finding of this study showed that the self-care practice of the respondents during this Pandemic had a significant relationship to their psychological well-being result. Thus, the null hypothesis, there is no significant relationship between the psychological well-being and self-care, was rejected.

In terms of psychological well-being and self-care, the results revealed that students are considered to be high on psychological well-being in terms of personal growth. On the other five psychological well-being, Self-Acceptance, environmental mastery, purpose in life, positive relations and autonomy, the respondents are considered to be moderate on well-being. In an overall view, students are moderately practicing self-care on all areas of consideration. However, highest among the self-care considered is on accomplishments, followed by relationships, meaning, positive emotions and engagement. Based on the results, the null hypothesis was rejected, there exists a significant negative low correlation between psychological well-being and self-care ( $r$  value = -0.440;  $p$ -value = 0.01). The overall findings of this study indicated that the self-care has a significant relationship to their psychological well-being. This means that as psychological well-being increases, the self-care of the students decreases.

Through the conduct of this study and results obtained, the researchers therefore recommend the following: (1) To conduct a study among adolescents in the millennial generation to assess their psychological well-being and self-care; (2) Seminars and forums for students that will help them maintain and practice self-care; (3) Provide more programs about how individuals can pursue psychological well-being. The level of analysis (self-acceptance, environmental mastery, and personal growth, purpose in life, positive relations and autonomy) of the Psychological well-being and model of PERMA (Positive emotions, engagement, relationship, meaning and accomplishment) were used in the study to assess the psychological well-being and self-care of respondents amidst Pandemic, therefore the study suggests that the Ryff Scale of Psychological well-being and PERMA model self-made questionnaire also be used for further analysis, which will create a stronger relationship between the psychological well-being and self-care of respondents. In addition, because the research centered on psychology students, a broader reach in terms of the respondents could be explored.

## References

- Burns, R. A., Byles, J., Magliano, D. J., Mitchell, P., & Anstey, K. J. (2015). The utility of estimating population-level trajectories of terminal wellbeing decline within a growth mixture modelling framework. *Social Psychiatry and Psychiatric Epidemiology*, 50(3), 479–487.
- Burns R. (2016) Psychosocial Well-being. In: Pachana N. (eds) Encyclopedia of Geropsychology. Springer, Singapore. [https://doi.org/10.1007/978-981-287-080-3\\_251-1](https://doi.org/10.1007/978-981-287-080-3_251-1)
- Coffey, John & Wray-Lake, Laura & Branand, Brittany & Mashek, Debra. (2014). A Multi-Study Examination of Well-Being Theory in College and Community Samples. *Journal of Happiness Studies*. 17. 10.1007/s10902-014-9590-8.
- Forgeard, M. J., Jayawickreme, E., Kern, M., & Seligman, M. (2011). Doing the right thing: Measuring wellbeing for public policy. *International Journal of Wellbeing*, 1(1), 79–106.
- Giangrasso, Barbara. (2021). Psychometric properties of the PERMA-Profilier as hedonic and eudaimonic well-being measure in an Italian context. *Current Psychology*. 40. 10.1007/s12144-018-0040-3.
- Kun, Agota & Balogh, P. & Krasz, K.G. (2017). Development of the work-related well-being questionnaire based on Seligman's PERMA model. 25. 56-63. 10.3311/PPso.9326.
- McKinzie et al (2021). Impact of the COVID-19 Pandemic on Physical and Mental Health in Lower and Upper Middle-Income Asian Countries: A Comparison Between the Philippines and China: *Frontiers in Psychiatry*. <https://doi.org/10.3389/fpsy.2020.568929>
- Sakan, D., et al (2020). The Role of Basic Psychological Needs in Well-Being During the COVID- 19 Outbreak: A Self-Determination Theory Perspective: *Front. Public Health*. <https://doi.org/10.3389/fpubh.2020.583181>
- Scherer, CAK (nd). A Comprehensive Guide to Desert Flower Essences for Professional and Self-Help Use. <https://www.desert-alchemy.com/publications/>. Retrieved April 10, 2022, from <https://www.desert-alchemy.com/article/spiritual-self-care/#:%7E:text=Spiritual%20self%2Dcare%20is%20the,and%20meaning%20for%20our%20lives.&text=There%20are%20many%20spiritual%20paths,meaning%20and%20understanding%20for%20life>
- Shahira, Natasha & Hanisshya, H & Zm, Lukman & Riza, Normala & Chik, Azlini & M.Y, Kamal. (2018). Psychological Well-Being among University Students in Malaysia. 2454-6186.
- Sparks (2021, August, 25). Why is Student Wellbeing important? <https://spark.school/wellbeing/why-is-student-wellbeing-important>
- Rowold, Jens. (2011). Effects of Spiritual Well-Being on Subsequent Happiness, Psychological Well-Being, and Stress. *Journal of religion and health*. 50. 950-63. 10.1007/s10943-009-9316-0.

## TEACHER TRAINING STUDENTS' STEREOTYPIC IMAGINES OF CAREER COUNSELLOR THROUGH DRAWINGS

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### Abstract

The purpose of the present study was to describe the stereotypical images of a career counsellor through drawings. The research was based on a sample of Estonian (N=22), Finnish (N=18) and Latvian (N=22) initial teacher training students who participated in international career guidance e-learning course lasting one academic semester. At the end of the course students were asked to draw their images of a career counsellor, and their drawings were analyzed systematically based on the modified version of the checklist developed by Barrow (2000). Respondents' drawings were scored independently by two raters with the overt features in drawings by a frequency count basis. Findings from present study using the Draw a Career Counsellor Test (DACCT) showed that preservice teachers drawings reflected several stereotypical imagines: the stereotypes of the career counsellor, the client stereotypes, and stereotypic elements of configuration of the working environment of the career counsellor.

**Keywords:** *Draw a career counsellor, stereotypical images, initial teacher training students.*

### 1. Introduction

Although structured surveys have yielded useful information on the public's attitudes towards and understanding of career guidance and career counsellors as mental health specialists (e.g., Lau et al., 2020; Ludwikowski et al., 2009) whereby less frequently qualitative research methodologies have employed with using metaphoric drawings for career statuses and values (Chong et al., 2021) among undergraduates. The use of drawings as representations of images is one qualitative method for analyzing personal beliefs and imagines. The assessment of perceptions of a scientist through drawing was developed by Chambers (1983) using the Draw a Scientist Test and have been followed more than 50 years (Miller et al., 2018) research path showing the increasing tendency to draw stereotypic scientists with children's age, but this tendency has decreased over historical time during last decades. Nowadays studies among undergraduates about stereotypic images of the scientist has also been applied in different countries around the world – in Canada (Milford & Tippet, 2013), China (Huang, Huang, Min, & Wei, 2014), Germany (Markic & Eilks, 2012; Reinisch et al., 2017), Ireland (Stapleton et al., 2018), South-Africa (Meyer, Guenther, & Joubert, 2019), USA (Medina-Jerez & Middleton, 2022; Miele, 2014; Morse, 1991; Subramaniam, Harrell & Wojnowski, 2013), Turkey (Ucar, 2012), and in different European (Austria, Belgium, Bulgaria, Czech Republic, Greece, Hungary, Latvia, Malta, Netherland, Poland, Spain) countries (Türkman, 2015).

The usage of tests similar to the Draw a Scientist Test for different professions demonstrates this method's acceptance for measuring stereotypes, including for some specific jobs like archaeologist (Renoe, 2003), biologist (Yang et al., 2018), computer user (Brosnan, 1999), dentist (Ucar & Uçar, 2016), engineer (Knight & Cunningham, 2004), inventor (Lee & Kwon, 2018), mathematician (Picker & Berry, 2000), musician (Colley et al., 2009), psychologist (Barrow, 2000; Hartwig, 2003), reader (Kaback, 2012), sport person (Colley, Berman, & Van Millingen, 2005), teacher and veterinarian (Losh, Wilke, & Pop, 2008). No research has investigated the stereotypical images of a career counsellor previously.

This study is an extension of earlier research in using drawings as a methodological tool in examining the images of undergraduates about career counsellors. The purpose of the present study was to describe the stereotypical images of a career counsellor through drawings. Research question was evoked: What are the stereotypical images of a career counsellor among the teacher training students?

## 2. Method

### 2.1. Participants

A total of 60 participants were enrolled as teacher training students in international career guidance e-learning course (Kõiv et al., 2019) lasting one academic semester in three universities at Estonia (N=22), Finland (N= 18), and Latvia (N=22). A majority of the participants (N=55) were females of traditional teacher training age ranging between 20-36 years (M=26.6, SD=1.3).

### 2.2. Instrumentation and coding

The used instrument in this study was inspired originally by the Draw a Scientist Test which was developed by Chambers (1983) to assess perceptions of scientists through drawing, and the Draw a Career Counsellor Test (DACCT) was developed using the instruction: "Please draw a picture of a career counsellor at work".

The analytical method of coding of drawings used in this research was a partial modification of that used by Barrow (2000) to determine whether the respondents had stereotyped indicators in the career counsellor image. The checklist for coding the drawings of the DACCT included four categories: images of the career counsellor, images of the client, the configuration of working environment of the career counsellor.

Two raters (including the first authors) intensively analyzed individually each drawing throughout and looked for the recognizable indicators, symbols and descriptors as indicated in the drawings. Multiple examples of overt attributes in the drawings counted only once. After that, raters come to an agreement of attributes or eliminate them from the list due to lack of relation to dentistry. The interrater reliability was averaged 0.94 across the variables, whereby attributes that yielded less consistency across raters included age of the figure and were excluded from the analysis. The data was analyzed by tabulating the number of responses for each of the attributes using the checklist. After reaching a final coding list, percentages were calculated for each of the 36 attributes of drawings plus the five additional indicators concerning with listed written attributes in the drawings. Overall, the drawings were coded on 39 attributes, based on agreement by two reviews to describe participants' perception of a career counsellor. Descriptive statistics were used for statistical analysis in the study.

### 2.3. Procedures

The Draw A Career Counsellor Test (DACCT) was given to the participants in the study during the last week of the international career guidance course. Students were given a blank piece of paper and instructed to "draw a career counsellor at work." The respondents were told that there were no right standards about what they could draw, and they can draw as they like. Participation in the investigation was voluntary and anonymous, data confidentiality and other ethical aspects were assured.

## 3. Results

The stereotypical images presented in the drawing of the DACCT were coded and used to evaluate undergraduates perceived stereotypical images of the career counsellor, the client, and the configuration of the career counsellors' working environment. The number and frequency of the attributes for each of the categories were counted and listed in Table 1. In terms of gender more than one-half (61%) of all drawings depicted the career counsellor as being female. This compared to just over one-fifth (23%) of drawings that depicted an unspecified figure or female career counsellor (8%).

When stereotypical images of the career counsellor were listed from most frequently drawn attributes to least frequently, the following attributes were positive facial expression, correct hairstyle and tidy appearance, suit/dress, notes/notebook, asks questions/listen, thinking, heart, coffee cup, pencil, briefcase, eyeglasses, whereby only few non-traditional (jugger, clown, figure with several heads, hands, legs, orienteer with compass) figures were depicted in the drawings.

After completing a cross-case thematic analysis about listed written attributes describing career counsellor, five sub-themes emerged: empathy and altruism; communication competence; support, help and cooperation; humanity, fairness, confidentiality, ethics; creativity and inspiration.

When the most frequent attributes for the category of client were ranked, they were female, younger than the psychologist, an individual rather than a group, and negative or positive facial expression, and thinking as insight was illustrated. The elements of configuration of the career counsellor working environment included: books/papers, room similar to home (clock, flower vase/flowerpot, lamp, picture at the wall, sun in the window), empty room without other people, chair/soft chair, bookshelves, desk/table, sits behind the desk near the client, sits/stands across from the client/side of client, box of tissues, and computer.

Table 1. Categories and attributes of drawings by response percentage and number.

| <b>Categories and attributes of the checklist for coding the drawings of the DACCT</b>            | <b>% (N=60)</b> |
|---|-----------------|
| <b>Images of career counsellor</b>  |                 |
| Male  | 8 (5)           |
| Female  | 61 (36)         |
| Undetermined figure   | 23 (14)         |
| Positive facial expression  | 80 (48)         |
| Correct hairstyle and tidy appearance   | 63 (38)         |
| Suit/dress  | 62 (37)         |
| Notes/notebook  | 55 (33)         |
| Asks questions/listen   | 48 (29)         |
| Thinking (insight illustrated)  | 42 (25)         |
| Heart   | 38 (23)         |
| Coffee/tee cup  | 22 (13)         |
| Pencil  | 20 (12)         |
| Briefcase   | 15 (9)          |
| Eyeglasses  | 13 (8)          |
| Non-traditional (juggler, clown, figure with several heads, hands, legs, orienteer with compass)  | 12 (7)          |
| <b>Listed written attributes</b>  |                 |
| Communication competence  | 70 (42)         |
| Support, help and cooperation   | 68 (41)         |
| Humanity, fairness, confidentiality, ethics   | 58 (35)         |
| Empathy and altruism  | 52 (31)         |
| Creativity and inspiration  | 42 (25)         |
| <b>Images of client</b>   |                 |
| Male  | 12 (7)          |
| Female  | 60 (36)         |
| Undetermined figure   | 20 (12)         |
| Individual, not group   | 66 (40)         |
| Negative facial expression  | 40 (24)         |
| Positive facial expression  | 42 (25)         |
| Younger than career counsellor  | 37 (22)         |
| Thinking (insight illustrated)  | 32 (19)         |
| <b>Configuration of career counsellors' working environment</b>                                   |                 |
| Books/papers  | 45 (27)         |
| Room similar to home (clock, flower vase/flowerpot, lamp, picture at the wall, sun in the window) | 42 (25)         |
| Diploma/certificate (in walls)  | 40 (24)         |
| Empty room without other people (except client)   | 33 (28)         |
| Chair/soft chair  | 38 (23)         |
| Bookshelves   | 30 (18)         |
| Desk/table  | 25 (15)         |
| Sits behind the desk near the client  | 23 (14)         |
| Sits/stands across from the client/side of client   | 22 (13)         |
| Box of tissues  | 20 (12)         |
| Computer  | 20 (12)         |

#### 4. Conclusions

Results of the study showed that several stereotypical images existed in the drawings of the DACCT in the images of the career counsellor, the client, and the configuration of the career counsellors' working environment, pointing out that initial teacher training undergraduates hold stereotypical images of a career counsellor in their drawing as it was shown in other professions such as dentist (Ucar & Uçar, 2016) psychologist (Barrow, 2000), and scientist (e.g. Huang et al., 2014; Medina-Jerez & Middleton, 2022; Meyer et al., 2019; Miele, 2014; Milford & Tippett, 2013; Reinisch et al., 2017; Subramaniam et al., 2013; Türkman, 2015; Ucar, 2012) among undergraduates.

Results of this study using the scoring of drawings of the career counsellor suggest that the career counsellor has perceived by respondents a predominantly female profession wearing suits or dress with correct hairstyle and tidy appearance, as well as eyeglasses, and other symbols of research (notes and notebooks, pencils, briefcases) which elements were suggestive of many respondents perceiving career counsellors as a professional and academic occupation. It was revealed that the career counsellor had stereotypes of external images (female, suit/dress, correct hairstyle, and tidy appearance), internal images



(symbols of positive feelings, warmth; symbols of research inquiry and thinking), and interpersonal communication process (listening, asking questions). In addition, the attributes listed as characteristics of career counsellor were all positive regarding to interpersonal competences and associated with a professional helping and support.

Respondents' descriptions of career counsellors in an office setting as working environment reinforced this impression professional and academic occupation as creating a safe and secure environment for career counselling. Namely, at one side – results suggested that the undergraduates' stereotypic images of the career counsellor were relate to descriptors of symbols of knowledge (e. g. books/papers, bookshelves, box of tissues) and technology product (computer). At the other side, it appears that the respondents' image of the career counsellor was the office setting with chairs and tables, no barriers between the career counsellor and client without other people, and more home like interior. Additionally, for the high status of career counsellor was impressed in the drawings with importance paid to diplomas/certificates as a part of the working room of the career counsellors. This result is parallel with the stereotypic image of working environment for psychologist with characteristic features as no barrier between psychologist and client, a sterile office without drapes, doors, and windows, with straight-back chairs and a minimum amount of furniture, and less importance of titles and diplomas (Barrow, 2000). Both stereotypic roles of the career counsellor and psychologist share commonalities – a close relationship between the mental health professional and client.

The present analysis showed that the career counsellor was portrayed in the respondents' drawings not only as a single figure, but also as a two-figure configuration in relations with clients. Namely, results indicated that client stereotypes included female, younger than the psychologist, negative or positive facial expression, thinking as insight was illustrated, and personal counselling situation, reflecting the professional impression that characterizes the professional status of a career counselor in individual communication with a client, but not group-based context of career guidance.

Summary, the analyze of respondents' drawings suggested that the stereotypic features of the career counsellors were predominantly: (1) external attributes as female person with professional correct appearance expressing nonverbally warm feelings and verbally opportunities for communication; (2) internal attributes were connected with professional communicative competences with help and support, and academic competences as signs of research knowledges; (3) career counsellor-client relational attributes reflected individual counselling situation with younger female client expressing nonverbally both positive and negative feelings; and (4) career counselors working environment was depicted as office setting without spatial barriers between career counsellor-client and with some home-like elements in the room, where, for example, diplomas/certificates and books/papers marked the academic orientation of the career counselor.

In order to better understand a profession – in our study career counsellor, stereotypical images of that profession need to be described. People not only create stereotypic images – in this study stereotypes of career counsellor, but also shape and change them. Previous studies have showed a reduction in stereotypical imagery of scientists (Medina-Jerez & Middleton, 2022; Miele, 2014; Stapleton et al., 2018) and psychologist (Barrow, 2000) during academical studies among undergraduates.

Describing the stereotypical images of one of the professions – career counsellor, could give the educators many hints to plan the educational setting in the area of career guidance. Implications for teacher educators include the need to understand that there is a need for strengthening the position of the subject of career guidance in the teacher training with engagement the multidimensional perspectives of career counsellors.

The strength of the present study was the specific design to examine the potential of the scoring checklist as a quantitative method of assessing pre-service teachers' stereotypic imagines of career counsellor trough the DACCT. Despite the strength of the study there is a limitation connected with the overbalance of the female students in the initial teacher training studies at the university level in different countries. This main methodological limitation in this study may be related to the interpretation of respondents' drawings and future studies with gender-balanced samples can clarify results.

## References

- Barrow, R. (2000). Determining stereotypical images of psychologists: The Draw a Psychologist Checklist. *College Student Journal*, 34(1), 123-33.
- Brosnan, M. J. (1999). A new methodology, an old story? Gender differences in the "draw-a-computer-user" test. *European Journal of Psychology of Education*, 14(3), 375-385.
- Chambers, D. W. (1983). Stereotypical images of the scientist: The Draw-A-Scientist Test. *Science Education*, 67(2), 255-265.

- Chong, S. T., Nen, S., Xiong, T. W., Mei, O. G., Koh, D., Subhi, N., Siang, T. J., Ping, N. C. L., & San, S. P. (2021). Metaphoric drawing narrative career counselling: Teaching work value and career identity statuses via experiential learning method. *International Journal of Academic Research in Progressive Education and Development*, 10(1), 671-685.
- Colley, A., Berman, E., & Van Millingen, L. (2005). Age and gender differences in young people's perceptions of sport participants. *Journal of Applied Social Psychology*, 35(7), 1440-1454.
- Colley, A., Mulhern, G., Relton, S., & Shafi, S. (2009). Exploring children's stereotypes through drawings: The case of musical performance. *Social Development*, 18(2), 464-477.
- Hartwig, S. G. (2003). Surveying psychologists' public image with drawings of a "Typical" psychologist. *South Pacific Journal of Psychology*, 14, 69-75.
- Huang, F., Huang, Y., Min, Z., & Wei, C. (2014). A Study of Chinese college students' images of the scientist. *International Journal of Contemporary Educational Research*, 1(2), 61-66.
- Kaback, S. (2012). The Draw-a-Reader Test: Informal assessment supporting teacher inquiry. In R. Shagoury & B. M. Power (Eds.), *Living the Questions: A Guide for Teacher-researchers* (pp. 162-166). Portland, Maine: Stenhouse Publishers.
- Knight, M., & Cunningham, C. (2004). *Draw an engineer test (DAET): Development of a tool to investigate students' ideas about engineers and engineering*. In ASEE Annual Conference and Exposition, Salt Lake City, 20-23 June 2004.
- Kõiv, K., Jussila, A., Rantanen, O., & Peitel, T. (2019). Estonian and Finnish students' experiences about international career guidance e-learning course. In C. Pracana & M. Wang (Eds.), *Psychological applications and trends 2019*. Lisbon: InScience Press, 134-137.
- Lau, P. L., Anctil, T., Ee, G. T., Jaafar, J., & Kin, T. G. (2020). Self-concept, attitudes toward career counseling, and work readiness of Malaysian vocational students. *The Career Development Quarterly*, 68(1), 18-31.
- Lee, E., & Kwon, H. (2018). Primary students' stereotypic image of inventor in Korea. *Journal of Baltic Science Education*, 17(2), 252-266.
- Losh, S. C., Wilke, R., & Pop, M. (2008). Some methodological issues with "Draw a Scientist Tests" among young children. *International Journal of Science Education*, 30(6), 773-792.
- Ludwikowski, W. M. A., Vogel, D., & Armstrong, P. I. (2009). Attitudes toward career counseling: the role of public and self-stigma. *Journal of Counseling Psychology*, 56(3), 408-416.
- Medina-Jerez, W. & Middleton, K. (2022). Examining Hispanic preservice teachers' perceptions of scientists in a science methods course. *International Journal on Studies in Education (IJonSE)*, 4(1), 70-87.
- Miele, E. (2014). Using the Draw-a-Scientist Test for inquiry and evaluation. *Journal of College Science Teaching*, 43(4), 36-40.
- Milford, T., & D. Tippett, C. T. (2013) Preservice teachers' images of scientists: Do prior science experiences make a difference? *Journal of Science Teacher Education*, 24(4), 745-762,
- Miller, D. I., Kyle, M. Nolla, Alice H. Eagly, & David H. Uttal (2018). The development of children's gender-science stereotypes: A meta-analysis of 5 decades of U.S. Draw-A-Scientist Studies. *Child Development*, 89(6), 1943-1955.
- Picker, S., & Berry J. (2000). Investigating pupils' images of mathematicians. *Educational Studies in Mathematics* 43, 65-94.
- Reinisch, B., Krell, M., Hergert, S., Gogolin, S., & Krüger, D. (2017) Methodical challenges concerning the Draw-A-Scientist Test: a critical view about the assessment and evaluation of learners' conceptions of scientists. *International Journal of Science Education*, 39(14), 1952-1975.
- Renoe, P. (2003). The Draw-an-Archaeologist Test: A good way to get the ball rolling. *Science Activities*, 40, 31-36.
- Stapleton, A., McHugh, M., Childs, P. E., & Hayes, S. (2018). "To see ourselves as others see us": Post-primary school students' drawings of scientists before and after participation in a career orientation programme. *Action Research and Innovation in Science Education*, 1(1), 15-25.
- Türkmen, H. (2015). Still persistent global problem of scientists' image. *Asia-Pacific Forum on Science Learning and Teaching*, 16(1), 1-21.
- Ucar, S. (2012). How do pre-service science teachers' views on science, scientists, and science teaching change over time in a science teacher training program? *Journal of Science Education and Technology*, 21(2), 255-266.
- Ucar, S., & Uçar, Y. (2016). The stereotypical images of a dentist and how they change over time in a dds program: application of Draw a Dentist Test (DADT). *Acta Poloniae Historica*, 26(3), 419-426.
- Yang, D., Sun, X., Xu, Z., Shen, Z., & Chen, Y. (2018). Pupils' images of the biologist: a small-scale explorative study. *Open Access Journal of Science*, 2(1), 85-87.

## WILL THE CHOICE OF PARENTING STYLE BE AFFECTED BY PARENTS' SELF-EFFICACY AND SELF PERCEPTION OF CONTROL

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### Abstract

Previous studies have widely explored the impacts of different parenting styles on children's developmental outcomes. Authoritative parenting is generally regarded as supportive and nurturing to children's psychological well-being. The concept of "control" is one of the important topics in the study of parenting. Previous studies mainly focused on the impacts of parental control over child discipline. However, the amount of research exploring the association between parental perceived controllability in their parenting practice and the choice of parenting styles is rare. The purpose of this study was to fill up this gap. A total of 157 parents participated in this survey, including 38 fathers and 119 mothers. The mean age of their children was 4.67. Three constructs were designed as independent variables to measure parental attributes on control, including parental efficacy, parental self-control, and parental perceived controllability over their children. This study was conducted within the context of the pandemic situation in which parents allowed their children and themselves to use mobile phones during the pandemic. Parental efficacy was measured by a one-item scale, as proposed by Bandura (2016), which was "How much can you do to control the time your child spends". The lack of parents' self-control was measured by studying how frequently they used their mobile phones with absent-mindedness. Parental perceived controllability was measured by parents' expected time consumption on a mobile phone by their child minus the exact time consumed in their mobile phone usage. The bigger the positive difference represented, the stronger parent's perceived controllability over child discipline. The result showed that the practice of the authoritative parenting style was significantly predicted by parental self-efficacy ( $\beta=0.239$ ,  $p=0.003$ ) and perceived controllability ( $\beta=0.154$ ,  $p=0.050$ ). However, the practice of authoritarian parenting style was predicted by a lack of self-control ( $\beta=0.423$ ,  $p<0.001$ ) and lack of perceived controllability ( $\beta=-0.159$ ,  $p=0.030$ ) but not parental self-efficacy ( $\beta=0.031$ ,  $p=0.670$ ). Similarly, for the practice of the permissive parenting style, it was predicted by a lack of self-control ( $\beta=0.477$ ,  $p<0.001$ ), and a lack of perceived controllability ( $\beta=-0.178$ ,  $p=0.011$ ). It implies that parents with authoritative parenting styles seem to have more internal resources for exercising appropriate parental control in child discipline than parents with authoritarian and permissive parenting styles. Perhaps, these parents may express their difficulty in exercising control in parenting in different ways. Recommendations for future parent education on learning "parental control" will be discussed.

**Keywords:** *Parenting style, parental self-efficacy, self-control, perceived controllability.*

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### 1. Introduction

Parenting has long been a focus of study among different professionals, for example, psychologists, educators, psychotherapists, sociologists, and social workers. While child development is one of the significant concerns in child-rearing, whether parenting is effective will directly determine the qualities of child development outcomes.

In the study of parenting, scholars from different disciplines may have different focuses. For example, psychologists or psychiatrists might emphasize the association between parents' mental health and the parenting process and its impacts on child development outcomes (Tungpunkom et al., 2017). Social workers might focus more on studying the impact of parenting practices or parenting beliefs on child development (Zuar et al., 2021). The topic of parenting styles is a core focus of exploration that has been widely studied. Previous research supported the claim that parents learn the practice of parenting style through intergenerational transmission (He et al., 2020; O'Brien, 2010). In other words, parents learn their parenting styles through their observation and influence from their parents at the time of their childhood experiences, which may become their later parenting styles and practices. That is, parents with

authoritarian parenting practices have their parents with an authoritarian parenting style. However, one may wonder if intergenerational transmission may be the only explanation. This study is to fill up the research gap by exploring what may be other factors to explain parents' choice of which parenting style to practice.

## **2. Literature review**

### **2.1. Parenting Style and parental self-control**

Baumrind (1967) initially developed a three-model parenting style that combines the strategies, behaviors, and attitudes parents apply in child-rearing. Baumrind (1967) proposed two different dimensions in the process of parenting. They are responsive and demandingness. Based on this categorization, she defined three parenting styles: authoritative parenting, authoritarian parenting, and permissive parenting. Authoritative parenting is described as a way of parenting in which parents are both responsive and demanding. Parents with an authoritative parenting style usually care about their children's needs, show parental warmth to their children, and set rules with clear explanations and mutual agreement with the child (Santroc, 2007). Authoritative parents allow their children autonomy and encourage them to explore and learn independence. However, authoritarian parents have high parental demands but low responsiveness. They set strict rules with high standards but little negotiation or explanations. The parenting process involves very little parental warmth and little communication with the child but is very controlling and demanding. Punishment is often the practice in case of disobedience to control their child's behaviors. Permissive parenting is characterized as highly responsive but not demanding. In other words, permissive parents are nurturing and warm. They involve with their child's activities and want to be children's friends. However, there are no rules to let their child follow. The expectation of their child is relatively low, and they barely exercise any discipline to control or regulate their child's behaviors. Previous researchers have recognized that parenting styles are correlated with some psychological or behavioral characteristics (Berge, 2010; DeHart et al., 2006; Park & Walton-Moss, 2012; Sarwar, 2016). A previous study reported that an authoritative parenting style strongly predicted positive outcomes in child behaviors (Schary, 2012). On the other hand, some other studies reported that the authoritarian parenting style was positively associated with controlling parenting (Chao, 1994), and it negatively predicted the children's executive control (Zhang, Yan, Nan & Cai, 2021). However, research on studying the association between parental self-control and parenting style is scarce.

### **2.2. Parental Efficacy**

Self-efficacy is defined as an individual's belief in how well or poorly he or she will handle a specific task based on his ability (Bandura, 1989). The more self-efficacy an individual holds, the more likely he or she will achieve the desired outcome. Parental efficacy can be defined as the "beliefs or judgments a parent holds of their capabilities to organize and execute a set of tasks related to parenting a child" (de Montigny & Lacharité, 2005). Efficacious parents have strong confidence in influencing their child's behavior. They will put more effort into meeting their expectations and persist when meeting obstacles (Bandura, 1999). On the contrary, parents with lower efficacy in a given situation will put less effort. Previous research also supported a negative association between a lower level of parental efficacy belief and a higher level of authoritarian parenting practice with less easygoing parental behaviors (Evans et al., 2012). Therefore, it may be the situation that parents who have a relatively lower level of parental efficacy belief will be more likely to choose an authoritarian parenting style to discipline their child to make sure their child's behaviors are under control.

### **2.3. Parental perceived controllability**

Parental control is one of the core dimensions of parenting practice. Parents with authoritarian parenting style practices were more likely to have more parental control over their children, although the related studies are rare (Cuzzocrea et al., 2015). On the one hand, it is essential to believe that parents who intend to socialize their children need to use authority and provide discipline. However, what will happen to parents if they perceive their parental authority and disciplinary power are not strong enough to socialize their children to behave? A study reported that parents with authoritarian parenting styles added restrictive parental control in the child-rearing style to reduce delinquency in their children (Pezzella, Thornberry & Smith, 2016). Because of this, it predicts that parents with a lower level of perceived controllability may execute more parental control over their children to prevent or reduce negative external misbehaviors, such that it may make them more likely to practice authoritarian parenting style in practice.

This study aims to fill up the research gap in which it explores the associations among four different variables, i.e., parenting styles, parental self-control, parental efficacy, and parental perceived controllability in parenting. Previous research to study these four constructs is rare. Therefore, there are two hypotheses in this study.

- (1) It predicts that parents who practice an authoritative parenting style will have more internal resources on parental attributes on control, such as parental self-efficacy, parental self-control, and parental perceived controllability.
- (2) It predicts that parents who practice an authoritarian parenting style will have fewer internal resources on parental attributes on control, such as parental self-efficacy, parental self-control, and parental perceived controllability.

### 3. Methodology

#### 3.1. Participants

Parents of children aged 3-6 years old were recruited as participants from an English Training Institution. A total of 159 parents were invited to complete the questionnaires, but only 157 participants provided valid data. Among these 157 parents, 38 (24.2%) were fathers, and 119 (75.8%) were mothers. All of them had a lone child in their families. Among these 157 families, 87(55.4%) of the participants' children were boys, and 70 (44.6 %) of their children were girls. Children's age ranged from 3 to 6 years old, with 4.68 years as the mean age.

#### 3.2. Measurements

**3.2.1. Dependent Variable: Parenting Style.** Parenting Style and Dimension Questionnaire (PSDQ)-Short Form was used to measure parents' parenting styles (Robinson et al.,2001). The short version of PSDQ has 32 items to group parents into three parenting styles using a five-point Likert scale (1= never, 5=always). The authoritarian parenting style comprises 12 items and three dimensions: verbal hostility, punishment, and physical coercion. The authoritative parenting style comprises 15 items and three dimensions: support and affection, regulation, and autonomy. The permissive styles are measured by 5 items in one dimension, indulgence. The scores for all items under each dimension were added up and averaged to get the score for that dimension. Similarly, the dimensions' scores for each parenting style were added and averaged to get the score for that parenting style. The higher scores on a particular parenting style represented the style of parenting practice that the participant most likely used in parenting.

**3.2.2. Independent Variables.** The constructs as independent variables measured parental attributes on control, including parental efficacy, parental self-control, and parental perceived controllability over their children. This study was conducted within the context of the pandemic in which parents allowed their children and themselves to use mobile phones during the pandemic. Parental efficacy was measured by a one-item scale, as proposed by Bandura (2016), which was "How much can you do to control the time your child spends". The lack of parents' self-control was measured by studying how frequently they used their mobile phones with absent-mindedness. Parental perceived controllability was measured by parents' expected time consumption on a mobile phone by their child minus the exact time consumed in their child's mobile phone usage. The more significant the positive difference, the stronger it represented the parent's perceived controllability over child discipline.

### 4. Findings

The results supported all hypotheses. By putting authoritative parenting style as the predictor and parental self-efficacy, perceived controllability, and parental self-control as independent variables, the results generated by running a linear regression showed that the practice of authoritative parenting style was significantly predicted by parental self-efficacy ( $\beta=0.239$ ,  $p=0.003$ ) and perceived controllability ( $\beta=0.154$ ,  $p=0.050$ ), but not parental self-control. However, if an authoritarian parenting style replaced the predictor, the practice of authoritarian parenting style was predicted by lack of self-control ( $\beta=0.423$ ,  $p<0.001$ ) and lack of perceived controllability ( $\beta=-0.159$ ,  $p=0.030$ ) but not parental self-efficacy ( $\beta=0.031$ ,  $p=0.670$ ). Similarly, for the practice of a permissive parenting style, it was predicted by a lack of self-control ( $\beta=0.477$ ,  $p<0.001$ ) and a lack of perceived controllability ( $\beta=-0.178$ ,  $p=0.011$ ). In other words, the results showed that parents with the practice of authoritative parenting styles seemed to own more internal resources, such as self-efficacy and perceived controllability, in exercising appropriate parental control in child discipline than parents in authoritarian and permissive parenting styles. The parents with the practice of authoritarian parenting style were those lacking these internal resources. Perhaps, these parents may express their difficulty in exercising control in parenting in different ways.

## 5. Discussion

Most of the previous research on parenting styles was mainly to study their influences on the outcomes in child development. Among this focus of studies, most findings supported the authoritative parenting style to be more effective with positive impacts on children's behaviors than the authoritarian parenting style. However, not much research is to study what factors are influential to the pathway of authoritarian parenting. Among this study theme, most of them supported the claim to explain the choice of parenting style by intergenerational transmission. Learning through observation and first-hand experience of being parented in childhood are important sources of learning how to be a parent. However, the explanation simply by intergenerational transmission seems inadequate to provide a better picture of the development of different parenting styles with the consideration at a micro or individualistic level.

Effective parenting requires not only parenting skills and knowledge but also energy and confidence in the process of parenting. The concern of whether parents' internal resources are adequate and robust enough for parenting seems to be an essential topic for parenting effectiveness. The findings in this study reported that the parental attribute of the control was significantly affecting parents' intention to use authority and power in child discipline, leading to a higher possibility to exercise an authoritarian parenting style. In other words, parents exercising the authoritarian parenting style may represent a specific group of parents who fear losing power and authority in parenting. To secure their control over their children, using the authoritarian parenting style to enforce strict rules and ensure obedience may make them feel more secure in their role as parents, especially when authority and power are both vital to parents.

The findings of this study can provide a new blueprint to develop the curriculum of parent education. In addition to teaching parenting skills and the re-establishment of a parent-child relationship, how to increase a parent's internal resources, especially the sense of parental control, serves as a new direction for parent education. Building up parental self-efficacy is one of the key elements in parent education. Parent educators can run workshops and seminars to help parents enrich their parenting knowledge and learn new parenting skills. More importantly, parent educators are suggested to emphasize building up parents' self-confidence to let them develop a stronger sense of controllability in parenting. This parent education approach will no longer treat parenting as simply a skill training on child-rearing. Instead, parenting can now be viewed as a process of self-development and growth. The parents and their child can both be the ones to benefit.

## References

- Abraham, E., Letkiewicz, A., Wickramaratne, P., Bunyan, M., Van Dijk, M., Gameroff, M., Weissman, M. (2021). Major depression, temperament, and social support as psychosocial mechanisms of the intergenerational transmission of parenting styles. *Development and Psychopathology*, 1-15.
- Bandura, A. (1989). Human agency in social cognitive theory. *American Psychologist*, 44(9), 1175-1184.
- Baumrind, D. (1967). Child care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*, 75(1), 43-88.
- Berge, J. M., Wall, M., Loth, K., & Neumark-Sztainer, D. (2010). Parenting style as a predictor of adolescent weight and weight-related behaviors. *Journal of Adolescent Health*, 46(4), 331-338.
- Chao, R. (1994). Beyond Parental Control and Authoritarian Parenting Style: Understanding Chinese Parenting through the Cultural Notion of Training. *Child Development*, 65(4), 1111-1119.
- de Montigny, F., & Lacharité, C. (2005). Perceived parental efficacy: Concept analysis. *Journal of Advanced Nursing*, 49(4), 387-396.
- Cuzzocrea, F., Barberis, N., Costa, S., & Larcana, R. (2015). Relationship between alexithymia, parenting style, and parental control. *Psychological Reports*, 117(2), 580-596.
- DeHart, T., Pelham, B. W., & Tennen, H. (2006). What lies beneath: Parenting style and implicit self-esteem. *Journal of experimental social psychology*, 42(1), 1-17.
- Evans, C. A., Nelson, L. J., Porter, C. L., Nelson, D. A., & Hart, C. H. (2012). Understanding relations among children's shy and antisocial/aggressive behaviors and mothers' parenting: The role of maternal beliefs. *Merrill-Palmer Quarterly*, 58(3), 341-374.
- He, Y., Liu, C., Chen, Y., Huang, J., & Luo, R. (2020). Intergenerational transmission of parenting style in rural China and the mediation effect of Caregiver's mental health. *Children and Youth Services Review*, 117, 105319.
- O'Brien, H. G. (2010) The Intergenerational Transmission of Parenting Styles of Irish Immigrant Mothers, *Journal of Family Social Work*, 13(5), 395-409.

- Park, H., & Walton-Moss, B. (2012). Parenting style, parenting stress, and children's health-related behaviors. *Journal of Developmental & Behavioral Pediatrics*, 33(6), 495-503.
- Pezzella, F. S., Thornberry, T. P., & Smith, C. A. (2016). Race socialization and parenting styles: Links to delinquency for african american and white adolescents. *Youth Violence and Juvenile Justice*, 14(4), 448-467.
- Santrock, J.W. (2007). *A topical approach to life-span development, third Ed.* New York: McGraw-Hill.
- Sarwar, S. (2016). Influence of parenting style on children's behaviour. *Journal of Education and Educational Development*, 3(2).
- Schary, D. P., Cardinal, B. J., & Loprinzi, P. D. (2012). Parenting style associated with sedentary behaviour in preschool children. *Early Child Development and Care*, 182(8), 1015-1026.
- Tungpunkom, P., Maybery, D., Reupert, A., Kowalenko, N., & Foster, K. (2017). Mental health professionals' family-focused practice with families with dependent children: a survey study. *BMC Health Services Research.*, 17(1).
- Zhang, J., Yan, Z., Nan, W., Cai, D. (2021). Authoritarian Parenting Effect on Children's Executive Control and Individual Alpha Peak Frequency. *Mind, Brain, and Education*, 15(4), 280-288.
- Zuar, L., Chien, K., Lentine, J., Cooley, V., Gerber, L., Ward, M., & Keefer, L. (2021). Does Parenting Style Affect Adolescent IBD Transition Readiness and Self-Efficacy Scores? *Children*, 8(5), 367.

# THE EFFECT OF A SCHOOL PREVENTION PROGRAM ON ALCOHOL CONSUMPTION

## A SOLOMON FOUR GROUP DESIGN

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### Abstract

The aim of this study was to investigate the direct and indirect effect of the Unplugged program on alcohol consumption (AC) as reported by schoolchildren a year after program implementation within a Solomon four group design. A randomized control trial using the Unplugged program was carried out among schoolchildren at 24 primary schools. Twelve schools were assigned to the experimental group (EG,  $n = 798$ ,  $n = 401^{EG \text{ no pre-test}}$ ,  $n = 397^{EG \text{ pre-test}}$ ) while 12 schools were assigned to the control group (CG,  $n = 622$ ,  $n = 298^{CG \text{ no pre-test}}$ ,  $n = 333^{CG \text{ pre-test}}$ ). The mean age of the schoolchildren was 13.5 years,  $SD = 0.59$ ; 47.5% girls. The sample consisted of 1420 schoolchildren in total. The data collection was carried out immediately before implementing the program (T1, experimental and control group with a pre-test), immediately after implementing the program (T2) and a year after program implementation (T3). The consumption of alcohol during the last 30 days (Hibbel, Guttormsson, Ahlström, & Kraus, 2012) was dichotomized for the purposes of the statistical analysis. A serial mediation analysis was performed through the Hayes' PROCESS tool in SPSS 25 (Model 6). The controlled variables in the serial mediation analysis were  $AC^{T2}$ , pretest, and gender. The mediation effect was tested on 5000 samples by means of Bootstrapping. The direct effect of Unplugged on  $AC^{T3}$  was confirmed. The effect of Unplugged on  $AC^{T3}$  was serially mediated by meaningful participation in the community<sup>T3</sup> and satisfaction with oneself<sup>T3</sup>. The results of this study have contributed to the effectiveness of the European school-based drug use prevention program Unplugged among Slovak schoolchildren.

**Keywords:** *Unplugged, alcohol consumption, meaningful participation in the community, satisfaction with oneself, schoolchildren.*

## 1. Introduction

Alcohol consumption is a health problem that can negatively affect the life perspective of young people. The ESPAD Group (2020) reported that 33% of the pupils who participated in the ESPAD study had first tried an alcoholic drink at age 13 or younger and that alcohol was perceived to be easily available. In most countries, the rates of availability of alcohol among boys and girls were found to be similar. Slovakia reported an increase in current alcohol use of five or more percentage points between 2015 and 2019 (ESPAD Group, 2020).

Interventions directed at schoolchildren are essential in preventing drug use initiation, in delaying the age of first use and reducing rates of drug use (Miller & Hendrie, 2009). The European Monitoring Centre for Drugs and Drug Addiction (2019) introduced Unplugged as an effective school-based prevention program designed to reduce substance use in adolescents aged 11-14 across different contexts. The Unplugged program incorporates components focused on critical thinking, decision-making, problem-solving, creative thinking, effective communication, interpersonal relationship skills, self-awareness, empathy, coping with emotions and stress, normative beliefs and knowledge about the harmful health effects of substances (European Monitoring Centre for Drugs and Drug Addiction, 2019, Caria, Faggiano, Bellocco et al., 2011). This study was focused on the direct and indirect effect of this EU-Dap Unplugged program (Vigna-Taglianti, Galanti, Burkhart et al., 2014) on alcohol consumption among Slovak schoolchildren. Firstly, it was hypothesized that there would be a direct effect of Unplugged on schoolchildren's alcohol consumption one year after program implementation. Secondly, it was hypothesized that there would be a direct effect of Unplugged on schoolchildren's meaningful participation in the community (ComPart), as part of a serial mediation. It was assumed that Unplugged as a school-based comprehensive social influence program would have a favourable effect outside



the home on school group activities, on sports and artistic activities and on schoolchildren's willingness to help other people. There has been evidence to suggest the importance of meaningful free-time substance-free activities in drug use prevention that can contribute to the development of new skills, fostering of self-esteem, a sense of meaning, social connectedness, mental well-being and resilience (Santini, Meilstrup, Hinrichsen et al., 2020). Thirdly, in a recent study it was hypothesized that there would be a direct effect of schoolchildren's ComPart on satisfaction with oneself as well as a direct effect of satisfaction with oneself on their alcohol consumption. In order to further clarify the effect of Unplugged, the present study tested a serial mediation model by proposing a theoretically based hypothetical causal chain.

## 2. Design

This study was a randomized control trial using a Solomon four-group design which enabled testing for the presence of pre-test sensitization (Nakazwe & Chanda, 2018, Braver & Braver, 1988).

## 3. Objective

To investigate the direct and indirect effect of the Unplugged program on alcohol consumption as reported by schoolchildren a year after program implementation within a Solomon four group design.

## 4. Methods

### 4.1. Sample and procedure

A randomized control trial using the Unplugged program was carried out among schoolchildren at 24 primary schools. The sampling used a list of primary and secondary schools in Slovakia retrieved from the Institute of Information and Prognosis of Education. The schools were selected from different municipalities on the basis of their geographical locations in East, Central and West Slovakia with six clusters based on population size.

Twelve schools were assigned to the experimental group ( $n = 798$ ) while twelve schools were assigned to the control group ( $n = 622$ ). The sample consisted of 1420 schoolchildren in total. The mean age of the schoolchildren was 13.5 years,  $SD = 0.59$ ; 47.5% girls. In this design, both the experimental and control groups had two subgroups: a pretested group and a non-pretested group. The number of schoolchildren in the pretested experimental group was 397 while the number of schoolchildren in the non-pretested experimental group was 401. The number of schoolchildren in the pretested control group was 333 and the number of schoolchildren in the non-pretested control group was 289.

The data collection was carried out immediately before implementing the program (T1, experimental and control group with a pre-test), immediately after implementing the program (T2) and a year after program implementation (T3).

The data collection was carried out with the informed consent of Parents/guardians and questionnaires were filled in during one lesson in the presence of a trained research team member, without the presence of a teacher. All the data that was collected was anonymized.

The protocol of this study was reviewed and approved by the Ethics Committee at the Faculty of Arts of P. J. Šafárik University.

### 4.2. Measures

**4.2.1. Alcohol consumption.** Alcohol consumption was measured by single item measure: "How often (if ever) have you drunk alcohol during the last 30 days?" The item was rated on a 4-point scale: 1=not at all; 4= 5 or more times (Hibbel, Guttormsson, Ahlström, & Kraus, 2012). For the purpose of this study, the item was dichotomized (0=not used, 1=used).

**4.2.2. Meaningful participation in community (ComPart).** 3 items assessed opportunities for meaningful participation in the community (the Resilience Youth Development Module of the California Healthy Kids Survey, Furlong, Ritchey, & O'Brennan, 2009). The scale measures schoolchildren's meaningful participation or involvement in relevant, engaging, and interesting activities with opportunities for responsibility and contribution in the community. The response scale was: not at all true, a little true, pretty much true, and very much true. A sample item was: "I help other people". The mean scores were created based on the schoolchildren's responses across all items, with higher scores indicating higher meaningful participation in the community. The Cronbach's alpha for the subscale in this questionnaire was 0.69 (T3).

**4.2.3. Satisfaction with oneself.** Satisfaction with oneself (“How satisfied are you usually with yourself?”) was measured on a five-item Likert scale from very satisfied to very dissatisfied (Hibbel, Guttormsson, Ahlström, & Kraus, 2012).

**4.3. Statistical analyses**

The serial mediation analysis was performed through Hayes’ *PROCESS* tool (Field, 2013) in SPSS 25 (Model 6). The mediation effect was tested on 5000 samples by means of Bootstrapping. The controlled variables in the serial mediation analysis were alcohol consumption<sup>T2</sup>, pretest, and gender.

**5. Results**

**5.1. Descriptive analysis**

A chi-square test for independence indicated no significant associations between the groups (experimental group and control group) and alcohol consumption immediately after implementing the program (T2), a year after program implementation (T3) (Table 1) or between gender and alcohol use among schoolchildren of the control group and experimental group at T2 (immediately after program implementation) and T3 (one year after program implementation) (Table 2).

*Table 1. Descriptive results of alcohol use by control / experimental group and pretest at two follow up measures.*

| Group    | T3        |           | Group | T2       |        | T3       |        | T2       |        |          |        | T3                |        |          |        |
|----------|-----------|-----------|-------|----------|--------|----------|--------|----------|--------|----------|--------|-------------------|--------|----------|--------|
|          | ComPart   | S         |       | not used | used   | not used | used   | Pretest  |        |          |        |                   |        |          |        |
|          |           |           |       |          |        |          |        | no       | yes    | no       | yes    | no                | yes    | no       | yes    |
|          |           |           |       | not used | used   | not used | used   | not used | used   | not used | used   | not used          | used   | not used | used   |
| CG       | Mean 8.21 | Mean 3.42 | CG    | 361      | 91     | 294      | 138    | 178      | 46     | 183      | 45     | 136               | 74     | 158      | 64     |
|          | SD 2.88   | SD 1.16   |       | 79.90%   | 20.1%  | 68.10%   | 31.90% | 79.50%   | 20.50% | 80.30%   | 19.70% | 64.80%            | 35.20% | 71.20%   | 28.80% |
| EG       | Mean 8.56 | Mean 3.39 | EG    | 477      | 144    | 430      | 164    | 240      | 82     | 237      | 62     | 219               | 75     | 211      | 89     |
|          | SD 2.70   | SD 1.15   |       | 76.80%   | 23.20% | 72.40%   | 27.60% | 74.50%   | 25.50% | 79.30%   | 20.70% | 74.50%            | 25.50% | 70.30%   | 29.70% |
| $\chi^2$ |           |           |       | ns       |        | ns       |        | ns       |        | ns       |        | 5.57 <sup>*</sup> |        | ns       |        |

Notes: control group (CG), experimental group (EG), T2 (immediately after program implementation), T3 (one year after program implementation), ComPart = Meaningful participation in the community, S = satisfaction with oneself,  $\chi^2$  = Chi-square test, \*p<0.05

*Table 2. Descriptive results of alcohol use by gender at two follow up measures<sup>1</sup>.*

|       | T2       |        |          |        | T3       |        |          |        |
|-------|----------|--------|----------|--------|----------|--------|----------|--------|
|       | CG       |        | EG       |        | CG       |        | EG       |        |
|       | not used | used   | not used | used   | not used | used   | not used | used   |
| boys  | 178      | 50     | 224      | 79     | 148      | 74     | 206      | 84     |
|       | 78.10%   | 21.90% | 73.90%   | 26.10% | 66.70%   | 33.30% | 71.00%   | 29.00% |
| girls | 179      | 40     | 250      | 63     | 143      | 62     | 222      | 78     |
|       | 81.70%   | 18.30% | 79.90%   | 20.10% | 69.80%   | 30.20% | 74.00%   | 26.00% |

<sup>1</sup>Notes: control group (CG), experimental group (EG), T2 (immediately after program implementation), T3 (one year after program implementation)

A chi-square test for independence indicated a significant association between the group which did not receive the pretest, (experimental group and control group) and alcohol consumption a year after program implementation (T3). 74.50% of the schoolchildren in the non-pretested experimental group and 64.80% of schoolchildren in the non-pretested control group reported alcohol consumption a year after program implementation (T3) (Table 1).

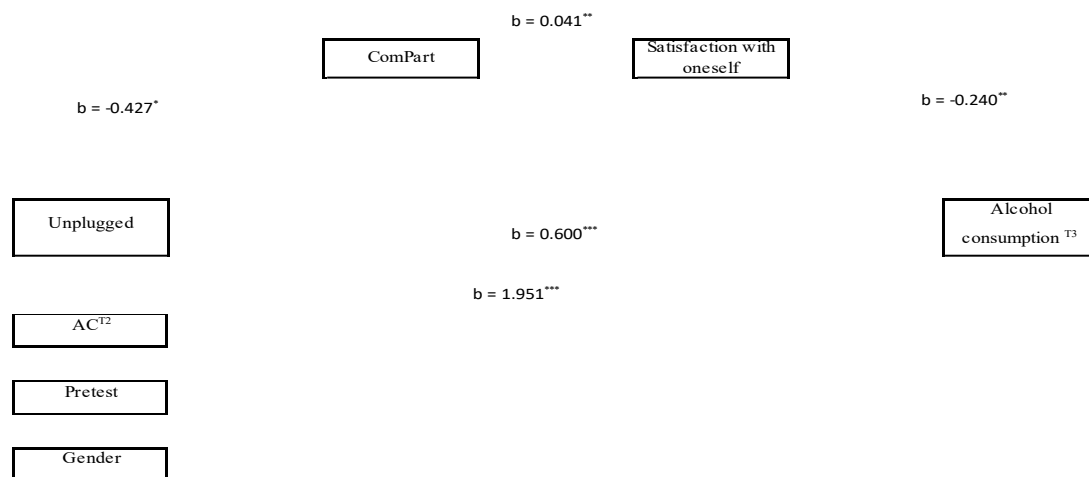
**5.2. Serial mediation**

A serial multiple mediation model was created using ComPart and satisfaction with oneself as the mediators. Alcohol consumption<sup>T2</sup>, pretest, and gender were controlled throughout these analyses. In the serial mediation, the mediators were assumed to have a direct effect on each other, and the independent

variable (Unplugged) was assumed to influence the mediators in a serial way that ultimately influences the dependent variable (alcohol consumption one year after program implementation) (Figure 1).

The data support the serial mediation hypothesis, the long-way specific indirect effect Unplugged → ComPart → satisfaction with oneself → alcohol consumption one year after program implementation was statistically significant (effect: -0.004; 95 % CI: -0.012 to -0.0001). The direct effect of the Unplugged program on alcohol consumption one year after program implementation was statistically significant (effect: -0.600,  $p < 0.001$ ). 68.10% of schoolchildren in the control group and 72.40% of schoolchildren in the experimental group did not report alcohol consumption one year after program implementation (Table 1).

Figure 1. Statistical serial mediation model.



Notes: AC<sup>T2</sup> = alcohol consumption, pretest, and gender were controlled throughout these analyses, T<sup>2</sup> = immediately after program implementation, T<sup>3</sup> = one year after program implementation, ComPart = Meaningful participation in community, a dashed line = nonsignificant effect, \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$

## 6. Discussion and conclusions

The results of this study have confirmed the long-way mediation that represented a causal chain of explored mediators (Demming, Jahn, & Boztuğ, 2017). Two shortcut mediations, which each include only one of the explored mediators, were not statistically significant. It means that (i) Unplugged affected schoolchildren's ComPart although the direct effect of ComPart on alcohol consumption was not confirmed, (ii) Unplugged did not affect satisfaction with oneself directly, but a direct effect of satisfaction with oneself on alcohol consumption was found. These findings support previous findings which have confirmed that after-school programs, volunteering, community, social group activities, as well as helping behaviour were associated with self-esteem and mental health (Santini, Stougaard, Koyanagi et al., 2020, Santini, Meilstrup, Hinrichsen et al., 2020, Durlak, & Weissberg, 2007, Wilson, 2000) and support the association between self-esteem and alcohol consumption (Richardson, Kwon, & Ratner, 2013). Based on the results of this study, schoolchildren's ComPart did not affect alcohol consumption directly but indirectly through satisfaction with oneself.

A direct effect of Unplugged on schoolchildren's alcohol consumption one year after Unplugged implementation was confirmed simultaneously controlling for alcohol consumption<sup>T2</sup>, pretest, and gender. These results have extended previous findings related to the effectiveness of Unplugged in reducing episodes of drunkenness among pupils in seven European countries (Vigna-Taglianti, Galanti, Burkhart et al., 2014). There was no effect of the intervention found for current alcohol use among adolescents in the Czech Republic (Gabrhelik, R., Duncan, A., Miovsky et al., 2012).

The findings of this study contribute to the growing body of evidence of the need to systematically evaluate school-based drug use prevention programmes. The limitations and strengths of this study must also be highlighted. The most important limitation of this study was that the measures were self-reported while the strength of this research was the cluster randomized controlled trial conducted with a Solomon four group design to filter out the effects of pretest sensitization (Mai, Takahashi, & Oo, 2020).

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### References

- Braver, M. W., & Braver, S. L. (1988). Statistical treatment of the Solomon four-group design: A meta-analytic approach. *Psychological bulletin*, *104*(1), 150-154.
- Caria, M. P., Faggiano, F., Bellocco, R., Galanti, M. R., & EU-Dap Study Group. (2011). Effects of a school-based prevention program on European adolescents' patterns of alcohol use. *Journal of Adolescent Health*, *48*(2), 182-188.
- Demming, C. L., Jahn, S., & Boztuğ, Y. (2017). Conducting mediation analysis in marketing research. *Marketing: ZFP–Journal of Research and Management*, *39*(3), 76-93.
- Durlak, J. A., & Weissberg, R. P. (2007). *The impact of after-school programs that promote personal and social skills*. Chicago, IL: Collaborative for Academic, Social, and Emotional Learning.
- ESPAD Group. (2020). *ESPAD report 2019 results from the European School Survey Project on Alcohol and Other Drugs*. Luxembourg: EMCDDA Joint Publications, Publications Office of the European Union.
- European Monitoring Centre for Drugs and Drug Addiction. (2019). *European Prevention Curriculum: a handbook for decision-makers, opinion-makers and policy-makers in science-based prevention of substance use*. Luxembourg: Publications Office of the European Union.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics*. London: Sage.
- Furlong, M. J., Ritchey, K. M., & O'Brennan, L. M. (2009). Developing norms for the California Resilience Youth Development Module: Internal assets and school resources subscales. *The California school psychologist*, *14*(1), 35-46.
- Gabrhelik, R., Duncan, A., Miovsky, M., Furr-Holden, C. D. M., Stastna, L., & Jurystova, L. (2012). "Unplugged": A school-based randomized control trial to prevent and reduce adolescent substance use in the Czech Republic. *Drug and Alcohol Dependence*, *124*(1-2), 79-87.
- Hibbel, B., Guttormsson, U., Ahlström, S., & Kraus, L. (2012). *The 2011 ESPAD Report. Substance use among students in 36 European Countries*. Stockholm: Modintryckoffset AB, ISBN 978-91-7278-233-4.
- Mai, N. N., Takahashi, Y., & Oo, M. M. (2020). Testing the Effectiveness of Transfer Interventions Using Solomon Four-Group Designs. *Education Sciences*, *10*(4), 92.
- Miller, T. R., & Hendrie, D. (2009). *Substance abuse prevention dollars and cents: A cost-benefit analysis*. Rockville, MD: US Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Prevention.
- Nakazwe, K. C., & Chanda, P. (2018). Monitoring and Evaluation Designs. *Participatory Monitoring and Evaluation for Projects, Programmes or Policies*, 85.
- Richardson, C. G., Kwon, J. Y., & Ratner, P. A. (2013). Self-esteem and the initiation of substance use among adolescents. *Canadian journal of public health*, *104*(1), e60-e63.
- Santini, Z. I., Meilstrup, C., Hinrichsen, C., Nielsen, L., Koyanagi, A., Koushede, V., ... & Madsen, K. R. (2020). Associations between multiple leisure activities, mental health and substance use among adolescents in Denmark: a nationwide cross-sectional study. *Frontiers in behavioral neuroscience*, *14*, 232.
- Santini, Z. I., Stougaard, S., Koyanagi, A., Ersbøll, A. K., Nielsen, L., Hinrichsen, C., ... & Koushede, V. (2020). Predictors of high and low mental well-being and common mental disorders: findings from a Danish population-based study. *European Journal of Public Health*, *30*(3), 503-509.
- Vigna-Taglianti, F. D., Galanti, M. R., Burkhart, G., Caria, M. P., Vadrucci, S., & Faggiano, F. (2014). "Unplugged," a European school-based program for substance use prevention among adolescents: Overview of results from the EU-Dap trial. *New directions for youth development*, *2014*(141), 67-82.
- Wilson, J. (2000). Volunteering. *Annual review of sociology*, *26*(1), 215-240.

## DO THE DEMOGRAPHIC VARIABLES CONTRIBUTE TO EMOTION REGULATION AND EMPATHY AMONG NAVY PERSONNEL?

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### Abstract

Education level and work duration are some of the factors that may enhance one's understanding of the phenomena in their work environment. Specific improvements include comprehending other people's perspectives, capably managing emotions, and espousing a receptive attitude. To examine these occurrences, a study was conducted involving 66 navy personnel from different academic backgrounds. Results showed that the education level of the participants contributed to 8.4% of the variance in cognitive empathy and 8.5% of the variance in emotion regulation. Navy personnel who scored high in terms of educational attainment also had high scores in cognitive empathy and emotion regulation. However, such effects were not found with respect to affective empathy. Work duration had no effect on the three dependent variables (cognitive empathy, affective empathy, and emotion regulation). This study's outcomes may help us reflect on the reality that education level may help enhance our capacity and ability to regulate emotions. The findings were thoroughly discussed in comparison with past studies and relevant theories, with a focus on the personnel of a naval base located in Sepanggar, Kota Kinabalu in Sabah, Malaysia.

**Keywords:** *Emotion regulation, cognitive empathy, affective empathy, navy personnel.*

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### 1. Introduction

Empathy and emotion regulation are two essential elements of interaction in any profession or organisation. Empathy has previously been studied in various professions, such as medical staff (Cunico et al., 2012; Hakansson et al., 2018; Petruccil et al., 2021), teachers (Wilson, 2020; Makoelle, 2019), and military professions (Roopa & Joseph, 2007; Cosmas & Kamarulzaman, 2021). Lack of empathy and emotion regulation may affect social interaction and understanding among workers within an organisation. Navy personnel, who typically work in teams and deal with various tasks in different locations, need to understand each other and manage their emotions well. This can foster good teamwork and prepare them for any circumstance that they may face. McDougall (2019) states that today's military leaders must properly understand, develop, and apply empathy to build cohesive teams and make better decisions in future operating environments. This was supported by Yap (as cited in Parmar, 2016), who served as a Navy SEALs and observed that empathy is an essential element that contributes to strong teamwork. Empathy is about gaining understanding, not generating personal feelings. According to Herink (2021), empathy can help enhance a group's desire to work together to achieve a shared mission. Understanding among the members in a group can create good relationships and better communication. Empathy can also help build teams, nurture new generations of leaders and inspire followers. Empathy that is nurtured among team members may help to build bonds, provide insight, guide understanding, sharpen people skills, and cultivate better communication (Herink, 2021). In a military context, leaders need to be empathic when dealing with their subordinates (Roopa & Joseph, 2007), and this may promote good team spirit among team members and leaders.

Some psychologists have stated that affective empathy is innate and can be perceived in infants. This is supported by the study of Roth-Hanania et al. (2011), who found that indicators of empathy (affective and cognitive) are already present in infants aged eight to ten months and will develop gradually until the age of two years. Proponents of this position suggest that empathy is further strengthened through social learning by engaging in voluntary or charity work. Empathy develops as an individual grows and becomes cognitive empathy, which allows one to feel the condition of others who

are in need. It is believed that empathy can be instilled and learned through education, personal experiences, or engaging in voluntary and community work. People with high levels of empathy can imagine themselves in others' situations and can feel and understand other people's difficulties and concerns. This may lead to more understanding and closer relationships. Wilding (n.d.) states that empathy is like a glue that holds relationships together, especially in a busy, complex, and stressful world. The inability to empathise can lead to conflicts at work, in families, and in society.

The term 'empathy' was first introduced in 1909 by psychologist Edward Titchener as a translation of the German term *Einfühlung*, which means 'feeling into' (Numanee et al., 2020). Teens with a supportive family and secure attachment demonstrated more empathy with close friends (Jaggo, 2021). Empathy is helpful to a person experiencing negative moments and who needs understanding from others. Conversely, it may add burden and distress when a person empathically shares the unhappiness or misery of other people (Sutherland, 1986). There are different types of empathy, such as cognitive, affective, and compassionate empathy. Cognitive empathy is referred to as perspective-taking, which suggests the idea of putting ourselves in someone else's shoes. Cognitive empathy can be attained by logically embracing another's situation and is attached to knowing what others feel and what they might be thinking. Cognitive empathy skills can be learned through reasoning and connecting with others through thoughtful reflection. Affective empathy, on the other hand, is embedded in the emotional response to another person's feelings or predicaments. It is inherent, which allows a person to experience another's emotions (Numanee et al., 2020). When we experience affective empathy, we are moving from the cognitive perspective into shared emotional experiences (Clarke, 2020). The third type of empathy is compassionate empathy, which is more operational in the sense that it leads a person to understand others' feelings with them and to offer help if it is necessary.

Based on the preceding statement, empathy may help us to understand and feel others' emotions and situations or to appreciate their perspective. Various factors have been identified which can help to enhance people's empathy, such as education level and work duration. For instance, a study by Cunico et al. (2012) found that 103 nursing students who were engaged in a three-year degree programme showed higher levels of empathy after they had completed their courses. This showed that empathy can be learned and enhanced through education and practice. This study is in line with Petruccil et al. (2021), who found that third-year health students in Albania showed higher empathy than first- and second-year students. It was revealed that monitoring empathy levels is fundamental to the adoption of useful educational strategies by faculties in order to improve empathy skills in health professional students and guarantee better care of patients, especially those in need of psychological support. Another study by Hakansson et al. (2018) also found that 326 undergraduate students in their sixth semester of an undergraduate nursing programme expressed more empathy than undergraduate students in their second semester and one-year master's nursing students.

Among military groups, Cosmas and Kamaruzzaman's (2021) study found that navy personnel who participated in a one-day workshop on emotion management scored higher in identifying seven types of emotions compared to those who did not attend the workshop. This showed that participating in educational programmes can help to increase people's knowledge of emotions. However, another study by Roopa and Joseph (2007) contradicted this and found that military medical officers with higher education showed lower empathy. This implies that education does not make a person more sensitive to other people's feelings. In reality, highly educated people may tend to be more analytical, rationalising, and intellectualising, making them less sensitive to others' feelings. The higher one advances in the formal education system, the more emphasis is placed on intellectual and cognitive abilities.

There is still a lack of studies that focus on empathy among military members; thus, to understand the phenomena, this study was conducted to understand the effects of specific demographic factors (education level and work duration) on empathy and emotional regulation among navy personnel. The study focuses on navy personnel because this profession demands various tasks that need to be conducted in groups. In addition, navy personnel can experience a breadth of stressors as identified by Roopa and Joseph (2007), who found that service members in the military are constantly exposed to a variety of stressors that are more severe and intense compared to those encountered in civil professions. Further, due to imposed discipline and lack of opportunities for verbal expression, navy personnel are emotionally more inhibited and need appropriate care, concern, and understanding of their problems (Roopa & Joseph, 2007). In addition, empathy is the least understood trait of the Army Leadership Requirements Model but is arguably among the most important. It is important for navy personnel to understand human characteristics like empathy in order to build cohesive teams based on trust and understanding for achieving and accomplishing tasks. In addition, armed forces need leaders who can

apply empathy to understand and lead their team members. Military leaders must not confuse empathy with ‘being soft’ (McDougall, 2019). Wetten (2020) stated that any aspiring leader should be familiar with their subordinates as much as they genuinely can, supported by the quotation, ‘no one cares how much you know until they know how much you care’. In other words, subordinates will only listen to their leaders when they are confident that their leaders genuinely care about them as individuals with needs.

## 2. Objectives

To explore the preceding phenomenon, a study was conducted to examine the effects of two demographic factors—education level and work duration—on empathy and emotional regulation.

## 3. Method

### 3.1. Study design

The study was based on a survey involving 66 navy personnel who worked at the same naval base. Participants were selected based on intentional and random sampling. The inclusion criteria required that all participants were navy personnel who worked at the Kota Kinabalu Naval Base at Sepanggar Bay, Kota Kinabalu and who had already worked there for at least one year.

### 3.2. Research instrument

A set of questionnaires consisting of four parts was used: Part A measured the demographic profile. There were 10 items used to measure the participants’ demographics, including gender, academic level, age, ethnicity, and occupation. Part B measured emotional regulation. The emotional regulation scale consisted of two subscales: the cognitive reappraisal facet (items 2, 4, 6, and 9) and the expressive suppression facet (items 1, 3, 5, 7, 8, and 10) and developed by Gross and John (2003). Sample items for the cognitive reappraisal facet included ‘When I want to feel more positive emotions (such as joy or amusement), I change what I am thinking about’, and ‘When I am feeling positive emotions, I am careful not to express them’. Sample items for expressive suppression facet are ‘I keep my emotions to myself’ and ‘When I am feeling negative emotions, I make sure not to express them’. Part C measured empathy using the Basic Empathy Scale (BES) is a 20-item scale developed by Jolliffe and Farrington (2006). The participants had to give the following ratings on a 5-point Likert-type scale: 1 for *strongly disagree*, 2 for *disagree*, 3 for *neither agree nor disagree*, 4 for *agree*, and 5 for *strongly agree*. The sample items were: ‘Seeing a person who has been angered has no effect on my feelings’ and ‘I can understand my friend’s happiness when they do well at something’. In a two-factor model (Jolliffe & Farrington, 2006), nine items assess cognitive empathy (Items 3, 6, 9, 10, 12, 14, 16, 19, and 20), and 11 items assess affective empathy (Items 1, 2, 4, 5, 7, 8, 11, 13, 15, 17, and 18). All participation was voluntary and anonymous.

## 4. Results

Of the 66 navy personnel, there were 52 males and 14 females with a mean age of 31.12 ( $SD = 6.60$ ). The mean for work duration was 11.48 ( $SD = 7.29$ ). Other demographic information can be found in Table 1.

Table 1. Demographic Profile of Navy Personnel ( $n = 66$ ).

| Variables/Groups                                  | Frequency | Percent (%) |
|---|-----------|-------------|
| <b>Education level</b>                            |           |             |
| The Malaysian Certificate Education (SPM)         | 40        | 60.60       |
| The Higher Malaysian Certificate Education (SPTM) | 10        | 15.20       |
| Undergraduate                                     | 14        | 21.20       |
| Post-graduate (master’s/PhD)                      | 2         | 3.00        |
| <b>Work duration</b>                              |           |             |
| 1–5 years   | 23        | 34.8        |
| 5–10 years  | 12        | 18.2        |
| More than 11 years                                | 31        | 47.0        |

The simple regression results show that education level contributed to 8.4% of the variance in cognitive empathy and 8.5% of the variance in emotion regulation among the participants. Navy personnel who scored high in terms of educational attainment also showed a high score in cognitive empathy and emotion regulation. However, such effects were not found with respect to affective empathy. Work duration had no effect on the three dependent variables (cognitive empathy, affective empathy, and emotion regulation).

*Table 2. Simple Regression Analyses of the Effects of Education Level and Work Duration on Empathy and Emotion Regulation.*

| Variables              | R square | Beta | Sig |
|------------------------|----------|------|-----|
| <b>Education level</b> |          |      |     |
| Cognitive empathy      | .084     | .29  | .02 |
| Affective empathy      | .001     | .04  | .78 |
| Emotion regulation     | .085     | .29  | .02 |
| <b>Work duration</b>   |          |      |     |
| Cognitive empathy      | .00      | .02  | .89 |
| Affective empathy      | .01      | -.10 | .40 |
| Emotion regulation     | .01      | -.10 | .45 |

## 5. Discussion

### 5.1. The effect of education level and work duration on empathy and emotion regulation

The study showed that only education level showed positive effects on cognitive empathy and emotion regulation, while work duration did not show any positive significant effect on all dependent variables. Education level can help to enhance navy personnel's cognitive and emotion regulation but not their affective empathy. These findings are also supported by previous studies (e.g., Cunico et al., 2012; Hakansson et al., 2018; Petruccil et al., 2021), which revealed that nurses and health students showed higher levels of empathy when they had more years of study in their degree. Like other critical skills, empathy can be developed when we practice it, although individuals can differ in their capacity to empathise (McDougall, 2019). This aspect makes it imperative for the development of an efficient tool to measure empathic ability (Roopa & Joseph, 2007). Wetten (2020) stated that empathy is a valued skill, and it is also becoming a rarer one. Younger recruits who were immersed in the digital world had the potential to lack of empathy; therefore, there is a need to emphasise empathy in their educational programmes. Regarding work duration, this study showed that it did not contribute to empathy and emotion regulation. This is perhaps due to other elements that are more prominent in enhancing navy personnel's empathy, such as their education level. In addition, according to a study completed in 2021 by the State of Workplace Empathy Study, there is a lack of empathy in all organisations. It was found that only 1 in 4 employees believed that empathy within their organisation was adequate (Peterson, 2020). This might be one of the reasons that work duration in this current study did not show any effect on empathy or emotional regulation. Based on their study of prosocial emotions, Cameron et al. (2019) suggested that showing empathy is not easy, especially when dealing with strangers, because it requires cognitive work. Learning empathy requires time and effort, and practicing it is a challenge. This is because our innate levels of empathy are closely related to our personality and upbringing (Quellmaz, 2021). Empathy, however, can be improved through other external factors, such as education level—as revealed in this current study—and other demographic factors that need to be explored thoroughly. Demographical factors can contribute more to either cognitive or affective empathy. Thus, learning empathy requires one's mental and emotional energy, and they must be willing to learn and practice empathy in their daily life.

## 6. Conclusion

It is important to discuss empathy within organisations like the navy. As MacDougall (2019) stated, there is a need to encourage the self-development of empathy by using it as an important selection criterion for command and other key leadership positions. If people are central to both leadership and warfare, we need leaders who can decipher human terrain just as well as they can physical terrain. The human behavior is complex; therefore, army leaders need empathy to better understand the experiences, perspectives, and feelings of their subordinates and thus to make better decisions for the benefit of the entire navy.



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### References

- Cameron, C. D., Hutcherson, C. A., Ferguson, A. M., Scheffer, J. A., Hadjiandreau, E., & Inzlicht, M. (2019). *Empathy is hard work: People choose to avoid empathy because of its cognitive cost* In Press, Journal of Experimental Psychology, General
- Clarke, J. (2020, April 07). Cognitive vs. emotional empathy, <https://www.verywellmind.com/cognitive-and-emotional-empathy-4582389>
- Cunico, L., Sartoni, R., Marognoli, O., Meneghini, A. M. (2012). *Developing empathy in nursing students: A cohort longitudinal study*, <https://doi.org/10.1111/j.1365-2702.2012.04105.x>
- Cosmas, G.G., & Kamarulzaman, R.H. (2021). A Study of Two Groups of Navy in Identifying Type of Emotions, Regulating and Understanding Emotions, *1st Borneo Seminar Proceeding*, 7-8 September 2021
- Gross, J.J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85, 348-362.
- Wilding, M. (n.d.). 7 habits of highly empathetic people follow these steps to focus on what matters: Connection, <https://www.inc.com/melody-wilding/7-habits-of-highly-empathetic-people.html>
- Jaggo, K. (2021, August 05). Empathetic teens come from more secure homes, study says, <https://www.verywellmind.com/empathetic-teens-come-from-more-secure-homes-study-says-5194459>
- Numanee, I. Z., Zafar, N., Karim, A., & Ismail, S. A. (2020). Developing empathy among first-year university undergraduates through English language course: A phenomenological study, *Heliyon*, 6, 2405-8440. <https://reader.elsevier.com/reader/sd/pii/S2405844020308653?token=4270ACA9E36831293F73C05C2520121D6499C4DBD94AFB98869F4608350263F226C8AD0B86557700AE04C6935AB568FF&originRegion=eu-west-1&originCreation=20211126132907>
- Petrucil, C., Gaxhjal, E., La Cerral, C., Caponnetto, V., Masotta, V., Dantel, A., & Lancia, L. (2021). Empathy Levels in Albanian Health Professional Students: An Explorative Analysis Using the Jefferson Scale of Empathy, <https://doi.org/10.1177/21582440211032192>
- Roopa, C.G., & Joseph, C. (2007). A preliminary study on empathy and personality in military medical officers, *Original Article*, 51(2), 28-39
- Sutherland, M. B. (1986). Education and Empathy. *British Journal of Educational Studies*, 34(2), 142-151. <https://doi.org/10.2307/3121323>
- Herink, A. (2021, January 12). *Empathy: A leader's greatest skills*. Vanderbilt University, <https://www.vanderbilt.edu/bass-military-scholars/2021/01/12/empathy-a-leaders-greatest-skill/>
- Hakansson, E. J., Holmström, I. K., Lindqvist, A. O., Sundler, A. J., Hochwälder, J., & Hammar, L. M. (2018). Empathy levels among nursing students: A comparative cross-sectional study, *Nursing Open*, <https://doi.org/10.1002/nop.2.280>.
- Makoelle, T. M. (2019). Teacher empathy, A prerequisite for an inclusive for an inclusive classroom, In M. A Peters (ed, pp1-6), *Encyclopedia of Teacher Education*, <https://doi.org/10.1007/978-981-13-1179-6-43-1>
- McDougall, J. (2019). Empathetic Leadership Understanding the Human Domain. Military Review. <https://www.armyupress.army.mil/Portals/7/military-review/Archives/English/ND-19/McDougall-Empathetic-Leadership.pdf>
- Parmar, B. (2016, December 13). *Want to be more empathetic? Here's some advice from a Navy SEAL*. <https://www.weforum.org/agenda/2016/12/what-a-navy-seal-can-teach-business-leaders-about-empathy/>
- Roth-Hanania, R., Davidov, M., & Zahn-Waxler, C. (2011). Empathy development from 8-16 month: Early signs of concern for other, *Infant Behavior and Development*, 34(3), 447-458
- Quellmalz, R. (2021, August 06). Empathy in the workplace has never been more important, *Topic Insights*, <https://topicinsights.com/work-life/importance-of-empathy-in-the-workplace/>
- Wilson, A. (2020). *A Study of Empathy and Teacher Self-Efficacy Among Preservice Early Childhood Educators*, Master Thesis, East Tennessee State University.

## STEREOTYPES TOWARD VOLUNTARILY CHILDLESS PEOPLE

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### Abstract

Research shows that people are perceived differently according to their parenting status. In particular, people who are voluntarily childless people are perceived more negatively than parents or people who are involuntarily childless people. Based on this information, the present research aims to examine how women and men who are voluntarily childless people are perceived in Turkey, a culture that cares about children. In this study, the participants (N = 35; mean age = 28.34) were asked to write down "the adjectives that come to mind when they think of women and men who do not want to have children". Participants were reached through an online data website <http://www.surveey.com>. Next, participants' responses were categorized using thematic analysis: personality traits (positive and negative), independence, and anxiety. According to the themes, men who were voluntarily childless were stereotyped more negatively than women who were voluntarily childless. Positive personality traits included realistic and hardworking (e.g., career-wise, workaholic, and hardworking) for both women and men, but women were also perceived as sociable and confident (e.g., successful, strong). Negative personal traits indicated that both groups were perceived as irresponsible and egoistic. However, men were also perceived as immature and womanizers (e.g., casanova, playboy). In addition, anxiety was a prominent theme for both groups. However, in this theme, while the emphasis was on the material things of men, the pregnancy period and body deterioration were emphasized in women.

**Keywords:** *Stereotypes, parental status, voluntarily childless.*

### 1. Introduction

People generally believe that everyone will get married (DePaulo, 2007; DePaulo & Morris 2005). This belief continues with couples who will have children. People perceive parenthood as a moral imperative (Ashburn-Nardo, 2017). But rates show that birth rates are falling (Turkish Statistical Institute, 2020). In the literature, people's unwillingness to be parents have been studied with terms such as "voluntarily childless", "childfree people" (e.g., Bays, 2017; Somers, 1993). These studies show that childfree people are evaluated differently from parents. Thus, this study aims to examine, with a qualitative study, how voluntary childless women and men are perceived in Turkey, where it is important to have children. In addition, whether the voluntary childless people are evaluated differently from the parents is another aim of the study.

Women who are parents were described as concerned, loving, hard-working, conventional, and patient, while childfree women were perceived as nonconforming, self-fulfilled, materialistic, intelligent, and individualistic (Callan, 1983). Childfree people were also perceived as significantly less psychologically fulfilled than parents (Ashburn-Nardo, 2017). Bays (2017) stated that mothers were perceived as warmer than competent, and voluntarily childless women were perceived as more competent than warm. In addition, mothers were the most admired group, eliciting helping behaviors; and childfree women elicited envy, disgust, and harmful behaviors. In summary, according to this study emotions, and behaviors toward women vary with parental status. Somers (1993) showed that childfree people were negatively stereotyped by relatives and their friends. According to this study, women were evaluated more negatively than men. Accordingly, voluntarily childfree targets elicited significantly greater moral outrage than did targets with two children (Ashburn-Nardo, 2017). In another study, childfree men were perceived as less caring and driven than involuntarily childless men and fathers, while voluntary childless women were perceived as less driven (Lampman & Dowling-Guyer, 1995).

People may decide not to have children for various reasons. For example, traditional gender roles have negatively correlated to voluntary childlessness (Waren & Pals, 2013). According to Waren and Pals (2013), education has also increased the probability of not having children in women. Other studies have

also shown the relationship between education level and voluntary childlessness. Research on attitudes towards voluntary childlessness in Turkey (Bahtiyar-Saygan & Sakallı-Uğurlu, 2019) showed that higher education predicts more positive attitudes towards childlessness. The study also included younger people who tended to support childlessness choice.

## **2. Methods**

### **2.1. Participants and procedure**

The sample included 35 (24 female, 11 male) participants (age from 18 to 60;  $M = 28.34$ ,  $SD = 7.72$ ). Sixteen participants are not in a relationship, nine participants are married, and ten are in a relationship. Five participants have children. Participants were asked to write down "the adjectives that come to mind when they think of women and men who do not want to have children" and "the adjectives that come to mind when they think of mothers and fathers". Participants reached to research through an online data website <http://www.surveeey.com>. According to Patton (2014), the basic meanings in a text are "theme". The words and themes in the text are analyzed by content analysis. In this study, thematic analysis was performed after the answers were collected. Firstly, all responses were reviewed. Secondly, coding was done. Finally, the codes were included in the appropriate themes.

### **2.2. Voluntarily childness women**

"Free" (frequency 11) was coded most frequently for voluntarily childless women. At the same time, participants have stated that these women are individualistic, irresponsible and career-oriented (frequency 3). All the stereotypes for voluntarily childless women have included three themes: Personal traits, independence, and anxiety.

Personality traits are divided into two sub-themes: negative and positive. The codes included in the negative traits (frequency 15): irresponsible, incompetent, self-centered, arrogant, selfish, coward. The codes included in the positive traits (frequency 34): social, hard-working (career-oriented, workaholic, idealistic), confident (successful, strong), and realistic (logical, realistic, realist).

Independence (12): Freedom (free, independent).

Anxiety (9): anxiety; worries about pregnancy, body deterioration, future, confidence, parenting, weight.

### **2.3. Voluntarily childness men**

Participants rated voluntary childless men with fewer different characteristics than voluntary childless women. Participants stated that these people do not want responsibility (frequency 11). However, these men were considered to be selfish, anxious, and free (frequency 4). All the characteristics for voluntary childless men have included three themes: personal traits, independence, and anxiety.

Personal traits are divided into two sub-themes. Positive traits (frequency 5): realistic (logical, realist), hardworking. Negative traits: (frequency 24): irresponsible, egoistic, womanizer, women-chaser, immature.

Independence (frequency 4): free.

Anxiety (frequency 11): anxiety; worries about materiality, parenting.

### **2.4. Women who are parents**

Responses of the participants were divided into three themes: personal traits, family responsibility, physical appearance

Similar to the previous two groups, the theme of personal traits is divided into two sub-themes as positive and negative. Positive traits codes (frequency 37): responsibility, mature, strong, altruistic, empathetic, compassionate. Negative traits codes (frequency 27): impetuous, authoritarian, anxious, irritable.

Family responsibility (frequency 23): tired, sleepless, always thinking of her child, unhappy, hopeless.

Physical appearance (frequency 6): ugly, neglected.

### **2.5. Men who are parents**

The characteristics for this group are divided into two themes: personal traits vs family responsibility.

Personality traits: Positive personality traits (frequency 19): responsible, compassionate. Negative personality traits (frequency 9): irresponsible, anxious.

Family responsibility (frequency 16): protector, unhappy, inconsiderate, unaimed, tired.

### 3. Discussion

The results showed that people were evaluated according to their parental status. Voluntarily childless women were rated with more positive characteristics than volunteer childless men. Men have more negative traits than women. Similarly, the theme of independence was emphasized more for women. The unexpected result in this study is that childfree women have the positive characteristics than negatives. These results may be related to the young sample of the research. Thus, Bahtiyar-Saygan and Sakallı-Uğurlu (2019) emphasized that young people supported voluntary childlessness more. At the same time, participants are well-educated in this research. Future studies should reach people from different age groups and different education levels. However, the results of this study are consistent with previous studies in terms of education and age (Bahtiyar-Saygan & Sakallı-Uğurlu, 2019; Waren & Pals, 2013). Also, not women, but childfree men have more negative traits than positive traits. The remarkable result here is that men are evaluated as a womanizer. A similar result was obtained in the study of Sakallı-Uğurlu, Türkoğlu, Kuzlak, and Gupta (2018) in which they examined stereotypes against single men and women in Turkey. In other words, single men in Turkey were also perceived as women-chaser. Accordingly, it may be said that men who denied marriage and having children, which are accepted as the norm, are similarly stereotyped.

The results showed that parents have more positive characteristics than negative characteristics. Participants believed that fathers are irresponsible people. As traditional gender roles expect childcare on women, fathers may be thought to be more careless to children. In the theme of family responsibility, “be tired” was emphasized for mothers, while protectionism is emphasized for fathers. This result maybe since the traditional Turkish family structure. According to common belief, men should protect women and be responsible for them (Glick & Fiske, 1996; Sakallı-Uğurlu, 2002).

An important result for parents is that physical appearance is emphasized in mothers' characteristics, but not for fathers. Accordingly, although men do not physically change after having children, the same is not the case for women. Moreover, physical appearance was not emphasized in childfree women. These results may be related to the fact that the participants thought that mothers were tired, sleepless, or constantly spending time with their children.

### References

- Ashburn-Nardo, L. (2017). Parenthood as a moral imperative? Moral outrage and the stigmatization of voluntarily childfree women and men. *Sex roles, 76*(5), 393-401.
- Bahtiyar-Saygan, B. & Sakallı-Uğurlu, N. (2019). Development of attitudes toward voluntary childlessness scale and its associations with ambivalent sexism in Turkey. *Journal of Family Issues, 40*(17), 2499-2527.
- Bays, A. (2017). Perceptions, emotions, and behaviors toward women based on parental status. *Sex Roles, 76*(3-4), 138-155.
- Callan, V. J. (1983). Perceptions of parenthood and childlessness: a comparison of mothers and voluntarily childless wives. *Population and Environment, 6*(3), 179-189.
- DePaulo, B. M. (2007). *Singled out: How singles are stereotyped, stigmatized, and ignored, and still live happily ever after*. New York, NY: St. Martin's Press
- DePaulo, B. M., & Morris, W. L. (2005). Singles in society and in science. *Psychological Inquiry, 16*(2-3), 57-83.
- Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*(3), 491-512.
- Lampman, C., & Dowling-Guyer, S. (1995). Attitudes toward voluntary and involuntary childlessness. *Basic and applied social psychology, 17*(1-2), 213-222.
- Sakallı-Uğurlu, N. (2002). Çelişik duygulu cinsiyetçilik ölçeği: Geçerlik ve güvenilirlik çalışması. *Türk Psikoloji Dergisi, 17*(49), 47-58.
- Sakallı-Uğurlu, N., Türkoğlu, B., Kuzlak, A. & Gupta, A. (2018). Stereotypes of single and married women and men in Turkish culture. *Current Psychology, 1-13*
- Somers, M. D. (1993). A comparison of voluntarily childfree adults and parents. *Journal of Marriage and the Family, 55*(3), 643-650.
- Turkish Statistical Institute. (2020). *Doğum İstatistikleri*. Retrieved from: <https://data.tuik.gov.tr/Bulten/Index?p=Dogum-Istatistikleri-2020-37229>
- Waren, W., & Pals, H. (2013). Comparing characteristics of voluntarily childless men and women. *Journal of Population Research, 30*(2), 151-170.

# DEVELOPMENT OF A CROSS-CULTURAL COMPETENCY SCALE BASED ON THE EXPERIENTIAL MODEL OF CROSS-CULTURAL LEARNING SKILLS

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## Abstract

The aim of this study was to develop a cross-cultural competency scale based on perspectives from the experiential model of cross-cultural learning skills for successful adaptation of international assignees. The study involved 134 participants from 41 countries who studied at a graduate school in Japan, specializing in international relations and international management. Maximum likelihood exploratory factor analysis was conducted with varimax rotation, extracting three latent components of cross-cultural competency: building relationships, translation of complex information, and conflict management. To validate those components, confirmatory factor analysis was conducted with the same group of participants. Results showed acceptable levels of model fit, and the reliability of the three components ranged from 0.83 to 0.87. Accordingly, the cross-cultural competency scale developed in this study seems to be an effective measurement model to analyze cross-cultural competencies.

**Keywords:** *Cross-cultural competencies, scale development, experiential model, international graduate students.*

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## 1. Introduction

Numerous cross-cultural competencies for effective performance and adaptation to culturally diverse working situations have been identified and discussed over the past few decades (Bird, Mendenhall, Stevens, & Oddou, 2010; Leiba-O'Sullivan, 1999). In the field of international management as well as cross-cultural psychology, these competencies have been theoretically integrated into several key domains (Bird et al., 2010; Johnson, Lenartowicz, & Apud, 2006; Lloyd & Härtel, 2010; Matveer & Merz, 2014; Yamazaki & Kayes, 2004). Such integration helps both scholars and practitioners capture an overall picture of cross-cultural competencies. Among cross-cultural competency classifications, the work of Yamazaki and Kayes (2004; Kayes, Kayes, & Yamazaki, 2005), which was conceptualized using experiential learning theory (Kolb, 1984; Kolb & Kolb, 2017), highlighted successful expatriate adaptation to cross-cultural situations and proposed the experiential model of cross-cultural learning skills. However, a scale for the cross-cultural competencies described in the model was not provided. This study thereby aimed to develop a cross-cultural competency scale based on that work.

## 2. Literature review

In this study, the term cross-cultural competency is considered the same as intercultural competency because the terms are used interchangeably in the literature (Draghici, 2014). Cross-cultural competence is defined as an “individual’s effectiveness in drawing upon a set of knowledge, skills, and personal attributes in order to work successfully with people from different national cultural backgrounds at home or abroad” (Johnson et al., 2006, p. 530). Classifications of a myriad of cross-cultural competencies typically consisted of a few dimensions with several competencies each. For example, based on differences between stable and dynamic competencies, Leiba-O'Sullivan (1999) proposed three competency dimensions—self-maintenance, cross-cultural relationships, and perceptual dimensions — with a total of 13 cross-cultural competencies (e.g., cultural knowledge, conflict-resolution skills, and stress-management skills). Bird et al. (2010) presented three dimensions similar to those of Leiba-O'Sullivan (1999), but each dimension had a different number and type of competency: the first dimension of perception management had four competencies (e.g., inquisitiveness, tolerance of ambiguity, and cosmopolitanism); the second dimension of relationship management had five competencies (e.g., relationship interest, interpersonal engagement, and emotional sensitivity); and the

third dimension of self-management had seven competencies (e.g., optimism, self-confidence, and self-identity).

This study focused on the experiential model of cross-cultural learning skills described by Yamazaki and Kayes (2004; Kayes et al., 2005) that did not propose measures. Thus, the study attempted to fill this gap by developing a scale of cross-cultural competencies. The classification in the experiential model relied on an extensive literature review of approximately 100 empirical studies to search for competencies important for effective cross-cultural learning in expatriates (Kayes et al., 2005). The model has four dimensions with seven competencies (Yamazaki & Kayes, 2004; Kayes et al., 2005). First, the interpersonal dimension includes the two competencies of building relationships within another culture (BR) and valuing people of different cultures (VP). The former competency refers to the ability to build, develop, and maintain good, trustful, and cooperative relationships with those of different cultures, while the latter refers to the ability to respect different cultures and understand values and behaviors in relation to them. Second, the information dimension includes the two competencies of listening and observation (LO) and coping with ambiguity (CA). The LO competency requires individuals to patiently listen to and observe people of different cultures. The CA competency calls for tolerating unfamiliar behaviors and uncertain situations in different cultures and coping with the ambiguity resulting from unfamiliar actions or nonverbal behaviors based on cultural differences. Third, the analytical dimension has one competency, translation of complex information (TCI), which involves communicating with people of different cultures by applying simple language to describe complex information and translating complicated ideas into plain words. The final dimension is action, which consists of two competencies: taking action and initiative (TAI) and managing others as conflict management (CM). The former competency refers to an action orientation—taking initiative and making risk-taking decisions in cross-cultural situations. The latter competency relates to interaction skills between host people and expatriates as a managerial activity. More specifically, it involves conflict management, serving to resolve conflicts between peoples of different cultures to establish a good relationship between them (Kayes et al., 2005). It is noted that this study thereby applied a simple and clear term, conflict management (CM) as the last competency from now on.

### 3. Methods

Since this study was intended to develop a cross-cultural competency scale as described in the introduction, we selected an international-focused graduate school in Japan as a research site relevant to international and cross-cultural activities. Over 90% of graduate students were from non-Japanese countries around the world, and classes were conducted in English, whereas students often encountered Japanese culture outside of the school. A total of 134 students participated in this study: 70 graduates specializing in international relations and 64 focused on international management. They came from 41 countries; Japanese students comprised only 3.7% of the study group. Their average age was 30.87 years ( $SD = 4.32$ ), and most had work experience before beginning graduate school. Of the student participants, 75 (56%) were men and 59 (44%) were women. They had at least one overseas experience including their current graduate program in Japan, and their average number of overseas experiences was 6.41 ( $SD = 6.81$ ). To develop the cross-cultural competency scale, the authors created 41 question items based on the experiential model with seven cross-cultural competency classifications. An example of BR is “Develop trustful relationships with people”; that of VP, “Respect different cultures and values”; that of LO, “Patiently listen to people, even if they cannot speak fluently”; that of CA, “Tolerate the unfamiliar behaviors of people”; that of TCI, “Communicate with people using simple language even if the information is complex”; that of TAI, “Become an action-oriented person if necessary”; and that of CM, “Resolve conflicts among people”. The 41 items applied a 7-point Likert-type scale.

### 4. Results

#### 4.1. Exploratory factor analysis

For exploratory factor analysis (EFA), maximum likelihood factor analysis was conducted with varimax rotation to extract latent factors from 41 items based on the cross-cultural learning model. The sample for the EFA was 134 graduate students, as described in the previous section. To identify key factors of EFA, we applied the guideline of an eigenvalue  $>1$  with scree plot investigation. To evaluate whether an item was kept or eliminated, we relied on three criteria: (a) a factor loading  $>0.5$  as a cutoff value (Maskey, Fei, & Nguyen, 2018), with that loading applicable for a sample size between 100 and 200 (Field, 2013); (b) the elimination of cross-loading items  $>0.4$  (Maskey et al., 2018); and (c) at least three items with  $>0.5$  per factor to account for the total variance (Costello & Osborne, 2005; Thompson, 2004).

Table 1. Results of first exploratory factor analysis with 134 participants.

| Competency Items    | Factor |      |      |      |      |      |      |      | h <sup>2</sup> |
|---------------------|--------|------|------|------|------|------|------|------|----------------|
|                     | 1      | 2    | 3    | 4    | 5    | 6    | 7    | 8    |                |
| BR1                 | 0.64   |      |      |      |      |      |      |      | 0.72           |
| BR2                 | 0.77   |      |      |      |      |      |      |      | 0.78           |
| BR3                 | 0.83   |      |      |      |      |      |      |      | 0.8            |
| BR4                 | 0.43   |      |      |      |      |      |      |      | 0.78           |
| BR5                 |        |      |      |      |      |      |      |      | 0.62           |
| BR6                 | 0.61   |      |      |      |      |      |      |      | 0.74           |
| VP1                 |        |      |      |      |      |      |      |      | 0.64           |
| VP2                 | 0.49   |      |      |      |      |      |      |      | 0.73           |
| VP3                 |        |      |      |      |      |      |      |      | 0.62           |
| VP4                 |        |      |      |      |      |      |      |      | 0.57           |
| VP5                 |        |      |      |      |      |      | 0.79 |      | 0.79           |
| VP6                 | 0.44   |      | 0.47 |      |      |      |      |      | 0.69           |
| LO1                 |        |      | 0.58 |      |      |      |      |      | 0.62           |
| LO2                 |        |      |      |      |      |      |      |      | 0.63           |
| LO3                 | 0.41   |      | 0.5  |      |      |      |      |      | 0.75           |
| LO4                 |        |      | 0.47 |      |      |      |      |      | 0.48           |
| LO5                 |        |      |      |      |      |      |      |      | 0.46           |
| LO6                 |        |      |      |      |      |      | 0.4  |      | 0.66           |
| CA1                 |        |      | 0.52 |      |      |      |      |      | 0.67           |
| CA2                 |        | 0.45 | 0.48 |      |      |      |      |      | 0.72           |
| CA3                 |        | 0.42 |      |      | 0.43 |      |      |      | 0.68           |
| CA4                 |        |      | 0.49 |      |      |      |      |      | 0.6            |
| CA5                 |        |      |      |      |      |      | 0.45 |      | 0.58           |
| TCI1                |        |      |      |      | 0.61 |      |      |      | 0.62           |
| TCI2                |        |      |      |      | 0.55 |      |      |      | 0.77           |
| TCI3                |        |      |      |      | 0.76 |      |      |      | 0.76           |
| TCI4                |        |      |      |      | 0.62 |      |      |      | 0.7            |
| TCI5                | 0.41   |      |      | 0.4  |      |      |      |      | 0.65           |
| TAI1                |        |      |      |      |      |      |      |      | 0.6            |
| TAI2                |        |      |      | 0.85 |      |      |      |      | 0.72           |
| TAI3                |        |      |      |      |      | 0.96 |      |      | 0.75           |
| TAI4                |        |      |      | 0.44 |      |      |      |      | 0.59           |
| TAI5                |        |      |      | 0.62 |      |      |      |      | 0.72           |
| TAI6                |        |      |      |      |      | 0.71 |      |      | 0.76           |
| CM1                 |        | 0.66 |      |      |      |      |      |      | 0.76           |
| CM2                 |        | 0.7  |      |      |      |      |      |      | 0.71           |
| CM3                 |        | 0.62 |      |      |      |      |      |      | 0.68           |
| CM4                 |        | 0.43 |      |      |      |      |      |      | 0.61           |
| CM5                 |        |      |      |      |      |      |      |      | 0.72           |
| CM6                 |        | 0.57 |      |      |      |      |      |      | 0.58           |
| CM7                 |        | 0.61 |      |      |      |      |      |      | 0.74           |
| Eigenvalue          | 16.41  | 2.51 | 1.81 | 1.69 | 1.49 | 1.4  | 1.26 | 1.05 |                |
| % of total variance | 40.03  | 6.11 | 4.41 | 4.11 | 3.64 | 3.41 | 3.07 | 2.57 |                |
| Total variance      |        |      |      |      |      |      |      |      | 67.37          |

Note. BR = building relationships, VP = valuing people of different cultures, LO = listening and observation, CA = coping with ambiguity, TCI = translation of complex information, TAI = taking action and initiative, CM = conflict management.

The first EFA of 41 items resulted in eight factors, as illustrated in Table 1. Bold numbers in the table were described as a factor loading  $>0.5$ . Among all items, 28 were eliminated: 20 had a factor loading  $<0.5$ , 5 had fewer than three items with a factor constituent  $>0.5$ , and 1 had cross-loading items  $>0.4$ , which further led to the change from 3 items to 2 items with a factor constituent  $>0.5$ . Consequently, 13 items remained which were involved with three Factors: Factor 1 had four items (BR1, BR2, BR3, and BR6); Factor 2, five items (CM1, CM2, CM3, CM6, and CM7); and Factor 5, four items (TCI1, TCI2, TCI3, and TCI4). Accordingly, with 27 items excluded, the remaining 13 items were kept for further examination. The second EFA of 13 items produced three factors that consisted of the 13 items with a factor loading  $>0.5$ . However, among them, 2 items were excluded due to cross-loading items  $>0.4$  (BR6 and TCI2); thus, 11 items remained. With 2 items excluded, Factor 1 of the second EFA included five items (CM1, CM2, CM3, CM6, and CM7); Factor 2 had three items (BR1, BR2, and BR3); and

Factor 3, three times (TCI1, TCI3, and TCI4). Accordingly, the remaining 11 items were further investigated. The third EFA of 11 items resulted in three dominant factors that were the same as those of the second EFA results. These three factors extracted from the third EFA satisfied the guideline and three criteria to keep all 11 items as described earlier in this section. Again, Factor 1 had five items which indicates conflict management; Factor 2, three items relating the competence of translation of complex information; and Factor 3, three items corresponding to building relationships. All three factors had a factor loading of  $>0.5$ . Cross-loading values of those factors ranged from 0.17 to 0.34 for Factor 1 (conflict management), 0.15 to 0.37 for Factor 2 (translation of complex information), and 0.18 to 0.25 for Factor 3 (building relationships). In terms of convergent and discriminant validity, results from the third EFA supported the three factors.

#### 4.2. Confirmatory factor analysis

This study conducted confirmatory factor analysis (CFA) on the same 134 graduates to verify the validity of the three dominant factors extracted from EFA: building relationships, translation of complex information, and conflict management. Results of the CFA revealed that the fit indices were acceptable ( $\chi^2 = 41.592$ ,  $p > .05$ ; minimum discrepancy per degree of freedom [CMIN/df] = 1.014; goodness-of-fit index [GFI] = 0.946; comparative fit index [CFI] = 0.999; incremental fit index [IFI] = 0.999; Tucker–Lewis index [TLI] = 0.999; root mean square error of approximation [RMSEA] = 0.010; standardized root mean square residual [SRMR] = 0.038). It is noted that we also performed CFA in terms of the theorized model consisting of the original seven cross-cultural competency classifications on the same sample. Results of the CFA revealed that the fit indices were weak ( $\chi^2 = 1495.32$ ,  $p < 0.01$ ; CMIN/df = 1.973; GFI = 0.659; CFI = 0.778; IFI = 0.782; TLI = 0.760; RMSEA = 0.086; SRMR = 0.080). Those results illustrated that the measurement model with a three-factor structure was better than the original. The finalized measurement model included the following 11 items as showed in Table 2.

Table 2. Eleven items of the finalized measurement model of the cross-cultural competence.

| 11 Items | Cross-Cultural Competencies  |
|----------|--|
| BR1      | Develop trustful relationships with people   |
| BR2      | Make and maintain good relationships with people                                   |
| BR3      | Build friendships with people  |
| TCI1     | Communicate with people using simple language even if the information is complex   |
| TCI3     | Use simple words to describe complicated information in a conversation with people |
| TCI4     | Translate complicated information into plain words when talking to people          |
| CM1      | Resolve conflicts among people   |
| CM2      | Develop bridges between one member and others in a conflicting situation           |
| CM3      | Alleviate conflicting situations among people                                      |
| CM6      | Decrease emotional tension among people  |
| CM7      | Act to make a situation better when people have conflicts                          |

Note. The term people in this questionnaire refers to those who have a different cultural background and/or those who have different nationalities.

#### 5. Discussion and conclusions

The study attempted to develop a cross-cultural competency scale based on the experiential model of cross-cultural learning skills. The model had seven classifications of cross-cultural competencies, but this study resulted in three latent components as a measurement model with the three competencies of building relationships (BR), translation of complex information (TCI), and conflict management (CM). These competencies reflect the interpersonal, analytical, and action areas. Based on experiential learning theory (Kolb, 1984; Kolb & Kolb, 2017), the interpersonal skill area relates to the learning mode of concrete experience (Boyatzis & Kolb, 1995; Yamazaki & Kayes, 2004) that “emphasizes feeling as opposed to thinking” (Kolb, 1984, p.68); the analytical skill area concerns that of abstract conceptualization accentuating thinking; and the action skill area involves that of active experimentation that requires taking action and practical applications. It would be inferable that those three skills areas are congruent with the affective, cognitive, and behavioral dimensions described by several studies as key dimensions of cross-cultural competency (Lloyd & Härtel, 2010; Matveer & Merz, 2014). The cross-cultural psychology literature indicated that dimensions of affect, cognition, and behavior are fundamental areas of cross-cultural psychology that focus on cultural contact with cultural



shock (Ward, Bochner, & Furnham, 2001). From this notion, the measurement model developed to analyze a degree of three cross-cultural competencies (i.e., BR, TCI, and CM) might be utilized to examine people's cultural contact including cultural shock. This raises an interesting question as to how three cross-cultural competencies in the measurement model have an influence on cultural shock. Finally, limitations of this study include methodological issues such as a small sample size, the participation of international graduate students rather than ongoing international assignees, and use of the EFA sample for CFA.

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### *References*

- Bird, A., Mendenhall, M., Stevens, M. J., & Oddou, G. (2010). Defining the content domain of intercultural competence for global leaders. *Journal of Managerial Psychology, 25*(8), 810–828. doi: 10.1108/02683941011089107
- Boyatzis, R. E., & Kolb, D. A. (1995). From learning styles to learning skills: the executive skills profile. *Journal of Managerial Psychology, 10*(5), 3–17. doi:10.1108/02683949510085938
- Costello, A. B., & Osborne, J. W. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research and Evaluation, 10*(7), 1–9. doi: 10.7275/jyj1-4868
- Draghici, A. (2014). The importance of cross-cultural competencies in the new context of human resources management. In A. Rakowska & K. Babnik (Eds.), *Human resource management challenges: Learning & development* (pp. 63–89). Lublin, Poland: ToKnowPress.
- Field, A. (2013). *Discovering statistics using IBM SPSS statistics* (4th ed.). Sage.
- Johnson, J. P., Lenartowicz, T., & Apud, S. (2006). Cross-cultural competence in international business: Toward a definition and a model. *Journal of International Business Studies, 37*, 525–543. doi: 10.1057/palgrave.jibs.8400205
- Kayes, D. C., Kayes, A. B., & Yamazaki, Y. (2005). Essential competencies for cross-cultural knowledge absorption. *Journal of Managerial Psychology, 20*(7), 578–589. doi: 10.1108/02683940510623399
- Kolb, A. Y., & Kolb, D. A. (2017). *The experiential educator: Principles and practices of experiential learning*. Kaunakakai, HI: EBLS Press.
- Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice-Hall.
- Leiba-O'Sullivan, S. (1999). The distinction between stable and dynamic cross-cultural competencies: Implications for expatriate trainability. *Journal of International Business Studies, 30*(4), 709–725. doi: 10.1057/palgrave.jibs.8490835
- Lloyd, S., & Härtel, C. (2010). Intercultural competencies for culturally diverse work teams. *Journal of Managerial Psychology, 25*(8), 845–875. doi: 10.1108/02683941011089125
- Maskey, R., Fei, J., & Nguyen, H.-O. (2018). Use of exploratory factor analysis in maritime research. *Asian Journal of Shipping and Logistics, 34*(2), 91–111. doi: 10.1016/j.ajsl.2018.06.006
- Matveer, A. V., & Merz, M. Y. (2014). Intercultural competence assessment: What are its key dimensions across assessment tools? In L. T. B. Jackson, D. Meiring, F. J. R. Van de Vijver, E. S. Idemoudia, & W. K. Gabrenya Jr. (Eds.), *Toward sustainable development through nurturing diversity: Proceedings from the 21st International Congress of the International Association for Cross-Cultural Psychology*. [https://scholarworks.gvsu.edu/iaccp\\_papers/128/](https://scholarworks.gvsu.edu/iaccp_papers/128/)
- Thompson, B. (2004). *Exploratory and confirmatory factor analysis*. Washington, DC: American Psychological Association.
- Ward, C., Bochner, S., & Furnham, A. (2001). *The psychology of culture shock* (2nd ed.). East Sussex, UK: Routledge.
- Yamazaki, Y. (2005). Learning styles and typologies of cultural differences: Atheoretical and empirical comparison. *International Journal of Intercultural Relations, 29*(5), 521–548. doi: 10.1016/j.ijintrel.2005.07.006
- Yamazaki, Y., & Kayes, D. C. (2004). An experiential approach to cross-cultural learning: A review and integration of competencies for successful expatriate adaptation. *Academy of Management Learning and Education, 3*(4), 362–379. doi: 10.5465/amle.2004.15112543

## **DYNAMICS OF IDEAS ABOUT FUTURE MARRIAGE AMONG YOUNG WOMEN WITH DIFFERENT MORAL ORIENTATION OF PERSONALITY**

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### **Abstract**

The problem of implementing reasoned education of students in the field of self-determination in marriage and family relationship raises the question of what psychological determinants contribute to the formation of complete and harmonious ideas about marriage which perform a guiding function when mastering a new social role.

The purpose of the study is to identify the features of ideas about future marriage depending on the moral orientation of young women at different stages of age development: adolescence (from 17 to 19 years), early adulthood (from 20 to 22 years).

In the study there was used review and generalization contents psychological and pedagogical literature; psych diagnostic method; comparative analysis of statistical data. 322 female students took part in the cross-sectional study.

There are no general substantive characteristics in the ideas about future marriage in adolescence. In the group of young women with egocentric orientation when forming ideas about their own marital behavior, such an element of the cognitive component as the fulfillment of duties is actualized, in the emotional component a positive attitude towards family as a social institution, their own family, future marriage partner, themselves, romantic love is revealed. Among young women with a group-centric orientation in the image "I am a future wife" there is empathy, a positive attitude towards romantic love, an attitude towards personal autonomy. Among young women with a humanistic orientation in thinking about the future marital roles there are the basic elements of cognitive, partially emotional and behavioral components. In the group of young women with a world-creating orientation the content of the image "I am a future wife" is characterized by the completeness of the representation of the cognitive component, saturation with such elements of the emotional component as a positive attitude towards family as a social institution, their own family, future marriage partner, themselves, future children, romantic love, leadership and responsibility in the family.

In early adulthood compared with adolescence there is a tendency to reduce the number of meaningful characteristics in the image "I am a future wife" among young women with egocentric, humanistic and world-creating orientations. The invariant characteristic is a personal independence in the studied image. Young women with egocentric, humanistic and world-creating orientations have such elements as caring, patience, respect for other people, balance.

**Keywords:** *Ideas about marriage, moral orientations.*

### **1. Introduction**

Currently, the socio-economic situation is rapidly changing, which obviously leads to significant changes in the characteristics of the modern family (Zhuravlev & Kupreichenko, 2007). Exploring marriage motivation for representatives of different ages, Kharchev (1986) states that concordance of motive for marriage positively correlates with increase of spouses age, so the motivation of marriage can be a condition for the success and harmony of family relations. In this case, we will focus on the comparative aspect of ideas about future marriage among young women with different moral orientation of personality, which is of interest for finding ways to achieve the stability of marriage. A study directly devoted to the readiness of young people to marry was conducted by Obozov (2001), Filyukova (2016), Trapeznikova & Volkova (2012), Dubrovina (2015). However, one can observe the absence of modern research on this problem, since the true meaning of marriage is the acceptance of a new status, with a new

set of privileges and responsibilities, and the recognition of this new status by others, recognized rights and responsibilities.

In the psychological literature, concepts such as psychological readiness for parenthood (Ovcharova, 2003), psychological readiness for motherhood (Meshcheryakova, 2000; Filippova, 2002; Ovcharova, 2005), psychological readiness for fatherhood (Spivakovskaya, 2000; Ovcharova, 2005; Demchuk, 2006) have been widely studied. But the ideas about the future marriage of young women with different moral orientation are insufficiently studied. A theoretical analysis of the research has shown that young people's ideas about family life and marriage use such concepts as "readiness for marriage", "ability to marry", "the need to create a family and raise children", and others. The definition of the attitude towards marriage and family relations can be interpreted as the basis for creating a family and controlling family relations, as an active state of personality that causes activity in organizing marriage and family relations, as a result of family education, psychological training and psychological mobilization (Volkova & Trapeznikova, 2012).

The resolution of the contradiction between the need of modern society in the formation of ideas about future marriage among young women with different moral orientation determines the problem of the study. The obtained research results served as the basis for the development and implementation of a program of psychological and pedagogical support for the development of ideas about future marriage.

## 2. Objectives

The purpose of the study is to identify the features of ideas about future marriage depending on the moral orientation of young women at different stages of age development: adolescence (from 17 to 19 years), early adulthood (from 20 to 22 years).

## 3. Methods

The dominant moral orientation of the personality is determined using the methodology "Moral Self-determination of Personality" by A.E. Vorobieva, A.B. Kupreichenko (Zhuravlev & Kupreichenko, 2007).

Using a modified version of the semantic differential technique (Solomin, 2001) we determined the valuable attitude of young women towards the concept of "I am a future wife." We have established the importance of such personal qualities as fulfillment of duties, caring, personal independence, responsibility, sexuality, patience, diligence, respect for another person, balance, success, empathy which formed the content of the cognitive component of ideas about marriage. The projective technique "Incomplete Sentences" (Yanjshin, 2021) allowed us to study the elements of the emotional component of ideas about marriage: the attitude towards family as a social institution, one's own family, future marriage partner, oneself, future children, romantic love, sex, family conflicts, divorce, leadership and responsibility in the family, rights and duties of spouses, family rest and leisure. As a result of using the questionnaire "Role Expectations and Claims in Marriage" by A.N. Volkova (Volkova & Trapeznikova, 2012) we identified the attitudes of female students towards their own personal readiness to fulfill family duties in the household, parental-educational, emotional-psychotherapeutic, intimate-sexual spheres, social activity, external attractiveness (role claims) which formed the behavioral component of ideas about marriage.

Further, through correlation analysis we have identified meaningful characteristics of ideas about the future role of a wife depending on the dominant moral orientation and age of female students. To this aim we calculated the correlation coefficients between the image "I am a future wife" and the elements of cognitive, emotional and behavioral components. For quantitative variables whose distribution corresponds to the normal law (established as a result of calculating the Kolmogorov-Smirnov criterion for one sample, the Shapiro-Wilkes criterion) we calculated the Pearson linear correlation coefficient ( $r$ ). For ordinal and quantitative variables, the distribution of which significantly differs from the normal law, is Spearman's rank correlation coefficient ( $r_s$ ). The results were used at the level of statistical significance  $p \leq 0.05$ ;  $p \leq 0.01$  for the final conclusions. The ranking procedure by the value of the correlation coefficient allowed us to determine the hierarchy of meaningful characteristics in the ideas about the future marital role from the most important to the less significant.

The study was conducted on the basis of Astrakhan State University, the Astrakhan branch of the Russian Academy of National Economy and Public Administration under the President of the Russian Federation. The study involved 389 female students. The total sample was divided into age cohorts in order to conduct a comparative analysis: adolescent age (from 17-19 years) with 190 people (48.8%), early adulthood (20-22 years) with 199 people (51.2%).

#### 4. Study results

Using the methodology "Moral Self-determination of Personality" by A.E. Vorobieva, A.B. Kupreichenko it was established that 7 people (3.7%) have egocentric orientation, 13 people (6.8%) have group-centric orientation, 47 people (24.7%) have humanistic orientation, 87 people (45.8%) have world-creating orientation, 36 people (18.9%) have mixed orientation in the adolescence group. 25 people (12.5%) with egocentric orientation, 24 people (12.1%) with group-centric orientation, 30 people (15.1%) with humanistic orientation, 89 people (44.7%) with world-creating orientation, 31 people (15.6%) with mixed orientation were identified in the age group of early adulthood.

The concept of "I am a future wife" consists of 6 elements of cognitive and emotional components among young women with egocentric orientation in adolescence. The following hierarchy of meaningful characteristics is observed: 1) positive attitude towards romantic love ( $r_s = 0.927$  at  $p = 0.003$ ); 2) positive attitude towards one's own family ( $r_s = 0.908$  at  $p = 0.005$ ); 3) positive attitude towards future marriage partner ( $r_s = 0.881$  at  $p = 0.009$ ); 4) positive attitude towards family as a social institution ( $r_s = 0.825$  at  $p = 0.022$ ); 5) performance of duties ( $r_s = 0.801$  at  $p = 0.03$ ); 6) positive attitude towards oneself ( $r_s = 0.761$  at  $p = 0.047$ ). In early adulthood in the typological group under consideration the image "I am a future wife" consists of 5 elements of the cognitive component which form the following hierarchy: 1) caring ( $r_s = 0.648$  at  $p < 0.001$ ); 2) patience ( $r_s = 0.615$  at  $p = 0.001$ ); 3) balance ( $r_s = 0.596$  at  $p = 0.002$ ); 4) respect for other people ( $r_s = 0.47$  at  $p = 0.018$ ); 5) personal independence ( $r_s = 0.443$  at  $p = 0.027$ ). The content of the cognitive and emotional components of the ideas about the marital role does not coincide in the image "I am a future wife" in adolescence and early adulthood.

The following hierarchy of meaningful characteristics is observed among young women with group - centric orientation in adolescence age in the image "I am a future wife": 1) empathy ( $r_s = 0.727$  at  $p = 0.005$ ); 2) positive attitude towards romantic love ( $r_s = 0.632$  at  $p = 0.02$ ); 3) setting for personal autonomy since a negative correlation with the scale of personal identification with a spouse was revealed ( $r_s = -0.555$  at  $p = 0.049$ ). In early adulthood the image "I am a future wife" consists of 3 elements of the cognitive component which form the following hierarchy: 1) success ( $r_s = 0.467$  at  $p = 0.021$ ); 2) personal independence ( $r_s = 0.451$  at  $p = 0.027$ ); 3) performance of duties ( $r_s = 0.427$  at  $p = 0.038$ ). The elements of cognitive (empathy), emotional (positive attitude towards romantic love) and behavioral components (attitude towards personal autonomy) of ideas about the future marital role characteristic of adolescence are absent in early adulthood.

Among young women with a humanistic orientation in adolescence ideas about their own future marriage include 13 elements of cognitive, emotional and behavioral components that form the following hierarchy: 1) respect for other people ( $r_s = 0.556$  at  $p < 0.001$ ); 2) personal independence ( $r_s = 0.521$  at  $p < 0.001$ ); 3) caring ( $r_s = 0.516$  at  $p < 0.001$ ); 4) sexuality ( $r_s = 0.512$  at  $p < 0.001$ ); 5) diligence ( $r_s = 0.498$  at  $p < 0.001$ ); 6) patience ( $r_s = 0.473$  at  $p = 0.001$ ); 7) role claims in the household sphere ( $r_s = 0.33$  at  $p = 0.033$ ); 8) responsibility ( $r_s = 0.326$  at  $p = 0.026$ ); 9) positive attitude towards future children ( $r_s = 0.317$  at  $p = 0.03$ ); 10) success ( $r_s = 0.314$  at  $p = 0.032$ ); 11) positive attitude towards one's own family ( $r_s = 0.311$  with  $p = 0.034$ ); 12) personal identification with a spouse ( $r_s = 0.309$  at  $p = 0.046$ ); 13) positive attitude towards family as a social institution ( $r_s = 0.298$  at  $p = 0.042$ ).

During the transition from adolescence to early adulthood the emotional and behavioral components are subject to the greatest changes in the content of the image "I am a future wife". The content of the cognitive component of the ideas about the future marital role practically coincides but the hierarchy of elements changes. In early adulthood young women's image "I am a future wife" includes 12 meaningful characteristics that form the following hierarchical structure: 1) performance of duties ( $r_s = 0.771$  at  $p < 0.001$ ); 2) diligence ( $r_s = 0.702$  at  $p < 0.001$ ); 3) success ( $r_s = 0.684$  at  $p < 0.001$ ); 4) respect for other people ( $r_s = 0.681$  at  $p < 0.001$ ); 5) balance ( $r_s = 0.658$  at  $p < 0.001$ ); 6) responsibility ( $r_s = 0.521$  at  $p = 0.003$ ); 7) patience ( $r_s = 0.497$  at  $p = 0.005$ ); 8) role claims in the emotional and psychotherapeutic sphere ( $r_s = 0.45$  at  $p = 0.012$ ); 9) caring ( $r_s = 0.428$  at  $p = 0.018$ ); 10) personal independence ( $r_s = 0.426$  at  $p = 0.019$ ); 11) role claims in the household sphere ( $r_s = 0.405$  at  $p = 0.026$ ); 12) role claims in the parental and educational sphere ( $r_s = 0.371$  at  $p = 0.044$ ). In early adulthood such meaningful characteristics as responsibility, diligence, and success become more important. At the same time the importance of caring, personal independence, patience, respect for other people, role-playing claims in the household sphere decreases. The image "I am a future wife" is complemented by such characteristics as fulfillment of duties, balance, role claims in the emotional-psychotherapeutic and parental-educational spheres. At the same time there are no elements of cognitive (sexuality), emotional (positive attitude towards family as a social institution, one's own family, future children) and behavioral (personal identification with a spouse) components inherent in the image "I am a future wife" in adolescence. In early adulthood young women with a humanistic orientation of personality revealed a close relationship between ideas about the future marital role and motherhood.

Among young women with a world-creating orientation in adolescence self-image in the role of a wife consists of 18 elements of cognitive and emotional components. The meaningful characteristics of the image "I am a future wife" form the following sequence: 1) diligence ( $r_s = 0.527$  at  $p < 0.001$ ); 2) caring ( $r_s = 0.521$  at  $p < 0.001$ ); 3) sexuality ( $r_s = 0.409$  at  $p < 0.001$ ); 4) patience ( $r_s = 0.392$  at  $p < 0.001$ ); 5) responsibility and personal independence ( $r_s = 0.374$  at  $p < 0.001$ ); 6) positive attitude towards future children ( $r_s = 0.354$  at  $p = 0.001$ ); 7) respect for other people ( $r_s = 0.346$  at  $p = 0.001$ ); 8) performance of duties ( $r_s = 0.339$  at  $p = 0.001$ ); 9) positive attitude towards romantic love ( $r_s = 0.323$  at  $p = 0.002$ ); 10) positive attitude towards future marriage partner ( $r_s = 0.306$  at  $p = 0.004$ ); 11) positive attitude towards oneself ( $r_s = 0.302$  at  $p = 0.005$ ); 12) balance ( $r_s = 0.298$  at  $p = 0.005$ ); 13) success ( $r_s = 0.279$  at  $p = 0.009$ ); 14) empathy ( $r_s = 0.253$  at  $p = 0.018$ ); 15) positive attitude towards family as a social institution ( $r_s = 0.234$  at  $p = 0.03$ ); 16) positive attitude towards one's own family ( $r_s = 0.227$  at  $p = 0.035$ ); 17) positive attitude towards primacy and responsibility in the family ( $r_s = 0.225$  at  $p = 0.037$ ).

In this typological group at the next stage of age development the emotional and behavioral components are subject to the greatest changes in the content of the image "I am a future wife", the content of the cognitive component of the ideas about the future marital role coincides but the hierarchy of elements changes. The image "I am a future wife" includes 17 meaningful characteristics that form the following hierarchical structure: 1) caring ( $r_s = 0.732$  at  $p < 0.001$ ); 2) personal independence ( $r_s = 0.594$  at  $p < 0.001$ ); 3) respect for other people ( $r_s = 0.577$  at  $p < 0.001$ ); 4) balance ( $r_s = 0.564$  at  $p < 0.001$ ); 5) diligence ( $r_s = 0.503$  at  $p < 0.001$ ); 6) sexuality ( $r_s = 0.486$  at  $p < 0.001$ ); 7) responsibility ( $r_s = 0.485$  at  $p < 0.001$ ); 8) performance of duties ( $r_s = 0.453$  at  $p < 0.001$ ); 9) patience ( $r_s = 0.446$  at  $p < 0.001$ ); 10) success ( $r_s = 0.388$  at  $p < 0.001$ ); 11) positive attitude towards future marriage partner ( $r_s = 0.362$  at  $p = 0.001$ ); 12) positive attitude towards romantic love ( $r_s = 0.34$  at  $p = 0.001$ ); 13) empathy ( $r_s = 0.32$  at  $p = 0.002$ ); 14) positive attitude towards sex ( $r_s = 0.279$  at  $p = 0.008$ ); 15) external attractiveness ( $r_s = 0.279$  at  $p = 0.008$ ); 16) role claims in the parental and educational sphere ( $r_s = 0.255$  at  $p = 0.016$ ); 17) positive attitude towards one's own family ( $r_s = 0.2222$  at  $p = 0.037$ ). In early adulthood such personal qualities as caring, personal independence, respect for other people, balance, success, empathy become more important. The image "I am a future wife" is complemented by a positive attitude towards sex, role-playing claims in the parental and educational sphere, external attractiveness. The role of such meaningful characteristics as responsibility, sexuality, patience, diligence, a positive attitude towards one's own family, a future marriage partner, and romantic love is decreasing. At the same time there is no positive attitude towards family as a social institution, oneself, future children, leadership and responsibility in the family, characteristic of the image "I am a future wife" in adolescence.

## 5. Conclusions

The formation of ideas about the future marital role among young women aged 17 to 19 years is associated with the dominant moral orientation of the personality. No common substantive characteristics were revealed in the ideas about future marriage in adolescence. In the group of young women with egocentric orientation when forming ideas about their own marital behavior such an element of the cognitive component as the fulfillment of duties is actualized, in the emotional component a positive attitude towards family as a social institution, their own family, future marriage partner, oneself, romantic love are revealed. Among young women with a group-centric orientation in the image "I am a future wife" empathy, a positive attitude towards romantic love, an attitude towards personal autonomy. Young women with a humanistic orientation in thinking about the future marital roles are the basic elements of cognitive (caring, personal independence, responsibility, sexuality, patience, diligence, respect for others, success), partly emotional (positive attitude towards the family as a social institution, a family and future children) and behavioral (personal identification with her husband, the role of claims in the domestic sphere) components. In the group of young women with a world-creating orientation the content of the image "I am a future wife" is characterized by the completeness of the representation of the cognitive component, intensity with such elements of the emotional component as a positive attitude towards family as a social institution, one's own family, future marriage partner, oneself, future children, romantic love, primacy and responsibility in the family.

In early adulthood compared with adolescence there is a tendency to reduce the number of meaningful characteristics in the image "I am a future wife" among young women with egocentric, humanistic and world-creating orientations. In the studied image the invariant characteristic is personal independence. Young women with egocentric, humanistic and world-creating orientations have such elements as caring, patience, respect for other people, balance. Among young women with group-centric, humanistic and world-creating orientations the common components are the fulfillment of duties, success. In the group of young women with a humanistic orientation the content of the image "I am a future wife"

is supplemented with elements of cognitive (responsibility, diligence) and behavioral (role claims in emotional-psychotherapeutic, household and parental-educational spheres) components. Among young women with a world-creating orientation ideas about future marriage differ in the completeness of the formation of the cognitive component, the actualization of elements of emotional (positive attitude towards their own family, future marriage partner, romantic love, sex) and behavioral (role claims in the parental and educational sphere, external attractiveness) components.

So, in the group of young women with egocentric and group-centric orientations the dynamics of self-image in the future marital role is characterized by the instability of the formation of cognitive, emotional and behavioral components in adolescence and early adulthood. The content of the image "I am a future wife" young women with humanistic and world-creating orientations have a greater fullness and intensity of elements. In the typological groups under consideration the content of the image "I am a future wife" in adolescence is distinguished by the presence of a positive attitude towards future children, in early adulthood there is by orientation to one's own responsibilities in raising children. Consequently, among young women with humanistic and world-creating orientations ideas about the future marital role are inextricably linked with motherhood. The cumulative formation of cognitive and individual elements of the emotional components of self-image in the marital role is characteristic of young women with a world-creating orientation at the considered stages of age development. Thus, the purposeful upbringing of students of a world-creating orientation will contribute to the completeness of the formation of the cognitive component, the stability of the elements of the emotional component (a positive attitude towards their own family, a future marriage partner, romantic love) of ideas about the future marital role in adolescence and early adulthood.

The results raised a number of questions: are there any differences in the content and hierarchical structure of the image "I am a future wife" and the ideas about the ideal spouse among young women depending on the moral orientation of the personality in adolescence and early adulthood? Do the ideas of the role of the wife among young men and young women coincide with the same moral orientations of the personality in the considered stages of age development? The prospect of further research should be the study of the connection between moral orientations and ideas about marriage among young men in adolescence and early adulthood.

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### *References*

- Dubrovina, I.V. (2015). *Family and child socialization*. Moscow.
- Filippova, G.G. (2002). *Psychology of motherhood. Textbook*. Publishing House of the Institute of Psychotherapy. Moscow.
- Filyukova, L.F. (2016). *Modern young family*. Moscow: Alpha.
- Kharchev, A.G. (1986). Research on family on the threshold of a new stage. *Sociological research*, 3.
- Meshcheryakova, S. Y. (2000). Psychological readiness for motherhood. *Questions of psychology*, 5, 18-27.
- Obozov, N. N. (2001). *The psychology of interpersonal relations*. Kiev.
- Ovcharova, R. V. (2003) *Psychological support of parenthood*. Moscow: Publishing House of the Institute of Psychotherapy.
- Ovcharova, R.V. (2005). *Psychology of parenthood: Study guide for students of higher studies establishments*. Moscow: Publishing center 'Academy'.
- Solomin L. (2001). *Psychosemantic diagnosis of hidden motivation*. Methodical manual. SPb. IMATON.
- Spivakovskaya, A. S. (2000). *Psychotherapy: game, childhood and the family*. Moscow: April Press; JSC publishing house EKSMO-press.
- Volkova, A. N., & Trapeznikova, T. M. (2012). Methodical Receptions of Diagnostics of Matrimonial Relations. *Questions of psychology*, 5, 110–116.
- Yanjshin, P. V. (2021). *Clinical psychodiagnostics of personality: a textbook for universities*. 3rd ed., reprint. and additional. Moscow: Yurayt Publishing House.
- Zhuravlev, A.L., & Kupreichenko, A.B. (2007). *Economic Self-determination: Theory and Empirical Research*. Publishing House 'Institute of Psychology of the Russian Academy of Sciences'.

## WHY DONATE AND FOR WHAT? THE PSEUDOINEFFICACY BIAS IN DONATING BEHAVIOR

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### Abstract

Charitable donations represent a possible indirect way to face the social challenge of poverty with people donating a certain amount of money independently of their social status and social roles. As such, scholarly authors devoted to the study of charity and donating behavior have proposed several models following different perspectives to explain the motivational factors and the individual conditions affecting donating behavior. In the present study, we aim at contributing to the selfish altruism model by suggesting the effect of pseudoinefficacy as possible cognitive bias which may be detrimental for deciding to donate. On the one hand, the selfish altruism model has gained notable attention as a possible explanation of the decision-making process underlying donating behavior. This model suggests that people offer aid to receive something in return or to gain a personal advantage. Such a personal benefit can be seen as the individual sense of being morally satisfied, namely, warm-glow. That is, those who donate may feel higher levels of social esteem, gratitude and respect from others which are aspects feeding their warm-glow. Individual would decide to donate by the possibility to gain moral satisfaction rather than acting for the common good. On the other hand, according to cognitive psychology, pseudoinefficacy may affect donating behaviors as an illusion of inefficacy that arises when individuals can only help some people but not others who yet are equally in need. In this sense, the phenomenon of pseudoinefficacy contributes to the selfish altruism model as an explanation of the individuals' emotions that may reduce donors' warm-glow. Ultimately, we propose a critical and interdisciplinary review of donating behaviors model and propose a research agenda for further investigations. Given the widespread of poverty as linked to the worldwide changes (i.e., novel pandemic of Sars-Cov-2), theoretical indications and reflections on donating behavior represent a pragmatic and moral concern whose relevance rests in the potential applied implications.

**Keywords:** *Donating behavior, selfish altruism, decision-making process, pseudoinefficacy, research agenda.*

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### 1. Introduction

Charity includes a wide range of manners to help the *underprivileged* (emphasis added) which can be grouped into three main activities, namely, (a) development of welfare trust to reduce poverty, (b) promoting education, and (c) promoting social initiatives for social benefit (see, Shaikh & McLarney, 2005). Beneficial initiatives for society include – inter alia – fundraising programs that no-profit organizations can organize with the aim to help people in need whose outcome is defined as *charitable donations*. Given the widespread of poverty as linked to the worldwide changes (e.g., pandemic of Sars-Cov-2, inadequate distribution of resources and wealth, excessive demographic expansion in certain countries), a good understanding of reasons to donate money is worth doing as means to promote successful marketing strategy to trigger charitable giving (Piferi & Lawler, 2006).

In this vein, understanding the motivational factors and the individual conditions affecting donating behavior is crucial. However, the literature on behavior associated with charitable donations is sparse. Indeed, scholars devoted to the study of charity and donating behavior have proposed several models to explain the psychological antecedents of donating behaviors by employing different perspectives (Bekkers et al., 2011).

The present contribution aims at complementing the selfish altruism theories on donating behavior by discussing the role of the so-called cognitive bias *pseudoinefficacy*. We will argue that pseudoinefficacy may be an individual detrimental factor for deciding to donate. We will suggest

considering donating behavior via a cognitive psychology approach through which taking into account the decision-making process laying at its basis.

Accordingly, we will firstly introduce the literature on donating behaviors by reporting both the role of individual and contextual aspects related to donations. Then, we will introduce the role of altruism as a motivating factor in donation processes, referring to the main psychological perspectives on this issue. With a focus on the so-called selfish altruism perspective, we will then examine the literature on the decision-making process behind donations. In this, we will frame the study of donating behavior in the study of cognitive biases that may affect such process. Accordingly, we will argue that the specific cognitive bias *pseudoinefficacy* plays an important role in this cognitive mechanisms. Finally, we will propose a research agenda by presenting three propositions for theory-building and research conducting on donating behaviors.

## 2. Literature review

### 2.1. Donor's features behind donations and the role of altruism

Studies on charitable donations have focused on the identification and comprehension of individual and contextual aspects related to donations. Firstly, individual differences related to the intention to, and actual donation are socio-demographic variables such as age, education, social status or religion orientation (Bekkers, 2010; Wiepking & Bekkers, 2010; White et al., 2016). Also, prosocial tendencies (Fernando et al., 2014), narcissistic trait (Konrath et al., 2016) and empathy (Bekkers, 2006) emerged as contributing factors in the propensity to donate. In particular, scholarly authors showed that empathic concern and intentions to donate are positively related (Verhaert & Van den Poel, 2011). Furthermore, individual's volunteer role identity is associated to their will to donate time or money (Grube & Piliavin, 2000; Finkelstein & Brannick, 2007; White et al., 2016). Finally, individuals' experience and perception of the act of donation play a relevant role as the distance between donation and its outcomes (e.g., the distance between the donor and the beneficiaries), the awareness of the beneficiaries in itself (i.e., oneself or others), and how and by whom the request to donate is made (Bekkers, 2010; Ye et al., 2015). Secondly, contextual factors affecting donation are the perception of what others donate (Martin & Randall, 2008), the individual level of trust in charity organizations (Alhidari et al., 2018), and the behavior of their peers (Frey & Meier 2004; Shang & Croson, 2005). Also, one's family's financial situation and the donor's income can have a significant effect on the type (i.e., time vs money donation), on the amount of the donation and on the actual making of a donation (Bekkers, 2010; Mayo & Tinsley, 2009).

Furthermore, there are certain motivating factor that drives people to help others through charitable donations. According to the literature three main theoretical perspectives provide explanations on the factors that cause prosocial behavior in human beings (Hysenbelli, 2014). Firstly, the *evolutionist perspective* (see Hamilton's theory, 1964) states that humans are genetically inclined to help those who have a certain number of shared genes (see, e.g., Lyle et al., 2009; Jaeger & van Vugt, 2021). The second perspective includes *pure altruism* theories which suggest that people will help others without expecting to gain any advantage or reward (Ferguson et al., 2008). The third perspective, links to *selfish altruism* theories which suggest that aid is offered in order to receive something in return or to gain a personal advantage (Exeley, 2015; Barash et al., 2014; Ottoni-Wilhem et al., 2017).

Independently of this, the seminal work by Andreoni (1990) introduced the concept of *warm glow* (WG) to denote the feeling of pleasure arising from helping someone. Accordingly, social esteem, gratitude and the respect of others are supposed to be critical variables in terms of the decision-making process driving helping behaviors. These dimensions are stronger than the perceived utility generated by having helped another person. As such, individual gains in moral satisfaction weigh more than any improvement to the common good. According to this narcissistic vision of prosocial behaviors, individuals help others in order to experience a feeling of pleasure. For example, individuals may desire to reduce aversive arousal experienced as a consequence of the exposure to the suffering of others (Hoffman, 1981). The reduction of aversive arousal as a form of emotional regulation or mood management motivates action with the self-interest of making oneself feel better (Gross, 2002).

### 2.2. Viewing donating behavior through cognitive psychology: the role of cognitive biases

Moreover, the literature presents how donating behavior may be viewed through cognitive psychology by addressing the decision-making process underlying donation behaviors and cognitive biases involved in it. In this context, authors have focused on the role played by cognitive biases and the irrational thinking involved in deciding whether to offer their help to others or not (Ruminati & Bonini, 2001). For example, some authors reported evidence of the donors' tendency of choose the easier option when are called to valuate two. With individuals unable to logically evaluate the efficacy of their aid due



to the lack of objective assessments, they often use the perception of a feeling of wellbeing as a clue (Baron & Szymanska, 2009). Also, evidence displayed the donors' tendency to change constantly the charitable associations to which donate, even if it does not affect them personally or to focus on a single characteristic as being the most important excluding any others (Tversky et al. 1998). Lastly, the impulse to offer help occurs independently of the beneficiaries and the contextual features. In this sense, people tend to oppose aid programs related to tax relief since they perceive them as a restriction of free choice (Baron & Szymanska 2009).

Considering the perspectives on altruism in donating behavior (see above), Dikert and colleagues (2011) proposed a two-stage model that integrates both selfish and pure altruism perspectives via the explanation of the decision-making processes that motivates donation. Such authors investigated the role of affective reactions toward children in need of financial contributions, dividing them into empathic feelings (i.e., pure altruism) and mood management-related feelings (i.e., selfish altruism). The authors claim that decisions concerning donations to charities involve a two-stage process: the first refers to individuals' decision to donate or not and is determined by self-centered feelings; the second indicates decision about how much to donate that comes from an evaluation of other people's needs. Results showed that when confronted with the misery of others, people donate money at least partly with the intention of making themselves feel better and/or avoid post-choice regret due to not donating. Only later do they take empathic feelings into account. These results corroborate the theories of selfish altruism as primary motivation for donating behaviors. Moreover, these pieces of evidence provide indications about the role of cognitive biases in decision-making behind donating behaviour.

### 3. Research agenda: Pseudoinefficacy bias affect decision to donate

Accordingly, researchers have reported the role of a specific cognitive bias in donating behaviors among which the study of pseudoinefficacy suggests indications about (a) the decision to donate and (b) how much individuals donate (Västfjäll et al., 2015). This cognitive bias refers to an illusion of inefficacy arising when individuals can only help some people but not others who are equally in need. Pseudoinefficacy does not describe the act of donating, but rather is about the emotional experience laying at the basis of donor's WG. Västfjäll & Slovic (2013) have shown how individuals may report a decrease in WG about giving help when the amount of people who could not be helped increase. Authors conducted further experimental studies in which they varied systematically the number of people that might be helped and the number of those who could not (Västfjäll et al., 2015). Results showed that participants had negative feelings related to their sense of inefficacy. This led participants to minimize the levels of WG deriving from choosing to help only part of the people in need involved in the study. Participants declared that they had a more intense feeling of WG when they were presented with only one person than in the experimental conditions, where there were other people who would not benefit from any financial aid. As follow, researchers claimed that the decision regarding how much to donate may be highly influenced by emotional variables.

With the aim at contributing to this selfish altruism perspective, by suggesting the effect of pseudoinefficacy as possible cognitive bias which may be detrimental for deciding to donate, we provide three propositions to set a research agenda for further theoretical and empirical investigations. Firstly, we agree with *selfish altruism* according to which people decide to donate to receiving in return warm glow as a personal advantage (Exeley et al., 2015, Andreoni (1990)). Moreover, we claim that pseudoinefficacy bias reduce the level of donor' WG in decisions to donate.

*Proposition 1:* Pseudoinefficacy bias negatively affect decision to donate, i.e., higher levels of pseudoinefficacy bias reduce the level of donor' WG which in turn lead deciding to not donate.

Secondly, we argue that pseudoinefficacy suggests indications not only about the decision to donate but also on how much individuals donate (Västfjäll et al., 2015). Thus, we assume that when pseudoinefficacy occurs, people can reduce the amount of money that donors decide to donate.

*Proposition 2:* Pseudoinefficacy bias negatively affect the amount of donations, i.e., higher levels of pseudoinefficacy bias reduce the amount of money that donors decide to donate.

Thirdly, we argue that donors' features and experiences can affect their donating behaviors. Particularly, the fact of already being a donor or a volunteer for some time can influence the decision to donate and the amount of the donation. Moreover, we assume that pseudoinefficacy can interact

differently in decision-making process that drives those who are already donor or volunteer (or not), affecting their donating behaviors.

*Proposition 3:* Pseudoinefficacy bias interacts with individual's characteristics of donors, e.g., being a donor (having already donated money in the past) or not and being a volunteer (having already donated money in the past) or not.

Our assumptions can be verified by conducting experimental research. For example, cross-sectional study comprising measures of pseudoinefficacy and donating behaviour could provide initial evidence of the relationships among such cognitive bias, donor decision-making and the amount of donation. Likewise, longitudinal studies could be devised in order to verify the casual role of pseudoinefficacy in both donations and their amount. Conversely, the analysis of national data on donation could help to figure out the trends of donation as well as inferring the role of pseudoinefficacy via the comparison of different donation schemes. For example, it would be possible that a larger amount of donors may prefer to allocate larger amount of money in specific donation scheme where the beneficiaries are well described (i.e., appearing as close to the donors). By contrast, other donation scheme working via taxpayers donating to non-profit organizations may have different trends showing the effects of pseudoinefficacy. Finally, qualitative methods could be used to explore the emotional and cognitive response to donations. These methods could help to figure out the overall experience of donation as well as the how and to what extent pseudoinefficacy matters.

#### 4. Conclusion

With poverty being more and more widespread due to the worldwide changes (e.g., pandemic of Sars-Cov-2), charitable donations represent a possible indirect way to face this social challenge. In this framework, a good understanding on what motivates people to donate is crucial to develop, for example, a successful marketing strategy which can trigger charitable giving. Since scholarly authors who focused on charity and donating behavior have proposed several models following different perspectives, in the present study we proposed a critical review of the literature that explain the motivational factors and the individual conditions affecting donating behavior. Afterwards, in accordance with the selfish altruism perspective, we proposed a research agenda for further investigations based on a model that consider pseudoinefficacy as a factor that can affect motivation to donate. We argue that our propositions can be a possible explanation of the decision-making process underlying donating behavior, and the knowledge on it can be useful to plan a research agenda for further investigations, whose relevance rests in the potential applied implications.

#### References

- Alhidari, I. S., Veludo-de-Oliveira, T. M., Yousafzai, S. Y., & Yani-de-Soriano, M. (2018). Modeling the effect of multidimensional trust on individual monetary donations to charitable organizations. *Nonprofit and Voluntary Sector Quarterly*, 47(3), 623-644.
- Andreoni, J. (1990). Impure altruism and donations to public goods: A theory of warm glow giving. *The Economic Journal*, 100(401), 464-477.
- Barasch, A., Levine, E. E., Berman, J. Z., & Small, D. A. (2014). Selfish or selfless? On the signal value of emotion in altruistic behavior. *Journal of Personality and Social Psychology*, 107(3), 393-413.
- Baron, J. & Szymanska, E. (2009). Heuristics and biases in charity. In D. M. Oppenheimer & C. Y. Olivola (Eds.), *Experimental approaches to the study of charity*. London: Taylor and Francis.
- Batson, C. D., Duncan, B. D., Ackerman, P., Bucldey, T. & Birch, K. (1981). Is empathic emotion a source of altruistic motivation? *Journal of Personality and Social Psychology*, 40, 290-300.
- Bekkers, R. (2006). Traditional and health-related philanthropy: The role of resources and personality, *Social Psychology Quarterly*, 69(4), 349-366.
- Bekkers, R. (2010). Who gives and when? A scenario study of intentions to give time and money. *Social Science Research*, 39(3), 369-381.
- Dickert, S., Sagara, N. & Slovic, P. (2011). Affective motivation to help others: A two stage model of donation decisions. *Journal of Behavioral Decision Making*, 24, 361-376.
- Exley, C. L. (2015). Excusing selfishness in charitable giving: the role of risk. *Review of Economic Studies*, 83(2), 587-628.
- Ferguson, E., Farrell, K., & Lawrence, C. (2008). Blood donation is an act of benevolence rather than altruism. *Health Psychology*, 27(3), 327-336.

- Fernando, J. W., Kashima, Y. & Laham, S. M. (2014). Multiple emotions: A person-centered approach to the relationship between intergroup emotion and action orientation. *Emotion*, 14(4), 722.
- Finkelstein, M. A., & Brannick, M. T. (2007). Applying theories of institutional helping to informal volunteering: Motives, role identity, and prosocial personality. *Social Behavior and Personality: an international journal*, 35(1), 101-114.
- Frey, B. S. & Meier, S. (2004). Social comparisons and pro-social behavior: Testing "conditional cooperation" in a field experiment. *The American Economic Review*, 94(5), 1717-1722.
- Gross, J. J. (2002). Emotion Regulation: Affective, Cognitive, and Social Consequences, *Psychophysiology*, 39(3), 281-91.
- Grube, J. A., & Piliavin, J. A. (2000). Role identity, organizational experiences, and volunteer performance. *Personality and Social Psychology Bulletin*, 26(9), 1108-1119.
- Hoffman, M. L. (1981). Is altruism part of human nature? *Journal of Personality and Social Psychology*, 40(1), 121-137.
- Hysebelli, D. (2014). Psicologia delle donazioni in beneficenza. Empatia, collasso della compassione e fattori psicologici legati alla scelta di aiutare il prossimo. *Psicologia Sociale*, 3, 233-260.
- Jaeger, B., & van Vugt, M. (2021). Psychological barriers to effective altruism: An evolutionary perspective. *Current Option in Psychology*, 17(44), 130-134.
- Konrath, S., Ho, M. H., & Zarins, S. (2016). The strategic helper: Narcissism and prosocial motives and behaviors. *Current Psychology*, 35(2), 182-194.
- Lyle III, H. F., Smith, E. A., & Sullivan, R. J. (2009). Blood donations as costly signals of donor quality. *Journal of Evolutionary Psychology*, 7(4), 263-286.
- Martin, R. & Randal, J. (2008). How is donation behaviour affected by the donations of others?. *Journal of Economic Behavior & Organization*, 67(1), 228-238.
- Mayo, J. W. & Tinsley, C. H. (2009). Warm glow and charitable giving: Why the wealthy do not give more to charity? *Journal of Economic Psychology*, 30(3), 490-499.
- Ottoni-Wilhelm, M., Vesterlund, L., & Xie, H. (2017). "Why Do People Give? Testing Pure and Impure Altruism." *American Economic Review*, 107 (11), 3617-33.
- Piferi, L. R., & Lawler, K. A. (2006). Social support and ambulatory blood pressure: An examination of both receiving and giving. *International Journal of Psychophysiology*, 62(2), 328-336.
- Rumiati, R. & Bonini, N. (2001). *Psicologia della decisione*. Bologna: Il Mulino.
- Shaikh, S., & McLarney, C. (2005). Where does all the money go? An investigation of donation filtration. *International Journal of Sociology and Social Policy*, 25(12), 81-91.
- Shang, J., & Croson, R. (2005). Field experiments in charitable contribution: the impact of social influence on the voluntary provision of public goods. *The Economic Journal*, 19(540).
- Tversky, A., Sattah, S. & Slovic, P. (1998). Contingent weighting in judgment and choice. *Psychological Review*, 95, 371-384.
- Västfjäll, D., Slovic, P. & Mayorga, M. (2015). Pseudoinefficacy: negative feelings from children who cannot be helped reduce warm glow for children who can be helped. *Frontiers in Psychology*, 6, 616.
- Verhaert, G. A. & Van den Poel, D. (2011). Empathy as added value in predicting donation behavior. *Journal of Business Research*, 64(12), 1288-1295.
- White, K. M., Poulsen, B. E. & Hyde, M. K. (2016). Identity and personality influences on donating money, time, and blood. *Nonprofit and Voluntary Sector Quarterly*, 46(2), 241-260.
- Wilhelm, M. O., & Bekkers, R. (2010). Helping behavior, dispositional empathic concern, and the principle of care. *Social Psychology Quarterly*, 73(1), 11-32.
- Ye, N., Teng, L., Yu, Y. & Wang, Y. (2015). "What's in it for me?": The effect of donation outcomes on donation behavior. *Journal of Business Research*, 68(3), 480-486

## THE EFFECT OF HAPPINESS AND RELIGIOUS FAITH ON CHRISTIAN YOUTH'S RESILIENCY DURING THE COVID-19 PANDEMIC

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### Abstract

Youths with happy emotions and strong religious faith, it can be assumed, experience increased resiliency when dealing with unexpected and challenging events, such as the COVID-19 pandemic. To examine this assumption, a study involving 229 Christian youths, all students at public and private universities in Sabah, Malaysia, was conducted. Participants had a mean age of 22.09 years (SD = 4.34) and were predominantly female (179; male = 49; undisclosed = 1). The study found that happiness contributed 4.7% of the variance of the participant's resiliency, while their religious faith contributed 4.1%. Furthermore, the Christian faith showed a moderation effect on the effect of happiness on resiliency. To wit, youths with high levels of happiness and strong Christian faith demonstrated high resiliency, and this finding supports the abovementioned research assumption. Therefore, it is suggested that when facing life challenges, including the COVID-19 pandemic, young adults ought to create a positive ambience, e.g., promoting happiness, enhancing religious faith via daily prayer, perceiving faith as a source of comfort and life's purpose, and engaging in faith-based/church activities as a way to strengthen resiliency.

**Keywords:** *Happiness, religious faith, resilience, youths, COVID-19 pandemic.*

### 1. Introduction

Youths in this post-modern era, in contrast to previous generations, generally live immersed in a technologically sophisticated milieu. With ever-advancing computer software and 'smart' devices, such technological tools might assist the youth of today in adapting and coping with various challenges, including academic, social, and economic. In the academic setting, nowadays youth can readily access a wealth of online educational and scholarly resources while undertaking academic assignments. Moreover, students can – as has been particularly the case during the COVID-19 pandemic – arrange online study or discussion groups and operate online programs on electronic learning platforms. Therefore, it may be assumed that with the aid of modern technology, youths can easily adapt to the 'new normal' of online distance learning, and other social norms associated with the pandemic. Past studies (e.g., Cosmas, 2020; OECD, 2020; Selvanathan et al., 2020), however, have found that many youths are struggling to deal with academic and life challenges faced as a direct or indirect consequence of the pandemic. Although equipped with modern devices to access the internet, many youths showed concerns and worries regarding their academic challenges irrespective of their educational level. First-year students, for instance, reported lower psychological well-being and motivation in their studies amid the pandemic as revealed in Ah Gang's (2022) study. Previous research (e.g., Quirk & Quirk, 2020; Schnieders & Moore, 2021) have also shown the academic challenges experienced by first-year university students. Many factors contribute to their lack of psychological well-being and motivation. These include the feeling of isolation from campus life and the inaccessibility of in-person interactions with fellow students and instructors. Learning from home, as experienced by most first-year students during the pandemic, may lead to the accumulation of elevated stress levels and other difficulties. Although most young adults are continuing with their post-secondary education, such challenges and concerns have been linked with increased uncertainty of their ongoing education, e.g., re-enrolment, thus potentially becoming a barrier to course persistence and completion (Schieder & Moore, 2021). These factors are likely impacting first-year students' psychological well-being and motivation in learning, and in turn, contributing to certain decisions to suspend study.

Final-year students similarly face their share of worries and concerns, not least regarding missing out on opportunities for professional placement to consolidate learnt skills and build confidence, as well as potentially improving job prospects after graduation. For instance, Choi et al. (2020) have indicated that a majority (59.3%) of final-year medical students in the UK felt less prepared to commence Foundation Year training owing to a lack of clinical practicum consequent to the COVID-19 pandemic.

Ensuring that students are better able to recover and ‘bounce back’ from academic and life difficulties experienced during the pandemic may require boosting their inner strengths. This can derive from various sources that help improve one’s sense of happiness or positivity and thereby increase resilience. To better understand this phenomenon, a study – presented in this paper – was conducted to examine the effects of happiness and religious faith on resilience among Christian students. These two elements are highlighted because, during the pandemic, students likely experience more negative emotions than positive ones. Moreover, many youths today, if they hold a religious faith, may not perceive it as a source of resiliency, particularly when facing unexpected circumstances such as the pandemic. Indeed, secularization theory suggests that with the advancement of knowledge in modern societies, the importance of religion will continue to weaken, resulting in increasingly secular societies (Gjelten, 2017). This is already observable in modernistic, as opposed to merely modern, societies where the role of religion is increasingly questioned. Additionally, although modern technology is good and its progress encouraged, there seems to be an obsession with technology, particularly among today’s youth. As a consequence, there is a discernible detachment from concrete familial and community interaction in preference to virtual contact.

Among youths, particularly those deemed vulnerable, the COVID-19 pandemic has fomented a crisis that poses considerable risks in terms of education, employment, mental health, and disposable income. Young people born between 1990 and 2005 have already lived through two major international upheavals within their first 15-30 years, namely the 2008/09 Global Financial Crisis and the COVID-19 pandemic. Undoubtedly, many young adults have been disproportionately impacted by these unprecedented events, either directly (say, as students or job seekers with dwindling opportunities) or indirectly (through the repercussions of these crises upon families and the wider community). Therefore, building resilience and the anti-fragility of public institutions should be pursued in tandem with the empowerment of young people (OECD, 2020). Despite experiencing various unexpected and testing events, some youths are able to regain resiliency by understanding their inner strengths. Previous studies (e.g., Cosmas, 2020; Ah Gang et al., 2021) have shown that the promotion of happy emotions and the strengthening of religious faith can be of help in youths to become more resilient when facing challenges posed by today’s world. Indeed, certain students have started adopting new methods for practising their faith in the wake of COVID-19, including attending reduced-capacity services, convening for religious discussions over Zoom, and seeking support from Harvard chaplains (Koller & Peterman, 2021). Such strategies can lessen the pandemic’s impact on academic performance and increase student resiliency.

Yet, it must be asked, *what is resilience?* Resilience has been addressed in terms of a psychological, social, emotional, and physical capacity or competence (Titus, 2011). Although resilience comes from within the person, sometimes it can be fortified via tangible and intangible supports from outside. However, although well-intentioned, external assistance from family, one’s university, and other relevant authorities may not always be adequate for coping with academic and life challenges resulting from the COVID-19 pandemic. As Mahmud (2021) suggests, in addition to social support (an external factor), a person’s resilience (an internal factor) ought to be strengthened as this will affect how the individual fares when experiencing difficulties and hardships. For example, university students have realized that modern technology cannot fully help them to overcome the several challenges emerging from the pandemic (Cosmas, 2020). Consequently, many youths find themselves limited in how to build their resilience as they navigate academic and social challenges in the era of COVID-19.

During the ongoing pandemic, many young adults have realized the importance of identifying and rebuilding their inner strengths which, in turn, can facilitate their adaptation to new challenges. According to Ream (n.d.), researchers and policymakers generally underestimate the prevalence of religiosity among American youth, the significance of religion in their lives, and their self-agency in religio-spiritual development. Furthermore, it is known that religion can benefit health, including mental health. For instance, Koenig (2012) in a comprehensive systematic review, among other things, showed a positive correlation between religion and increased happiness and hope, in addition to better coping with adversities and finding meaning. Thus, it is reasonable to suggest that religion may enhance and be a source of resilience by providing an adaptive alternative to maladaptive actions. By participating in community-based religious activities, youths can acquire a sense of belonging and develop positive relationships with peers and adults, not to mention form a connection with God, or higher powers, thereby providing a sense of meaning and purpose in life (Ream, n.d.). This is no different to previous generations. For example, among the ‘baby boomer’ generation, Roof (1999) found that they sought religious involvement that helped address the complexities faced in their inner lives, which, in turn, facilitated finding personal meaning in life. Indeed, religious believers claim greater social self-esteem and psychological adjustment than non-religious individuals (Gebauer et al., 2012). Growing up in today’s world can be complicated. Parents often worry about how their children will navigate the social, behavioural, and developmental challenges of life, especially during adolescence (Vanderweele, 2018). These challenges only intensify when entering another developmental stage, e.g., young adulthood, and all the more when facing globally unsettling events, such as the COVID-19 pandemic.

## 2. Methodology

### 2.1. Study design

The COVID-19 pandemic has resulted in limited opportunities for researchers to conduct face-to-face studies. Hence, it was deemed that online methods were the safest and most practical means to collect data from university students. Potential participants were invited to join this study via a Google Form survey link circulated on various online platforms (e.g., WhatsApp and email). This strategy may have helped broaden the dissemination of the survey invitation leading to a wider array of students being approached from both public and private universities. Participants were recruited based on purposive and snowball sampling. As suggested by Crossman (2020), purposive sampling was employed to match population-specific characteristics required to meet the study's objective. Snowballing sampling was later used by encouraging students who already participated in the study to invite fellow students who likewise fulfilled the required characteristics by sharing the survey link. All participants were university students and Christians from a range of denominations, including Catholic, Methodist, the Evangelical Church of Sabah (SIB), the Protestant Church of Sabah (PCS), Basel Church of Sabah, among others.

### 2.2. Objectives

Based on previous research and recent events, this study was conducted with the aim of examining the effects of happiness and religious faith on the resiliency of Christian youths. In addition, the study also examined the moderation effect of religious faith on the relationship between happiness and resiliency among Christian youths. This study focused on Christian youths because it seeks to provide further insight into how the Christian faith can lift the resiliency of Christian youths, particularly in Sabah, Malaysia, during the pandemic. Although Christianity is the third most practised religion in Malaysia, it is the second in Sabah state. According to the Institute of Ethnic Studies (2018), 26.6% of Sabah's population are Christians and are majority from Bahasa speaking native indigenous community.

### 2.3. Research instrument

A questionnaire consisting of a demographic profile section and three measurement scales (i.e., happiness, religious faith, and resiliency) was used for the data collection. The **Demographic Profile** was employed to gather data about the participants' gender, religion, as well as their university, academic year/level, and campus residency. The **Brief Resilient Coping Scale** (Sinclair & Wallston, 2004) was used to measure the students' resiliency coping skills, with their responses ranging from 1- 'does not describe me at all' to 5- 'does describe me very well.' The two sample items for this scale were 'I look for creative ways to alter difficult situations,' and 'I actively look for ways to replace the losses I encounter in life.' A higher score was defined as a higher resiliency. The **Subjective Happiness Scale** (Lyubomirsky & Lepper, 1999) was used to measure students' happiness during the Movement Control Order, i.e. 'coronavirus lockdown', that lasted from 18 March to 28 April 2020. The two sample items were 'In general I consider myself ...' and 'Compared to most of my peers, I consider myself...'. The response scale ranged from 1- 'not a very happy person' to 7- 'a very happy person.' A higher score indicated greater happiness. The **Religious Faith Scale** (Plante & Boccaccini, 2007) was used to measure participants' religious faith by asking them to rate their level of agreement with three items based on a 5-point Likert-type scale, ranging from 1 ('strongly disagree') to 5 ('strongly agree'). The three items were 'praying daily,' 'I look to my faith as the source of inspiration,' and 'I look to my faith as a source of comfort.'

## 3. Results

A total of 229 Christian youths from various denominations participated in the study. A majority of participants were females, 179 (78.20%), with 49 (21.40%) males, and one did not disclose their gender. Participants' mean age was 22.09 years (SD = 4.34). The study found that happiness contributed 4.7% to the variance of resilience among the Christian youth participants, while their religious faith contributed 4.1%. In addition, the Christian faith showed a moderation effect on the effect of happiness on resiliency, as shown in Table 1.

*Table 1. Hierarchical Regression Analyses of the Moderation Effects of Religious Faith on the Relationships Between Happiness and Christian Youths' Resiliency.*

| Variables                   | B    | R square | R square change | Sig. |
|-----------------------------|------|----------|-----------------|------|
| Step 1                      |      | .047     | .047            | .00  |
| Happiness                   | .216 |          |                 |      |
| Religious faith             | .213 | .088     | .041            | .00  |
| Happiness x religious faith | 1.33 | .137     | .049            | .00  |

#### 4. Future research directions

Suggested further research should examine distinct Christian denominations individually (e.g., Catholic, Anglican, Baptist, Methodist, etc.). In this current study, Christianity was taken collectively, without differentiating between denominations. This is because the study sought to understand broadly how Christian youths apply their religious faith in coping with academic and life challenges faced during the COVID-19 pandemic. However, owing to each denomination's distinct approach to religious teachings, practices, and community activities, it is reasonable that each would have a different level of impact upon resilience among youths. It is not unusual for Catholic youth, for instance, to partake in retreats and specific events focused on young people, including World Youth Day. Such activities may help how youth face challenges and changes in life. As has been remarked: "When a strong wind blows people can do one of two things: build windbreaks or set up windmills." (Catholic Archdiocese of Canberra and Goulburn, n.d.) That is, one can avoid change or make the most of it, utilising and building up resilience.

#### 5. Discussion

This study found that both elements – happiness and religious faith – can increase resilience among Christian youth. The findings indicate that the inner strength of Christian youths can benefit from positive feelings and faith, as demonstrated by increased resilience when facing academic and life stress amidst the COVID19 pandemic. Nelson-Becker and Thomas (2020) define resilience as the ability to access one's inner wisdom and strength enhanced by time and experience. People are resilient because often there are few other choices, besides despairing and to isolate. One's tenacity in claiming a personal sense of spirituality and finding meaning in adversity is a testament to such resilience, as per the experience of Christian youths during the pandemic. According to Edara et al. (2021), when facing uncertainty due to unexpected events, such as the COVID-19 pandemic, people increasingly tend to put their trust and hope in God or the Divine. In the wake of devastating experiences, certain people feel a need to trust in God and have hope that the testing times will pass. Indeed, during the COVID-19 pandemic, many people seem to be relying on the power of the Divine for intercession and intervention. Belief in the existence of God or the Divine signifies pleasant valence leading to resiliency and promoting overall wellness (Edara et al., 2021). Vanderweele and Ying Chen (2018) highlight how a religious upbringing can profoundly help adolescents navigate life challenges as well as contribute to a wide range of health and well-being outcomes later in life. Their study involved a large sample of over 5,000 adolescents, with over eight years of follow up, and controlled for many variables to try to isolate the effect of religious upbringing. Vanderweele and Ying Chen found that those raised in a religious or spiritual environment were subsequently better protected from various challenges during adolescence, thereby leading to a happier life, and were more likely to engage in voluntary work, have a greater sense of mission and purpose, and higher levels of forgiveness. Religious observance, prayer, and meditation can be vital resources for adolescents navigating the challenges of a busy modern life. A strong commitment, however, is often required to establish such practices. The psychological and social impact students are facing during the pandemic can produce dysfunction in daily activities and, if prolonged, will undoubtedly increase their anxiety and fears. Therefore, one way to overcome these negative effects is by strengthening resilience through happiness and religious faith. All these may help students manage their stress and anxiety, aid in resolving the complexities encounter during a crisis, and shield them from traumatic situations (Mahmud, 2021).

#### 6. Conclusion

This study of young Christian university students supports the original assumption that resilience can be enhanced through increasing happiness and faith. Both of these elements – happiness and faith – can be found through practising Christianity and their combination can synergistically boost resiliency among youth facing academic and life challenges amidst the COVID-19 pandemic.

#### *Acknowledgements*

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#### *References*

Ah Gang, G. (2022). *Psychological Well-being of First-year Psychology Students Amid the COVID-19 Pandemic*, LUMEN Proceeding.

- Catholic Archdiocese of Canberra and Goulburn. (n.d). *Resilience in times of change*. <https://cgatholic.org.au/my-family-my-faith/blog/resilience-times-change/>
- Choi, B., Jegatheeswaran, L., Minocha, A., Alhilani, M., & Mutengesa, E. (2020). The impact of the COVID-19 pandemic on final year medical students in the United Kingdom: A national survey, *BMC Med Educ* **20**, 206 (2020). <https://doi.org/10.1186/s12909-020-02117-1>
- Cosmas, G. (2020). Psychological Support in Uplifting University Students' Happiness in Fighting the Coronavirus Lockdown. *Postmodern Openings*, *11*(2), 31-42. <https://doi.org/10.18662/po/11.2/155>
- Cosmas, G., Seok, C. B., & Ading, C. (2020). *The effects of previous adversity, happiness, and religious faith in enhancing university students' resilience to the COVID-19 pandemic*. In Pracana, C., & Wang, M. (Eds.), pp. 212-216, Lisbon: Portugal, InScience Press.
- Crossman, A. (2020, March 19). *Understanding purposive sampling: An overview of the method and its applications*. Retrieved from <https://www.thoughtco.com/purposive-sampling-3026727>
- Edara, I. R., Del Castillo, F., Ching, G. S., Del Castillo, C. D. (2021). Religiosity, Emotions, Resilience, and Wellness during the COVID-19 Pandemic: A Study of Taiwanese University Students, *International Journal Environment Research and Public Health* **18**, 6381. <https://doi.org/10.3390/ijerph18126381>
- Gebauer, J. E., Sedikides, C., & Neberich, W. (2012). Religiosity, Social Self-Esteem, and Psychological Adjustment: On the Cross-Cultural Specificity of the Psychological Benefits of Religiosity, *Psychological Science*, *23*(2), 158-160. <https://doi.org/10.1177/0956797611427045>
- Gjeltten, T. (2017, April 18). *Why religion is more durable than commonly thought in modern society*, <https://www.npr.org/2017/04/28/525895389/why-religion-is-more-durable-than-we-thought-in-modern-society>
- Institute of Ethnic Studies. (2018, 01 June). *Final presentation of the Sabah study on Christian-based social organisations*, <https://www.ukm.my/kita/news/final-presentation-of-the-sabah-study-on-christian-based-social-organisations-1-june-2018/>
- Koenig, H. G. (2012). Religion, Spirituality, and Health: The Research and Clinical Implications. *ISRN Psychiatry*, *2012*, 278730, 1-33. <https://doi.org/10.5402/2012/278730>
- Koller, A. M., & Peterman, T. C. (2021, February 23). Religious groups keep faith during pandemic, remote academic year News, *The Harvard Crimson*, <https://www.thecrimson.com/article/2021/2/23/religious-groups-keep-the-faith/>
- Lyubomirsky, S., & Della Porta, M. (2008). Boosting happiness, buttressing resilience: Results from cognitive and behavioral interventions. In J. W. Reich, A. J. Zautra, & J. Hall (Eds.), *Handbook of adult resilience: Concepts, methods, and applications* (pp.450-464). The Guilford Press.
- Mahmud, M. I. (2021, August 21). Varsity students need help to cope with stress, anxiety, *New Straits Times*, <https://www.nst.com.my/opinion/letters/2021/08/719836/varsity-students-need-help-cope-stress-anxiety>
- Nelson-Becker, H., & Thomas, M. (2020). Religious/spiritual struggles and spiritual resilience in marginalised older adults, *Religions*, *11*(431), 1-17, <https://www.doi.10.3390/rel11090431>
- OECD. (2020). *Youths and COVID-19, Response, recovery and resilience*, [https://read.oecd-ilibrary.org/view/?ref=134\\_134356-ud5kox3g26&title=Youth-and-COVID-19-Response-Recovery-and-Resilience](https://read.oecd-ilibrary.org/view/?ref=134_134356-ud5kox3g26&title=Youth-and-COVID-19-Response-Recovery-and-Resilience)
- Plante, T. G., & Boccaccini, M. T. (2007). The Santa Clara Strength of Religious Faith Questionnaire, *Pastoral Psychology*, *45*, 375-387. doi: 10.1007/BF02230993
- Quirk, J. M., & Quirk, J. P. (2020, July 29). *What incoming first-year students want online learning to be* <https://er.educause.edu/articles/2020/7/what-incoming-first-year-students-want-online-learning-to-be>
- Ream, G. L. (n.d.). Religion's role in the development of youth, <http://demoiselle2femme.org/wp-content/uploads/Religions-Role-in-the-Development-of-Youth.pdf>
- Roof, W. C. (1999). *Spiritual Marketplace: Baby Boomers and the Remaking of American Religion*. University Press
- Schnieders, J. Z., & Moore, R. (2021). First-year college students' online learning experiences during the pandemic, *Insights in Education and Work*, *First-Year-College-Students-Online-Learning-Experiences-During-Pandemic.pdf* (act.org)
- Selvanathan, M., Hussin, N. M., & Azazi, N. A. (2020). *Students learning experiences COVID-19: Work from home period in Malaysian Higher Learning Institutions*, <https://journals.sagepub.com/doi/full/10.1177/0144739420977900>
- Sinclair, V. G., & Wallston, K. A. (2004). The development and psychometric evaluation of the Brief Resilient Coping Scale. *Assessment*, *11* (1), 94-101. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/14994958>
- Titus, Craig. (2011). *Resilience and the Virtue of Fortitude*. Washington: Catholic University
- Vanderweele, T. J. (2018, September 18). Religious upbringing and adolescence, <https://ifstudies.org/blog/religious-upbringing-and-adolescence>



## FOSTERING EMPLOYABILITY AT WORK THROUGH JOB CRAFTING

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### Abstract

In the current times of labor market transformations characterized by increasing globalization and digitalization processes, institutions and organizations are aiming at fostering employees' levels of employability via training interventions at work. Higher levels of employability sustain employees' competitiveness and job security as well as organizational productivity. Some scholarly authors define employability as a form of proactive adaptability specific to work that allows employees to identify and implement their career plans. It is also defined as the ability to transition effortlessly among the different occupations, allowing the individual to obtain employment. Given this, interventions aimed at fostering proactivity are deemed to be a possible way to foster employability. In recent years, researchers and practitioners have extensively examined employability, identifying different and separate antecedents, i.e., volition, support for career, skill development, job-related skills, willingness to change jobs, self-efficacy, and applicability of training on the job. In this study, we aim to give a contribution to such literature on training interventions to promote employability by proposing critical scrutiny around training interventions by which we will introduce job crafting intervention as a candidate to foster employability by supporting employees' proactive behaviors. Indeed, job crafting intervention is a specific training aimed at promoting proactive behavior. In particular, it focuses on four main employees' behavioral strategies, namely, (a) reducing job demands, (b) seeking challenges at work, (c) optimizing and (d) enhancing job resources. By promoting such behavioral strategies, employees can foster the applicability of learning by doing at work which directly affect the overall sense of employees' employability. For instance, seeking challenges strategies can indirectly lead to learn novel practices at work affecting their sense of competence and organizational belonging. Likewise, reducing job demands and enhancing job resources can be seen as behavioral strategies which can directly foster practical knowledge (i.e., know-how) and its applicability which in turn may lead to higher levels of perceived employability among employees. Hence, in this study, we will firstly outline the benefit of training interventions at the workplace within which job crafting can be seen as a possible training pathway to foster employability. Secondly, we will present the specific training strategies setting a research agenda for further developments. Ultimately, we aim at lecturing about the pragmatic and moral concern of the notion of employability by proposing a theoretical discussion for practical implications.

**Keywords:** *Employability, training interventions, applicability, job crafting, research agenda.*

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### 1. Introduction

The construct of employability is difficult to define owing to the different meanings that *to be employable* can have. One of the most widely accepted definition comes from Van der Heijde and Van der Heijden, who consider employability as a multidimensional construct characterized by the continuous fulfilling, acquiring, or creating of work through the optimal use of competences (van der Heijde & van der Heijden, 2006). Their definition is consistent both with the conceptualization of Forrier and Sels, which talk about employability like an individual chance for employment on the internal or external labor market (Forrier & Sels, 2003) and with the one of Fugate, Kinicki and Ashforth, who defined it as «a form of work specific active adaptability that enables workers to identify and realize career opportunities» (Fugate et al., 2004). Employability is studied from different angles and distinct levels (individual, organizational, and industrial) across a wide range of academic disciplines, such as business and management studies, human resource management, human resource development, psychology, educational science, and career theory (van der Heijde & van der Heijden, 2006), but all

conceptualizations, like those previously mentioned, share that employability implies a permanent process of acquisition and fulfillment of employment, within or outside the current organization.

Employability has been present in the literature for many years, but the current interest has been driven by changes in public employment policy. Therefore, given that several studies have shown that improving employability is fundamental for organizations and institutions that want to keep up with modern society's changes, it becomes essential thinking about interventions that promote the purpose of enhancing employability, intended as a specific form of proactive adaptability specifically for work that allows workers to identify and realize career opportunities. An objective that has led several authors to consider different types of interventions to increase opportunities for professional development and self-efficacy. Moreover, Whelan and colleagues, in a trial that wanted to examine whether interventions which aim to build employability by targeting individual wellbeing are more effective than conventional approaches, demonstrated how proposing intervention for improving career potential could have a significant impact on the employability of long-term unemployed workers (Whelan et al., 2018).

### **1.1. Aim of the study**

Employability can be promoted in many ways, but one of the most effective is certainly through interventions, especially if targeted at individual's needs, such as training and counseling. In fact, this kind of intervention affects people's wellbeing, showing improvements in mental health, self-esteem, and job-search self-efficacy, as well as a reduction in the occurrence of negative automatic thoughts and employment (Whelan et al., 2018). Furthermore, numerous authors reported learning at work is an important antecedent of employability whose impact can be emphasized (e.g., van der Heijden et al., 2016). Given the importance and effectiveness of interventions, we intend to conduct a critical review of training interventions, focusing especially on job crafting intervention, that in the last two decades several scholars reported as crucial in the field of career development. Job crafting is an informal process that focuses on the positive changes that employees can make in order to shape their work practice to align with their idiosyncratic interests and values, and ultimately, enhance the enjoyment, meaning, and satisfaction they attain from their work (Slemp & Vella-Brodrick, 2014), and previous studies have shown a positive relationship between job crafting and employability (Tims et al., 2012; Brenninkmeijer and Hekkert-Koning, 2015).

In accordance with scholars that define job crafting as a possible pathway to foster employability, in the present contribution we aim to outline the benefit of job crafting training interventions at the workplace. Then, we will propose some strategies in order to provide a research agenda that can be a guide for future development. Lastly, we will discuss employability definitions and pragmatic and moral concerns of the notion of employability by proposing a theoretical discussion to future practical implications.

## **2. The applicability intervention**

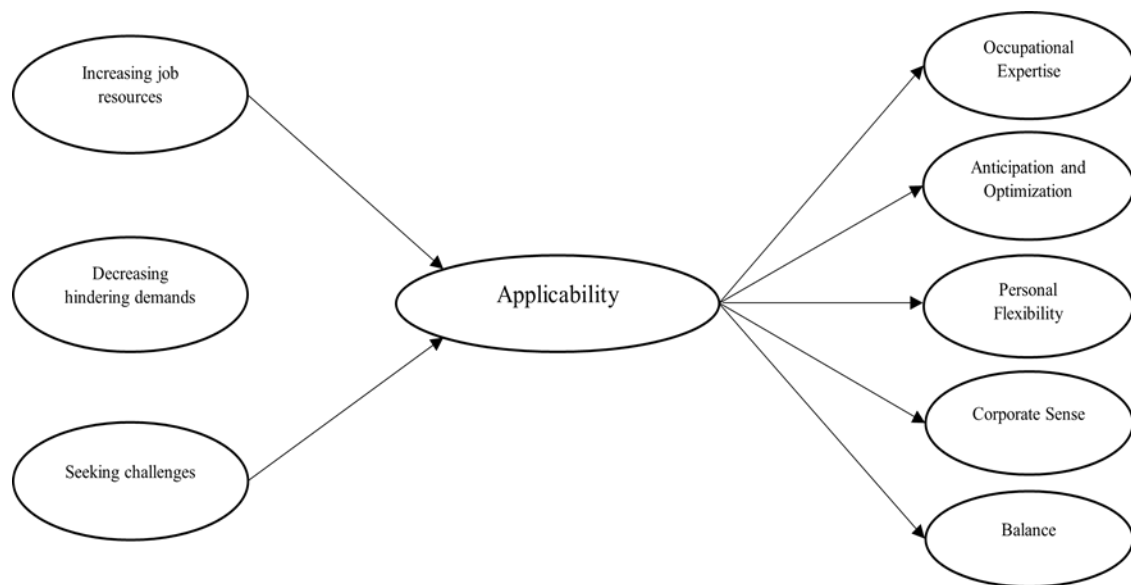
Applicability is a particular type of intervention that deals with the promotion of practical knowledge at work and job crafting can be viewed as an antecedent of applicability. Applicability is constituted by training and development activities which refer to the systematic approach to learning aimed at improving individual, team, and organizational effectiveness (Goldstein & Ford, 2002; Paradise, 2007; Rivera & Paradise, 2007), and may produce important benefits for individual employees (Arthur et al., 2003; Hill & Lent, 2006; Satterfield & Hughes, 2007), teams, organizations, and society as a whole (Aguinis & Kraiger, 2009; Noe et al., 2010). However, in order for training and development to be effective, it is highly important to carefully consider the applicability of newly learned knowledge, attitudes, and skills to safeguard the enhancement of both employee and, subsequently, organizational-level outcomes (Antonacopoulou, 2016; Kozlowski et al., 2000). Participation in training and development programs is rarely enough to guarantee its effectiveness of it (Baldwin & Ford, 1988). Estimates of newly learned competences' loss, due to poor transfer of training, range from 66% (Saks & Belcourt, 1997) to 90% (Curry et al., 1994; Sookhai & Budworth, 2010). It is the positive transfer of training and development - that is, the extent to which the learning that results from it transfers to the job - that leads to meaningful changes in work performance and, consequently, employability enhancement (Blume et al., 2010; Holton III et al., 2001). Adequate transfer of newly learned knowledge, attitudes, and skills stimulate an employee to become an autonomous learner who can deal with new tasks and unfamiliar problem situations, and of developing adaptive expertise (see also Ford & Schmidt, 2000). Competences that are newly acquired in training need to be fully and appropriately transferred to and applied in job-related activities (Aguinis & Kraiger, 2009; Holton III, Chen, & Naquin, 2003; Kontoghiorghes, 2004) in order to actually further develop workers' employability (Eraut, 2004; Hicks, Bagg, Doyle, & Young, 2007; Pulakos et al., 2000; Russ-Eft, 2002).

In other words, the applicability of newly acquired competences in the practice of one's current job (Broad,1997; Mathieu, Tannenbaum, &Salas,1992; Tracey, Tannenbaum, & Kavanagh,1995; Wexley & Latham, 1991) is of crucial importance to increase their actual use and to enhance workers' career potential (De Vos et al.,2011; Van der Heijden & Van der Heijden, 2006). For these reasons, applicability could be the main intervention to use in order to increase the levels of perceived employability.

### 3. Interweaving applicability intervention and job crafting intervention

Nowadays, there is a lack of knowledge concerning the relationship between job crafting and applicability of training. The present research aims to examine if teaching employees to craft their job may impact on the levels of applicability of training which, in turn, is positively related to the self-reported dimensions of employability (see Figure 1) (Plomp et al., 2019). We argue that if job crafting is associated with a type of experiential learning, the experience directly teaches something about work, and this can increase the level of employability, namely job crafting can directly affect on learning, and indirectly on employability.

Figure 1. Hypothesized model of Job Crafting fostering Applicability and Employability.



Job crafting (Wrzesniewski & Dutton, 2001) is a construct that represents the proactive role of the worker in modifying and redesigning activities, tasks, and work to adapt them to his/her personal characteristics and aptitudes. Theorization of this theme is inspired by studies on "idiosyncratic jobs", namely jobs that are not linked to explicit contractual terms but rather focus on extra-economic characteristics, such as organizational atmosphere or trust (Bonazzi, 2007). These studies radically changed the psychological view of work, promoting a shift from defining tasks regardless of who was doing them to considering more individual characteristics and trying to fulfill them. Job Crafting strategies consist of four proactive behaviors: (a) reducing job demands, (b) seeking challenges at work, (c) optimizing and (d) enhancing job resources. Theoretical models that have contributed most to the development of job crafting are the JD-R Model and the Job Identity Model. The first one, formulated by Bakker e Demerouti (2007), states that this re-modeling activity would be aimed at balancing job demands and job resources of employees: while demands involve physical or mental effort, resources facilitate the individual in achieving their goals. In this perspective, Job Crafting interventions would therefore aim to increase available resources and reduce the demands of the work environment (de Gennaro, Buonocore & Ferrara, 2017). The second theoretical model was developed by the own authors of job crafting conceptualization and asserts that individuals can proactively interfere to modify the content of their work to make it consistent with their individual characteristics (Wrzesniewski & Dutton, 2001). Subsequently, Petrou et al. (2012) collapsed the two dimensions by Tims et al. (2012) related to job resources (increasing structural and social job resources) and differentiated between three characteristics of job crafting: seeking resources, seeking challenges, and reducing demands (Svicher & Di Fabio, 2021).

We suggest that increasing job resources can be seen as a cognitive mechanism underlying applicability. Indeed, increasing job resources refers to the extent to which employees learn how to enhance their resources at work whether they refer to both relations and work conditions. Viewed as a form of experiential learning we suggest that the motivational and cognitive mechanism underlying applicability may cover the mechanism promoted via a job crafting intervention. This in turn would lead to higher levels of employability at work thanks to the enhancement of the experiential capacity development and the linked cognitive awareness.

**Proposition 1:** Increasing job resources can affect the extent to which employees learn through work. Higher levels of increasing job resources can indirectly support the enhancement of employability.

Moreover, we propose that seeking challenges can support applicability and indirectly affect employability dimensions. In particular, as demonstrated in several studies (e.g., Harju, L. K, 2016), seeking challenges at work enhances employee work engagement, prevents job boredom, and generates other job crafting behaviors. If job crafting is associated with experiential learning, outcomes that can be achieved in terms of employability are greater. Based on these assumptions, we hypothesize that a job crafting intervention focused on seeking challenges would promote an applicability intervention which, in turn, would have a positive impact on perceived employability. Conversely, decreasing hindering demands represent a challenging aspect related to the work conditions which are not related to cognitive dimensions and even more, experiential learning. Therefore, we suggest that

**Proposition 2:** Seeking challenges can affect the extent to which employees learn through work. Higher levels of seeking challenges can indirectly support the enhancement of employability.

Such propositions can be verified via multiple ways. From a theoretical point of view, our study is limited to assuming such associations given the prominence of a few literary sources. Therefore, we suggest that such assumptions may be further explored via conceptual analysis and theoretical reflections by scholarly authors. From an empirical point of view, we suggest that our assumptions may be tested both with classical experimental research design. For instance, training interventions may be devised, and participants of the study assigned to three different groups. One group may receive a classical applicability intervention. A second group may receive a job crafting intervention while a third group may participate in both job crafting and applicability interventions. Then, a fourth control group may be included and comparisons can be made between participants to see the extent to which employability at work is promoted. Moreover, a cross-sectional study comprising measures of job crafting dimensions, applicability and employability could provide initial evidence of the relationships among dimensions. Likewise, longitudinal studies could be devised in order to verify the causal role of job crafting dimensions in both applicability and employability. These methods could help to figure out the overall effect of job crafting behavior on how and to what extent applicability and employability are related.

#### 4. Conclusion

Building on previous studies reporting the key contribution of informal learning to employability enhancement, we hypothesized that training employees to craft their job would relate to higher applicability of the training on the job and developmental activities and, consequently, to employability enhancement. However, our study is limited to a short literature review. Although this compromises our contribution, its originality offers some indications about further exploration by proposing two propositions that could be tested in multiple ways. Indeed, we argue that our propositions can be a possible explanation of the motivational and cognitive mechanism underlying applicability, and the knowledge on it can be useful to propose possible training intervention at work for the promotion of employability.

#### References

- Aguinis, H., & Kraiger, K. (2009). Benefits of training and development for individuals and teams, organizations, and society. *Annual Review of Psychology*, 60, 451–474.
- Antonacopoulou, E. P. (2016). The Relationship between Individual and Organizational Learning: New Evidence from Managerial Learning Practices, 37(4), 455–473.

- Arthur, W., Bennett, W., Edens, P. S., & Bell, S. T. (2003). Effectiveness of training in organizations: A meta-analysis of design and evaluation features. *Journal of Applied Psychology, 88*(2), 234–245.
- Baldwin, T. T., & Ford, J. K. (1988). Transfer of training: a review and directions for future research. *Personnel Psychology, 41*(1), 63–105.
- Blume, B. D., Ford, J. K., Baldwin, T. T., & Huang, J. L. (2010). Transfer of training: A meta-analytic review. *Journal of Management, 36*(4), 1065–1105.
- Curry, D. H., Caplan, P., & Knuppel, J. (1994). Transfer of Training and Adult Learning (TOTAL). *Journal of Continuing Social Work Education, 6.1*, 8–14.
- Hill, C. E., & Lent, R. W. (2006). A narrative and meta-analytic review of helping skills training: Time to revive a dormant area of inquiry. In *Psychotherapy* (Vol. 43, Issue 2, pp. 154–172).
- Holton III, E. F., Bates, R. A., & Ruona, W. E. A. (2001). Development of a generalized learning transfer system inventory. *Human Resource Development Quarterly, 11*(4), 333–360.
- Kozlowski, S. W. J., Brown, K. G., Weissbein, D. A., Cannon-Bowers, J. A., & Salas, E. (2000). A multilevel approach to training effectiveness: Enhancing horizontal and vertical transfer. In K. J. Klein & S. W. J. Kozlowski (Eds.), *Multilevel theory, research, and methods in organizations: Foundations, extensions, and new directions* (pp. 157–210). Jossey-Bass.
- Noe, R. A., Tews, M. J., & Dachner, A. M. (2010). Learner engagement: A new perspective for enhancing our understanding of learner motivation and workplace learning. *Academy of Management Annals, 4*(1), 279–315.
- Plomp, J., Tims, M., Khapova, S. N., Jansen, P., & Bakker, A. (2019). Psychological safety, job crafting, and employability. A comparison between permanent and temporary workers. *Frontiers in Psychology, 10*(APR), 974.
- Satterfield, J. M., & Hughes, E. (2007). Emotion skills training for medical students: a systematic review. *Medical Education, 41*(10), 935–941.
- Sookhai, F., & Budworth, M. H. (2010). The trainee in context: Examining the relationship between self-efficacy and transfer climate for transfer of training. *Human Resource Development Quarterly, 21*(3), 257–272.

# AN EXPLORATIVE STUDY ON USERS' MOTIVATION AND ADOPTION OF WEARABLES TECHNOLOGIES USING THE TECHNOLOGY ACCEPTANCE MODEL (TAM)

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## Abstract

During the last decade, the growth of wearable products such as smartwatches, display glasses, smart tattoos, wrist-bands, and headbands has been increasing and propagated rapidly to mainstream usage, due to their capability for both leisure or fitness and medical data tracking (Celik, Salama, & Eltawil, 2020; Nam & Lee, 2020). Following Wright and Keith's (2014) conceptualization, wearable technology and wearable devices are phrases that describe electronics that are integrated into clothing and other accessories that can be worn comfortably on the body. The study is based on a cross-sectional design, data being collected from a convenience sample of 261 participants (48 males, 213 females), aged between 18 and 29 years old ( $M=21.73$ ,  $SD=3.70$ ) through the following structured questionnaires: Technology Acceptance Model (Davis, 1989) and Gratifications of Wearables Technology (Travers, 2015). The study applied the Technology Acceptance Model (TAM) to explore the motivation (gratifications) of students in the adoption of wearables technologies and actual usage of wearables technologies. The results of the study suggest that both Perceived Ease of Use ( $r=.279$ ,  $p<.01$ ) and Perceived Usefulness ( $r=.386$ ,  $p<.01$ ) correlate with Actual System Use. Moreover, Perceived Ease of Use positively correlates with Accessibility scale of Gratifications of Wearables Technology ( $r=.380$ ,  $p<.01$ ), and Perceived Usefulness positively correlate with all scales of Gratifications of Wearables Technology – Health ( $r=.427$ ,  $p<.01$ ), Accessibility ( $r=.522$ ,  $p<.01$ ) and Status ( $r=.262$ ,  $p<.01$ ). The reality is that the interest in wearables is growing fast, during the last few years, a large variety of wearables has been offered to the market (Seneviratne et al., 2017). A forecast of the wearable industry shows that it will most likely experience important changes within the next few years, wearables being more and more present in mainstream usage. Practical implications of the recent study are discussed as well as some directions for future research in the area.

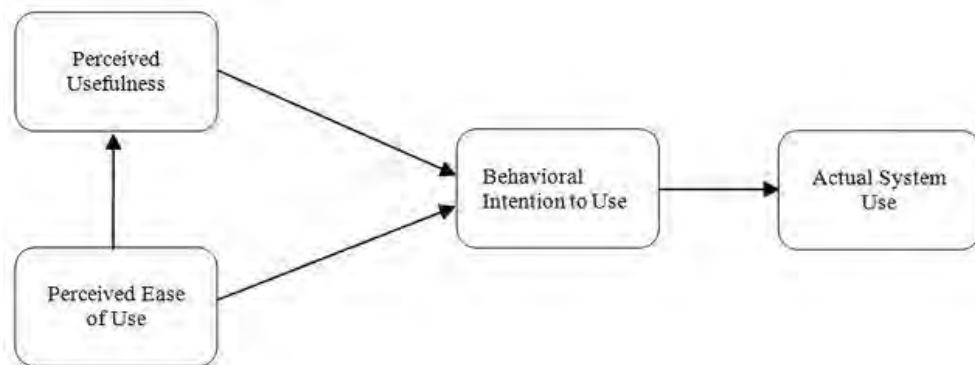
**Keywords:** TAM, wearables, technology, internet of bodies, motivation.

## 1. Introduction

The interaction between humans and technology was well documented in the literature. One of the most well-known models is the so-called Technology Acceptance Model (TAM) developed by Davis in 1986 (1986, 1989). TAM is the most agreed theory for describing an individual's acceptance of information systems (Lee, Kozar, & Larsen, 2003). Scholars state that the wide acceptance of TAM is based on the fact that the model has both a sound theoretical assumption and practical effectiveness (Chuttur, 2009). This model (Figure 1) assumes that an individual's technology acceptance is determined by two major variables: perceived usefulness and perceived ease of use (Marangunić & Granić, 2015).

Even though TAM has been tested widely with different samples in different situations and proved to be a valid and reliable model explaining information system acceptance and use (Mathieson, 1991; Davis & Venkatesh, 1996), many extensions to the TAM have been proposed and tested (Venkatesh & Davis, 2000; Henderson & Divett, 2003; Lu, Yu, Liu, & Yao, 2003; Lai & Zainal, 2015; Lai, 2016), reaching as much as five new versions, leading up to the Unified Theory of Acceptance and Use of Technology (UTAUT). The UTAUT has four predictors of users' behavioral intention: performance expectancy, effort expectancy, social influence, and facilitating conditions (Venkatesh, Morris, Davis, & Davis, 2003).

Figure 1. The earliest technology acceptance model. (Davis, 1989).



The TAM model and its revised forms have gained considerable prominence, particularly due to its transferability to various contexts and samples, its potential to explain variance in the intention to use or the use of technology (King & He, 2006; Marangunić & Granić, 2015).

Furthermore, Mugo and colleagues (2017) stated that the two dimensions of TAM, namely perceived ease of use and perceived usefulness, are both influenced by two other categories of variables: internal and external variables. Internal variables consist of factors such as the attitude of the user, their beliefs, and level of competency, whereas external variables include mainly external barriers faced by users during utilization (organizational, technological, and social barriers). Moreover, other scholars pointed out that those two important variables (perceived usefulness and perceived ease of use) are often accompanied by external variables explaining variation in perceived usefulness and ease of use such as subjective norms, self-efficacy, and facilitating conditions (Abdullah & Ward, 2016).

In the last few years, the industry of wearable products grows exponentially, devices such as smartwatches, display glasses, wrist-bands, and headbands being rapidly propagated into mainstream usage, due to their capability for both leisure or fitness and medical data tracking (Celik, Salama, & Eltawil, 2020; Nam & Lee, 2020). Wearable technology has spread through a large array of areas including medical, healthcare, fitness, and even fashion industries (Dunne, 2010; Gepperth, 2012; Perry et al., 2017).

Sharma and Biros (2019) defined wearables as “a subset of IoT that includes ‘things’ that can be incorporated into clothing or worn on the body as accessories” (p. 35). In Seneviratne and colleagues’ (2017) conceptualization, “wearables can sense, collect, and upload physiological data in a 24x7 manner, providing opportunities to improve quality of life in a way not easily achievable with smartphones alone. Wearables can also help users perform many other useful micro-tasks, such as checking incoming text messages and viewing urgent information, much more conveniently and naturally than possible with a smartphone, which is often carried in pockets or bags” (Seneviratne *et al.*, 2017, p. 2573).

Other authors, (Wright & Keith, 2014) defined wearable technology and wearable devices as electronics that are integrated into clothing and other accessories that can be worn comfortably on the body. Those kinds of devices provide users (and other stakeholders) with information regarding their habits, activity levels, and different physiological data (Motti & Caine, 2014).

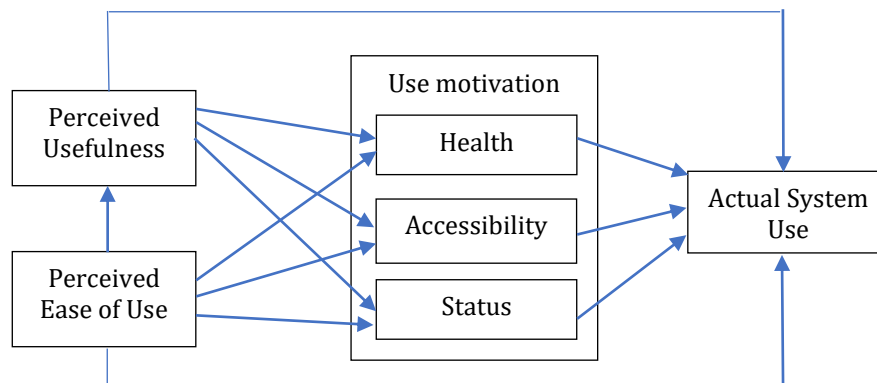
This study aims to adopt this model as the theoretical framework for investigating the user motivation and adoption of wearable technology among students. Following the original model, we propose the following research questions (Figure 2):

RQ1: What relations can be observed between perceived usefulness and user motivation/gratification in the adoption of wearables technology?

RQ2: What relations can be observed between perceived ease of use and user motivation/gratification in the adoption of wearables technology?

RQ3: What relations can be observed between user motivation/gratification in the adoption of wearables technology and actual system usage?

Figure 2. Conceptual framework.



## 2. Methods

The sample consisted of 261 students (48 males, 213 females). The age range of the participants was from 18 to 29 years ( $M=21.73$ ,  $SD=3.70$ ). For data collection, a purposive convenience sampling technique was used. A self-reported data collection technique was employed. Before completion, the purpose of the study was briefly explained to the participants and informed consent was obtained. All participants were ensured about the confidentiality of the data and that it would be only used for research purposes. They were invited to fill in a set of questionnaires compiling the following measures: Gratifications of Wearables Technology (Travers, 2015) and Technology Acceptance Model (Davis, 1989).

Gratifications of Wearables Technology (Travers, 2015) is a questionnaire that comprises 60 items structured on 3 dimensions: health, accessibility, and status. Each item consisted of a 5-point Likert Scale with different statements that inquire the extent to which the respondent agrees or disagrees. A response of 1 indicated strongly disagree and a 5 indicated strongly agree. The internal consistency coefficient of the composite score was  $\alpha=.96$  with excellent alpha scores for all subscales: health  $\alpha=.96$ , accessibility  $\alpha=.87$ , and status  $\alpha=.93$ .

Technology Acceptance Model (Davis, 1989), consists of 12 items, covering two dimensions: perceived usefulness and perceived ease of use. The answers are distributed on a seven-options Likert scale from 1 (Extremely unlikely) to 7 (Extremely likely). The internal consistency coefficient (Cronbach's Alpha) of those scales was 0.79 for perceived ease of use and 0.75 for perceived usefulness.

## 3. Results

After collection, the data were analyzed using SPSS 26.0 version software. The analysis of Skewness and Kurtosis coefficients showed a normal distribution of data, therefore, to answer to the proposed RQ, the Pearson correlation was used.

Means, standard deviations, and bivariate correlations for all the study variables are presented in Table 1. As can be observed, a series of positive relationships between the selected variables have been identified. Specifically, to answer to our first research question (RQ1: What relations can be observed between perceived usefulness (PUSE) and user motivation/gratification in the adoption of wearables technology?), the correlation between PEU, PUSE and Health, Accessibility and Status were calculated. As can be observed from Table 1, PUSE positively correlates with all motivation/gratification scales (Health  $r=.427$ ,  $p<0.01$ ; Accessibility  $r=.522$ ,  $p<0.01$ ; Status  $r=.262$ ,  $p<0.01$ ). Therefore, individuals who sought wearable technology for instrumental, action-oriented purposes, such as staying connected and informed or monitoring their health and sleeping patterns, had greater perceptions of usefulness. These findings are in line with Joo and Sang's (2013) examination of smartphone use, indicating that this correlation can be extrapolated to almost all wearables' technologies.

The second research question (RQ2: What relations can be observed between perceived ease of use (PEU) and user motivation/gratification in the adoption of wearables technology?) PEU positively correlate with Accessibility ( $r=.380$ ,  $p<0.01$ ) but not with Health and Status ( $p>0.05$ ). Those results point to the fact that people might adopt wearable technologies for health or status reasons regardless how easy it is to operate them.



Regarding the last research question (RQ3: What relations can be observed between user motivation/gratification in the adoption of wearables technology and actual system usage?), the results showed positive correlations between Health ( $r=.205$ ,  $p<0.01$ ), Accessibility ( $r=.199$ ,  $p<0.01$ ) and actual system use. The Status subscale of motivation/gratification did not significantly correlate with actual system use ( $p>0.05$ ), despite the aim of a series of advertising campaigns that market these devices as the “long-awaited” innovations of the future, positioning them as novel status symbols.

Table 1. Descriptive statistics and inter-correlations of the study variables.

|                  | Mean | SD   | 1      | 2      | 3      | 4      | 5    |
|------------------|------|------|--------|--------|--------|--------|------|
| 1. PEU           | 3.83 | .80  | -      |        |        |        |      |
| 2. PUSE          | 3.53 | .84  | .502** | -      |        |        |      |
| 3. Health        | 2.86 | 1.07 | .119   | .427** | -      |        |      |
| 4. Accessibility | 3.81 | .78  | .380** | .522** | .303** | -      |      |
| 5. Status        | 2.66 | .92  | -.077  | .262** | .540** | .471** | -    |
| 6. ASU           | 2.16 | 1.28 | .279** | .386** | .205** | .199** | .261 |

n=261, \*\*p<0.01

#### 4. Conclusions

Current findings are supported by previous studies that highlighted positive correlations between PEU, PU, attitude and motivation for use and actual system usage (Davis, 1986, 1989). Numerous studies have found that those seeking different gratifications of a technology will also have different perceptions of ease of use and usefulness (Ishii, 2006; Leung & Wei, 2000).

One of the most well-known meta-analyses conducted by King and He (2006) also confirmed the importance of perceived benefits in technology acceptance. As technology advances, it will become more crucial that new innovations remain simple to use and navigate.

Despite the valuable findings of this study, it is not without limitations. One of the main weaknesses of this study was the use of a cross-sectional design, which does not allow for an assessment of the cause-effect relation. Also, another limitation, common to many studies, is related to the fact the questionnaires were self-reported, and the tendency is to investigate and report attitudes, rather than behaviors (Hughes et al., 2018). Another issue to be considered when evaluating the results is the small sample, which makes the results difficult to generalize, and that most respondents of this study were young (18-29 years old). It has been known that younger individuals are the primary users of wearable devices, therefore older consumers who might be not so familiar with those technologies should be considered for future studies.

#### References

- Abdullah, F., & Ward, R. (2016). Developing a General Extended Technology Acceptance Model for E-Learning (GETAMEL) by analysing commonly used external factors. *Computers in Human Behavior*, 56, 238 – 256.
- Celik, A., Salama, K. N., & Eltawil, A. (2020). The Internet of Bodies: A Systematic Survey on Propagation Characterization and Channel Modeling. *IEEE Internet of Things Journal*, doi:10.36227/techrxiv.12912752
- Chuttur, M. Y. (2009). Overview of the technology acceptance model: Origins, developments and future directions. *Working Papers on Information Systems*, 9(37), 9-37.
- Davis, F. D. (1986). Technology Acceptance Model for Empirically Testing New End-user Information Systems Theory and Results. Unpublished Doctoral Dissertation, MIT.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.
- Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: Three experiments. *International Journal of Human-Computer Studies*, 45(1), 19–45.
- Dunne, L. (2010). Smart clothing in practice: Key design barriers to commercialization. *The Journal of Design, Creative Process & the Fashion Industry*, 2(1), 41–65.

- Gepperth, J. (2012). Smart Things: Wearables & Clothing. In M. Karnz, E. Steinbach, S. Diewald, A. Moller, & L. Roalter (Eds.), *Advance in media technology* (pp. 41–48). Distributed Multimodal Information Processing Group: Munich, Germany.
- Henderson, R., & Divett., M. J. (2003). Perceived usefulness, ease of use and electronic supermarket use. *International Journal of Human-Computer Studies*, 59(3), 383-395.
- Ishii, K. (2006) Implications of mobility: The uses of personal communication media in everyday life. *Journal of Communication*, 56(2), 346-365. doi: 10.1111/j.1460/2466.2006.00023.x.
- Joo J., & Sang, Y. (2013). Exploring Koreans' smartphone usage: An integrated model of the technology acceptance model and uses and gratifications theory. *Computers in Human Behavior*, 29, 2512-2518. doi: 10.1016/j.chb.2013.06.002.
- King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management*, 43(6), 740–755.
- Lai, P. C. (2016). Design and Security impact on consumers' intention to use single platform E-payment. *Interdisciplinary Information Sciences*, 22(1), 111-122.
- Lai, P. C., & Zainal, A. A. (2015). Perceived Risk as an Extension to TAM Model: Consumers' Intention to Use a Single Platform E-Payment. *Australian Journal of Basic and Applied Sciences*, 9(2), 323-331.
- Lee, Y., Kozar, K. A., & Larsen, K. R. T. (2003). The Technology Acceptance Model: Past, Present, and Future. *Communications of The Association for Information Systems*, 12(50), 752-780.
- Leung, L., & Wei, R. (2000). More than just talk on the move: uses and gratifications of the cellular phone. *Journal of Mass Communications Quarterly*, 77(2), 308-320. doi: 10.1177/107769900007700206.
- Lu, J., Yu, C. S., Liu, C., & Yao, J. (2003). Technology acceptance model for wireless internet. *Journal of Internet Research*, 13(2), 206-222.
- Marangunić, N., & Granić, A. (2015). Technology acceptance model: A literature review from 1986 to 2013. *Universal Access in the Information Society*, 14(1), 81–95.
- Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research*, 2(3), 173-191.
- Motti, V.G., & Caine, K. (2014). Human factors considerations in the design of wearable devices. In *Proceedings of the Human Factors and Ergonomics Society 58th Annual Meeting* (pp. 1820–1824). Santa Monica, CA: Human Factors and Ergonomics Society.
- Mugo, D., Njagi, K., Chemwei, B., & Motanya, J. (2017). The Technology Acceptance Model (TAM) and its Application to the Utilization of Mobile Learning Technologies. *Journal of Advances in Mathematics and Computer Science*. 20(4), 1-8.
- Nam, C., & Lee, Y.A. (2020). Validation of the wearable acceptability range scale for smart apparel. *Fashion and Textiles*, 7(13), 1-17.
- Perry, A., Malinin, L., Sanders, E., Li, Y., & Leigh, K. (2017). Explore consumer needs and design purposes of smart clothing from designers' perspectives. *International Journal of Fashion Design, Technology and Education*, 10(3), 372–380.
- Seneviratne, S., Hu, Y., Nguyen, T., Lan, G., Khalifa, S., Thilakarathna, K., Hassan, M., & Seneviratne, A. P. (2017). *A Survey of Wearable Devices and Challenges*. *IEEE Communications Surveys & Tutorials*, 19, 2573-2620.
- Sharma, M., & Biro, D. (2019). Building Trust in Wearables for Health Behavior, *Journal of the Midwest Association for Information Systems (JMWAIS)*, 2019(2), Article 3, DOI: 10.17705/3jmwai.000051.
- Travers, J. (2015). Uses and gratifications of wearable technology adoption (Master dissertation, University of Missouri). Retrieved from <https://hdl.handle.net/10355/58517>
- Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 186-204.
- Venkatesh, V., Morris, M. G., Davis, F. D., & Davis, G. B. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425-478.
- Wright, R., & Keith, L. (2014). Wearable Technology: If the Tech Fits, Wear It, *Journal of Electronic Resources in Medical Libraries*, 11(4), 204-216.

## ARAB YOUTHS' EXPECTATIONS OF PARENTS AND PERCEPTIONS OF CHILD NEGLECT

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### Abstract

Neglect of children and youth by their parents severely affects children's development. Unfortunately, literature on child neglect focuses on professional discourse while rarely examining the views of children and youth themselves. This lacuna is interwoven with the broader issue of children's expectations of their parents, which are also scarcely studied. This study aims to gain a more nuanced understanding of youth life experiences, focusing on two related and complementary issues: their expectations of parents and their perceptions of child neglect. The study employed a qualitative paradigm focusing on the meanings and interpretation of social phenomena and social processes in context. Data were gathered via focus group discussions from a total of 31 youth, through purposive sampling according to age (13 and 14) and ethnic affiliation (Muslim Arabs in northern Israel), and thematically analyzed.

The data analysis showed that youth expectations of their parents reflect their perceptions of neglect. Four themes arose: emotional wellbeing, responsibility and supervision, guidance and companionship, and providing material needs. The findings highlight the need to include voices representing diverse groups in the population, as part of context-informed perception in discourses of parenting and child neglect. These voices provide a platform for examining the complexity inherent in negotiating neglect in the unique context of youth, and the importance of recognizing their unique perceptions. The voices raised the importance of emotional and psychological needs for the youths' wellbeing and development to a greater extent than material and physical needs.

**Keywords:** *Parenting, child neglect, context-informed perception, Arab youths' expectations, emotional and material needs.*

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### 1. Introduction

Parents play a major role in the lives of their children, including meeting basic needs for food, clothing, shelter, protection, and security, but also other emotional and developmental needs (Asija, 2015). Warm parenting is seen as the key to the healthy and thriving development of adolescents across various well-being domains (Ulferts, 2020). Therefore, the neglect of children by their parents is considered to have severe implications for children's wellbeing, development, social skills, and achievements, as well as affecting physical and mental health during the child's life span (Turner et al., 2019).

Parents aim to promote and support the physical, social, emotional, economic, and intellectual development of a child from infancy to adulthood (Asija, 2015). They are expected to be responsible for raising a child who utilizes his or her full potential as an individual. There is a lack of consensus in the literature on what is expected from parents and particularly an assessment of strengths in a parenting capacity.

Despite the importance of the issue of child neglect, there is a scarcity of scholarly literature aimed at understanding, preventing, and intervening with child neglect (Elias et al., 2018). Child neglect generally includes a lack of parental supervision, protection, and provision of basic needs such as nutrition, medical care, clothing, shelter, and education. Neglect may be physical, medical, educational, emotional (which includes a lack of affection and empathy), environmental, and supervisory (Julien et al., 2019; Morrongiello & Cox, 2020).

One angle from which the phenomena of child neglect have hardly been examined is the perspectives of children and youth themselves. Due to the growing emphasis in recent years on children's rights, their inclusion in social studies has become critical.

This study focuses on the context of the Muslim Arab society in Israel. The Arab society is the largest native minority group in Israel, constituting 21 percent of the entire Israeli population (Central Bureau of Statistics, 2020). Over the past three decades, the family structure and the perceptions of its members are in the process of changing at various levels, including parent-child relationships. The rapid changes create, in many cases, gaps between parents and their children, resulting in family conflicts and a lack of supervision, thereby putting children and youth at higher risk for behavioral problems.

The current study aims to gain a better and more nuanced understanding of youth life experiences, focusing on their expectations of parents and perceptions of child neglect in the context of Arab Muslim society. It addresses the following two research questions: What are the Muslim Arab youths' expectations from their parents? How do Muslim Arab youth perceive and define child neglect?

## **2. Materials and methods**

This paper is based on a qualitative study that involved six focus group discussions from a total of 31 Muslim Arab youth, aged 13 and 14 who live in the northern part of Israel. Each discussion lasted one to two hours and began with a brief explanation of the study. Later, vignettes were presented describing various states of neglect such as education and health. Participants were invited to share their perceptions of the situations and offer suggestions for intervention.

As part of the qualitative analysis, the focus group discussions were audiotaped, fully transcribed verbatim, and anonymized. The texts were read and re-read several times. They were then coded according to recurrent themes, which were mapped according to methodically identified interconnections and emerging patterns (Patton, 2015).

## **3. Findings**

The qualitative analysis of the focus groups' discussions yielded four main themes about neglect and expectations of parents: emotional wellbeing, responsibility and supervision, guidance and companionship, and providing material needs.

### **3.1. Emotional wellbeing**

All the youth emphasized parental love, warmth, and affection as key characteristics of the relationships between parents and their children, with one saying, "Parents need to give their children warmth and love." They further noted the importance of parental care: "A good parent is someone who takes care of me and asks how I'm doing 24 hours a day."

The youths viewed a lack of love, warmth, trust, concern, and care as neglectful parenting: "My mother's love is gone. She gave birth to seven children and has to divide the love between them, and you only have a small part left."

### **3.2. Responsibility and supervision**

Participants stressed their expectations that parents should be responsible: "If you bring children into the world, you have a responsibility." They expect parents to be involved in their children's social life and get to know their friends. It seems that parental monitoring and supervision provide the youths with a sense of safety, "My parent should know where I am going to and coming from."

A neglectful parent was also described as a parent who does not take the parenting role seriously even when the teachers try to involve them, thereby failing to meet their responsibilities for youth education: "If the youths have a test, and they study for it, but the parents do not help them."

### **3.3. Guidance and companionship**

The need for guidance, companionship, and direction from the parents stood out in the various focus groups. One participant stressed this need, saying, "Parents are supposed to teach their children everything about life." There is also the need to provide knowledge, experiences, explanations, and conversations about right and wrong: "Parents need to explain everything to their children and educate them for the rest of their lives. They need to guide them and raise their awareness of what is happening in life."

### **3.4. Providing material needs**

Some of the youths talked about their expectations of material goods they request from their parents, such as money, gifts, treats, and vacations. One participant said, "Parents should give children out-of-pocket expenses and surprises. If they [the youths] ask for phone or clothes, for example, the

parents should give them.” Nonetheless, most of the study participants addressed the importance of food preparation and explained that mothers are expected to cook for their children, “A good mother should always cook for her children what they like to eat.” At the same time, from the youth perspective, a parent who does not provide food for his children is considered a neglectful parent. One participant said, “Neglectful parents do not prepare food and do not take care of the children”.

In the youths’ descriptions of neglectful parents, there was a reference to a wider range of unmet needs than in the description of their expectations of parents. One youth mentioned the basic need for a roof over their heads, “Some people have no food. They have to thank God that their parents did not throw them on the street.”

The findings highlight the youths’ expectation of material giving from their parents, taking into account the financial situation of the family. They stressed the need for a meal and a shelter that would protect them, so their absence was considered parental neglect.

#### **4. Discussion**

The study attempted to gain a better and more nuanced understanding of children and youth life experiences, focusing on their expectations of parents and their perceptions of child neglect in the context of Muslim Arab society in Israel.

Compared to the research literature (Julien et al., 2019), the youth voices in the present study raised many different aspects, mainly emphasizing the parent’s exclusive responsibility, particularly emotionally. They gave special importance to the quality of parent-child relationships and indicated that the emotions of love, warmth, support, respect, trust, and caring are essential and basic emotions, thus their absence was considered in their view as neglect.

The youths reported that neglectful parents do not show interest in their children and do not trust them. Also, they make no effort to monitor them or protect them from the many risks around them. Participants in the present study addressed the parent’s insensitivity to their emotional and physical needs and the parent’s preoccupation with his or her personal needs as contributing factors to child neglect. This finding is particularly important because, in the research literature, neglect refers to much more basic and minimal definitions; identifying physical, emotional, educational, and medical neglect (Julien et al., 2019).

Moreover, the findings emphasized the central place of the family in building the youths’ identity and the youths’ need for security and parental involvement, and supervision in their social relationships. This expectation coming from the study participants might reflect the accepted belief that Arab parents are extensively involved and responsible for the upbringing and behavior of their children (Dwairy & Achoui, 2006).

The findings in this study contribute to the conceptualization of neglect as a multifaceted social problem. The youths raised the importance of emotional and psychological needs to a greater extent than material and physical needs. The findings underscore the importance of positive interactions and dynamics between parents and their children, and the importance of paying attention to protective factors (e.g., parental love, support, and involvement) that can help youth in situations of neglect. Thus, as professionals, it is important to encourage parents to express love and show warmth to their children.

The study also highlights that intervention and prevention programs for child neglect should emphasize the positive sides and strengths of the parents in their relationships with their children, avoiding a focus on shortcomings that may foster negative attitudes among caregivers. Furthermore, emotional support might be present and provide a source of strength also in houses where physical or other types of neglect are more likely, and it seems to matter a great deal for children’s wellbeing.

Protecting the wellbeing and safety of children should be the responsibility of society. Therefore, the awareness, supervision, and involvement of the public about neglect and its consequences should be raised through increased publicity and various media about existing services such as helplines, child protection institutions, and organizations as well as Internet sites dealing with the issue of neglect, in a manner adapted to the language of the target population. It is important to provide the public with explanations of how to identify child neglect and to whom to report if needed. In some cases, the involvement of informal factors such as friends, family, community, and religious leaders should be encouraged when other programs working directly with the family have not helped.

## References

- Asija, D. P. (2015). Good parenting: Success of human race. *Scholarly Research Journal for Interdisciplinary Studies*, (3)17, 2927-2938. <http://oaji.net/articles/2015/1174-1434190108.pdf>
- Central Bureau of Statistics. (2020). *The population of Israel on the Eve of 2020*. <https://www.cbs.gov.il/en/mediarelease/Pages/2019/Population-of-Israel-on-the-Eve-of-2020.aspx>
- Dwairy, M., & Achoui, M. (2006). Introduction to three cross-regional research studies on parenting styles, individuation, and mental health in Arab societies. *Journal of Cross-Cultural Psychology*, 37(3), 1-9. DOI: 10.1177/0022022106286921
- Elias, T. I., Blais, N., Williams, K., & Burke, J. G. (2018). Shifting the paradigm from child neglect to meeting the needs of children: A qualitative exploration of parents' perspectives. *Social work in public health*, 33(7-8), 407-418. <https://doi.org/10.1080/19371918.2018.1543625>
- Julien, C., Sylvestre, A., Bouchard, C., & Leblond, J. (2019). Morphosyntactic development and severe parental neglect in 4-year-old French-speaking children: ELLAN study. *Child Maltreatment*, 24(3), 254-264. <https://doi.org/10.1177/1077559519829249>
- Morrongiello, B. A., & Cox, A. (2019). Issues in defining and measuring supervisory Neglect and conceptualizing prevention. *Child Indicators Research*, 13, 369-385. <https://doi.org/10.1007/s12187-019-09653-3>
- Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Sage.
- Turner, H. A., Vanderminden, J., Finkelhor, D., & Hamby, S. (2019). Child neglect and the broader context of child victimization. *Child Maltreatment*, 24(3), 265-274. <https://doi.org/10.1177/1077559518825312>
- Ulferts, H. (2020). *Why parenting matters for children in the 21st century: An evidence-based framework for understanding parenting and its impact on child development*. Paris: OECD Education Working Papers; OECD Publishing.

## PSYCHOSOCIAL IMPACT OF VIRTUAL NETWORKS ON UNIVERSITY STUDENTS

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### Abstract

Technology has modified all aspects of the lives of individuals, making it more comfortable, this is a great achievement of humanity, but it has also made us dependent beings. The use of electronic platforms, social networks, applications (App), artificial intelligence, virtual assistants, among others, represent unimaginable achievements just 50 years ago. Daily life requires a smartphone, since we are not able to orient ourselves geographically, remember a phone number, or any information that is needed since it is easy to take a photo, carry the schedule of activities, financial services through banking online, have the Covid-19 vaccination record, or check food options at a food service, because a QR reader is required. In addition to the daily technological dependence, we find the attitudes and emotional dependence in which preferences, tastes, photographs, music, virtual approach to family and friends, and much more, become an essential support, especially in the young generations. With this framework, the aim is to evaluate the psychosocial impact of virtual networks on university students in the Republic of Panama. For this, a measurement instrument was designed that was applied remotely through Google form ©. The Likert-type format allowed inferential statistical analyzes to guarantee the discrimination index of the items, the reliability of the instrument through Cronbach's Alpha, as well as the construct validity with the factorial analysis using the SPSS 24 © software.

The results reveal that university students have a positive attitude towards virtual networks, which represent psychological and social support, which allows users an emotional protection that they use as a defense against the uncertainty of the day to day and about the near future. Thus, the psychosocial impact of virtual networks encourages emotional containment, in addition, they become social support when links are established with small close groups, regardless of their membership in extended groups. Another finding shows that not all the impact of virtual networks is positive, for example, it was discovered that sleep patterns are not healthy, in addition, the information they receive at night can generate anxiety, anguish and stress.

**Keywords:** *Virtual networks, psychosocial impact, university students.*

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### 1. Introduction

Arce-García, Orviz-Martínez, and Cuervo-Carabel (2020), published the result of a study that aimed to analyze the emotional discourse of the news of the 10 main information newspapers in Spain and its relationship with the diffusion, attention, emotions, and feelings of Twitter users. To do this, they used big data analysis techniques applying algorithms. The importance of the research focuses on the fact that studies that analyze emotions allow identifying the state of public opinion, predicting stock and political movements. The authors highlight the differences between the studies of emotions, so that the structure of six basic emotions includes: happiness, sadness, anger, fear, disgust, and surprise; while the structure of eight is preferable because it encompasses: anticipation, disgust, anger, sadness, fear, confidence, surprise, and joy.

The findings indicate that the writings are expressions that seek to provoke those emotions that polarize trust and fear, so the news that provokes these emotions has more influence (Arce-García, Orviz-Martínez, & Cuervo-Carabel, 2020).

Brenner, Alexander, Quirke, Eustace-Cook, Leroy, Berry, Healy, Doyle, and Masterson (2021) developed a study on the redundancy of the concept of technological dependency. They indicate that it covers a continuum such that it describes attributes related to the area in which it is used. The authors suggest that in the case of requiring support due to technological dependency, the term technological

clinical assistance should be used, since the biopsychosocial context is complex and could imply unfavorable consequences for the person and their family.

Zhou, Hu, and Wang, (2019), presented an assisted diagnosis model to quantify mental disorders (MDAD), through the intensity of short texts from users on social networks. To do this, the sentiment analysis was divided into 11 dimensions and five mental disorders were used: depressive disorder, anxiety disorder, obsessive-compulsive disorder (OCD), bipolar disorder and panic disorder, collected on Twitter.

The authors mention that through sentiment distribution similarity calculations and Stochastic Gradient Descent (SGD), people with a high probability of having a mental disorder can be detected in real time. Mental health warnings can be made in time for users with an obvious emotional bias in their tweets. Thus, through the analysis of multipolarity of feelings, support for the prevention and diagnosis of mental disorders is achieved.

For Rodríguez and Garza (2019), it is possible to analyze the representation, detect and predict the emotional intensity of the user through the analysis of virtual networks. To do this, they used data mining of one of the most visited and popular social networking sites with close to 67 million Twitter users, ranking 13th in the best Alexa sites. The decision to use this repository is because it contains a sufficiently large number of users and comments in Spanish.

The analysis of data on the presence or absence of joy, anger, fear, and sadness, together with the previous or past emotional intensity, as well as the day of the week and the hour, allowed us to propose a model that uses three categories of relationship: with the user, with the contact and with the environment. The authors conclude that the prediction of emotional intensity can be used in marketing, monitoring emotional health, detecting depression and cyberbullying.

According to González and Muñoz (2016), technological networks allow users to interact, communicate, share content, create communities, direct their learning, and have virtual spaces in real time.

In Panama, the use of Facebook became popular until 2008 and, by 2014, more than a million people had already connected. That means 25.63% of the total population, which at that time amounted to 3,901,000 people.

### **1.1. Design**

A non-experimental *ex post facto*, cross-sectional design was used, and the type of study is correlational.

### **1.2. Objectives**

Evaluate the psychosocial impact of virtual networks on university students in the Republic of Panama.

## **2. Method**

A measurement scale was built that was applied remotely through social networks and email to university students in Panama.

The instrument consists of 25 items that inquire about the use of electronic networks under a Likert-type scale with five response options from which six factors are derived. The construct validity was obtained with the factorial analysis, the results show a percentage of the total explained variance of 60.30% and an Alpha reliability of 0.861, which demonstrates an adequate psychometric structure. An intentional snowball-type sample selection was made during the month of January 2022. A total of 125 participants were reached.

The instrument used also measures other constructs, for this document the results of the scale of use of technological networks are shown. This scale contains seven factors: Interpersonal relationships (Grinder, Tumblr, Snapchat, Tinder, LinkedIn, Telegram), meetings (Webinars, Google Meet, Zoom, email), video (WhatsApp, YouTube, alerts, reading electronic material), information (Facebook, Twitter, Messenger), leisure (Memes, TikTok, Pinterest), intensity (the intensity that I spend on my social networks and the frequency that I spend on my networks) and social networks (Instagram, online games, social networks).



### 3. Results

The data was subjected to descriptive statistics to obtain a complete panorama of the participants' responses, by question, in addition to parametric inferential statistics, Student's t-test for independent samples by factors and gender, ANOVA by academic degree and Pearson's r-correlation between the factors, through the IBM SPSS 24© program.

The results, regarding the frequency of the use of virtual networks, are led by WhatsApp (M=4.75, SD=0.60), followed by the use of email (M=4.20, SD=1.06), YouTube (M=4.05, SD= 1.04), Social Networks (M=3.99, SD=1.19), Instagram (M=3.86, SD=1.39), Facebook (M=3.61, SD=1.36), the alerts (M=3.58, SD=1.22), Zoom (M=3.43, SD=1.34), Electronic reading (M=3.30, SD=1.31), frequent use (M=3.26, SD=1.14), intensity of use (M=3.25, SD=1.17), Google meet ( M=2.91, SD=1.45), Memes (M=2.77, SD=1.48), Messenger (M=2.71, SD=1.40), Webinars (M=2.51, SD=1.40), Games (M=2.41, SD= 1.48), TikTok (M=2.41, SD=1.48), Twitter (M=2.41, SD=1.45), LinkedIn (M=2.24, SD=1.35), Pinterest (M=2.23, SD=1.37), Telegram (M=2.23, SD=1.39), Snapchat (M=1.62, SD=1.06), Tumblr (M=1.48, SD=0.91), Tinder (M=1.44, SD=0.85), and finally Grindr (M=1.39, SD=0.85).

Table 1. Independent Samples t-Test Results.

| Factor                         | Man          |       | Woman        |       | t      | p             |
|--------------------------------|--------------|-------|--------------|-------|--------|---------------|
|                                | M            | SD    | M            | SD    |        |               |
| 1. Interpersonal relationships | 1.508        | .553  | 1.651        | .806  | 1.144  | .255          |
| 2. Meetings                    | 2.967        | .930  | 3.290        | .898  | 1.805  | .075          |
| 3. Videos                      | 3.967        | .590  | 3.916        | .649  | -.426  | .671          |
| 4. Information                 | 2.745        | 1.102 | 2.716        | .955  | -.141  | .888          |
| 5. Leisure                     | 2.324        | 1.124 | 2.379        | 1.054 | .255   | .799          |
| 6. Time intensity              | <b>3.657</b> | .839  | <b>3.160</b> | 1.018 | -2.848 | <b>.006*</b>  |
| 7. Social networks             | <b>3.807</b> | .957  | <b>3.061</b> | .973  | 3.985  | <b>.000**</b> |

Note: The mean and standard deviation values for men (n=38) and women (n=87) are shown, as well as the results of the t-test (equal variances are not assumed) for the comparison by sex. \*p < .05. \*\*p < .01.

The factors intensity of time and social networks show statistically significant differences between men and women. Therefore, equality is assumed in the use, by gender, of interpersonal networks, meetings, videos, information, and leisure (Table 1).

Table 2. Result of ANOVA.

| Factor                         | Bachelor's  |      | Master's    |     | Doctorate   |      | F     | p             |
|--------------------------------|-------------|------|-------------|-----|-------------|------|-------|---------------|
|                                | M           | SD   | M           | SD  | M           | SD   |       |               |
| 1. Interpersonal relationships | 1.57        | .68  | 1.61        | .72 | 1.60        | .80  | .151  | .962          |
| 2. Meetings                    | <b>3.12</b> | .82  | <b>3.60</b> | .91 | <b>3.70</b> | .94  | 6.164 | <b>.000**</b> |
| 3. Videos                      | 3.83        | .69  | 4.00        | .48 | 4.05        | .75  | .686  | .603          |
| 4. Information                 | 2.54        | 1.08 | 2.89        | .88 | 3.04        | .96  | 1.513 | .203          |
| 5. Leisure                     | <b>2.54</b> | 1.08 | <b>2.05</b> | .98 | <b>1.78</b> | .84  | 3.327 | <b>.013*</b>  |
| 6. Time intensity              | 3.29        | 1.04 | 3.40        | .93 | 3.10        | .95  | .245  | .912          |
| 7. Social networks             | 3.26        | 1.05 | 3.11        | .97 | 3.04        | 1.24 | 1.250 | .293          |

Note: Mean and standard deviation values are shown for bachelor's (n=81), master's (n=29), and doctoral (n=15) students, as well as the results of the analysis of variance (ANOVA) for comparison by level. of studies. \*p < .05. \*\*p < .01.

Doctoral students spend more time in meetings than master's and bachelor's students in a progressive and significant way, in addition, it is inverse to the time they use for leisure. The factors associated with interpersonal relationships, videos, information, intensity, and social networks do not present differences (Table 2).

Table 3. Pearson's *r* correlation results.

| Factors                        | M     | SD    | <i>r</i> |               |               |               |               |               |               |
|--------------------------------|-------|-------|----------|---------------|---------------|---------------|---------------|---------------|---------------|
|                                |       |       | 1        | 2             | 3             | 4             | 5             | 6             | 7             |
| 1. Interpersonal relationships | 1.608 | .739  | 1        | <b>.366**</b> | <b>.311**</b> | <b>.426**</b> | <b>.417**</b> | <b>.300**</b> | <b>.382**</b> |
| 2. Meetings                    | 3.192 | .916  |          | 1             | <b>.366**</b> | <b>.311**</b> | <b>.426**</b> | <b>.417**</b> | <b>.300**</b> |
| 3. Videos                      | 3.932 | .630  |          |               | 1             | <b>.495**</b> | <b>.360**</b> | .106          | <b>.291**</b> |
| 4. Information                 | 2.725 | .998  |          |               |               | 1             | <b>.368**</b> | <b>.274**</b> | <b>.462**</b> |
| 5. Leisure                     | 2.362 | 1.071 |          |               |               |               | 1             | .166          | <b>.435**</b> |
| 6. Time intensity              | 3.312 | .991  |          |               |               |               |               | 1             | <b>.297**</b> |
| 7. Social networks             | 3.288 | 1.024 |          |               |               |               |               |               | 1             |

Note: The average and standard deviation values by factor ( $n=125$ ) are shown, as well as the results of the correlation between factors through Pearson's *r* test. \* $p < .05$ . \*\* $p < .01$ .

The factors are correlated with each other, in a significant way, which suggests cause effect from the results, only the intensity factor of time dedicated to virtual networks does not show significant correlation, with the factors of video and leisure (Table 3).

In addition, they were asked how connected you are with virtual networks? On a scale of zero to ten, resulting in a mean of 6.54 with a standard deviation of 2.34, they were also asked how satisfied your connection with virtual networks makes you feel virtual networks? Obtaining an average score of 6.51 and a standard deviation of 2.19, which translates into a conscious link and satisfaction for said link in 6.5 out of 10.

#### 4. Discussion

There are differences by gender with respect to intensity and play. These results are consistent with the work of Fernández de la Iglesia, Casal, Fernández and Cebreiro (2020), where the use of networks is influenced by gender, for example, men use networks to participate in games, while women use them to socialize and to add photos and videos. In addition, men connect more frequently to participate in online games or enter gambling websites, while women neglect their study tasks more or get in a bad mood for not connecting.

The ANOVA statistic made it possible to compare the factors for undergraduate, master's and doctoral students, finding statistically significant differences, which show that the meetings are nodal, because according to Anguita, Iglesias García (2018) represents that university students are an "intoxicated population", which has the need to get involved in networks oriented to social agency, in a participatory, deliberative manner, to form social and cultural capital.

The relationship between the factors allowed to establish the link of cause and effect, so knowing the time they spend on virtual networks allows describing aspects of their interpersonal relationships, work, and leisure, also helps to outline an image of the psychosocial impact to virtual networks in university students in the Republic of Panama.

To conclude, the psychosocial impact of adhering to technology continues to grow, for the moment, the participants assume 65% of linkage with virtual networks, which minimizes the opportunity for person-to-person interaction, which although at this time of pandemic can be a protection measure, it is essential to provide permanent monitoring, so that it is possible to differentiate between proactive tools and pathological habits. In this scenario, it is possible to consider that university students require technological clinical assistance due to the amount of time they use virtual networks (Brenner, Alexander, Quirke, Eustace-Cook, Leroy, Berry, Healy, Doyle, & Masterson, 2021).

In any case, it is necessary to continue promoting access, management, evaluation, integration, communication and creation, in a safe, critical and responsible way through digital devices and network technologies, since the messages are loaded with emotions, especially news and advertising that emerge while university students use virtual networks, (Arce-García, Orviz-Martínez, & Cuervo-Carabel, 2020), what is recommended is to carry out more studies with the assisted diagnosis model to quantify mental disorders (MDAD), by Zhou, Hu, and Wang, (2019), in addition to monitoring their emotional health (Rodríguez & Garza, 2019).

## References

- Anguita Martínez, R., Iglesia Atienza, L.D.I. y García Zamora, E. (2018). Creación de contenidos transmedia en la sociedad hiperconectada. Una etnografía digital con jóvenes universitarios. *Fuentes*, 20 (1), 29-41.
- Arce-García, S., Orviz-Martínez, N., & Cuervo-Carabel, T. (2020). Impacto de las emociones vertidas por diarios digitales en Twitter. *El Profesional de la Información*, 29(5), 1–13.
- Brenner, M., Alexander, D., Quirke, M. B., Eustace-Cook, J., Leroy, P., Berry, J., Healy, M., Doyle, C., & Masterson, K. (2021). A systematic concept analysis of “technology dependent”: challenging the terminology. *European Journal of Pediatrics*, 180(1), 1–12. <https://doi.org/10.1007/s00431-020-03737-x>
- Fernández de la Iglesia, J. C., Casal Otero, L., Fernández Morante, M. C., & Cebreiro, B. (2020). Actitudes y uso de Internet y redes sociales en estudiantes universitarios/as de Galicia: implicaciones personales y sociales. *Revista Prisma Social*, (28), 145–160. <https://revistaprismasocial.es/article/view/3372>
- González, C., & Muñoz, L. (2016). Redes Sociales su impacto en la Educación Superior: Caso de estudio Universidad Tecnológica de Panamá. *Campus Virtuales*, 5, (1), 84-90. [www.revistacampusvirtuales.es](http://www.revistacampusvirtuales.es)
- Rodríguez, F. M., Garza, S. E., (2019). Predicting emotional intensity in social networks. *Journal of Intelligent & Fuzzy Systems*, 36(5), 4709–4719. <https://doi.org/10.3233/JIFS-179020>
- Zhou, T., Hu, G., & Wang, L. (2019). Psychological Disorder Identifying Method Based on Emotion Perception over Social Networks. *International Journal of Environmental Research and Public Health*, 16, 953; doi:10.3390/ijerph16060953

# ACCULTURATION, PARENTING PRACTICES AND THE TRANSMISSION OF CULTURAL AND RELIGIOUS VALUES IN MUSLIM IMMIGRANT FAMILIES

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## Abstract

Acculturation is a complex and dynamic process associated with various difficulties and challenges that play a major role in raising children. This is especially true for Muslim immigrant families where instilling traditional values and a strong sense of ethnic and religious identity is a primary aspect of the parenting process.

This study addresses the process of cultural negotiation undertaken by immigrant Muslim parents and analyses how it affects their children's education and parenting practices. Eleven Muslim immigrant adults with children, settled in Italy from an average of 25 years ( $F=9$ ; mean age= 48) participated to a semi-structured interview about their experiences of raising their children in relation to their origins and Italian culture. Atlas-ti was used for thematic analysis. The results showed that the educational role of parents in these families is challenged by the difficulty of finding a match between the traditional model of education and the mainstream model. This difficulty intertwines with the one related to the need to reconcile different needs, namely, the need to preserve and transmit religious and cultural values, and the need to adapt to the values that they and their children learn through interaction with the plural society. In response to this challenge, parents seem to prefer separation as an acculturation strategy, in terms of the content of traditional and religious values, while maintaining a negotiating space for these values. Instead, in teaching these values, they have moved increasingly closer to the Italian model of parenting, which is based on flexibility and dialogue, thus adopting integration in the field of parenting strategies.

This research was the preliminary phase of an intervention project aimed at empowering the Islamic community of Turin, Italy, to support families in practicing intentional parenting in order to address the challenges related to the migratory context. In other words, to promote the acquisition of parenting skills that can meet both children's identity needs and parents' needs for appreciation and cultural transmission, and also prevent problems and psychological distress caused by cultural conflicts. It emerged from both the research and the intervention project that the need to develop a model of "parenting in migration" is shared by the entire Muslim community and requires a collective and collaborative effort to promote this process by creating spaces for discussion and by activating the resources available in the community that can guide and accompany parents in difficulty in their educational role, creating synergies with the services offered by the territory.

**Keywords:** *Acculturation, parenting, cultural values, Muslim families, empowerment.*

## 1. Introduction

In today's Europe, the presence of a Muslim migrant population is already an established reality. As always, the stabilisation of a population in an area brings with it the presence of family units and the growth of new generations (ISTAT, 2020). The family dimension plays an important role in the migration project, both socially and culturally. Certainly, the family is of great importance both in the migration phase and in the subsequent stabilisation phase. However, the family also plays a central role in the difficult process of integration into the arrival society. (Monaci et al., 2010). On the one hand, the family is the place where traditional values and ties to the extended network of relatives and compatriots are preserved and where new psychological categories, boundaries, and identities are redefined (Chrysochoou, 2004; Berry, 1997). On the other hand, families provide emotional support, resources, and protection that are fundamental to the process of social inclusion. However, immigrant parents often feel left alone in their parenting efforts because they lack the family network that traditionally shares parental responsibility (Tummala-Narra, 2004). For this set of reasons, the family can also be a site of

conflict and sometimes very difficult negotiation between traditional practices and new lifestyles (Monaci et al, 2010).

If this picture applies to migrant families in general, Muslim families face another difficulty related to their religious affiliation. Indeed, a negative view of Islamic culture and religion in Western and especially European societies leads to a lack of support, if not outright hostility, on the part of the receiving context for the work of cultural transmission of Muslim parents and exposes the second generation to strong pressure to assimilate (Fedi et al., 2019; Kunst & Sam, 2014; Rizzo, et al., 2020). On the other hand, the multiethnic and polycultural nature of contemporary Western societies also poses crucial problems for Muslim parents. Indeed, the collectivist values of this cultural world clash with the individualistic approach of Western societies, just as the presence of religion in the public sphere, characteristic of Islam, clashes with the demand to relegate it to the private sphere coming from the Western social context.

The concept of culture clash calls into question the acculturation paradigm, which refers to the cultural changes following a prolonged contact with another culture. Berry's seminal model (Berry, 1997) identify four main acculturation strategies (assimilation, integration, separation, and marginalisation) that result from the intersection of two motivational drivers: the willingness to maintain one own's cultural heritage and the willingness to participate to the plural society. Authors (e.g., Arends-Tòth & Van de Vijver, 2003; Ward, 2001) have emphasised that the acculturation strategy chosen is not unique, but can change depending on the area of life. Research has shown that in public spheres of life such as work and business, immigrants tend to adapt to the dominant culture. In private domains such as family values and relationships, immigrants want to maintain their culture of origin (Arends-Tòth & Van de Vijver, 2004). In these areas, change occurs very slowly. For this reason, it is a major challenge for parents to integrate different and sometimes conflicting cultural models and values in order to meet the new needs of their children. In this framework, the acculturation gap between parents and children is likely to be linked to an intergenerational gap, making the reconciliation of different values one of the most important challenges for immigrant families (Dwairy & Menshar, 2006).

The aim of the present study was twofold. First, it examined the cultural negotiation process of a group of Muslim migrant parents who have been living in a large city in northern Italy for more than ten years. Second, by analysing the impact of this negotiation on the upbringing of the children and the parenting practices of the parents, the research laid the groundwork for a community psychology intervention aimed at strengthening the local Islamic community and supporting the families in practicing intentional parenting in migration.

## **2. Methods**

### **2.1. Participants and procedure**

The study involved 11 Muslim migrant parents ( $F = 9$ ; average age: 48 range: 43-60), residing in Italy from an average of 25 years (range: 20-32). All participants were first generation immigrants who migrated to Italy from Morocco ( $n = 4$ ), Egypt ( $n = 6$ ) and Algeria ( $n=1$ ). All participants get their educational degree in their country of origin. Specifically, seven participants hold a university degree, two a high school diploma; one participant attended primary school and one had no education. All participants were parents of at least one adolescent child.

For all participants except one, Italy and Piedmont were the only place of destination. In one case, a participant migrated to France before arriving in Italy. In the men's case, migration was due to economic reasons, while all the women participants migrated for family reunification.

Although 4 participants were Italian speakers, all the interviews were conducted in Arabic by a native speaker researcher and then translated in Italian.

### **2.2. Data collection**

A qualitative method was chosen because it is best suited to examine the complex dynamics of cultural negotiation. In an early phase, participants were recruited within the local Islamic community from public settings (mainly mosques) and personal contacts. Then, a snowball sampling procedure was followed. All participants were informed verbally and in writing of their consent and gave written consent to participate. The recorded interviews took place in private residences. Interviews were conducted between February and December 2020 by an Arabic and Italian-speaking trained interviewer who followed a semi-structured in-depth interview guide and asked for additional information as needed. The interview grid included (a) demographic data, (b) family and immigration history (c) questions about raising children in migration. The interviews lasted an average of 1.30 hours; participants volunteered and received no compensation for their participation. The Ethics committee at the local university approved the study protocol.

### 2.3. Data analysis

The audiotaped interviews were transcribed verbatim in Arabic and translated by the Arabic-Italian speaking researcher who collected them; the translations were reviewed for accuracy by members of the research team. All identifying information was deleted from the final transcripts. The transcribed interviews were subjected to qualitative content analysis using Atlas.ti 9 software (Muhr, 1997). We adopted a collaborative approach and an open and axial coding method to iteratively create thematic categories (Olson et al., 2016). Disagreements were explored and discussed together to agree on final coding.

A total of 58 codes were created for the text analysis (coding a total of 841 quotations). In keeping with the purpose of this study, we focused only on the following codes: Parental control (n = 99) parental affect (n= 45); parenting (n= 82); second generations (n= 398).

### 3. Results and discussion

Our analysis began by answering the question, "What are the greatest fears that parents of Muslim immigrants feel about raising their children in a Western context?". It emerged that our participants' fears were mainly related to the possibility of their children assimilating to the Italian context and losing the connection with their country of origin and the heritage culture. In fact, in the perception of our interviewees, the assimilation of children means a complete abandonment of cultural habits strongly linked to the Islamic value system. In this framework, assimilation would take on the meaning of a total rejection of the moral and religious rules that form the basis of traditional culture. An Egyptian father noted:

*When you come to a Western country you are faced with that typical openness of their culture such as the excessive contact between men and women you find here, which is limited for us and in this you find a strong cultural conflict.* [int. 11; M; 54 years; Egypt]

The threat to Islamic values coming from Italian society is destabilising for Muslim families. Parents find themselves forced to defend behavioural rules that are not supported by the context of their children's lives. An Egyptian mother explained:

*The society we come from has raised us to have values and moral principles that guide your actions, but they also tell you that you can go out and do what you want without violating your values. But how can a teenager maintain his values if everyone around him does not?* [int. 2; F; 51 years; Egypt]

The impact of cross-cultural contact on parents' acculturation emerged from the comparison our respondents made with the Italian parents they met in their daily lives. All of our participants noted the difference between the way Italian parents raise their children and the way they see as typical of the Arab world. A Moroccan mother told us:

*Italian parents cuddle a lot with their children, we Arab families have a more aggressive style: Come here! Sit down! Do that!!! instead they turn to their children and say "love", "darling, would you give me...". I have noticed this many times and regret that we did not do the same with our children. Instead, when their children are grown up, they have the boyfriend, they can take him home. We Arab parents say to our children "Eib" (shame) to have the boyfriend. Italian parents give so many freedoms that we can't give* [int. 5; F; 46 years; Morocco].

Parental socialization toward autonomy and self-determination is highly valued by the Muslim parents interviewed when directed toward young children. Autonomy and self-determination, on the other hand, become a problem in adolescence, when children are confronted with the customs and traditions of their Italian peers and clashes with the need to demand compliance with Islamic cultural rules. A mother explained:

*Then the boy in the puberty stage says to you "Why my friends can and I cannot" and therefore his values go against his desires, so even if you teach him certain limits, but then he sees that all these things are allowed in his environment* [int. 2; F; 51 years; Egypt].

It appeared that the comparison with Italian parents led our respondents through a negotiation process by questioning their traditional parenting style and trying new ways of interacting and raising children. This led them to try to understand the kid's perspective and to soften certain rules of behaviour, as another Egyptian mother explained:

*You see the psychological side... if you are a boy in a group of friends whose parents allow you to stay out maybe until 5 in the morning, while you are the only one whose father wants you to come home no later than midnight... then you feel bad psychologically and that's why sometimes I did not say anything when he was late and I turned a blind eye* [int 1; F; 53 years; Egypt].

Similarly, an Egyptian father noted:

*I want to say one thing: the life of an adolescent here in Italy goes in phases and each phase lasts 1 or 2 years, after which there is a change. Also, in the way of thinking... you may find a boy who*

*goes through a moment of loss and after a few years matures and leaves that path and others who are very good and then after a few years go astray...* [int.10; M; 60 years; Egypt].

However, accepting that children have needs different from those their parents consider culturally acceptable puts the parenting couple in crisis, as this Egyptian father describes:

*My son did not want to feel different from his Italian friends. At puberty, hormones change, you want to be freer, and he wanted to be free. He could not control his desires and impulses because he saw them as acceptable in that cultural context. It was too difficult for us as parents to accept it.* [int. 2; M; 54 years; Egypt]

Parents have adopted some strategies that they consider efficient in dealing with these challenges. For example, they encourage their children to build friendship networks within the Muslim community, thus promoting the formation of a strong sense of ethnic identity in the children, which is seen as a greater guarantee of religious observance. This is particularly true when children's intimate relationships are at stake. Here it follows the opinion of two mothers:

*When my daughter was a child, I explained to her that in the future she would choose an Egyptian, Muslim boy to marry. This is not because we reject those who are different (...). Our customs and traditions are different from theirs [i.e.: Italian people]. There are things that are normal for them but not for us. We Egyptians are more conservative in certain things. For example, here you can marry civilly and not religiously; we do not have that distinction* [int. 3; F; 48 years; Egypt].

*I try to bring Islam closer to them [i.e.: my children] by making friends like them. For example, my daughters have made friends with Moroccan girls who are our neighbours and are honest and good girls, like them, and well brought up Islamically. From them they have learned to wear the veil. I did not force any of them to wear it.* [int. 4; F; 49 years; Morocco].

Thus, the desire to preserve cultural values leads parents to adapt their parenting model in order to find the most effective way to pass on their values to their children. However, this often leads to uncertainty about which model is best to ensure the well-being of children and the preservation of cultural heritage. The words of these mothers explain well the challenge of parenting in a culturally different country:

*You see so much negative experiences around that you are afraid this will happen to your children. So you put a lot of pressure on them and this sometimes leads to the opposite outcome ... leads them to explode. Then you realize that you need to put pressure on yourself and hold back and relieve the pressure on them. A balance must be ensured. And this is by no means easy. I think it will be easier for the second and third generations. Our first generation is the one that has the most difficulties. We must not give up our own culture and at the same time adapt to the new context. It is a difficult equation to solve. Not everyone succeeds. As I told you, sometimes my son tells me things that are unacceptable for my culture that if I could I would tear him to pieces, but I hold back and pretend nothing has happened. This is the challenge.* [int. 3; F ; 48 years ; Egypt].

*During adolescence, as she grew up and became more independent, there was a time when she fell in love with an Italian boyfriend. I tried to explain to her that we cannot have relationships like the Italians, but obviously the moral standards with which you speak to her are different from hers, so she looks at you as if you came from another world. It was very difficult to convince her that this relationship goes against our values.* [int. 8; F; 43 years; Egypt].

In general, the interviews highlighted the perception that in Muslim families parenting roles are challenged both by the difficulty of finding coherence between different parenting models and by the fact that they cannot rely on the support of their extended family as they would have in their home country. An Algerian mother noted:

*Here in migration you have no family network. In our countries, when a child fights with his parents, instead he goes to his uncle for a few days and the uncle talks to him, talks to the parents and mediates between them. This kind of character does not exist here in Italy, but here we can find a psychologist (...)* [int. 9; F; 54 years; Algeria].

#### **4. Conclusion**

Overall, the research has highlighted the difficulties Muslim parents face in carrying out their parental role in a context that is perceived as unsupportive, if not hostile, to their traditional values and culture. Interaction with Italian society, which is perceived as very distant from the moral codes these parents rely on, is perceived as a threat to the religious values they seek to transmit to their children. Identifying the most effective strategies to respond to these challenges seems to require a long process of negotiation. For the participants in our study, this process resulted in mixed acculturation strategies: on the one hand, separation through the preservation and transmission of cultural values and through the promotion of intra-ethnic relations to foster in the children a strong sense of ethnic identity that

encourages them to adhere to traditional and religious values. On the other hand, they seem to have opted for integration in terms of educational style, which thus tries to approach the "Italian" one through dialogue and flexibility.

Although this study was not without limitations, such as the overall small number of participants, the results served as the basis for developing a capacity building project in the local Islamic community. The project, named UMMA: *Community Empowerment for Integrated Families*, is currently underway and starts from a collaboration between the psychology department of the local university and an Islamic association in the area, in partnership with the city's socio-educational services; its implementation was funded by a major bank foundation and the local municipality.

From an operational perspective, UMMA consists in two main lines of intervention. A first action targeted the local Islamic community as a whole with a series of open online meetings, in which professionals and experts, whenever possible recruited from within the Islamic community itself, debated and deepen topics related to the educational challenges in intercultural contexts. The second action aimed to train a group of *Community Mediators* by developing a set of skills and knowledge that the people involved will be able to spend within the community itself and by acting in a network with the city's socio-educational services in accompanying vulnerable parents. In short, UMMA's overall aim was to activate synergies and integrated interventions, favouring the development of bridging relationships between the Islamic and the Italian communities and overcoming the emergency and assistance logic of taking care of the individual case.

## References

- Arends-T th, J., & Van de Vijver, F. J. (2004). Domains and dimensions in acculturation: Implicit theories of Turkish–Dutch. *International Journal of Intercultural Relations*, 28, 19-35.
- Berry, J.W. (1997). Immigration, acculturation and adaptation. *Applied Psychology: An International Review*, 46(1), pp. 5-34.
- Chrysochoou, X. (2004). *Cultural diversity. Its social Psychology*. Malden, MA, US: Blackwell Publishing.
- Dwairy, M., & Menshar, K. E. (2006). Parenting style, individuation, and mental health of Egyptian adolescents. *Journal of Adolescence*, 29, 103-117.
- Fedi, A., Mannarini, T., Brodsky, A., Rochira, A., Buckingham, S., Emery, L., Godsay, S., Scheibler, J., Miglietta, A., & Gattino, S. (2019). Acculturation in the discourse of immigrants and receiving community members: Results from a cross-national qualitative study. *American Journal of Orthopsychiatry*, 89, 1–15.
- Istat (Istituto Nazionale di Statistica), 2020. Identità e percorsi di integrazione delle seconde generazioni in Italia (Identity and integration paths of second generations in Italy). Retrieved on January, 31, 2022 from <https://www.istat.it/it/archivio/240930>
- Kunst, J. R., & Sam, D. L. (2014). “It's on Time That They Assimilate”–Differential acculturation expectations towards first and second generation immigrants. *International Journal of Intercultural Relations*, 39, 188-195.
- Monaci, M. G., Carbone, D., & Bonapace, W. (2010). Le famiglie immigrate e i servizi sociali: reti di sostegno formali e informali (Immigrant families and social services: formal and informal support networks). *Rivista di Studi Familiari*, 1, 76-95.
- Muhr, T. (1997). *Scientific Software Development's Atlas. ti: Visual Qualitative Data, Analysis, Management, Modelbuilding: In Education, Research & Business: Short User's Manual: Version 4.1 for Windows 95 and Windows NT*. Scientific Software Development.
- Olson, J. D., McAllister, C., Grinnell, L. D., Gehrke Walters, K., & Appunn, F. (2016). Applying Constant Comparative Method with Multiple Investigators and Inter-Coder Reliability. *Qualitative Report*, 21.
- Rizzo, M., Miglietta, A., Gattino, S., & Fedi, A. (2020). I feel Moroccan, I feel Italian, and I feel Muslim: Second generation Moroccans and identity negotiation between religion and community belonging. *International Journal of Intercultural Relations*, 77, 151-159.
- Tummala-Narra, P. (2004). Mothering in a foreign land. *The American Journal of Psychoanalysis*, 64(2), 167-182.
- Ward, C. (2001). the As, Bs, Cs of acculturation. In D. Matsumoto (Ed.), *Handbook of culture and psychology* (pp. 411-445). Oxford, UK: Oxford University Press.



## CAN PERCEIVED SOCIAL SUPPORT PROTECT AGAINST EMOTIONAL EXHAUSTION IN SMART WORKERS? A LONGITUDINAL STUDY

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### Abstract

The ongoing outbreak of COVID-19 is deeply affecting the way people work, with changes concerning the labor market (e.g., increasing unemployment), work practices (e.g., smart working), the emergence of new risk factors (e.g., the perceived risk of infection at work) and the accentuation of traditional ones (e.g., workload). In this study, we investigated whether smart working (SW) could affect the well-known association between the perceived characteristics of the work environment and workers' health and well-being. More specifically, building on the Job Demands-Resources (JD-R) model we hypothesized that workload and perceived social support (PSS), as relevant job demands and resources (i.e., risk and protective factors), may be associated with emotional exhaustion (EE) over time. We also hypothesized that working condition, that is, smart vs in-person working, may affect these longitudinal relationships. We expected the positive association between workload and EE to be stronger, while the negative association between PSS and EE to be weaker, for smart workers. A longitudinal study was carried out in a sample of workers from different organizations in Italy ( $N = 292$ ). Participants completed an online questionnaire between the end of October 2020 and the first half of November 2020 (i.e., T1) and four months later (i.e., T2). Workload and PSS were measured at T1 using scales taken from the Q<sub>u</sub>-Bo Test and the SAPH@W Questionnaire, respectively, two instruments standardized for the Italian context. Emotional exhaustion was assessed at T2 using the scale taken from the Italian adaptation of the Maslach Burnout Inventory. The hypothesized relationships were tested using moderated multiple regression. Workload at T1 was positively associated with EE at T2, whereas the association between PSS at T1 and EE at T2 was negative. Furthermore, SW moderated the association between PSS and EE, which was negative and significant for in-person workers, but non-significant for smart workers. Our study confirmed that, in line with the JD-R, workload and PSS can be conceived as risk and protective factors for EE, respectively. Interestingly, when considering the moderating role of SW, results showed that, to date, PSS may not be a valuable job resource for smart workers. Hence, although SW has proved useful and sometimes necessary during the COVID-19 pandemic, possible negative aspects of SW as implemented in the pandemic-related emergency (e.g., social separation and work-to-family conflict) need to be carefully considered. In terms of prevention, supervisors should be encouraged to foster a sense of belonging, trust and results-based management.

**Keywords:** *Workload, perceived social support, smart working, COVID-19, job demands-resources.*

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### 1. Introduction

The health emergency caused by the current COVID-19 pandemic, and the related government measures taken to face it, have determined relevant changes in several areas of everyday life, including the work domain (Burdorf et al., 2020). In fact, public and private organizations had to adopt new working practices and policies to sustain productivity in compliance with the rules of social distancing (e.g., reducing physical proximity and social interactions). These included, among others, the adoption of smart working (SW), a form of flexible work characterized by the absence of restrictions in time or space and an organization by phases, cycles, and objectives (Marino & Capone, 2021), which has become a widely used practice as a measure to contain the spread of the new Coronavirus (Wang et al., 2021). In Italy, although smart working was originally proposed with the aim of increasing competitiveness and facilitating work-life balance (Law 81/2017), most organizations were unprepared to properly implement and support this working condition, and many workers had no previous experience of it. Not surprisingly,

a previous study in the Italian context has shown SW to be positively associated with increased workload and technostress (i.e., techno-overload and techno-invasion; Molino et al., 2021).

Furthermore, several studies worldwide have shown that shifting from regular work to SW during the COVID-19 outbreak had a negative impact on work characteristics (e.g., increase in workload/technostress, reduced perceived social support), workers' well-being (e.g., higher emotional exhaustion), and productivity (Wu & Chen, 2020; Wang et al., 2021). Considering this scenario and building on the Job Demands-Resources model (JD-R; Demerouti et al., 2001; see also Bakker & Demerouti, 2017), in this longitudinal study we took a step further and we investigated whether SW could affect the association between the perceived characteristics of the work environment, in terms of workload and perceived social support (PSS) - as relevant job demands and resources - and emotional exhaustion (EE), a core component of job burnout (Taris et al., 2004).

According to the JD-R model, job characteristics from different occupations may be categorized as job demands or job resources. On the one hand, job demands are those aspects of a job (physical, psychological, social, and organizational) that require sustained physical and/or psychological (cognitive and emotional) effort from the employee and are therefore associated with certain psychological and/or physiological costs. On the other hand, job resources are those aspects of a job (physical, psychological, social, and organizational) that are functional in achieving work objectives, reduce job demands and the associated costs (psychological and/or physiological), or promote personal growth, learning, and development (Demerouti et al., 2001; Bakker and Demerouti, 2007, 2017).

Conceived as a job demand, workload requires effort and drains employees' mental and physical resources such as time and energy, thus leading, over time, to EE. Thus, in line with the JD-R model, we hypothesized that workload at time 1 (T1) will be positively associated with EE at Time 2 (T2), so that higher levels of workload will be associated with higher levels of EE four months later.

Hypothesis 1: workload at T1 will be positively associated with EE at T2.

Conceptualized as a job resource, PSS is functional in dealing effectively with high job demands and achieving work goals, thus contributing to prevent job burnout (Schaufeli & Bakker, 2004). Hence, we hypothesized that PSS at T1 will be negatively associated with EE at T2, so that higher levels of PSS will be associated with lower levels of EE over time.

Hypothesis 2: PSS at T1 will be negatively associated with EE at time 2.

Finally, in this study we also hypothesized that SW might affect the relationship between the characteristics of work (i.e., workload and PSS) and EE over time. Specifically, given the forced and suboptimal implementation of SW during the COVID-19 outbreak, we expected the positive association between workload and EE to be stronger, while the negative association between PSS and EE to be weaker, for smart workers.

Hypothesis 3: SW will moderate the positive association between workload and EE over time, which is expected to be stronger for smart workers.

Hypothesis 4: SW will moderate the negative association between PSS and EE over time, which is expected to be weaker for smart workers.

## 2. Methods

The study was conducted in Italy and included a sample of workers from different organizations. Briefly, workers were approached by trained research assistants and were invited to participate in a study about their work experience. They were also informed that they would be contacted for a second survey four months later. Participants filled out a first online questionnaire between the end of October 2020 and the first half of November 2020 (i.e., Time 1, T1). They also filled out a second online questionnaire between the end of February 2021 and the first half of March 2021 (i.e., Time 2, T2). All participants provided written informed consent before participating in the study. The project was approved by the Ethical Committee for the Psychological Research of the University of Padova, Italy. Overall, 292 participants completed the questionnaire at both T1 and T2. The sample consisted of 162 women (55.5%) and 129 men (44.2%; one missing value, 0.3%) with a mean age was 37.2 years ( $SD = 12.2$ ).

## 2.1. Measures

Participants completed the following self-report measures:

Workload was measured at T1 using a scale taken from the Q<sub>u</sub>-Bo Test (De Carlo et al., 2008), an instrument standardized for the Italian context. The scale included five items (e.g., "Your job requires you to work very hard and intensely") with a response scale ranging from 1 (*strongly disagree*) to 6 (*strongly agree*). Cronbach's alpha was .87 at T1.

Perceived social support was assessed at T1 using a scale taken from the Safety at Work questionnaire (SAPH@W; Converso et al., 2021). The scale included two items with a response scale ranging from 1 (*not at all*) to 10 (*completely*). Cronbach's alpha was .74 at T1.

Emotional exhaustion was assessed at T2 using the scale taken from the Italian adaptation of the Maslach Burnout Inventory—General Survey (MBI-GS; Schaufeli et al., 1996). The scale included nine items (e.g., "I feel emotionally drained from my work"), and the six-point response scale ranged in this study from 1 (*never*) to 6 (*always*). Cronbach's alpha was .93 at T2.

Smart working was detected by asking each participant to indicate his working condition at T1. The item discriminates those who work in-person from those who work – in whole or in part – remotely.

## 2.2. Data analysis

The hypothesized relationships were tested using moderated multiple regression analyses (Aiken & West, 1991). In the estimated model, workload and PSS were the independent variables, SW was the moderator, and EE was the dependent variable. The scores of both workload and PSS were centered before the interaction terms were calculated. If a significant interaction was found, then a simple slope analysis was conducted. Statistical analyses were carried out using the software R version 4.1.2 (2021).

## 3. Results

There was a positive, small- to medium-sized correlation between workload at T1 and EE at T2,  $r(290) = .26, p < .001$ , whereas a negative, medium-sized correlation between PSS at T1 and EE at T2 emerged,  $r(290) = -.35, p < .001$ . The regression model showed that workload at T1 was positively associated with EE at T2 ( $b = .19, p < .01, \beta = .19$ ), whereas PSS at T1 was negatively associated with EE at T2 ( $b = -.22, p < .001, \beta = -.38$ ). Hypothesis 1 and hypothesis 2 were supported. Furthermore, the interaction between workload and SW was not significant, whereas the interaction between PSS and SW was positive and significant ( $b = .15, p < .05, \beta = .25$ ). Simple slope analysis revealed that the longitudinal association between PSS and EE was negative and significant for in-person workers ( $b = -.22, p < .001, \beta = -.38$ ), but non-significant for smart workers ( $b = -.07, ns, \beta = -.13$ ). Hypothesis 4 was supported, whereas hypothesis 3 was not.

## 4. Discussion

The COVID-19 outbreak forced organizations worldwide to rethink their working practices and policies in order to contain the spread of SARS-CoV-2 (e.g., by reducing physical proximity and social interactions), which has led to the massive adoption of SW. Hence, millions of people around the world were forced to suddenly become "smart workers", giving rise to a "global experiment" of SW (Wang et al., 2021). Not surprisingly, during the ongoing outbreak of COVID-19 researchers worldwide devoted great attention to the consequences of SW, which showed a negative impact on both the characteristics of work (e.g., increased workload, reduced social support) and workers' health and well-being (e.g., increased emotional exhaustion; Wu & Chen, 2020; Wang et al., 2021).

In this perspective and building on the JD-R model (Demerouti et al., 2001), the aim of this longitudinal study was to explore if, and to what extent, workload and PSS (as relevant job demands and job resources, respectively) affected EE over time during the current pandemic, also considering the potential moderating role of SW in these associations. Hence, we hypothesized that workload at T1 would be positively associated with EE at T2 (i.e., four months later), and that PSS at T1 would be negatively associated with EE at T2. We also hypothesized that SW would moderate these associations, with the positive association between workload and EE being stronger, and the negative association between PSS and EE being weaker, for smart workers.

Results largely supported our predictions. Workload at T1 was positively associated with EE at T2, whereas there was a negative association between PSS at T1 and EE at T2. Contrary to our prediction, SW did not moderate the association between workload and EE over time. On the contrary, SW moderated the association between PSS and EE over time, which was negative and significant for in-person workers, but non-significant for smart workers.

Taken together, these results are consistent with previous empirical research, showing that workload is positively associated with health impairment linked to work-related stress (see Nixon et al., 2011 for a review and meta-analysis). Similarly, our results are consistent with prior research showing that PSS (e.g., from colleagues or supervisors) is negatively associated with emotional exhaustion and psychophysical strain (Valadez-Torres et al., 2018; Macias-Velasquez et al., 2021; see also Viswesvaran et al. 1999, for a meta-analysis).

With respect to the moderating role of SW, our results showed that PSS did not appear to be a valuable resource for smart workers during the COVID-19 outbreak. A possible explanation is that traditional strategies of social support prove to be less effective for smart workers, who have specific needs and expectations. These include, for example, the need for instrumental support from supervisors/colleagues to accomplish tasks during the period of working from home or to manage difficulties related to information and communication technologies (ICTs; Wang et al., 2021). Similarly, smart workers might need emotional support from supervisors/colleagues to overcome social isolation and to maintain bonds between work team members (Kniffin et al., 2021). It is also possible that traditional strategies of social support simply cannot be applied to smart workers.

Finally, regarding practical implications, our study suggests that organizations should encourage managers and supervisors to develop new skills to effectively support smart workers. These include, for example communication skills (e.g., communication clarity and management of communication flow) and technological skills, such as knowledge about the correct and secure use of ICTs (i.e., e-leadership; Contreras et al., 2020; Van Wart et al., 2019), which can help smart workers to achieve their work goals and to alleviate the impact of technostress (i.e., instrumental social support; Bakker & Demerouti, 2007; see also Langford et al., 1997). Similarly, organizations should encourage managers and supervisors to provide opportunities for non-task interactions among team members, in order to enable emotional connection, reduce social isolation and loneliness, as well as maintain social bonds between workers (i.e., emotional social support; Kniffin et al., 2021; see also Langford et al., 1997). Furthermore, the adoption of result-based management can strengthen mutual trust between leaders and followers (Kim et al., 2021).

## 5. Conclusions

In conclusion, this study showed that workload, as a job demand, was associated with higher levels of EE four months later, whereas PSS, as a job resource, was associated with lower levels of EE over time. Furthermore, SW moderated the association between PSS and EE, which was negative and significant for in-person workers, but non-significant for smart workers. This suggests that PSS may not have been a valuable job resource for smart workers during the current COVID-19 outbreak, and that the possible negative aspects of SW – as implemented in the pandemic-related emergency – need to be thoroughly considered and addressed by organizations.

## References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Thousand Oaks, CA, US: Sage Publications, Inc.
- Bakker, A. B., & Demerouti, E. (2007). The job demands-resources model: State of the art. *Journal of Managerial Psychology*, *22*, 309–328.
- Bakker, A. B., & Demerouti, E. (2017). Job demands-resources theory: Taking stock and looking forward. *Journal of Occupational Health Psychology*, *22*, 273–285.
- Burdorf, A., Porru, F., & Rugulies, R. (2020). The COVID-19 (Coronavirus) pandemic: Consequences for occupational health. *Scandinavian Journal of Work, Environment & Health*, *46*, 229–230.
- Contreras, F., Baykal, E., & Abid, G. (2020). E-Leadership and teleworking in times of COVID-19 and beyond: What we know and where do we go. *Frontiers in Psychology*, *11*:590271.
- Converso, D., Bruno, A., Capone, V., Colombo, L., Falco, A., Galanti, T., ... Loera, B. (2021). Working during a pandemic between the risk of being infected and/or the risks related to social distancing: First validation of the SAPH@W questionnaire. *International Journal of Environmental Research and Public Health*, *18*, 5986.
- De Carlo, N. A., Falco, A., & Capozza, D. (2008). *Test di valutazione del rischio stress lavoro-correlato nella prospettiva del benessere organizzativo, Qu-Bo* [Test for the assessment of work-related stress risk in the organizational well-being perspective, Qu-Bo]. Milano: FrancoAngeli.
- Demerouti, E., Bakker, A. B., Nachreiner, F., and Schaufeli, W. B. (2001). The job demands-resources model of burnout. *Journal of Applied Psychology*, *86*, 499–512.

- Kim, T., Mullins, L.B., & Yoon, T. (2021). Supervision of telework: A key to organizational performance. *The American Review of Public Administration*, 51:263-277.
- Kniffin, K. M., Narayanan, J., Anseel, F., Antonakis, J., Ashford, S. P., Bakker, A. B., ... Vugt, M. van. (2021). COVID-19 and the workplace: Implications, issues, and insights for future research and action. *American Psychologist*, 76, 63–77.
- Langford, C. P., Bowsher, J., Maloney, J. P., & Lillis, P. P. (1997). Social support: A conceptual analysis. *Journal of Advanced Nursing*, 25, 95-100.
- Marino, L., & Capone, V. (2021). Smart working and well-being before and during the COVID-19 pandemic: A scoping review. *European Journal of Investigation in Health, Psychology and Education*, 11, 1516–1536.
- Macias-Velasquez, S., Baez-Lopez, Y., Tlapa, D., Limon-Romero, J., Maldonado-Macias, A. A., Flores, D. L., & Realyvásquez-Vargas, A. (2021). Impact of co-worker support and supervisor support among the middle and senior management in the manufacturing industry. *IEEE Access*, 9, 78203-78214.
- Molino, M., Ingusci, E., Signore, F., Manuti, M., Giancaspro, M. L., ... & Cortese, C. G. (2020). Wellbeing costs of technology use during COVID-19 remote working: an investigation using the Italian translation of the technostress creators scale. *Sustainability*, 12, 5911.
- Nixon, A. E., Mazzola, J. J., Bauer, J., Krueger, J. R., & Spector, P. E. (2011). Can work make you sick? A meta-analysis of the relationships between job stressors and physical symptoms. *Work & Stress*, 25, 1–22.
- R Core Team (2021). R: A language and environment for statistical computing. Vienna, Austria: R Foundation for Statistical Computing.
- Schaufeli, W. B., Leiter, M. P., Maslach, C., & Jackson, S. E. (1996). The Maslach Burnout Inventory-General Survey. In C. Maslach, S. E. Jackson, and M. P. Leiter (Eds.), *Maslach Burnout Inventory Manual*, 3rd ed. (pp. 19-26). Palo Alto, CA: Consulting Psychologists Press
- Schaufeli, W. B., & Bakker, A. B. (2004). Job demands, job resources, and their relationship with burnout and engagement: A multi-sample study. *Journal of Organizational Behavior*, 25, 293–315.
- Taris, T. W., Horn, J. E. V., Schaufeli, W. B., Schreurs, P. J. G. (2004). Inequity, burnout and psychological withdrawal among teachers: A dynamic exchange model. *Anxiety, Stress & Coping*, 17, 103–122.
- Valadez-Torres, S. G., Maldonado-Macías, A. A., Camacho-Alamilla, R. & Avelar-Sosa, L. (2018). Relationship between social support and burnout dimensions in middle and senior managers of the manufacturing industry in Ciudad Juárez. In J. L. García-Alcaraz, G. Alor-Hernández, A. A. Maldonado-Macías, & C. Sánchez-Ramírez (Eds.), *New perspectives on applied industrial tools and techniques* (pp. 409-431). Manhattan, NY: Springer.
- Van Wart, M., Roman, A., Wang, X., & Liu, C. (2019). Operationalizing the definition of e-leadership: Identifying the elements of e-leadership. *International Review of Administrative Sciences*, 85, 80–97.
- Viswesvaran, C., Sanchez, J. I., & Fisher, J. (1999). The role of social support in the process of work stress: A meta-analysis. *Journal of Vocational Behavior*, 54, 314-334.
- Wang, B., Liu, Y., Qian, J., & Parker, S. K. (2021). Achieving effective remote working during the COVID-19 pandemic: A work design perspective. *Applied psychology*, 70, 16-59.
- Wu, H., & Chen, Y. (2020). The impact of work from home (WFH) on workload and productivity in terms of different tasks and occupations. In C. Stephanidis, G. Salvendy, J. Wei, S. Yamamoto, H. Mori, G. Meiselwitz, F. Fui-Hoon Nah, & K. Siau (Eds.), *Proceedings of the 22nd HCI International Conference* (pp. 693-706).

## INTERGROUP ANXIETY AND NATIONAL IDENTITY AMONG SLOVAKS (PRELIMINARY FINDINGS)

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### Abstract

Slovaks belong to nations that have long-term negative attitudes towards migrants (e.g. Bozogáňová, Piterová, 2020). We are interested in whether national identity is related to intergroup anxiety (contact with a person of another ethnicity). Intergroup anxiety can be broadly defined as the arousal that occurs as a result of individuals' negative expectations of rejection or discrimination during cross-group interactions or fears that the interaction partner or they themselves may behave in an incompetent or offensive manner (Stephan & Stephan, 1985, Turner, Hewstone, Voci & Vonofakou, 2008). The aim of the paper is to determine the relationship between national (Slovak) identity and intergroup anxiety and further determine whether there are differences in these constructs in the context of sex and age. The research sample consisted of 1001 respondents (49% men) aged 17 to 75 (M = 44.81; SD = 14.92). The data were collected online in the form of a panel collection in Slovakia with the ambition to obtain a representative sample of respondents (based on sex, age, region, and education). Intergroup anxiety was measured by the Stephan and Stephan (1985) scale (Cronbach  $\alpha = .866$ ). Slovak national identity was measured by 8 items from ISP 2013 - National Identity III (Cronbach  $\alpha = .801$ ). It was found that there is a weak positive relationship between national identities and intergroup anxiety. Multivariate analysis of variance was conducted to compare national identity and intergroup anxiety. Using Pillai's trace, there was a significant effect of sex, age, and there was a significant effect of interaction sex x age. Results showed that older respondents (53 and above) scored higher than younger age groups in terms of national identity. Intergroup anxiety was higher in men. It appears that national identity is higher for women with increasing age, while for men its value decreases. The limit of the study is its exploratory and cross-sectional character. However, we consider it a steppingstone, when examining the mentioned constructs in the given context.

**Keywords:** *National identity, intergroup anxiety, Slovakia, MANOVA.*

### 1. Introduction

Slovaks belong to nations that have long-term negative attitudes towards migrants (e.g. Bozogáňová, Piterová, 2020). In previous research it was found that lower socioeconomic status, lower education, higher religiosity, older age, and rightist political orientation are associated with a higher sense of immigrant threat (see e.g. Hainmueller & Hiscox, 2007, Gorodzeisky, 2013, Tartakovsky & Walsh, 2015, Hoxhaj & Zuccotti, 2021). According to the IOM (2022), as of December 2021, the share of foreigners in the population of Slovakia was 3.07%, which is the third lowest share of foreigners among the countries of the European Union (after Poland and Romania). Most foreigners come to Slovakia from neighboring countries - the Czech Republic, Hungary, Poland, Austria, and Ukraine. Based on the 2021 census, 10.8% of the total population with permanent residence subscribed to national minorities (mostly Hungarian, Roma, Czech and Ruthenian) (SODB, 2021). In our contribution, we have chosen a different perspective on this issue. We are interested in whether the national identity is related to intergroup anxiety (contact with a person of another ethnicity).

Intergroup anxiety can be broadly defined as the arousal that occurs as a result of individuals' negative expectations of rejection or discrimination during cross-group interactions or fears that the interaction partner or they themselves may behave in an incompetent or offensive manner (Stephan & Stephan, 1985, Turner, Hewstone, Voci & Vonofakou, 2008). According to Stephan (2014), an anxiety intergroup consists of several components. The affective component is experienced as negative and

aversive. From a cognitive point of view, anxiety between groups can be created by assessing that interaction with non-group members is expected to have negative consequences. From a physiological point of view, people experience various bodily changes (see Stephan, 2014). All three components overlap. According to Stephan (2014), in addition to personality traits, which are predisposed to intergroup anxiety (e.g. ethnocentric, intolerant, hostile ...), there is second type of relatively permanent personality traits that affect intergroup anxiety and consist of various aspects of social identity. People who strongly identify with the social group (e.g. national, ethnic, religious, or gender) to which they belong can be expected to experience intergroup anxiety when interacting with members of a different social group. The high value that their own group attaches to them will lead them to fear threats from the other group.

We focused specifically on national identity. The literature on national identity and outgroup rejection is rich and diverse. There are different ways of defining national identity, and different aspects of national identity can be related to attitudes to outgroup members in different ways (Blank & Schmidt, 2003; Grigoryan, 2016). National identity has customarily been examined in terms of national boundaries and attachment to the nation. Despite its complexity, two principal dimensions of national identity are commonly identified—national boundaries (determined by a civic/ethnic framework) and attachment to the nation (in the dual forms of patriotism and nationalism) (Ariely, 2020). Nationalistic identification focuses on the comparison between the national ingroup and relevant outgroups, whereas patriotic identification is a kind of critical loyalty with the ingroup that aims at improving the ingroup according to its standards and norms (Wagner, Becker, Christ, Pettigrew & Schmidt, 2012, Wagner, Kotzur & Friehs, 2022).

## 2. Goal

The aim of the paper is to determine the relationship between national (Slovak) identity and intergroup anxiety and further determine whether there are differences in these constructs in the context of sex and age. This paper has exploratory character.

## 3. Methods

Intergroup anxiety was measured by 11 items adapted from the Stephan and Stephan (1985) scale, with higher scores reflecting greater anxiety (Cronbach  $\alpha = .866$ ). Instruction was “Imagine that you only work with people from other ethnic groups - how would you feel?” - example of items: confident, happy, defensive. Respondents answered on scale where 1 = not at all – 10 = extremely. Positive items (confident, happy, accepted, self-assured) have been recoded for better interpretation of the results. A higher score means a greater intergroup anxiety. The summary score was divided by the number of items in the questionnaire: minimum – 1, maximum – 10).

Slovak national identity (ethnic and civic identity) was measured by 8 items from ISP 2013 - National Identity III (Cronbach  $\alpha = .801$ ). The instruction was “Some people say the following things are important for being truly Slovak. Others say they are not important. How important do you think each of the following is?” – examples of items: to have Slovak ancestry, to feel Slovak, to live in Slovakia for most of one’s lives. Respondents answered on a scale where 1 = very important - 4 = not important at all. The items have been recoded for better interpretation of the results. A higher score means a higher national identity. The summary score was divided by the number of items in the questionnaire: minimum – 1, maximum – 4).

Using factor analysis (principal axis factoring), we verified whether the two-factor or one-factor solution of the used questionnaire works in the Slovak population (see Ariely, 2020). The results showed that there is no distinction between ethnic and civic identity in Slovakia - we are working with the general name national identity (one-factor solution). Factor was comprised of 8 items reported on a 4-point scale that explained with factor loadings from .288 (being Christian) to .745 (have Slovak citizenship).

### 3.1. Research sample

The research sample consisted of 1001 respondents (49% men) aged 17 to 75 (M = 44.81; SD = 14.92). Out of these respondents, 54.2% were employed, 7.5% unemployed, 5.1% self-employed, 7.5% on maternity/parental leave, 20.6% pensioners and 5.1% students. 1.9% of research sample completed primary education, 54.5% secondary and 43.7% completed university education. The data were collected online in the form of a panel collection in Slovakia with the ambition to obtain a representative sample of respondents (based on sex, age, region, and education). Data were processed in IBM SPSS v.26, with respect to conditions of used methods.

#### 4. Results

It was found (Pearson correlation) that there is a weak positive relationship ( $r = .119$ ;  $p < .001$ ) between national identities and intergroup anxiety. In Table 1 are descriptive characteristics of intergroup anxiety and national identity for men, women, and age categories.

Table 1 Descriptive characteristics.

|     |                    | Intergroup anxiety |       |       | National identity |      |
|-----|--------------------|--------------------|-------|-------|-------------------|------|
|     |                    | N                  | M     | SD    | M                 | SD   |
| sex | men                | 490                | 4.546 | 1.415 | 2.929             | .588 |
|     | women              | 511                | 4.153 | 1.466 | 2.868             | .563 |
| age | less than 35 years | 330                | 4.199 | 1.485 | 2.855             | .533 |
|     | 36 - 52 years      | 336                | 4.461 | 1.535 | 2.843             | .607 |
|     | 53 and more years  | 335                | 4.375 | 1.328 | 2.994             | .574 |

Based on the averages, we can see that the Slovak respondents state the intergroup anxiety and national identities in the mean values of the individual methodologies used.

Multivariate analysis of variance (sex, age (categories: less than 35 (early adulthood - 33% of respondents), 36 – 52 (middle adulthood - 33.6% of respondents), 53 and more (late adulthood and old age - 33.5% of respondents), sex x age) was conducted to compare national identity and intergroup anxiety.

Using Pillai's trace, there was significant effect of sex,  $V = .017$ , ( $F(2, 994) = 8.344$ ,  $p < .001$ ); age,  $V = .017$ , ( $F(2, 994) = 4.286$ ,  $p = .002$ ) and there was significant effect of interaction sex x age  $V = .010$ , ( $F(2, 994) = 2.448$ ,  $p = .044$ ).

Table 2. Tests of Between-Subjects Effects.

|           |                    | F      | df | Sig.   | Partial Eta Squared | Observed Power |
|-----------|--------------------|--------|----|--------|---------------------|----------------|
| age       | intergroup anxiety | .706   | 2  | .494   | .001                | .170           |
|           | national identity  | 7.332  | 2  | .001** | .015                | .938           |
| sex       | intergroup anxiety | 16.593 | 1  | .000** | .016                | .983           |
|           | national identity  | .638   | 1  | .425   | .001                | .126           |
| age x sex | intergroup anxiety | 1.298  | 2  | .274   | .003                | .282           |
|           | national identity  | 3.959  | 2  | .019*  | .008                | .711           |

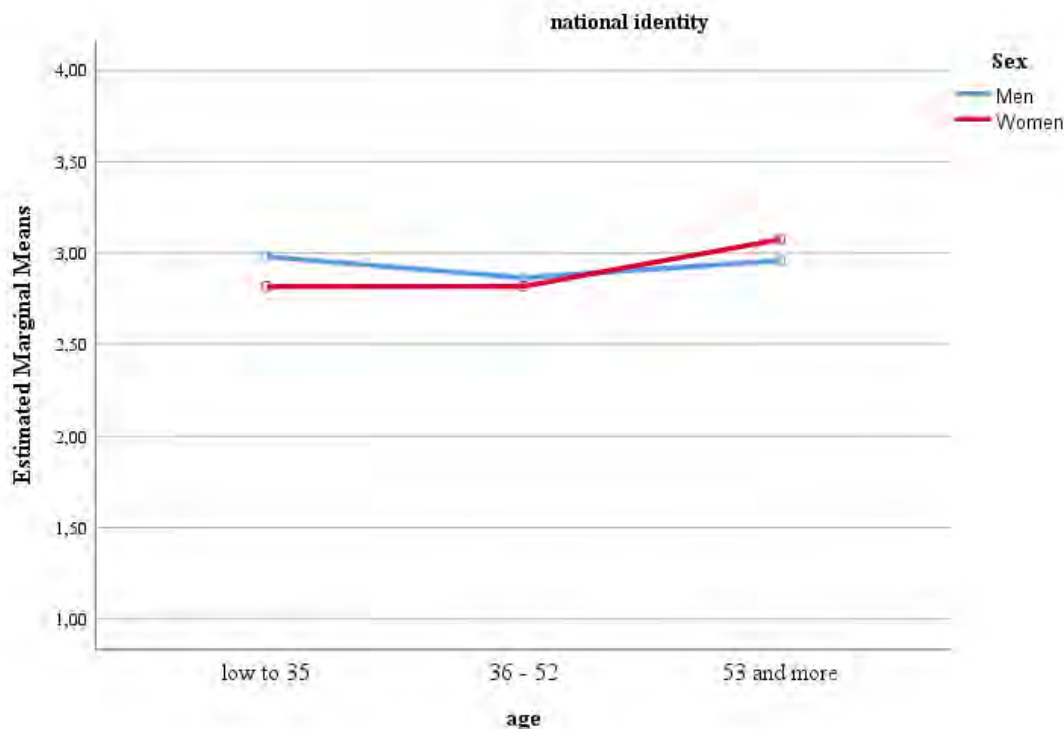
\*\*  $p < .001$ ; \*  $p < .05$

Specifically, differences were demonstrated based on age ( $F = 7.332$ ,  $df = 2$ ,  $p = .001$ ) in national identity. Based on sex in intergroup anxiety ( $F = 16.593$ ,  $df = 1$ ,  $p < .001$ ) and within age x sex interaction in national identity ( $F = 3.959$ ,  $df = 2$ ,  $p = .019$ ).

Results showed that older respondents (53 and above) scored higher than younger age group (36 – 52 years) in terms of national identity ( $MD = .1507$ ,  $p = .002$ ,  $CI[.045, .256]$ ) and also score higher than age group low to 35 years ( $MD = .1380$ ,  $p = .006$ ,  $CI[.032, .244]$ ). Intergroup anxiety was higher in men ( $MD = .406$ ,  $p < .001$ ,  $CI[.210, .601]$ ). The interaction between sex and age was significant in national identity, showed in Graph 1.



Graph 1. Interaction age x sex in national identity.



Based on the graph, it appears that national identity is higher for women with increasing age, while for men its value decreases. However, these differences are very small (it can be a coincidence), so it will be appropriate to examine this trend further.

## 5. Discussion and conclusion

The aim of the paper was to determine the relationship between national (Slovak) identity and intergroup anxiety and determine whether there are differences in these constructs in the context of sex and age. The results showed a weak relationship between national identity and intergroup anxiety. Given the number of foreigners in Slovakia based on statistics (SOBD, 2021; IOM, 2022) we can consider this relationship to be logical. Also based on the results of a Eurobarometer survey (Bozogáňová, 2020) the Slovak respondents seldom or never come into contact with migrants and in almost 80% of the cases, respondents from the Slovak population do not have immigrants as friends or family members. Slovaks are unlikely to meet migrants and other ethnic groups, which may be related to the low level of reported intergroup anxiety. Intergroup anxiety was higher in men than women, but this difference was small. We can theorize about the reason for these differences - it may be related to the position of a man in society, often presented as the breadwinner of the family. Contact with another ethnic group may be perceived as more threatening due to the presence of other ethnic groups in the workplace (Ukrainian and Ruthenian workers in factories in Slovakia – see Bozogáňová, 2020, Bozogáňová & Piterová, 2020). The presence of these people can pose a perceived threat to the job. However, these considerations need to be further verified.

Another finding was a higher level of national identity among older respondents (late adulthood) compared to younger groups (early and middle adulthood). We can explain this result by the consideration that the longer a person lives in a country, the more they feel they belong to it. Wagner, Kotzur and Friehs (2022) stated that the strength of the effect of group identification on outgroup derogation depends on two moderators: The salience of a specific group membership in a situation – the sudden recognition that an interaction partner is a member of a specific immigrant group can change an interaction dramatically from one minute to the other – and the degree of identification with an ingroup. Thus, based on social identity theory, one can propose that the more salient national or ethnic group membership in a situation and the more individuals identify with a national or ethnic ingroup, the stronger their rejection of immigrants (Wagner, Kotzur & Friehs, 2022).

Based on the last of our findings, it appears that national identity is higher for women with increasing age, while for men its value decreases. However, these differences are very small (it can be a coincidence), so it will be appropriate to examine this trend further. The limit of the study is its

exploratory and cross-sectional character. However, we consider it a steppingstone, when examining the mentioned constructs in the given context. The advantage is the "representative" research sample of the Slovak population. In future research, it is appropriate to use multifactor methods for national identity research and a situational approach to measuring intergroup anxiety. The methodology used may be too abstract for respondents and they may not be able to imagine the given situations.

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### *References*

- Ariely, G. (2020). Measuring dimensions of national identity across countries: theoretical and methodological reflections. *National Identities*, 22(3), 265–282.
- Barnes, Kelly L. (2015) National Identity and Attitudes toward Immigrants: The Role of Social Comparison and Perceptions of Competition. *Electronic Thesis and Dissertation Repository*. 3190.
- Blank, T., & Schmidt, P. (2003). National identity in a united Germany: Nationalism or patriotism? An empirical test with representative data. *Political Psychology*, 24(2), 289–312.
- Bozogánová, M. (2020). The opinions of the Slovak population on immigrants based on Eurobarometer data. *Človek a spoločnosť*, 23(1), 45–57.
- Bozogánová, M. & Piterová, I. (2020). Postoje k migrácii na Slovensku v kontexte Európy a krajín Vyšehradskej štvorky. In Fedáková, D., & Kenotš, M. (Ed.), *Európska sociálna sonda - 9.kolo na Slovensku* (89–114). Košice: Spoločenskovedný ústav CSPV SAV.
- Gorodzeisky, A. (2013). Mechanisms of exclusion: attitudes toward allocation of social rights to out-group population. *Ethnic and Racial Studies*, 36(5), 795–817.
- Grigoryan, L. K. (2016). National identity and anti-immigrant attitudes: The case of Russia. In Grimm, J., Huddy, L., Schmidt, P. & Seethaler, J. (Eds.). *Dynamics of National Identity* (206–228). Routledge.
- Hainmueller, J., & Hiscox, M. J. (2007). Educated preferences: Explaining attitudes toward immigration in Europe. *International Organization*, 61(02).
- Hoxhaj, R., & Zuccotti, C. V. (2021). The complex relationship between immigrants' concentration, socioeconomic environment and attitudes towards immigrants in Europe. *Ethnic and Racial Studies*, 44(2), 272–292.
- IOM (2022). Migrácia na Slovensku. Retrieved February 10, 2022, from <https://iom.sk/sk/migracia/migracia-na-slovensku.html>
- SODB (2021). Národnosť. Retrieved February 10, 2022, from <https://www.scitanie.sk/zilinsky-kraj-s-najvyssim-podielom-slovenskej-narodnosti>
- Tartakovsky, E., & Walsh, S. D. (2015). Testing a new theoretical model for attitudes toward immigrants: The case of social workers' attitudes toward asylum seekers in Israel. *Journal of Cross-Cultural Psychology*, 47, 72–96.
- Wagner, U., Kotzur, P.F. & Friehs, M-T. (2022) Anti – immigrant prejudice and discrimination in Europe. In Tileagă, C., Augoustinos, M. & Durrheim, K. (Eds.), *The Routledge International Handbook of discrimination, prejudice and stereotyping* (75 – 89). New York: Routledge.

# PROFESSIONALS, STREAMERS AND AMATEUR PLAYERS: AN ETHNOGRAPHY FOR EXPLORING ORGANIZATIONAL BEHAVIOURS IN DIFFERENT WORK-PLAY CONDITIONS

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## Abstract

In recent decades, work has been going through a series of transformations leading to the rise of virtual organizations and to the spread of gamification practices. On the other side, also play activities have been going through a process of “workification”, with the rise of phenomena such as “grinding” in video games. Nowadays, the boundaries between work and play are blurred, so that the old dichotomies between game and labour do not hold anymore. This entanglement between work and play might shape the organizations and the dynamics of their members, radically. To understand how, we investigate organizational dynamics occurring in a multiplayer video game, as virtual gaming worlds are often designed to replicate complex social structures and serious work ecosystems. We involve Esports professionals, streamers, and amateur players as they differently intertwine “playing” and “working” practices during the gaming activity. Professionals have problems that are typical of workers, like pursuing a remunerated career in the area; streamers invest an emotional labour during live performances in order to attract spectators who economically sustain them; amateur players could perceive their activity as a “second work”. An ethnographic study within an Italian gaming community is in progress. We focus on “Call of Duty: Warzone”, a First-Person Shooter Battle Royale game which requires players to enact organizational efforts in order to reach the in-game objectives (e.g., defeat the enemy team). The study uses i) semi-structured interviews and participant observation conducted in the game environment played by the amateurs, ii-iii) observation of gaming sessions, analysis of online content and semi-structured interviews with reference to streamers and professional, iv) analysis of communication exchanges of all three types of players during the gaming sessions. We expect that players belonging to different categories will enact distinct organizational behaviours and give rise to various organizational structures. A cross-comparison between them, which is missing in current literature, would clarify how different modalities of combining work and play impact on organizational behaviours and dynamics; it could also help both academic and practitioners address the issues faced by current working virtual organizations, by providing insights on how to effectively organize people collaborating from a distance through “best practices” that can be found in games. Preliminary results will be presented at the conference. Since the study is targeted to the Italian context, generalization of the results might be difficult; however, we expect to provide rich insights through the adoption of a qualitative ethnographic approach.

**Keywords:** *Virtual organizations, organizational behaviour, video games, digital ethnography.*

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## 1. Introduction

In recent decades, the world of work has been going through a series of transformations in the Western world. These changes brought two main consequences, affecting the way work is organized and leading to the rise of new organizational structures, like virtual organizations (DeSanctis & Monge, 1999). Nevertheless, along with the spread of such organizations, a series of issues have also arisen (Johnson & Isenhour, 2003): in particular, human resources departments have been more and more challenged by the supervision of a displaced workforce and the management of related problems, for instance how to enable knowledge sharing among the employees (Cramton, 2001).

According to a growing tradition of academic literature, possible solutions to these concerns could be drawn from the analysis of digital gaming worlds (Rapp, 2018b; Rapp, 2020a). This assumption grounds on the fact that video games are often designed to mirror already existing social structures, such as work ecosystems (Lukacs et al., 2009): from games, researchers may gather insights and best practices

that can be transposed to systems which entail non-virtual interaction among the individual, as well as to “serious” virtual environments that entail working practices. Evidence of this “paradigm” shift can be found in the diffusion of gamification practices in work organizations, which have tried to address this novel situation by embedding so-called “gamification” techniques (Deterding et al., 2011) within the work processes (Smith & Kilty, 2014) to train and motivate employees, or even developing ad-hoc video games aimed at engaging employees (Stanculescu et al., 2016).

On the other side, also play activities have been going through a process of “workification”, with the rise of phenomena such as *grinding*, namely the repetition of a series of routinary actions performed by the player to advance in the game (Dibbell, 2016), or even to illicit practices like *gold farming*, a deviant activity which involves the sale of virtual in-game resources in exchange of real-world money (Keegan et al., 2010). These dark phenomena are typical of many RPGs (Role-Playing Games) and MMORPGs (Massively Multiplayer Online Role-Playing Games), like World of Warcraft (Rettberg et al., 2008; Nardi, 2010). According to Taylor (2012), the diffusion of these practices shows that the boundaries between work and play are blurring; similarly, the old dichotomies between game and labour do not hold anymore (Goggin, 2011).

The entanglement between the work and the play dimensions may radically affect the organizations and the dynamics occurring among their members, even in unpredicted and detrimental ways. However, there is a scarcity of studies which addressed this particular topic from a psychological perspective. To fill this literature gap, we aim to qualitatively investigate the organizational dynamics which are reproduced in a Multiplayer Online video game: adopting the Mapping Principle (Williams, 2010) as a conceptual starting point, according to which human behaviours in virtual spaces can be similar to their non-virtual counterparts (Ahmad et al., 2014), we pursue the idea that player activity enacted in virtual worlds can be generalized to better understand real world social dynamics (Keegan et al., 2010).

The target of the study is constituted by three types of players, namely Esports professionals, streamers, and amateur players. Drawing from a diversified collection of studies, carried out within disparate area of research (e.g., Game Studies, Sociology, Human-Computer Interaction, Computer Science, Psychology...), we assumed that these players may be considered a reference point, as they differently intertwine “playing” and “working” practices during the gaming activity. In fact, it has already been shown that players engage in gaming sessions differently depending on the way they perceive their activity: as work, leisure, or a combination of both, i.e., *playbour* (Törhönen et al., 2019).

More specifically, professional gamers have problems that are typical of labourers, like developing their skills and pursuing a remunerated career in the area (Taylor, 2012). Video game streamers and content creators have to invest an *emotional labour* during live performances, viz., to actively model their behaviour and manage their emotions in order to attract an audience (Woodcock & Johnson, 2019), as well as to retain spectators, some of whom even support them financially through a system of subscriptions (Walker, 2014). Finally, amateur players have been considered labourers, as they produce economic value (Koutsouras et al., 2017), despite not receiving any income; plus, they could perceive their activity as an obligation or even a “second job” (Yee, 2006).

With the present study, we intend to answer to the following research questions: *How do players organize the game action, depending on their perception of their gaming activity? What characteristics do these provisional organizational structures have?* In addition to that, we would explore a series of sub-questions, which relate to organizational processes such as communication, learning, the management of power and possible enactment of dark practices. For instance, *how do players communicate in the game? What sources do players use to learn how to play the game? How are decisions taken and in what way are wins/loss attributed to the players?* In the attempt to respond to these and similar points, we have been ethnographically investigating the digital gaming environment of “Call of Duty: Warzone”, for reasons that will be explained in the next section.

## 2. Setting

“Call of Duty: Warzone” (or simply “Warzone”) is a Multiplayer Online Battle Royale game developed for several gaming platforms and published in 2020 by Activision as a *free-to-play* game, so it doesn’t require any payments. Whether they are alone or in group – a squad can be composed by two, three or four members: players’ overall objective is to survive until the end, by killing all the enemy players in the arena while a mortal gas cloud shrinks the playable area as time goes by. Battle Royale matches can be played in two different maps, depending on the mode. Default mode is considered more punishing, since players can come back in the game after the second death only if their team “respawn” them by spending money at a Buy Station, while in Resurgence mode the redeployment occurs for the nearly total duration of the match – with the exception of the end game.

### 3. Method

Given the complexity of the matter and the relatively shortage of scientific production about the topic, we opted for a qualitative methodology, which would help us explore subjective meanings and perspective from the standpoint of the participants (Hammarberg et al., 2016). More specifically, we are carrying out an ethnographic study within the Italian community of *Call of Duty: Warzone*. Building on previous digital reflexive ethnographies (e.g., Rapp, 2020b), the first author has conducted an ethnography in the game adopting a reflexive approach, which values the researcher's experience and considers her subjective experience worthy to be explored (Van Maanen, 2011), thus also entailing an auto-ethnographic work (Rapp, 2018a; Rapp, 2022). Differently from "objective ethnographies", this approach ensures more transparency to the whole investigation (Cardano, 2009; Rode, 2011).

The ethnographic work has been conducted since May 2021. Within this period, phases of participant observation and data analysis were alternated. First, the ethnographer played the game as a participant observer and, as she learned the basics, she began to participate to the online spaces of the community, such as Facebook and Telegram private groups of the game, content communities, i.e., Instagram, Youtube and Twitch channels, and official websites containing walkthroughs and guides of Warzone. After a couple of months from the beginning of the ethnography, the first author joined a regiment, a sort of clan system, which aggregates people who want to share the game experience in a more continuative way, counting about 128 members. In this way she could join and observe matches with different players, take notes of their social dynamics and their daily informal discussions.

#### 3.1. Data collection

In our analysis we have been using different data sources. Generally speaking, observation will be conducted in a participant way on amateur players, while streamers/professional will be observed through their social media channels, which are open to the public. Some of these observations and gaming sessions will be recorded, having the consent of the amateur players. Interviews will be conducted on all the three types of players and recorded to consent data analysis.

During these months, the first author has already been collecting materials in the form of documents, videos, personal experiences, gaming sessions, informal conversations. Observations have been conducted during all the matches that the first author has been participating to, and a number of them has been recorded, with the consent of the participants. Personal experiences are collected through a daily diary, which contains observations and reflections written down after a game session or an informal conversation have occurred.

Interviews will be conducted in the last phase of the data collection. Participant will be recruited by following different strategies, namely: i) involving players of the regiment, which is expected to positively contribute to the quality of data, enriching informal conversations and observations conducted on the same participants; ii) adopting a snowball sampling technique, so to gather gamers having a wider range of experiences. The number of participants will be decided according to a data saturation criterion (Bowen, 2008), i.e., stopping recruitment when the ethnographer will realize that additional data would not produce new crucial findings. Interviews will be conducted via different channels, i.e., Discord, Zoom, and transcribed verbatim. A set of predetermined questions will be asked to the participants, leaving them free to explore unforeseen themes.

A separate discussion is reserved to the collection of social media content. Facebook groups such as *Call of Duty Warzone ITA* and *Call of Duty Italia*, are scanned every day, as they testify the Warzone culture. Public and private groups have been joined to stay updated on the game. Through the exploration of Facebook pages, as well as of Twitter, Instagram, and Twitch accounts the first author can grasp how these players interact with their followers, what are the main topics of discussion and so on. So far, the first author has been following several streamers and watching their live sessions, as well as the video that they uploaded on Youtube. Relevant quotations are reported within the ethnographic diary. Tournaments will be selected and watched to better understand how organizational behaviour occurs during official events.

#### 3.2. Data analysis

The field notes, the informal conversations and the interviews will go under a thematic analysis (Braun & Clark, 2012; Saldaña, 2013), adopting an inductive stance (Patton, 1990) for the whole process. The analysis will be mostly conducted by the first author by applying open and axial coding techniques (Strauss & Corbin, 1990). In addition to that, she will employ a "participant researchers" strategy (LeCompte & Goetz, 1982), asking the informants to give their opinion about the line of argument which will be emerge from the analysis. By being part of a regiment, the first author could keep the discussion with participants open, thus preserving all the different nuances of participants' opinions, asking for

questions in an informal way and involving a smaller group of participants that could express their point of view on the preliminary findings in a more critical way.

From an ethical point of view, the privacy of participants and content creators or players who published content over the Internet will be guaranteed as both players' names and game nicknames will be anonymized. Moreover, the members of the regiment are informed of the scope of the research and the role of the first author.

#### 4. Expected results

We expect that players belonging to different categories will enact distinct organizational behaviours and give rise to various organizational structures. A cross-comparison between them, which is missing in current literature, would clarify how different modalities of combining work and play impact on organizational behaviours and dynamics; it could also help both academic and practitioners address the issues faced by current working virtual organizations, by providing insights on how to effectively organize people collaborating from a distance through “best practices” that can be found in games. Preliminary results will be presented at the conference.

#### 5. Limitations

Since the study is targeted to the Italian context, generalization of the results might be difficult; however, we expect to provide rich insights through the adoption of a qualitative ethnographic approach. On the other side, embracing an ethnography approach has “practical” advantages in terms of research. As a matter of fact, observing players interacting in an environment which is relatively easy to access will ensure the collection of “rich” data which would be otherwise complicated or impossible to gather, due to resource constraints or privacy issues.

#### References

- Ahmad, M. A., Shen, C., Srivastava, J., & Contractor, N. (2014). On the Problem of Predicting Real World Characteristics from Virtual Worlds. In Ahmad, M. A., Shen, C., Srivastava, J., & Contractor, N. (Eds.), *Predicting Real World Behaviors from Virtual World Data* (1-18). Springer.
- Bowen, G. A. (2008). Naturalistic inquiry and the saturation concept: a research note. *Qualitative Research*, 8(1), 137–152.
- Braun, V. & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi: 10.1191/1478088706qp063oa
- Cardano, M. (2009). *Etnografie: immagini della pratica etnografica*. Rassegna Italiana di Sociologia, 1.
- Cramton, C. D. (2001). The Mutual Knowledge Problem and Its Consequences for Dispersed Collaboration. *Organization Science*, 12(3), 346-371.
- DeSanctis, G., & Monge, P. (1999). Introduction to the Special Issue: Communication Processes for Virtual Organizations. *Organization Science*, 10(6), 693-703.
- Deterding, S., Dixon, D., Khaled, R., & Nacke, L. (2011). From game design elements to gamefulness: Defining “Gamification”. In *Proceedings of the 15th international academic MindTrek conference: Envisioning future media environments (MindTrek '11)* (pp. 9e15). New York, NY: ACM.
- Dibbell, J. (2015). Invisible labor, invisible play: Online gold farming and the boundary between jobs and games. *Vanderbilt Journal of Entertainment & Technology Law*, 18(3), 419.
- Goggin, J. (2011). Playbour, farming and leisure. *Ephemera: theory & politics in organization*, 11(4), 357-368.
- Hammarberg, K., Kirkman, M., & de Lacey, S. (2016). Qualitative research methods: when to use them and how to judge them. *Human reproduction*, 31(3), 498-501.
- Johnson, R. D., & Isenhour, L. C. (2003). 6. Changing the rules? Human resources in the 21st century virtual organization. In E. Salas (Ed.), *Advances in Human Performance and Cognitive Engineering Research*, vol. 3 (119–152). Bingley: Emerald Group Publishing Limited.
- Keegan, B., Ahmed, M. A., Williams, D., Srivastava, J., & Contractor, N. (2010). Dark gold: Statistical properties of clandestine networks in massively multiplayer online games. *2010 IEEE Second International Conference on Social Computing*, 201-208. IEEE.
- Koutsouras, P., Martindale, S., & Crabtree, A. (2017). The Ludic Takes Work. *Proceedings of 15th European Conference on Computer-Supported Cooperative Work-Exploratory Papers*. European Society for Socially Embedded Technologies (EUSSET).

- LeCompte, M., Goetz, J. (1982). Problems of reliability and validity in ethnographic research. *Review of Educational Research*, 52(1), 31–60.
- Lukacs, A., Embrick, D. G., & Wright, T. (2009). The managed hearthstone: Labor and emotional work in the online community of World of Warcraft. In *International Conference on Facets of Virtual Environments* (pp. 165-177). Berlin, Heidelberg: Springer.
- Nardi, B. (2010). *My life as a night elf priest: An anthropological account of World of Warcraft*. University of Michigan Press and University of Michigan Library.
- Patton, M. Q. (1990). *Qualitative evaluation and research methods*. SAGE Publications, inc.
- Rapp, A. (2018a). Autoethnography in Human-Computer Interaction: Theory and Practice. In Filimowicz, M. and Tzankova, V. (eds.), *New Directions in Third Wave Human-Computer Interaction: Volume 2 - Methodologies*, Human-Computer Interaction Series, 25-42. Cham: Springer. doi: 10.1007/978-3-319-73374-6\_3
- Rapp, A. (2018b). Social game elements in World of Warcraft: Interpersonal relations, groups and organizations for gamification design. *International Journal of Human-Computer Interaction*, 34(8), 759-773.
- Rapp, A. (2020a). A Gameful Organizational Assimilation Process: Insights from World of Warcraft for Gamification Design. *Proceedings of the ACM on Human-Computer Interaction*, 4(CSCW3), 1-25.
- Rapp, A. (2020b). An exploration of world of Warcraft for the gamification of virtual organizations. *Electronic Commerce Research and Applications*, 42, 100985.
- Rapp, A. (2022). Time, engagement and video games: How game design elements shape the temporalities of play in massively multiplayer online role-playing games. *Information Systems Journal*, 32(1), 5-32.
- Rettberg, S., Corneliussen, H. G., & Rettberg, J. W. (2008). Corporate ideology in World of Warcraft. *Digital culture, play, and identity: A World of Warcraft reader*, 19-38.
- Rode, J. A. (2011). Reflexivity in digital anthropology. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems (CHI '11)*, pp. 123–132.
- Saldaña, J. (2021). *The coding manual for qualitative researchers* (2<sup>nd</sup> Edition). Sage.
- Smith, R., & Kilty, L. A. (2014). Crowdsourcing and gamification of enterprise meeting software quality. *Proceedings of the 7th International Conference on Utility and Cloud Computing, IEEE*, 611-613.
- Stanculescu, L. C., Bozzon, A., Sips, R.-J., Houben, G. (2016). Work and play: an experiment in enterprise gamification. *Proceedings of the 19th ACM Conference on Computer-Supported Cooperative Work and Social Computing*, 346-358.
- Strauss, A., & Corbin, J. (1990). *Basics of qualitative research techniques*. Thousand oaks, CA: Sage publications.
- Taylor, T. L. (2012). *Raising the stakes: E-sports and the professionalization of computer gaming*. Mit Press.
- Törhönen, M., Hassan, L., Sjöblom, M., & Hamari, J. (2019). Play, playbour or labour? The relationships between perception of occupational activity and outcomes among streamers and YouTubers. *Proceedings of the 52nd Hawaii International Conference on System Sciences (HICSS'52)*, 2558-2567.
- Van Maanen, J. (2011). *Tales from the field. On writing ethnography* (2nd ed.). Chicago, IL: The University of Chicago Press.
- Yee, N. (2006). The Labor of Fun How Video Games Blur the Boundaries of Work and Play. *Games and Culture*, 1(1), 68-71.
- Walker, A. (2014). Watching us play: Postures and platforms of live streaming. *Surveillance & Society*, 12(3), 437-442.
- Williams, D. (2010). The mapping principle and a research framework for virtual worlds. *Communication Theory*.
- Woodcock, J., & Johnson, M. R. (2018). Work, Play, and Precariousness: An Overview of the Labour Ecosystem of Esports. *Working Paper*.

## HOW INNOVATION DRIVES INCLUSION: OPPORTUNITIES AND CHALLENGES OF ONLINE PSYCHOLOGICAL INTERVENTION

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### Abstract

The current pandemic has had a huge impact on people's psychophysical health with repercussions on the job dimension, leading to high levels of dissatisfaction and fear for the future.

Online interventions have become very popular especially during the COVID-19 pandemic, in fact many psychologists and patients switched from face-to-face to online sessions to continue their psychological therapies. The scientific literature has shown strong evidence for online psychotherapy, with this application being used both as an alternative to traditional healthcare and as an enhancement of face-to-face treatment. Many studies highlight that online therapy, and the quality of therapeutic alliance seem to be equivalent in both modalities.

There are additional barriers such as public stigma, cultural and language barriers, geographic isolation in rural areas and social isolation, particularly in the context of the COVID-19 pandemic and online psychology interventions allow inclusion as they enable to involve many people who need psychological support, as well as to continue the psychological paths interrupted by the pandemic.

A study was conducted to specifically analyze the implications that online psychology has on today's society. Through a structured interview, 23 psychologists were questioned with the aim to investigate different thematic areas relating to online psychological interventions. A qualitative analysis was conducted using the Atlas.ti software.

All participants were part of a platform specifically designed for the provision of psychological services, managed by a structure registered with the NHS. One purpose of the study was to investigate psychologists' perceptions of online psychology rather than traditional therapy.

Some limitations comprise the small sample of psychologists which may not be generalizable to the population at large. Further, another limitation is related to the digital divide – the cultural bias inherent in accessing the Internet and all information and services that exist online as well as the lack of awareness of how the Internet can be used in a functional way.

An interesting future discussion for counseling psychologists may be explored: blending online therapy into regular face-to-face sessions. In fact, the scientific literature shows that the combination between these two modalities has potential in secondary mental health care.

The existing literature and the study we have conducted methodically highlight the social responsibility of the intervention, which has an impact on the society and is consistent with the key objectives of the 2030 agenda.

**Keywords:** *Online psychology, Covid-19, psychological intervention, innovation, traditional therapy.*

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### 1. Introduction

Since 11 March 2020, everyone's life has radically changed because of Corona Virus: people have started working from home and interpersonal relationships have declined, forcing people to interact almost exclusively through a screen.

In this alarming situation, mental health was severely affected (Kahdemian et al., 2021). During pandemics, people experience stress and anxiety and psychological disorders more frequently. In fact, it is



estimated that between one third and one half of people may have psychiatric problems in these situations (Liu et al., 2020; Ko et al., 2020).

The demand for psychological support has become increasingly urgent precisely when this need has been hampered by restrictions imposed by governments around the world. In this scenario, online psychology can play an inclusive role as it allows to reach a greater number of people. Innovations in web technology offer promising prospects by providing adequate care timely and efficiently, often through online psychology programs (De Carlo et al., 2019; van der Vaart et al., 2014).

## **2. Online psychological support**

Since the beginning of the Covid-19 pandemic, people have started to avoid face-to-face interactions and the need for psychological support has increased. In the case of psychologists, advice from professional associations around the world has encouraged professionals to continue psychotherapies with patients by using the online modality (Cataldo et al., 2021; De Carlo et al., 2019). The advantages and concrete strengths of an online approach highlighted by the scientific literature include reduced costs, improved access to underserved patient populations, continuity of a psychotherapeutic relationship after a patient has moved away. Different systematic reviews and meta-analyses have shown that online psychological treatments for depression often are as effective as face-to-face ones (Sharry et al., 2013; Newman et al., 2011; Andersson & Cuijpers, 2009). Other aspects that seem to prove online therapy equal to traditional therapy are: 1) the virtual space where therapy takes place: traveling to the therapist's office can be as stressful and anxiety-inducing as "having to be seen" by other people because of the still very present public stigma. Patients mostly participate in the session from their homes and the home environment, thanks to its familiarity, probably helps the patient to feel more comfortable both in initiating therapy and in being honest and open with the therapist (De Carlo et al., 2019). Online therapy tends to provide more eye contact than in-person psychotherapy; 2) the patient's sense of control: with online therapy the patient experiences greater physical and psychological control of the session; in general, the treatment appears to be more "patient-centered"; 3) the option of using a "blending therapy" model combining in-person therapy and online sessions, especially for patients with high levels of anxiety (phobic patients, patients with autism spectrum, or trauma patients). The integration of these two modalities, after the establishment of a therapeutic alliance, may be a valid approach to therapy (Kocsis & Yellowlees, 2018).

## **3. The study**

A total of 23 participants took part in the present study. All professionals were Italian, had received specific training in the use of the platform, and had experience of online support. The present study aims to analyze, through a qualitative analysis, the perceptions of all psychologists engaged in online intervention on a dedicated technological platform. Specifically, the study-objectives were:

- Analyzing – using qualitative tools – the perceptions of psychologists engaged in online intervention.
- Exploring the methodology used during the interventions, the patient's relationship with the psychologist, the differences between online and face-to-face interventions.
- Investigating the degree of user's satisfaction.

Online psychological interventions provided through technological platforms have made it possible to give continuity to the paths started before the pandemic, have offered psychologists the opportunity to reach people in their offices / homes and to initiate specific and relevant interventions throughout the pandemic.

## **4. Method**

A structured interview was created and carried out via Zoom. All interviews, lasting 40 to 50 minutes, aimed to investigate psychologists' perceptions of online psychology.

All interviews were carried out with the collaboration of a platform specifically designed for psychological services, managed by a health facility, and registered with the NHS. Each interview was divided into 4 parts aimed at investigating different thematic areas: methodology; relation; technology; proposals for actions and developments.

Qualitative data analysis was performed using Atlas.ti, a software to support the content analysis. Content analysis is a qualitative research technique that allows to "extract" useful information and meanings from a set of written documents as well as count the "occurrences" or how many times a word

and / or concept appears in the documents. The content analysis generally follows a series of cyclical phases:

- After a first reading of the interviews, the categories of analysis are defined.
- Based on the categories that have emerged, a theoretical phase of redefining those categories is carried out.
- The new redefined categories are applied again to the texts to obtain a set of categories that clearly represent the contents of the texts.

## 5. Data analyses, interpretation, and results

### 5.1. Methodology

This category had the objective of appreciating, for example, how psychologists managed the online interview, the duration of the session, the main differences between online and traditional sessions.

*"So, I'll tell you the truth, initially I wasn't much in favor of it because I didn't think there could be effective results. Then in 2019 I started doing it out of necessity, because I had this opportunity and I realized that it actually has the same effectiveness as the sessions that are done in person."*

As regards the area of methodology, professionals believe that online sessions help the patient to feel more comfortable (N=7<sup>1</sup>), as well as facilitate him/her from a logistical point of view as he/she does not have to physically go to the professional's office (N=5). Conversely, online interventions can encounter internet connection problems (N=3) and may involve difficulties for the professional in grasping the patient's non-verbal language (N=14).

The online mode has also been found to make psychology more accessible than that carried out in person (N = 10); the online setting is more effective (N = 9) and increases the possibility of intervention (N = 9).

The professionals interviewed report how problems related to anxiety and stress (N =13) are frequent among their patients, followed by problems of interpersonal and couple relationships (N = 12), discomfort related to the Covid-19 pandemic (N = 8), as well as depressed mood and loneliness (N = 7).

### 5.2. Relations

This category had the aim of ascertaining what the nature of the patient's relationship was like, if it was possible to establish a therapeutic alliance, and if the patients appeared to be satisfied.

*"I notice that online there is less shyness, and, for example, it happened to me with a guy who told me he had never gone to a psychologist because he had many doubts and decided to start now, yes because he needed it, but also because he felt safer online."*

As regards the area of relations, high satisfaction with the online intervention is observed (N = 21) and the fact that technology facilitates the relationship between psychologist and patient (N = 8).

### 5.3. Technology

This category of questions was aimed to detect any strengths and weaknesses that psychologists had found in the use of the platform and technology.

*"Moreover, the platform is designed with a simple operation, however, like everything new, it has to be learned."*

As regards the area of technology, the advantages and disadvantages associated with it have emerged. There is a need to improve the operation of the platform to avoid technical problems that may arise during the session (for example malfunctioning or connection issues). Reduced non-verbal communication emerges again (N = 8). Among the advantages linked to the technology, the greater flexibility of the online intervention is highlighted (N = 17) and the higher number of users who can be reached through this method (N = 5).

### 5.4. Proposal for actions and development

This category had the objective of asking for suggestions for implementations to be made to the platform

*"From my point of view, there should be a more autonomous management by the professional as regards appointments and payments for single sessions because most users want to pay after each session ..."*

<sup>1</sup>The number indicates the frequency with which the dimension emerges.

As regards the last area – proposal for actions and development – professionals desire to improve the app from a technical point of view to acquire greater autonomy in managing appointments with patients, as well as implementing notifications reminding them, for example, of when appointments are scheduled (N = 8). As can be seen from the responses, a strong predominance of positive attitudes emerges both on the content of the services and on the online platform. Online psychology is considered an effective and flexible method, which allows professionals to engage a greater number of patients and patients to carry out the session from their own home without having to move, reducing time and costs. Furthermore, technology is perceived as a facilitator of the relationship between psychologist and patient.

## 6. Limitation

Online interventions also raise questions related to cultural conditions, in fact in an increasingly mobile world, online psychological intervention can give psychologists the ability to keep in touch with patients who would normally get lost because of their moving elsewhere. An example would be students who move to university or people who travel frequently for work and who, with online interventions, would be able to stay in touch with their therapists from home instead of finding new ones. However, one limitation is related to the digital divide – the gap between demographics and regions that have access to modern information and communications technology and those that don't. This issue suggests how online psychology interventions could be improved even for disadvantaged populations who need psychological support (Mallen et al., 2005; Hoffman, Novak, & Schlosser, 2000). Another limitation could be the size of the sample which is limited to a small number of psychologists (N=23) and may not be generalizable to the entire population. Nevertheless, the results already obtained suggest that this area of intervention and this protocol have a potential that should be further investigated and replicated in broader contexts.

## 7. Future development

An interesting future discussion for counseling psychologists may be explored. Blended therapy refers to the combination of face-to-face and online interventions. The results of a study highlight that some practical parts of the therapy could be carried out in an online environment, while the discussion of thoughts, feelings, and difficulties are still better done face-to-face. One of the main advantages in blended programs is the flexibility to support patients in their treatment; however, it requires commitment, willingness, and skill from therapists who should learn how to use the online mode in a stimulating way and should be able to tailor therapy to individual patients (Becker et al., 2013). In addition, combination therapy offers the opportunity to improve patient self-management and to increase the effectiveness (cost) of therapy, while providing the support that patients need.

## 8. Conclusion

The results of this study are in line with scientific literature. Online psychology seems to encourage inclusion of users for two main reasons: first, it allows users to overcome the stigma, still present, of physically going to the psychologist; second, as highlighted in the technology category, it allows to reach a greater number of users. Among them, those who have had to stop the psychological path due to the pandemic and those who, without the help of technology, would have likely not approached a psychologist. The information that emerged from the study has value both for developing the service with a view to a better customer experience and for improving the working conditions of online psychologists on the platform. Indeed, a strong predominance of positive attitudes has emerged both in the content of the services and in the online platform with respect to potential general and platform criticalities. Furthermore, the existing literature as well as this study highlight the social responsibility of the intervention, which has an impact on society as well as being consistent with the key objectives of the 2030 Agenda, one of which focuses on health and welfare.

## References

- Andersson G., & Cuijpers P. (2009): Internet-based and other computerized psychological treatments for adult depression: a meta-analysis. *Cognitive Behavior Therapy* (38), 196–205.
- Becker. M., & Jensen-Doss A. (2013). Computer-assisted therapies: examination of therapist-level barriers to their use. *Behavior Therapy* (44), 614–624.

- Cataldo, F., Chang, S., Mendoza, A., & Buchanan, G. (2021). A perspective on client-psychologist relationships in videoconferencing psychotherapy: Literature review. *JMIR Mental Health*, 8(2), e19004.
- De Carlo, A., Dal Corso, L., Benevene, P., Vicente Castro, F., & Corbo, M. (2019, June). *Organizational Psychology and Technology: ethical, legal and practical issues related to active listening and work-related stress monitoring in Italy and Europe*. XXVI Congresso de Psicologia – INFAD, Salamanca.
- De Carlo, A., Mora, D., Di Sipio, A., & Girardi, D. (2021, settembre). *Essere psicologi online*. [Be an online psychology]. XVIII Congresso Nazionale AIP Associazione Italiana di Psicologia, Verona.
- De Carlo, A., Mora, D., Rapisarda, S., & Ranieri, L. (2021). Nuove tecnologie di ascolto-sostegno & recovery-formazione. Psicologia online e Realtà Virtuale. [New listening-support & recovery-training technologies. Online Psychology and Virtual Reality] In N. A. De Carlo, & I. Maccani (eds), *Codice Smart Working*. [Smart Working code]. (130-148). Trento: SEAC.
- García-Morales, V. J., Garrido-Moreno, A., & Martín-Rojas, R. (2021). The transformation of higher education after the COVID disruption: Emerging challenges in an online learning scenario. *Frontiers in Psychology*, (12), 196.
- Hoffman, D. L., Novak, T. P., & Schlosser, A. (2000). The evolution of the digital divide: How gaps in Internet access may impact electronic commerce. *Journal of Computer Mediated Communication*, (5), 233-245.
- Khademian, F., Delavari, S., Koohjani, Z., & Khademian, Z. (2021). An investigation of depression, anxiety, and stress and its relating factors during COVID-19 pandemic in Iran. *BMC Public Health*, 21(1), 1-7.
- Ko CH., Yen CF., Yen JY., & Yang MJ. (2006). Psychosocial impact among the public of the severe acute respiratory syndrome epidemic in Taiwan. *Psychiatry and Clinical Neuroscience*, 60(4), 397-403.
- Kocsis, B. J., & Yellowlees, P. (2018). Telepsychotherapy and the therapeutic relationship: Principles, advantages, and case examples. *Telemedicine Journal and E-Health*, 24(5), 329-334.
- Liu., Gayle A., Wilder-Smith A., & Rocklöv J. (2020): The reproductive number of COVID-19 is higher compared to SARS coronavirus. *Journal of Travel Medicine*, 76(1), 1-4.
- Mallen, M. J., Vogel, D. L., & Rochlen, A. B. (2005). The practical aspects of online counseling: Ethics, training, technology, and competency. *The counseling psychologist*, 33(6), 776-818.
- Mautong, H., Gallardo-Rumbea, J., Alvarado-Villa, G., Fernández-Cadena, J., Andrade-Molina, D., Orellana-Román, C., & Cherez-Ojeda, I. (2021). Assessment of depression, anxiety, and stress levels in the Ecuadorian general population during social isolation due to the COVID-19 outbreak: a cross-sectional study. *Bmc Psychiatry*, 21(1), 1-15.
- Newman G., Szkodny E., Llera J., & Przeworski A. (2011): A review of technology- assisted self-help and minimal contact therapies for anxiety and depression: is human contact necessary for therapeutic efficacy? *Clinical Psychology Review*, (31), 89-103.
- Parikh, S. V., & Huniewicz, P. (2015). E-health: an overview of the uses of the Internet, social media, apps, and websites for mood disorders. *Current opinion in psychiatry*, 28(1), 13-17.
- van der Vaart, R., Witting, M., Riper, H., Kooistra, L., Bohlmeijer, E. T., & van Gemert-Pijnen, L. J. (2014). Blending online therapy into regular face-to-face therapy for depression: content, ratio and preconditions according to patients and therapists using a Delphi study. *BMC psychiatry*, 14(1), 1-10.
- Sharry J., Davidson R., McLoughlin O., & Doherty G (2013). A service-based evaluation of a therapist-supported online cognitive behavioral therapy program for depression. *Journal of Medicine Internet Research*, 15 (6):e121.
- Stoll, J., Müller, J. A., & Trachsel, M. (2020). Ethical issues in online psychotherapy: A narrative review. *Frontiers in Psychiatry*, (10), 993.

# SOCIO-PSYCHOLOGICAL FACTORS AND EMIGRATION PLANS AMONG UNIVERSITY STUDENTS IN SLOVAKIA DURING THE COVID-19 PANDEMIC

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## Abstract

**Objective:** The objective of this study was to examine the relationship between socio-psychological factors such as the perceived economic situation, perceived political situation, well-being, rootedness and emigration plans of university students in Slovakia during the Covid-19 pandemic.

**Methods:** The data for this study were collected through an online survey of university students during the Covid-19 pandemic between November and December 2021. The research sample consisted of 151 (76.2% female) Slovak university students (M=21.8 years, SD=2.5). In order to identify emigration plans, there was one question with 8 answer options. Based on this, the respondents were divided into two groups; those who do not plan to leave Slovakia (76.8%) and those who plan to leave in the long term (23.2%). There was also one item used to measure the perceived economic situation and political situation. The satisfaction with life scale was used to measure well-being while the Rootedness scale consisting of the Desire for Change and Home/Family subscales was used to measure rootedness. As emigration plans was a categorical variable, binary logistic regression was used. The analysis was controlled for gender.

**Results:** A model containing five independent variables (perceived economic situation, perceived political situation, well-being, rootedness - desire for change and home/family dimensions) explained 41.9% of variance in emigration plans during the Covid-19 pandemic, and correctly classified 84.8% of the cases. Only three of these variables made a unique statistically significant contribution to the model. The strongest predictor of emigration plans during the Covid-19 pandemic was perceived economic situation, recording an OR of 2.27. This indicated that students who perceived the economic situation in Slovakia more pessimistically were over 2 times more likely to report an emigration plan. The OR of 1.32 for rootedness – desire for change, indicated that students with a greater desire for change were over 1.32 times more likely to report emigration plans. On the contrary, the OR of 0.81 for rootedness – home/family was less than 1, indicating that students who were more satisfied with their home and family were 0.81 times less likely to report emigration plans.

**Conclusion:** The strongest predictor of emigration plans during a pandemic is perceived economic situation. The dimensions of rootedness, as confirmed by previous studies, are predictors of emigration plans in the pre-pandemic and pandemic period.

**Keywords:** *Emigration plans, Covid-19 pandemic, university students, socio-psychological factors.*

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## 1. Introduction

It is international migration that is according to Bargerová (2016) considered to be one of the fundamental civilization challenges of the 21st century with its serious economic, social, political and other impacts. Yet it plays a key role in the development of a society (Bargerová, 2016). Therefore, migration can be generally seen as a neutral phenomenon having both positive or negative effects for different countries such as brain gain or brain drain. Slovakia is one of the countries which experience a significant brain drain due to shortages of workforce in the labor market in all sectors since 2016 caused by the outflow of qualified workers (Grenčíková, Skačkauskienė & Španková, 2018). Slovakia was always known as a country of migrants, but according to Machlica, Toman, Haluš and Martinák (2017), emigration from Slovakia has intensified since our country joined the EU. The largest group of emigrants are young and educated people. The statistics from Káčerová and Horváthová (2014) show that about 53.68% people from those that left Slovakia in 2011 had a secondary education and 21.55% university

education. Similar results have been reported by Lučanská et al. (2020), who found that up to 45.4 % of students plan to leave Slovakia for a long period of time after they finish university.

However, currently the world is facing a much bigger problem, known as Covid-19 pandemic declared on March 11, 2020 by the World Health Organization (WHO, 2020). Although, WHO (2020) recognizes the Covid-19 pandemic primarily as a public health crisis, it also admits that this crisis affects every sector. The same view on this topic was presented by Boucher (2020) who stated that the spread of this disease to the world caused a series of different shocks. One of these shocks is caused by restrictions regarding traveling as a result of various measures aimed at slowing down and preventing the spread of this disease. Therefore, Covid-19 pandemic is not only a health crisis, but what is for this study more important, it is a migration crisis as well (Boucher, 2020). We consider it important to address the issue of the factors related to emigration behavior, which have been widely studied and empirically tested in connection with emigration intentions or plans in recent years. Thus, we select following socio-psychological factors to re-examine them in the current situation of the Covid-19 pandemic. According to our knowledge, there are only few studies which have addressed this topic so far. However, none of them has studied the socio-psychological factors adapted by in this study.

One of the issues that young people are focusing on while they are considering emigration is economic situation in the country. This has been documented among youth in Slovakia (Youth Council of Slovakia [RMS], 2016). Within the V-cycle of Structured dialogue many of them have said that they felt as if they were only "surviving" but not actually living, because of the economic situation, lack of opportunities to get a job, especially a decent one. This issue was also examined by other authors (e.g. Orosová, Gajdošová, Kulanová & Berinšterová, 2017; Traikova, Möllers & Petrick, 2018), who emphasize its importance in relation to future emigration behavior. For example, Orosová et al. (2017) have found that a higher level of negative evaluation of economic situation is associated with the emigration intentions of students in Slovakia. Another important result of the Structured dialogue was finding that young people in Slovakia don't have much faith in their future successful life. This was particularly linked to their perspective on the political situation in the country. Therefore, a permanent stay abroad was often reported (RMS, 2016). Another important predictor of emigration behavior is well-being. The findings in this area are so far contradictory. While some authors claim that lower well-being leads to emigration behavior (e.g. Cai, Esipova, Oppenheimer & Feng, 2014; Hajduch, Orosová & Kulanová, 2018), others claim the opposite that it is the higher well-being which leads to emigration behavior (e.g. Polgreen & Simpson, 2011; Ivlevs, 2014). However, there is a consensus that well-being is a factor which plays a role in migration. This issue was further examined by Lučanská et al. (2020) who has found that regarding the emigration plans of Slovak university students, surprisingly, rootedness plays a more important role than well-being. This was shown by the analysis of the relationship between well-being and emigration plans which was fully mediated by rootedness (both dimensions). More precisely, the first dimension represented by a high desire for change was found to boost emigration plans regardless of low well-being. On the other hand, high satisfaction with home and family was found to weaken emigration plans regardless of high well-being (Lučanská et al., 2020). This kind of role of rootedness as one of the emigration factors was confirmed to play a role by other authors as well (e.g. Cooke, 2011; Hricová, Janovská, Orosová & Kulanová, 2017).

## 2. Objectives

The objective of this study was to examine the relationship between emigration plans of university students in Slovakia during the Covid-19 pandemic and socio-psychological factors such as the perceived economic situation, perceived political situation, well-being and rootedness.

## 3. Methods

### 3.1. Sample and procedure

The data for this study were collected through an online survey focusing on the emigration behavior of university students as well as various aspects of their lives during the Covid-19 pandemic. The survey was conducted between November and December 2021. The research sample consisted of 151 Slovak university students ( $M=21.8$  years,  $SD = 2.5$ ). The majority of the sample (76.2%) were females.

### 3.2. Measures

The respondents were asked to complete an online questionnaire, voluntarily and anonymously. To identify emigration plans and socio-psychological factors, the following measures were used:

- **Emigration plans** – were identified by a single question: "Given the Covid-19 pandemic, do you plan to leave Slovakia after you finish university?" with 8 possible answers: (1) No, I am not

planning to leave; (2) I do not know, I have not thought about it; (3) I do not know, I have not decided yet; (4) I am planning to go abroad for 6 months; (5) I am planning to go abroad for 6 to 12 months; (6) I am planning to leave for more than a year; (7) I am planning to leave for more than 5 years; (8) I am planning to leave permanently. Based on the answer, the respondents can be divided into different groups. For the purpose of this study, they were divided into two groups: (a) those who do not plan to leave Slovakia (answer 1); (b) those who plan to leave Slovakia in the long term (answer 6, 7 or 8) even in time of Covid-19 pandemic.

- **Perceived economic situation** – was assessed by a single item question: “What do you think about the development of economy in Slovakia over the next 10 years in context of your professional career and perspective a starting your own family?” The respondents answered on a four-point Likert scale ranging from 1 – very optimistic to 4 – very pessimistic. The score ranges from 1 to 4 points, while a higher score indicates a more pessimistic perception of the economic situation in Slovakia.

- **Perceived political situation** – was assessed by a single item question: “If you should evaluate the political situation in Slovakia in comparison with other EU countries, how would you see it?” The respondents answered on a seven-point Likert scale ranging from 1 – much better to 7 – much worse. The score ranges from 1 to 7 points, while a higher score indicates a more pessimistic perception of the political situation in Slovakia.

- **Well-being** – was addressed using the construct of subjective well-being (Diener, Emmons, Larsen & Griffin, 1985; Džuka & Dalbert, 2002). The respondents were asked to indicate the extent to which they agreed with 5 statements, while taking into account the covid-19 pandemic (e.g. “In most ways my life is close to my ideal.”) on a five-point Likert scale ranging from 1 – strongly disagree to 5 – strongly agree. The score ranges from 5 to 25 points with a higher score indicating a higher level of well-being. Cronbach’s alpha for well-being was 0.879.

- **Rootedness** – was measured using the McAndrew Rootedness scale (1998) which consists of 2 dimensions (“Desire for change” subscale and “Home/Family” subscale). The respondents were asked to indicate the extent to which they agreed with statements for each subscale on a five-point Likert scale ranging from 1 – strongly disagree to 5 – strongly agree. There were 6 statements for “Desire for change” subscale (e.g. “Moving from place to place is exciting and fun.”) and 4 statements for “Home/Family” subscale (e.g. “I am extremely satisfied with my present home.”). The score for “Desire for change” subscale ranges from 6 to 30 points; a higher score indicates a higher level of a respondent’s desire to change their living environment. Cronbach’s alpha for this subscale was 0.573. The score for the “Home/Family” subscale ranges from 4 to 20 points; a higher score indicates a higher level of a respondent’s attachment to their family and home. Cronbach’s alpha for this subscale was 0.556.

### 3.3. Statistical analyses

Due to the categorical nature of the dependent variable, a binary logistic regression in SPSS 25 was used in order to identify the strength of the model and socio-psychological factors related to students’ emigration plans during the Covid-19 pandemic. The analysis was controlled for gender.

## 4. Results

First, the emigration plans among university students in Slovakia during the Covid-19 pandemic was examined. Based on this the respondents were divided into two groups: those who do not plan to leave Slovakia and those who plan to leave Slovakia in the long term even in time of Covid-19 pandemic. As shown in Table 1, up to 76.8% of students in Slovakia (77.4% female, 75.0% male) do not plan to leave Slovakia after they finish university and up to 23.2% of students (22.6% female, 25.0% male) plan to leave in long term. A Chi-square test of independence (with Yates Continuity Correction) indicated no significant association between gender and emigration plans,  $\chi^2(1, n=151) = .005, p = .944, \phi = 0.024$ .

*Table 1. Emigration plans among university students in Slovakia during the Covid-19 pandemic.*

| Emigration plan                             | Among sample<br>(n=151) | Among females<br>(n=115) | Among men<br>(n=36) |
|---|-------------------------|--------------------------|---------------------|
| Not planning to leave Slovakia              | 116 (76.8 %)            | 89 (77.4 %)              | 27 (75.0 %)         |
| Planning to leave Slovakia in the long-term | 35 (23.2 %)             | 26 (22.6 %)              | 9 (25.0 %)          |

The descriptive statistics of the explored variables regarding to emigration plans during the Covid-19 pandemic are shown in Table 2. In general, those who do not plan to leave Slovakia scored lower in perceived economic and political situation, desire for change and higher in home/family rootedness as compared to those who plan to leave in the long term even in time of Covid-19 pandemic.

Table 2. Descriptive statistics of the sample in the explored variables according to emigration.

| Variable                       | Theoretical range | Not planning to leave | Planning to leave in the long-term | T-test value |
|--------------------------------|-------------------|-----------------------|------------------------------------|--------------|
| Perceived economic situation   | 1 – 4             | M = 2.55 (SD = 0.66)  | M = 3.11 (SD = 0.68)               | - 4.375***   |
| Perceived political situation  | 1 – 7             | M = 5.67 (SD = 0.97)  | M = 6.23 (SD = 0.69)               | - 3.780***   |
| Well-being                     | 5 – 25            | M = 14.43 (SD = 5.14) | M = 13.09 (SD = 5.11)              | 1.359        |
| Rootedness – Desire for change | 6 – 30            | M = 17.65 (SD = 4.06) | M = 21.97 (SD = 3.82)              | - 5.602***   |
| Rootedness – Home/Family       | 4 – 20            | M = 16.52 (SD = 2.45) | M = 14.40 (SD = 3.13)              | 3.679***     |

M – Mean; SD – Standard deviation; \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Second, logistic regression was performed to assess the impact of a number of socio-psychological factors on the likelihood that respondents would report that they plan to leave Slovakia after they finish university even in time of Covid-19 pandemic. The model as a whole was statistically significant,  $\chi^2(6, n = 151) = 49.03$ ,  $p < .001$  and explained 41.9 % of the variance in emigration plans during the Covid-19 pandemic. Model correctly classified 84.8% of the cases. As shown in Table 3, only three of five examined independent variables made a unique statistically significant contribution to the model (perceived economic situation, desire for change and home/family rootedness). The strongest predictor of emigration plans during the Covid-19 pandemic was perceived economic situation, recording an OR of 2.27. This indicated that students who perceived the economic situation in Slovakia more pessimistically were more than 2-times more likely to report having a plan to leave Slovakia after they finish university even in time of Covid-19 pandemic. The OR of 1.32 for rootedness – desire for change, indicated that students with a greater desire for change were more than 1.32 times more likely to report a plan to leave Slovakia. On the contrary, the OR of 0.81 for rootedness – home/family was less than 1, indicating that students who were more satisfied with their home and family were less likely to report emigration plans.

Table 3. Logistic regression predicting likelihood of reporting emigration plans.

| Regression model ( $R^2 = 0.419$ ) |         |       |        |    |        |             |                      |       |
|------------------------------------|---------|-------|--------|----|--------|-------------|----------------------|-------|
| Predictors                         | B       | S. E. | Wald   | df | Sig.   | Exp(B) (OR) | 95 % C. I for Exp(B) |       |
|                                    |         |       |        |    |        |             | Lower                | Upper |
| Gender*                            | 0.171   | 0.578 | 0.087  | 1  | 0.767  | 1.186       | 0.382                | 3.679 |
| Perceived economic situation       | 0.819   | 0.389 | 4.431  | 1  | 0.035  | 2.267       | 1.058                | 4.858 |
| Perceived political situation      | 0.380   | 0.302 | 1.586  | 1  | 0.208  | 1.462       | 0.810                | 2.640 |
| Well-being                         | 0.063   | 0.051 | 1.561  | 1  | 0.212  | 1.065       | 0.965                | 1.176 |
| Rootedness – Home/Family           | 0.279   | 0.076 | 13.369 | 1  | <0.001 | 1.322       | 1.138                | 1.536 |
| Rootedness – Desire for change     | - 0.214 | 0.091 | 5.539  | 1  | 0.019  | 0.808       | 0.676                | 0.965 |

Note: \*female as a reference group; OR – odds ratio; 95% CI – confidence interval (lower and upper threshold)

## 5. Discussion and conclusions

In this study we focused on the relationship between emigration plans of university students in Slovakia during the Covid-19 pandemic and socio-psychological factors (the perceived economic and political situation, well-being and rootedness). Although previous research in this area has confirmed all examined factors as important predictors of emigration behavior in the pre-pandemic period, our results concerning the pandemic period are different. The perceived economic situation and two dimensions of rootedness are predictors of emigration plans not only in the pre-pandemic period but also in the pandemic period. However, the perceived political situation and the well-being proved to be insignificant in relation to emigration plans during the Covid-19 pandemic. This is a change from the pre-pandemic period.

The biggest limitation of this study is a small size sample with a disproportional distribution of gender. It is also important to mention that the sample consisted of Slovak university students only. Future research should extend the sample by including other age groups and countries. The findings of this study may stimulate further research activity in this area since there are only few studies addressing the two important questions: a) What does emigration look like during the Covid-19 pandemic? b) What will emigration look like after the Covid-19 pandemic?



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### References

- Bargerová, Z. (2016). Migrácia ako spoločenský fenomén: historické, sociálne a právne aspekty [Migration as a social phenomenon: historical, social and legal aspects]. In M. Hlinčíková, & G. Mesežnikov (Eds.), *Otvorená krajina alebo nedobytná pevnosť?*, 17–36.
- Boucher, A. (2020). *Covid-19 is not only a health crisis, it's a migration crisis. The Interpreter (Lowy Institute)*. Retrieved February 18, 2022, from: <https://www.lowyinstitute.org/the-interpreter/covid-19-not-only-health-crisis-it-s-migration-crisis>
- Cai, R., Esipova, N., Oppenheimer, M., & Feng, S. (2014). International Migration Desires Related to Subjective Well-Being. *IZA Journal of Migration*, 3(8), 1–20.
- Cooke, T. J. (2011). It is not just the economy: Declining migration and the rise of secular rootedness. *Population, Space and Place*, 17(3), 193–203.
- Diener, E. D., Emmons, R. A., Larsen, R. J., and Griffin, S. (1985). The satisfaction with life scale. *Journal of personality assessment*, 49 (1), 71–75.
- Džuka, J., Dalbert, C. (2002). Vývoj a overenie validity škály emocionálnej habituálnej subjektívnej pohody [Elaboration and verification of emotional habitual subjective well-being scales (SEHP)]. *Československá psychologie*, 46 (3), 234–250
- Grenčíková, A., Skačkaušienė, I., & Španková, J. (2018). The features of labor emigration from the Slovak republic. *Business: Theory and Practice*, 19, 271–277.
- Hajduch, B., Orosová, O., & Kulanová, M. (2018). Factors related to life satisfaction. Relationship between life satisfaction and emigration intentions among university students. In C. Pracana, & M. Wang (Eds.), *International Psychological Applications Conference and trends 2018 (InPACT 2018)*, Lisboa: InScience Press, 177–181.
- Hricová, L., Janovská, A., Orosová, O., & Kulanová, M. (2017). Is desire for change and satisfaction with one's home and family relevant in the development of emigration intentions among university students? *Edukácia. Vedecko-odborný časopis*, 2(1), 73–79.
- Ivlevs, A. (2014). *Happy Moves? Assessing the Impact of Subjective Well-Being on the Emigration Decision (Working Paper Series 1402, 1–27)*. Bristol: University of the West of England, Economics. Retrieved February 18, 2022, from: <https://www2.uwe.ac.uk/faculties/BBS/BUS/Research/Economics%20Papers%202014/1402.pdf>
- Káčerová, M., & Horváthová, R. (2014). International migration of Slovakia – demographic and spatial aspects. *Slovak Statistics and Demography*, 2, 33–51.
- Lučanská, F., Orosová, O., Naydenova, V., Benka, J., Dobrowolska Kulanová, M., & Abrinková, L. (2020). Country matters: well-being and emigration plans among university students in Slovakia and Bulgaria: the mediation effect of rootedness. In C. Pracana, & M. Wang (Eds.), *Psychology Applications & Developments VI*, Portugal: inSciencePress. 107–119.
- Machlica, G., Toman, J., Haluš, M., & Martinák, D. (2017). *Enhancing advanced skills to better meet labour market demand in the Slovak Republic*, OECD Economics Department Working Papers, No. 1416, Paris: OECD Publishing. 1–38.
- McAndrew, F. T. (1998). The measurement of 'rootedness' and the prediction of attachment to home-towns in college students. *Journal of Environmental Psychology*, 18, 409–417.
- Orosová, O., Gajdošová, B., Kulanová, M., & Berinšterová, M. (2017). Economic and psychological factors of emigration intentions among Slovak university students. In C. Pracana, & M. Wang (Eds.), *International Psychological Applications Conference and trends 2017 (InPACT 2017)*. Lisboa: W.I.A.R.S., 385–387.
- Polgreen, L., & Simpson N. B. (2011). Happiness and International Migration. *Journal of Happiness Studies*, 12, 819–840.
- Rada mládeže Slovenska [Youth Council of Slovakia]. (2016). *Správa z konzultácií Štruktúrovaného dialógu* [Structured Dialogue Consultation Report]. Retrieved February 18, 2022, from: <http://strukturovanydialog.sk/strukturovany-dialog/sprava-z-v-cyklu-strukturovaneho-dialogu-na-slovensku/>
- Traikova, D., Möllers, J., & Petrick, M. (2018). Go west? Emigration intentions of young Bulgarian agricultural specialists. *Journal of Rural Studies*, 62, 134–145.
- World health organization (2020). *Timeline: WHO's COVID-19 response*. Retrieved February 18, 2022, from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline#!>

## MOMS IMMERSED IN THEIR WORK: VIRTUAL REALITY AND MENTAL HEALTH PROMOTION AFTER MATERNITY LEAVE

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### Abstract

Mental health, well-being, performance, and numerous other variables in the workplace are frequently managed through a multidisciplinary approach aimed to make the organization more productive. New technology, such as virtual reality (VR), can be adapted to very different needs. It can enhance psychological intervention on workers, making them more effective and efficient. Several studies have analyzed the effectiveness of training with VR in the workplace. VR can be used mainly for: learning relaxation techniques, promoting stress reduction; enhancing personal resources, managing difficult situations; reducing anxiety and depression, both on its own or combined with exposure therapy, which allows to use scenarios and situations that are impossible to implement in vivo.

Return to work (RTW) after maternity leave is a common transition in women's lives that may be a challenge. Several mothers leave their job to devote themselves to their children's care and development. However, that choice is not always a free and personal decision: it may be based on issues related to work-life balance and employment after childbirth or on supervisors' and colleagues' messages about motherhood being inappropriate in the work context. Expectations and responsibilities related to the role of mother are intertwined with those related to the world of work.

With the aim of exploring and enhancing the personal and professional resources of working mothers and deconstructing irrational beliefs on the role of mother and worker, a psychological protocol based on VR was proposed to a small number of working mothers currently engaged in the caregiving of preschool children. The four-step VR-based training comprises two sessions focusing on body consciousness, and two focusing on psychological techniques. The efficacy of the protocol is evaluated through the comparison of questionnaires administered pre and post intervention.

We assumed that: the reinforcement of personal resources may trigger a spiral of "gain" capable of leading the person to positive outcomes both in the work and in the private sphere; the increase of work resources may activate a motivational process with positive outcomes for health.

The limitations of the study are related to the number of participants and to the lack of a control group. Future research could include longitudinal studies involving participants from different organizations. The VR protocol can be a useful contribution to support mothers' RTW after maternity leave while, at the same time, helping organizations to be healthier and more efficient.

**Keywords:** *Virtual reality, return to work after maternity leave, personal resources, irrational belief, mental health.*

### 1. Introduction

New technologies, such as virtual reality (VR), play a growing and central role in our society and can be adapted to very different needs: they are promising ways of caring for employees, in the psychological field as well. This study focuses on the intersection between VR and the support to mothers that return to work (RTW) after maternity leave. VR can make the psychological intervention more effective and efficient.

### 2. The origin of virtual reality

VR is a technology that allows people to live an experience within a 3D computer-generated virtual environment, the setting of which is controlled by the professional. Within the virtual environment

it is possible to interact both with the surrounding context and with any other user (Botella et al., 2006). Immersive virtual reality (IVR) generally uses a display device, and advanced interface devices. In this case, the user is completely immersed into the virtual environment.

The concepts of immersion and presence are fundamental in VR interventions. Slater and Wilbur (1997) defined immersion as “*the extent to which the computer displays are capable of delivering an inclusive, extensive, surrounding, and vivid illusion of reality to the senses of a human participant*” (p. 3). When the virtual world is genuine and similar to the real world, immersion is achieved. Immersion is necessary to enhance the presence, “*a psychological state or subjective perception in which even though part or all of an individual's current experience is generated by and/or filtered through human-made technology, part or all of the individual's perception fails to accurately acknowledge the role of the technology in the experience*” (Lombard & Snyder-Duch, 2001; p. 58). Even if immersion and presence may seem similar concepts, the main difference is that the former is a characteristic of the virtual world, whereas the latter is a personal characteristic.

In the early 2000s, psychologists began to apply VR with exposure therapy (VRET). Between the '90s and the present day, a series of studies have been conducted on the use of VR for the treatment of psychological disorders related to phobias and, more generally, anxiety disorders (Botella et al., 2004). Other studies investigated chemotherapy-derived stress (Schneider et al., 2011), pain reduction (Espinoza et al., 2012). In the organizational context, ample scientific evidence demonstrated that new technologies play an important role in achieving individual and collective well-being (De Carlo, Carluccio et al., 2020). In particular, VR can be an effective tool to develop entrepreneurial skills and teamwork as well as to reduce anxiety and work-related stress also through relaxation techniques. These techniques can influence positive affectivity leading to an increase in positive emotions and a reduction in negative ones (Anderson et al., 2017; Kiss et al., 2016).

The main theories employed to create the protocols used in the study are the Conservation of Resources Theory (COR) (Hobfoll, 1998) and the Effort-Recovery Model (E-R) (Meijman & Mulder, 1998). The former is based on the assumption that people struggle to obtain, preserve, and protect their resources, which can be internal and/or external. The E-R Model, on the other hand, focuses mainly on the consequences of workload. The concepts of energy and fatigue are predominant in the model: the aim of the recovery process is to recover and restore optimal energy levels and reduce or eliminate the symptoms of fatigue.

### 3. Virtual reality and maternity

The perinatal period, defined as the time span from conception to the year following childbirth, is a risk phase for parents' mental health due to the great biological, social, and relational transformations it entails. It can cause a conspicuous increase in stress, alterations in the sleep-wake rhythm and changes in mood. Research in recent decades has been dedicated to studying the phenomenon in depth, and although the experience is naturally marked by a happy event such as the birth of a child, it can also be a cause of suffering. Unexpected difficulties may arise related to the new rhythms and lifestyle that are necessarily upset (Paulson & Bazemore, 2010).

Going through the stages that accompany the woman before, during, and after the pregnancy, if the woman works, one encounters the delicate moment of returning to work (RTW) after maternity leave. Nowadays, working life highlights the different roles of mothers, allowing them to perceive themselves not “only” as mothers, but also as workers. However, it often happens that employers attribute negative characteristics to motherhood, leading working women to perceive concern about the announcement of their pregnancy or, in the most extreme cases, to postpone the choice to become mothers. Many mothers, in fact, prefer to devote themselves to the care of their children rather than re-enter the job market. All this acquires a negative meaning when this choice is not free and personal but is based on issues relating to work-life balance and re-employment after childbirth. For these reasons, when mothers face RTW after maternity, they may perceive feelings of inadequacy, not knowing whether they will be able to cope with organizational and family challenges (Carluccio et al., 2020).

VR can be used in a variety of settings for a variety of purposes, including supporting mothers during pregnancy. Frequently, VR is used to facilitate pregnancy by reducing the anxiety levels of expectant mothers and training them in effective pain management during labor. Among the non-pharmacological methodologies, VR technology can provide a simulation that allows to shift the mother's focus from pain to something else (e.g., sea, mountain, beach, river, lake, woods, etc.).

### 4. The study

In order to develop a VR-based training aimed to facilitate mothers' RTW after maternity, a self-report questionnaire was administered in this study aimed at identifying some relevant psychological dimensions in RTW after maternity leave.

A psychological protocol based on VR was proposed to a small number of working mothers currently engaged in caregiving. The first phase involves the administration of the self-report questionnaire, which aimed at identifying the following dimensions. *Rigidity of maternity belief* were assessed using the RMBS (Thomason et al., 2015). The scale is composed of 24 items and comprises four subscales<sup>1</sup>. *Positive supervisor behaviors in RTW after maternity leave* were assessed through SSRW-WM-9 (Carluccio et al., 2020). The instrument is composed of 9 items and comprises three subscales<sup>1</sup> with 3 items each. *Irrational beliefs at work* were assessed using the Italian version of WIB-Q (Falco et al., 2017). The scale is composed of 16 items and measures four types of work-related irrational beliefs<sup>1</sup> with 4 items each. *Quality of maternity leave* were assessed through QMLS (Sterling & Allan, 2019). The instrument is composed of 23 items and comprises six subscales<sup>1</sup>. Trait-anxiety were assessed using the subscale for trait-anxiety of STAI-Y (Pedrabissi & Santinello, 1989). The instrument is composed of 40 items and measures two type of anxiety (state and trait) with 20 items each. *Psychological capital* was assessed through Italian version of PCQ (Di Sipio et al., 2012). The instrument is composed of 32 items and measures four personal resources<sup>1</sup>. *Recovery experiences* were assessed using Recovery Experience Questionnaire (Sonnetag & Fritz, 2007). The instrument is composed of 16 items and comprises four subscales<sup>1</sup> with 4 items each. *Perceived stress* was assessed through I-PSS-14 (Mondo et al., 2021). The scale is composed of 14 items. *Fear of Covid-19* was assessed through a scale developed by Ahorsu and colleagues (2020). The instrument is composed of 7 items. The *perceived Covid-19 related risk of being infected at work* was assessed through CPRS-W (Falco et al., 2021). The instrument is composed of 8 items and comprises two types of perception (cognitive and emotive) with 4 items each. *General and work satisfaction* were assessed through 2 items (De Carlo et al., 2008). *Job performance* was assessed through 2 items (Falco et al., 2013).

The second phase, based on the findings of the first, provides a four-step (50 minutes per session, once a week) VR-based training (De Carlo, Rapisarda et al., 2020; Mora et al., 2021). Two sessions (the first and the third) focus on body consciousness through the practice of diaphragmatic breathing and a technique based on mindfulness called *Body Focus*. The other two are psychological techniques: *Virtual Three Good Things*, focused on the woman's past successes and achievements; *Best Possible Self*, focused on the future positive thinking.

#### 4.1. Objective

The aim of the VR-based protocol is to achieve the following objectives: 1) strengthening personal and work resources, which activate a motivational process with positive outcomes for both individual well-being and performance; 2) strengthening and acquiring new personal resources, that can increase positive outcomes in both the personal and work spheres, limiting rigid beliefs relating to the role of working mother and improving the process of RTW after maternity; 3) increasing and improving health and performance in the workplace by teaching and learning specific techniques and strategies that can be used by participants independently also outside the workplace.

#### 4.2. Methods

A total of six participants took part in the ongoing first edition of the VR-based protocol, all working mothers currently engaged in the caregiving of preschool children (0-6 years old). After providing informed consent, mothers are invited to describe, metaphorically, their RTW after maternity. After that, participants were administered the self-report questionnaire described above. The following phase included the four-step VR-based training. The self-report questionnaires were used before (t1), immediately after (t2), and 3 months following the training (t3). State anxiety was measured before and after each session of the training.

#### 4.3. Data analyses, interpretation, and results

Table 1 shows our finding at t1 of the ongoing first edition of the VR-based protocol. Generally, mothers report medium levels of rigid beliefs about maternity (M=3.71) and work (M=2.55). Although the levels of personal resources are good (M=4.30), especially self-efficacy (M=4.96), there is room for improvement, especially about recovery (M=2.76) and satisfaction, mainly at work (M=3.50).

Mothers described their RTW after maternity leave as: “a race on a route known because I was immediately assigned a complex activity which I know well and I have flexibility both hourly and in terms of presence in the workplace”; “a new adventure full of unknowns and uncertainties because I did not know what I should expect”; “taking my life back into my hands because I went back to being a woman and not just a mother”; “a roller coaster because it was scary but by now I was seated, the carousel had started and I could only wait for the ride to finish”. Largely, mothers expressed the perception of RTW after maternity leave as an adventure, characterized by fear and uncertainty; as an opportunity to assert one's identity as a working woman; as a return to a known place, characterized by a familiar activity.

<sup>1</sup>Please refer to Table 1.

Table 1. Mean, standard deviation.

| Psychological dimensions                                | Range      | Mean        | St. dev.    | Psychological dimensions  | Range       | Mean        | St. dev.    |
|---|------------|-------------|-------------|---|-------------|-------------|-------------|
| <b>Rigidity of maternal belief</b>                      | <b>1-7</b> | <b>3.71</b> | <b>1.64</b> | <b>Positive supervisor behaviors in RTW after maternity leave</b> | <b>1-5</b>  | <b>3.05</b> | <b>1.10</b> |
| <i>Perceptions and societal expectations of mothers</i> | 1-7        | 3.91        | .68         | <i>Inclusive behavior</i>   | 1-5         | 2.61        | 1.06        |
| <i>Role identity</i>                                    | 1-7        | 5.19        | 1.14        | <i>Negative behavior*</i>   | 1-5         | 3.56        | 1.24        |
| <i>Maternal confidence</i>                              | 1-7        | 3.71        | 1.83        | <i>General proactive support</i>                                  | 1-5         | 3.20        | 1.12        |
| <i>Maternal dichotomy</i>                               | 1-7        | 3.71        | 1.64        | <b>Psychological capital</b>                                      | <b>1-6</b>  | <b>4.30</b> | <b>.78</b>  |
| <b>Irrational belief at work</b>                        | <b>1-5</b> | <b>2.55</b> | <b>.49</b>  | <i>Resilience</i>   | 1-6         | 4.38        | .66         |
| <i>Performance demands</i>                              | 1-5        | 3.78        | .87         | <i>Hope</i>   | 1-6         | 4.14        | 1.19        |
| <i>Coworkers' approval</i>                              | 1-5        | 2.17        | .86         | <i>Optimism</i>   | 1-6         | 3.50        | 1.36        |
| <i>Failure</i>  | 1-5        | 3.00        | 1.46        | <i>Self-efficacy</i>  | 1-6         | 4.96        | .71         |
| <i>Control</i>  | 1-5        | 1.39        | .49         | <b>Recovery experience</b>  | <b>1-5</b>  | <b>2.76</b> | <b>.57</b>  |
| <b>Quality of maternity leave</b>                       | <b>1-7</b> | <b>4.72</b> | <b>1.23</b> | <i>Psychological detachment</i>                                   | 1-5         | 2.21        | .64         |
| <i>Time off</i>   | 1-7        | 5.04        | 1.27        | <i>Relaxation</i>   | 1-5         | 2.21        | .95         |
| <i>Flexibility</i>                                      | 1-7        | 4.79        | 1.70        | <i>Mastery experiences</i>  | 1-5         | 3.04        | 1.13        |
| <i>Coworker support</i>                                 | 1-7        | 4.44        | 1.39        | <i>Control</i>  | 1-5         | 3.58        | 1.40        |
| <i>Discrimination*</i>                                  | 1-7        | 5.25        | 1.94        | <b>Perceived stress</b>   | <b>0-4</b>  | <b>2.95</b> | <b>1.00</b> |
| <i>Microaggression*</i>                                 | 1-7        | 5.92        | 1.31        | <b>Fear of Covid-19</b>   | <b>1-6</b>  | <b>2.19</b> | <b>1.07</b> |
| <i>Benefits</i>   | 1-7        | 2.83        | 1.14        | <b>Perceived risk of Covid-19</b>                                 | <b>1-5</b>  | <b>2.33</b> | <b>.72</b>  |
| <b>Trait anxiety</b>                                    | <b>1-4</b> | <b>2.61</b> | <b>.60</b>  | <b>General satisfaction</b>                                       | <b>1-6</b>  | <b>4.33</b> | <b>1.03</b> |
|   |            |             |             | <b>Work satisfaction</b>  | <b>1-6</b>  | <b>3.5</b>  | <b>1.89</b> |
|   |            |             |             | <b>Performance</b>  | <b>1-10</b> | <b>7.08</b> | <b>1.59</b> |

\* High values indicate low presence of the construct.

## 5. Discussion

The study shows our finding related to some psychological dimensions, relevant in RTW after maternity leave, investigated through the self-report questionnaires employed in the first phase of the ongoing VR-based protocol. Based on the potential of VR and in line with the results shown in other studies (Mora et al., 2021; Rapisarda et al., 2021), in t2 and t3 we expect an improvement in personal resources, in the management of anxiety and stress and, in general, in individual and organizational well-being. Specifically, a reduction in rigid beliefs about maternity and work is expected.

Given the limited number of mothers who participated in the study, mainly because of the Covid-19-related restrictions, this work is still an ongoing experience. A larger sample is needed as well as control groups. However, the results already obtained suggest that this area of intervention and this VR-based protocol may have a potential that should be further investigated and replicated in broader contexts. The use of VR, characterized by innovative and immersive technologies, is promisingly placed among the applications of psychology for the support of workers in the organizational context.

## References

- Ahorsu, D.K., Lin, C.Y., Imani, V., Saffari, M., Griffiths, M. D., & Pakpour, A.H. (2020). The Fear of COVID-19 Scale: Development and Initial Validation. *International Journal of Mental Health and Addiction*, 1–9.
- Anderson, A.P., Mayer, M.D., Fellows, A.M., Cowan, D.R., Hegel, M.T., & Buckey, J.C. (2017). Relaxation with immersive natural scenes presented using virtual reality. *Aerospace Medicine and Human Performance*, 88(6), 520-526.
- Botella, C., Hofmann, S. G., & Moscovitch, D. A. (2004). A self-applied, Internet-based intervention for fear of public speaking. *Journal of Clinical Psychology*, 60(8), 821-830.
- Botella, C., Quero, S., Baños, R.M., Perpiñá, C., & Riva, G. (2006). Virtual Reality and Psychotherapy. In G. Riva, C. Botella, P. Légeron, & G. Optale (ed.), *Cybertherapy: Internet and virtual reality as assessment and rehabilitation tools for clinical psychology and neuroscience*. Amsterdam: IOS Press.

- Carluccio, F., Dal Corso, L., Falco, A., & De Carlo, A. (2020). How to positively manage return to work after maternity leave: Positive supervisor behaviors to promote working mothers' well-being. *TPM - Testing, Psychometrics, Methodology in Applied Psychology*, 27(4), 583-601.
- De Carlo, A., Carluccio, F., Rapisarda, S., Mora, D., & Ometto, I. (2020). Three uses of virtual reality in work and organizational psychology interventions. a dialogue between virtual reality and organizational well-being: relaxation techniques, personal resources, and anxiety/depression treatments. *TPM - Testing, Psychometrics, Methodology in Applied Psychology*, 27(1), 129-143.
- De Carlo, A., Rapisarda, S., Mora, D., & Benevene, P. (2020, April). *Your best virtual self-improvement. The use of virtual reality in stress management training*. International Psychological Applications Conference and Trends - InPACT 2020.
- De Carlo, N.A., Falco, A., & Capozza, D. (2008). *Test di valutazione del rischio stress lavoro-correlato nella prospettiva del benessere organizzativo, Qu-Bo* [Test for the assessment of work-related stress risk in the organizational well-being perspective, Qu-Bo]. Milano, Italy: FrancoAngeli.
- Di Sipio, A., Falco, A., Kravina, L., & De Carlo, N.A. (2012). Positive personal resources and organizational well-being: resilience, hope, optimism, and self-efficacy in an Italian health care setting. *TPM - Testing, Psychometrics, Methodology in Applied Psychology*, 19(2), 81-95.
- Espinoza, M., Baños, R. M., García-Palacios, A., Cervera, J.M., Esquerdo, G., Barrajón, E., & Botella, C. (2012). Promotion of emotional wellbeing in oncology inpatients using VR. *Annual Review of Cybertherapy and Telemedicine*, 53-57.
- Falco, A., Dal Corso, L., Girardi, D., De Carlo, A., Barbieri, B., Boatto, T., & Schaufeli, W.B. (2017). Why is perfectionism a risk factor for workaholism? The mediating role of irrational beliefs at work. *TPM- Testing, Psychometrics, Methodology in Applied Psychology*, 24(4), 583-600.
- Falco, A., Girardi, D., Dal Corso, L., Yildirim, M., & Converso, D. (2021). The perceived risk of being infected at work: An application of the job-demands-resources model to workplace safety during the COVID-19 outbreak. *PLoS ONE*, 16(9), e0257197.
- Falco, A., Girardi, D., Kravina, L., Trifiletti, E., Bartolucci, G.B., Capozza, D., & De Carlo, N.A. (2013). The mediating role of psychophysic strain in the relationship between workaholism, job performance, and sickness absence: A longitudinal study. *Journal of Occupational and Environmental Medicine*, 55(11), 1255-1261.
- Hobfoll, S.E. (1998). *Stress, culture, and community: The psychology and physiology of stress*. New York: Plenum Press.
- Lombard, M., & Snyder-Duch, J. (2001). Interactive advertising and presence: A framework. *Journal of Interactive Advertising*, 1(2), 56-65.
- Meijman, T.F., & Mulder, G. (1998). Psychological aspects of workload. In P.J.D. Drenth, & H. Thierry (ed.), *Handbook of work and organizational psychology* (Vol. 2: Work psychology, pp. 5-33). Hove, England: Psychology Press.
- Mondo, M., Sechi, C., & Cabras, C. (2021). Psychometric evaluation of three versions of the Italian Perceived Stress Scale. *Current Psychology*, 40, 1884-1892.
- Mora, D., Falco, A., Di Sipio, A., & De Carlo, A. (2021, April). *4 steps for fighting Covid-related anxiety: An application of virtual reality in a small company*. International Psychological Applications Conference and Trends - InPACT 2021.
- Paulson, J.F., & Bazemore, S.D. (2010). Prenatal and postpartum depression in fathers and its association with maternal depression. *Journal of the American Medical Association*, 303(19), 1961-9.
- Pedrabissi, L., & Santinello, M. (1989). Verifica della validità dello STAI forma Y di Spielberger [Verification of the validity of the STAI, Form Y, by Spielberger]. *Giunti Organizzazioni Speciali*, 191-192, 11-14.
- Rapisarda, S., Mora, D., & De Carlo, A. (2020, november). *Applicazioni della Realtà Virtuale per la promozione della salute e la prevenzione del disagio lavorativo* [Applications of Virtual Reality for the promotion of health and the prevention of work discomfort]. AIP - Giornate di Studio: Sezione di Psicologia per le Organizzazioni.
- Schneider, S.M., Kisby, C.K., & Flint, E.P. (2011). Effect of virtual reality on time perception in patients receiving chemotherapy. *Support Care Cancer*, 19(4), 555-564.
- Slater, M., & Wilbur, S. (1997). A framework for immersive virtual environments (FIVE): Speculations on the role of presence in virtual environments. *Presence: Teleoperators and virtual environments*, 6(6), 603-616.
- Sonntag, S., & Fritz, C. (2007). The Recovery Experience Questionnaire: Development and validation of a measure for assessing recuperation and unwinding from work. *Journal of Occupational Health Psychology*, 12(3), 204-221.
- Sterling, H.M., & Allan, B.A. (2019). Construction and validation of the quality of maternity leave scales (QMLS). *Journal of Career Assessment*, 1-23.
- Thomason, E., Flynn, H.A., Himle, J.A., & Volling, B.L. (2015). Are women's parenting-specific beliefs associated with depressive symptoms in the perinatal period? Development of the rigidity of maternal beliefs scale. *Depression and Anxiety*, 32, 141-148.

## SOURCES OF CHANGES IN LEADERSHIP STYLES IN HEALTHCARE IN BULGARIA DURING COVID 19 CRISIS

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### Abstract

The aim of the study is to identify the content components of the leadership styles in healthcare during COVID 19 crisis. Another goal of the study is to examine the relationship between value preferences and various demographic indicators, such as gender, age, education, position in the hierarchy, length of service and place of residence. The study was conducted among 376 people between February and March 2021 during the COVID 19 crisis. The methodology of B. Bass and B. Avolio - "Multifactor Leadership Questionnaire" was applied. The instrument was standardized for Bulgarian conditions by S. Karabelyova (Karabelyova S., 2011) and it described the transforming (charismatic) leadership style, the transactional leadership style, and the avoiding (liberal) leadership style. The data was processed via the software programme SPSS - 21 and for the purpose of the analysis descriptive statistics and dispersion analysis have been made. The study assumes that if the sources of changes in leadership styles are known, activities of an organization could be optimized, and the results of their joint activities could be maximized. The data show that demographic indicators differentiate leadership styles to varying degrees.

**Keywords:** *Leadership styles, healthcare organizations, COVID 19, Bulgaria.*

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### 1. Introduction

Leadership in the present study is perceived as dynamic and open, emerging and functioning spontaneously; applying creative methods of organization in order to use innovative resources and achieve success in future; it is strongly influenced by group moods. Leaders are seen as "meaning leaders", emphasizing "symbolic leadership behavior", inspiring message, intellectual stimulation of followers through leadership ability to trust themselves and their followers, self-sacrifice and performance "beyond honor" by followers (Alimo- Metcalfe, 2002). Leadership is charismatic and it can bring about significant organizational change because it "changes" employees to pursue organizational goals and the overall vision for the future of the organization (Shamir, 1995). Thus, the derived leadership specifics fit into the characteristics of the transformational and charismatic style of management within the "New Paradigm" - leadership with mission and skills, motivation and consistency.

In this sense, B. Bass and B. Avolio (Multifactor Leadership Questionnaire - Bass & Avolio, 2004) identify four types of leadership styles and build a multifactor questionnaire for their study:

(1) Idealized influence - transforming leaders whose behavior leads to admiration, trust and respect to them; their followers want to emulate them;

(2) Inspirational motivation - the leader who encourages and inspires people with enthusiasm and optimism for the vision of future development;

(3) Intellectual stimulation - transformative leaders who encourage their followers to express doubts, to rethink problems and approaches to old solutions, to look for new ways, to be creative and innovative and

4) Individual consideration (respect) or individualized attention - the leader who actively develops the potential of its employees by creating new opportunities.

### 2. Methods

#### 2.1. Procedure

The methods in the current study give the opportunity to assess specific factors that determine the degree of influence of the studied leadership styles in the field of healthcare.

The statistic programs are expected to bring out the leadership styles with the strongest impact in the work environment.

## 2.2. Participants

376 people from two health institutions in the country are covered: one public and one private - for the period from February to April 2021, of which men - 157, women - 219; under the age of 30 - 65 people, from 30 to 50 - 188 and over 50 - 123 people; living in the capital - 29, in a big city - 213, in a small town and village - 134; public hospital - 177 and private hospital - 199; doctors - 231 people, nurses - 55; administration - 48 and other staff - 42 people; in management positions - 106; executives - 270. The studied nests are two with a composition of 147 people and 229 people, respectively.

## 2.3. Measures

The "Multifactor Leadership Questionnaire" of B. Bass and B. Avolio has been used in the present study. The methodology is standardized for Bulgarian conditions by S. Karabeliova (Karabeliova, 2011). The instrument shows high construct validity ( $\alpha = 0.74$ ) and content validity ( $\alpha = 0.94$ ). The internal consistency of the Multifactor Leadership Questionnaire is also very good -  $\alpha = 0.70$  for all scales (Bass & Avolio, 2004). The sub-scales are free of social desirability. The individual sub-scales show good reliability according to the Cronbach's coefficient. The results for the reliability of the different scales are similar to those of other researchers who have applied it. This gives grounds to claim that the questionnaire can be used in Bulgarian conditions to register the different leadership styles. With this methodology one can study the possible change of this type of leadership styles and find trends in their development related to the dynamic changes in the external environment. It is assumed that personal, situational and positional factors will determine leadership styles. The aim is to find trends in their development in response to future requirements of the external environment.

## 3. Results

The results shown in Table 1 express the manifestations of the different leadership styles in the studied health organizations. The respondents believe that the dominant characteristics of their managers are most fully described by the way they achieve pre-agreed standards.

Table 1. Differences in leadership style types by demographic variables.

| Leadership styles/sources of variations | Idealized influence, charisma      | Inspirational motivation           | Intellectual motivation            | Individualized attention           | Conditional rewards                | Management of exceptions           | Liberal leadership                |
|---|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|-----------------------------------|
| Gender                                  | <b>F=4.031;</b><br><b>p=0.045</b>  | F=0.001;<br>p=0.977                | F=0.157;<br>p=0.692                | F=1.198;<br>p=0.274                | F=0.368;<br>p=0.544                | F=0.592;<br>p=0.442                | F=0.297;<br>p=0.586               |
| Age                                     | F=4.578;<br>p=0.011                | <b>F=8.010;</b><br><b>p=0.000</b>  | <b>F=5.176;</b><br><b>p=0.006</b>  | <b>F=8.458 ;</b><br><b>p=0.000</b> | <b>F=3.630;</b><br><b>p=0.027</b>  | <b>F=14.723;</b><br><b>p=0.000</b> | F=4.513;<br>p=0.012               |
| Location                                | F=0.096;<br>p=0.909                | F=0.073;<br>p=0.93                 | F=2.117;<br>p=0.122                | F=0.322;<br>p=0.725                | F=1.481;<br>p=0.229                | F=1.957;<br>p=0.143                | F=1.194;<br>p=1.194               |
| Property                                | F=0.062;<br>p=0.804                | F=2.412;<br>p=0.121                | F=0.059;<br>p=0.808                | F=0.018;<br>p=0.892                | F=0.026;<br>p=0.871                | F=4.033;<br>p=0.856                | F=0.426;<br>p=0.514               |
| Position                                | <b>F=5.868;</b><br><b>p=0.001</b>  | <b>F=11.707;</b><br><b>p=0.000</b> | F=10.764;<br>p=0.047               | <b>F=8.745;</b><br><b>p=0.000</b>  | <b>F=4.754;</b><br><b>p=0.003</b>  | <b>F=11.721;</b><br><b>p=0.000</b> | <b>F=4.868;</b><br><b>p=0.002</b> |
| Total length of service                 | F=1.812;<br>p=0.165                | <b>F=2.692;</b><br><b>p=0.055</b>  | F=1.198;<br>p=0.303                | F=0.64;<br>p=0.528                 | F=0.586;<br>p=0.557                | <b>F=7.526;</b><br><b>p=0.001</b>  | <b>F=4.868;</b><br><b>p=0.003</b> |
| Length of service in the organization   | <b>F=6.242;</b><br><b>p=0.002</b>  | <b>F=3.705;</b><br><b>p=0.026</b>  | F=1.687;<br>p=0.186                | F=1.238;<br>p=0.291                | F=1.998;<br>p=0.137                | <b>F=8.371;</b><br><b>p=0.000</b>  | F=1.903;<br>p=0.151               |
| Length of service at the position       | <b>F=9.852;</b><br><b>p=0.000</b>  | <b>F=6.18;</b><br><b>p=0.002</b>   | <b>F=5.422;</b><br><b>p=0.005</b>  | <b>F=4.663;</b><br><b>p=0.025</b>  | <b>F=3.745;</b><br><b>p=0.025</b>  | <b>F=8.576;</b><br><b>p=0.000</b>  | <b>F=5.033;</b><br><b>p=0.007</b> |
| Studied nest                            | F=0.027;<br>p=0.869                | F=0.048;<br>p=0.827                | F=0.007;<br>p=0.935                | F=0.004;<br>p=0.950                | F=0.192;<br>p=0.662                | F=0.024;<br>p=0.877                | F=0.291;<br>p=0.590               |
| Hierarchical position                   | <b>F=41.372;</b><br><b>p=0.000</b> | <b>F=50.786;</b><br><b>p=0.000</b> | <b>F=54.699;</b><br><b>p=0.000</b> | <b>F=72.835;</b><br><b>p=0.000</b> | <b>F=35.294;</b><br><b>p=0.000</b> | <b>F=53.235;</b><br><b>p=0.000</b> | <b>F=9.954;</b><br><b>p=0.002</b> |

Note: Scores which are significantly different are displayed in bold



The management of exceptions fits into the understanding of transforming leadership, “which refers to the process of change by embracing emotions, values, ethics, standards and long-term goals, and includes assessment of motives of followers, meeting their needs and treating them as full-blooded human beings. “(Karabeliova, 2011). At the same time, the leader takes actions only when there are problems without taking risks. In the active management of exceptions, the leader actively strives to control and monitor for potential deviations of his subordinates from the standards, errors and inaccuracies that are allowed in the consistent implementation of tasks and takes corrective actions, if necessary (Bass, 1998).

The way leaders influence their self-esteem through interpersonal communication is highly appreciated, as well as the ways they motivate and inspire them to work and help them find meaning in their job, increasing the awareness of their followers about what is good for the whole group by applying proactive measures. Followers, on the other hand, are motivated to perform tasks beyond their own expectations, which is useful for them. The idealized influence occurs when the leaders act as role models for their followers.

The individualized attention, when the leaders pay special attention to the needs of each follower, to his expectations and desire for development is, so called, an auxiliary characteristic of leaders according to the respondents. The leader gives the followers many opportunities to learn new things, discusses with each follower his individual ideas and plans for personal growth. At the same time, the leader tries to exchange rewards for effort or good performance. He determines the tasks that need to be performed and offers remuneration only in cases of a result commensurate with the set standard.

It is assumed that leadership styles find their expression in different ways, depending on environmental factors. Therefore, the leadership styles would have different manifestations depending on demographic variables, such as: gender, age, location, type of organization, position, total length of service, length of service in the organization, position and place of residence. The hypotheses are tested by analysis of variance, the results of which are shown in the tables below. The multiple comparison tests are applied when it is established after one-factor analysis of variance (ANOVA) that the F-ratio is significant and the "p" is a significance level, not bigger than 0.05.

The hypothesis of a differentiating role of gender regarding the leadership styles, was partially confirmed - there are significant gender differences, related to the charismatic leadership ( $F = 4.031$ ;  $p = 0.045$ ). This result shows that there are no qualitative differences in the leadership effectiveness of male and female leaders. However, it should be taken into account that men are perceived as showing more leadership oriented towards the whole and the task and are more likely to use an autocratic or directive style than women. In contrary, women are perceived as showing more socially oriented leadership, more often using a democratic or participatory style than men, and that is confirmed by the results of the present study (Eagly, Kakau, Makhijani, 1995).

The results from statistical procedures show that age significantly differentiates the seven leadership styles: idealized influence ( $F = 4.578$ ;  $p = 0.011$ ), inspirational motivation ( $F = 8.010$ ;  $p = 0.000$ ), intellectual motivation ( $F = 5.176$ ;  $p = 0.006$ ), individualized attention ( $F = 8,458$ ;  $p = 0,000$ ), conditional rewards ( $F = 3,630$ ;  $p = 0.027$ ), management of impressions ( $F = 14,723$ ;  $p = 0,000$ ) and liberal leadership ( $F = 4,513$ ;  $p = 0.012$ ). There is a tendency to increase the grades and self-assessments of these leadership styles with age. It could be a logical explanation for the obtained results that with increasing age, more and more expectations are expressed regarding the leadership contribution to the organization and its development.

The hypothesis about the differentiating significance of the settlement type was not confirmed. According to the data from the analysis of variance, no statistically significant differences are derived. The participation of individuals in an organization can be described as motivated; the employees expect the leader to perform his role of competent and concerned manager about their development, regardless of location.

On the grounds of understanding that the differences in styles in the organization are significantly differentiated by the type of property - private and state, a variance analysis was made. The results of the analysis show that there are no statistically significant differences according to this demographic variable. In general, the manifestations of coherence between manager and employee are highly appreciated. In addition, it can be noted that attention is paid to the work sense. These values can also be interpreted in terms of avoiding conflict behavior and the perception of friendly relations.

The position is an indicator that distinguishes leadership style. Of interest is the result of descriptive statistics, where there is the highest data in the administration, regardless of style. It is reasonable to believe, however, that the emphasis is on coordination within the organization and proactive behavior for stability. It can also be stated that in order to meet workplace goals, the team members strive to strictly follow the rules, instructions and procedures in the implementation.

The total length of service has statistically significant impact on leadership styles without being associated with critical thinking, making urgent changes ( $F = 2.692$ ;  $p = 0.055$ ) and achieving the preliminary agreed standards ( $F = 7.526$ ;  $p = 0.001$ ).

The length of service in the specific organization also significantly differentiates the leadership styles of idealized influence ( $F = 6.242$ ;  $p = 0.002$ ), inspirational motivation ( $F = 3.705$ ;  $p = 0.026$ ) and management of impressions ( $F = 8.371$ ;  $p = 0.000$ ). There is tendency to increase the grades and self-assessments of the respondents in the specific organization with the increase of the length of service in the specific organization, again. However, the data shows that there is a link between the assessments of the people with the longest length of service in the specific organization and those with the shortest one. The first few years of the individual's career are usually devoted to testing different work roles, behaviors and work strategies, and over time the best approaches are established and implemented. Newcomers feel motivated and inspired to recognize the goals of the organization as their own and they find sense and challenges in their job. The line manager identifies the tasks on the agenda and informs others how they will be rewarded if they meet these goals. The accumulated length of service allows the leader to assess the negative effects of non-compliance with these conditions for him and his followers.

The length of service at the specific position significantly differentiates each leadership style. The successful organizational behavior is important to match the skills of opposite leadership styles for interpersonal interactions and orientation to the requirements of the environment, combined with the skills to manage the control system and changes introduction, dictated by greater professional experience.

Preferred leadership styles are not found according to the studied nests in Plovdiv and Stara Zagora. It turns out that the leadership style depends on the location, where it is practiced.

The position held in the organization significantly differentiates the self-assessments and assessments of each leadership style. There were registered higher self-assessments of the managers in the sample than the assessments of the performers. The assumptions about higher self-assessments of managers than those of performers are confirmed by the results of the study, which can be explained by the lack of sufficiently frequent and clear communication "from top to bottom" in the organization. It is also possible that the difference in assessments is due to an existing difference in the perception of leaders and the way their followers perceive them.

The study of leadership styles leads to the conclusion that the most varied are the styles described as charismatic in the New Paradigm theory: "inspirational motivation" and "intellectual stimulation", as well as "conditional rewards" and "individualized attention", "idealized influence" (charisma)". The styles of "management of exceptions" and "liberal leadership" are relatively steady. Differences in the studied demographic indicators were registered for each style. According to the results, it can be stated that the qualities of the leader are appreciated, related to the creative and entrepreneurial attitudes and orientations towards innovation and ingenuity.

#### 4. Discussion

The results show that demographic indicators differentiate leadership styles to various degrees. The gender, the studied nests / Plovdiv and Stara Zagora /, the total length of service and the types of property / state or private / are not sources of variation and do not differentiate the four dimensions. The most varied is the charismatic leadership style, which is influenced by age, location, position, length of service in the organization and position, as well as the hierarchical level, followed by styles of inspirational motivation and management of exceptions, influenced by age, total length of service and the length of service in the organization. The styles of intellectual motivation, individual attention, and conditional rewards are influenced equally by age. The logic of such an arrangement can be sought in the desire to maintain stability and develop opportunities for adequate rapid actions, if necessary.

#### References

- Alimo-Metcalfe, B., Alban-Metcalfe, R. (2002). *Leadership*. - In: P., Warr, (Ed.). *Psychology at Work*. London: Penguin Books, pp. 300-326.
- Assessing the Relationship between Market Orientation and Organizational Culture in Midwestern Hospitals: An Empirical Study, Capella University, 112p. ISBN 0542837048, 9780542837043
- Bass, B. (1998). *Transformational Leadership: Industrial, Military, and Educational Impact*. Mahwah, New Jersey: Erlbaum.
- Davies A. (2016). *The Globalisation of Corporate Governance: The Challenge of Clashing Cultures*. CRC Press, 2016. 256 p. ISBN 1317030109, 9781317030102

- Eagly, A., Kakau, S., Makhijani, M. (1995). Gender and Effectiveness of Leaders: A Meta-Analysis. *Psychological Bulletin*, Vol 117(1), pp. 125-145
- Ilieva, S. (2006). *Organizational culture: Nature, functions and change*. Sofiya: University press "St. Kliment Ohridski", p.332 ISBN 9540724805
- Karabeliova, S. (2011). *Values and cultural practices in Bulgaria*. Klasika stil 2011, p. 345
- Shamir, B. (1995). *Social distance and charisma: Theoretical notes and an exploratory study*. *Leadership Quarterly*, 6, pp. 19-47.
- Schein, Edgar H. (2010) *Organizational Culture and Leadership*, 4th ed (2010) ISBN 978-0-470-18586-5
- Thomas J. Peters and Robert H. Waterman, Jr., (1986). *In Search of Excellence: Lessons from America's Best-Run Companies* (New York: Warner Books, 1982), pp. 223-24, 286.

## ETHICAL CLIMATE IN ORGANIZATION AND EMPLOYEES ACCEPTANCE OF CORRUPTIVE RATIONALIZATIONS

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### Abstract

The aim of this research was to examine the relationship between the organizational ethical climate and the level of employees' acceptance of certain types of corruptive rationalizations. The ethical climate refers to the perception of ethical criteria and practices an organization applies to determine what constitutes acceptable work behavior (Victor & Cullen 1988). Previous studies indicate the link between certain types of organizational ethical climate and employees' engagement in corruption (Gorsira et al., 2018; Stachowicz-Stanusch and Simha, 2013). Corruptive rationalizations are defined as self-serving attempts to legitimate ethically questionable behavior (Ashforth & Anand, 2003). On an ad hoc sample of 306 employees from different organizations in the Republic of Serbia, an online questionnaire was applied for data collecting on the perception of the organizational ethical climate. ECQ (Victor & Cullen, 1988) with 36 items was administered to estimate the presence of seven types of ethical climate with Cronbach's  $\alpha$  ranging between 0.69 to 0.85. Kopter-2 (Majstorovic, 2011;  $\alpha = 0.72$ ) with 18 items was applied to measure preference of six corruptive rationalizations measured here – denial illegality, denial responsibility, denial victim, denial injury, social weighting and appeal to higher loyalties. MRA reveals results indicating the perception of an egoistic ethical climate ('Self-interest') as a significant predictor of increased preference of four of six types of corruptive rationalizations (denial illegality, denial responsibility, social weighting and appeal to higher loyalties). In addition, increased perception of the 'Company profit' climate predicts increased acceptance of the 'Denial victim' rationalization. All other types of ethical climate predict either diminished preference for any form of corruptive rationalization or they are unrelated to them. It should be emphasized that ethical climates from the 'Benevolence' cluster such as 'Social responsibility', 'Friendship', and 'Team interest' predict rejecting 'Denial responsibility', 'Denial injury', and 'Social weighting' as rationalizations of a corruptive act. It was concluded that some types of ethical climate support corruption. If the typical decision-making criterion in an organization is perceived to be individual and local, and if the dominant ethical criterion is perceived to be egoism, then this organizational context probably generates employees' acceptance of justification of their corruptive intentions or acts. Results also indicate that 'Personal morality' and 'Organizational rules and regulations' types of ethical climate are unrelated to the preference of any kind of corruptive rationalization. The importance of organizational interventions, such as promotion of social responsibility, friendship and team interests in the anti-corruption campaign, is discussed.

**Keywords:** *Ethical climate, organizations, corruptive rationalizations, employees.*

## 1. Introduction

Of the 180 countries reviewed, Serbia ranks 96th in the corruption perception index in 2022 (Transparency International, 2022). It is difficult to alter country-level factors of corruption, and macro-level explanations may not be useful in designing anti-corruption measures (Rose-Ackerman, 2010). Hence, the present study examines relations of organizational ethical climate and employees' engagement in corruption by accepting corruptive rationalizations (e.g. Majstorović, 2012; Nahartyo & Haryono, 2018).

### 1.1. Ethical climate and corruptive rationalizations

It is common knowledge that individual, group and organizational factors constantly influence employees' organizational behavior. In this study, we look for an insight into how the ethical climate, as an organizational factor, affects employees' readiness to accept corruptive rationalizations. The significance of such insight may be in considering the acceptance of corruptive rationalizations as an

indicator of corruption among organizational members. The ethical climate refers to 'the shared perception of what is correct behavior and how ethical situations should be handled in an organization' or as 'prevailing perceptions of typical organizational practices and procedures that have ethical content' (Victor & Cullen, 1988). The significant impact of an organizational ethical climate on employees' behavior is reported by much research (e.g., Cullen et al., 2003; Martin & Cullen, 2006; Newman et al., 2017). These effects can be explained by employees' affective identification with an organization, by moral disengagement (Pagliaro et al., 2018), or by the influence of ethical leadership at work (Kia et al., 2019). One of the detrimental outcomes that the ethical climate may cause is the occurrence of corruption among employees (Gorsira et al., 2018). According to the original theoretical model of organizational ethical climate (Victor & Cullen, 1988), two dimensions intersect – the ethical criterion for organizational decision making and the locus of analysis used as a referent in ethical decision making. The first dimension has three criteria (egoism, benevolence, and principle), while the second has three loci representing sources of moral reasoning (individual, local, and cosmopolitan). In the context of egoism (maximizing self-interest), the loci of analysis define three types of ethical climate considering the level of interest: Self-interest, Company profit, and Efficiency. In the context of benevolence (maximizing common interests), considering non-members of an organization, organizational collective or other constituencies outside the organization, the loci produce Friendship, Team interests, and Social responsibility. Depending on the source, principle produces Personal morality, Company rules and procedures, and Laws and professional codes. Later validation of this model provided evidence of the existence of seven types of ethical climate (Cullen, Victor, & Bronson, 1993), which were used in this study. As the ethical climate theory proposed, empirical studies confirm that an ethical climate is a particularly relevant organizational factor explaining a wide range of unethical decisions of employees (Kish-Gephart et al., 2010), including negative organizational outcomes (Martin & Cullen, 2006). One of those unethical decisions is an engagement in corruption, which is defined as the "misuse of authority for personal, subunit and/or organizational gain" (Ashforth & Anand, 2003, p. 2). Three factors must be present for an employee to engage in corrupt behavior – motivation, opportunity, and rationalization (Mayhew & Murphy, 2014). Individuals use corruptive rationalizations in order to justify corruptive behavior, and to overcome the unpleasant state caused by the discrepancy between the decision and personal ethical standards (e.g. Ashforth & Anand, 2003; Anand et al., 2004), the condition called ethical dissonance or moral stress (Majstorović, 2012). Ashfort & Anand (2003) identified nine types of corruptive rationalizations. Six of them were measured in this research (Majstorović, 2012, pp. 60-61): (1) Denial illegality (a corrupt act is rationalized by denial of the illegality through criticizing the quality or application of the law in practice), (2) Denial responsibility (avoidance of responsibility and transferring it to others or common practice), (3) Denial injury (minimizing the consequences of the act in the sense that the damage caused to the company is not that significant), (4) Denial victim (denying the importance of the damage to the previously depersonalized person), (5) Social weighting (occurs when an actor compares their act with others whose actions they evaluate as far more immoral), and (6) Higher loyalties (sacrificing individual or universal values in order to "protect" the group). Hence, in many organizations, corruption is considered to be "normal", which occurs when corruption is accepted and practiced daily (Ashforth & Anand, 2003). The concept of normalization of corruption provides a framework for explaining the persistence of corruptive behaviors, even when individuals were not stereotypical criminals (ibid, 2003; Fleming et al., 2022). Individuals learn these neutralization techniques through interaction with peers (Hauser, 2019), and the magnitude of corruption affects how they provide rationalization (Nahartyo & Haryono, 2018). Moreover, it is not only corrupt practices that are normalized "but also the social reaction to them" (Fleming et al., 2022, p. 216). The results of one study on a sample of 145 respondents (Nahartyo & Haryono, 2018) in which 2x2 between-subject factorial experimental design was used, indicate there is a positive effect of rationalization on individuals' "subsequent offense". "When people think that their behavior falls short of common ethical standards, they justify the legitimacy of their actions" (ibid, 2018, p. 175).

Previous studies of the ethical climate effects on employees' ethical behavior have unequivocally shown that the perception of an egoistic ethical climate is an organizational context in which all types of corrupt rationalizations are accepted (e.g. Majstorović et al., 2020) and even all corrupt behaviors are manifested (e.g. Stachowicz-Stanusch & Simha, 2013; Gorsira et al., 2018). In addition, other ethical climates show different trends in these relationships. Some findings suggest that an ethical climate based on the criterion of benevolence is positive, while climates based on the criterion of principles are a negative predictor of organizational corruption (Stachowicz-Stanusch & Simha, 2013). Contrary to this, there are findings indicating that the ethical climates of friendship and team, of rules and procedures, and of social responsibility contribute to the tendency to reject three of the six measured corrupt rationalizations (Majstorović et al., 2020). It seems that an "Ethical climate may shape employees' personal and social norms on corruption" (Gorsira et al., 2018, p. 4). When it comes to the strategy of

prevention of corrupt behavior, the authors agree that promoting a climate that is not egoistic, can influence the emergence of more ethical behaviors (Stachowicz-Stanusch & Simha, 2013; Gorsira et al., 2018; Majstorović et al., 2020). In addition, Hauser (2019) indicates that employees who have undergone anti-corruption training are more likely to reject justifications for corrupt practices than those who have not. Based on these findings, we assume that an egoistic ethical climate in organizations generates employees' tendency to accept rationalizations in order to justify their corrupt intentions and behavior.

## 1.2. Objectives

The objective of this research was to determine the importance of the dominant organizational ethical climate for the employees' acceptance of corruptive rationalizations. This includes detecting the type of the ethical climate as well as its specific measures as predictors of the acceptance of certain corruptive rationalizations.

## 2. Methods

### 2.1. Participants and procedures

The data were gathered from an on-hand sample of 306 employees from the Republic of Serbia. The participants were mostly women (90%) with an average age of 37.9, and with different organizational roles and work tenure. They were asked to anonymously fill out an online questionnaire via GoogleForm platform during the year of 2021.

### 2.2. Variables and instruments

The organizational ethical climate refers to 'prevailing perceptions of typical organizational practices and procedures that have ethical content' and it is comprised of nine types as a result of the intersection of criteria and sources of moral reasoning dimensions (Victor & Cullen, 1988). Corruptive rationalizations represent an individual's corruptive strategies aimed to justify unethical intentions and acts or, at least, to avoid condemnation from others (Majstorovic, 2012). The organizational ethical climate was measured by a revised version of the ECQ with seven types of ethical climate and with internal consistency of their measures ranging between .69 and .85 (Cullen, Victor & Bronson, 1993). The level of acceptance of six corruptive rationalizations was estimated by the questionnaire Kopter-2 (Majstorovic, 2011) comprised of 18 items and with the internal consistency of .72 for the whole scale (Majstorovic, 2020).

## 3. Results

Pearson correlations presented in Table 1 indicate a systematic relationship between the presence of seven types of ethical climate and the level of acceptance of six types of corruptive rationalizations. We can notice that, as employees perceive more elements of the 'Self-Interest' climate in their organization, they become more willing to accept four of six types of measured rationalizations. In addition, if profit and efficiency govern an organizational work ethic, employees are ready to deny illegality of corrupt intentions and acts, and they intend to demonstrate loyalty to higher unethical interests. Equally important is to notice that five remaining types of ethical climate are either unrelated or negatively related with three types of corruptive rationalizations – denying responsibility, denying injury and social weighting.

Multiple regression analyses (Enter method) reveal results indicating that employees' perception of the ethical climate in their organization predicts the acceptance/refusal level of four types of corruptive rationalizations (Table 2). More specifically, 'Self-interests' ( $\beta = .15$ ,  $t(304) = 2.30$ ,  $p < .022$ ) and 'Profit & Efficiency' ( $\beta = .15$ ,  $t(304) = 2.25$ ,  $p < .025$ ) ethical climates significantly predict the acceptance of 'Denial Illegality' corruptive rationalization. The 'Denial Responsibility' rationalization was predicted by 'Self-interests' ethical climate ( $\beta = .14$ ,  $t(304) = 2.14$ ,  $p < .033$ ), as this type of ethical climate was the only predictor of 'Social Weighting' corruptive rationalization ( $\beta = .14$ ,  $p < .031$ ). The 'Friendship & Team' ethical climate significantly predicts refusal of the 'Social Weighting' rationalization ( $\beta = -.17$ ,  $t(304) = 2.11$ ,  $p < .036$ ). Finally, the 'Self-interests' ethical climate ( $\beta = .21$ ,  $t(304) = 3.18$ ,  $p < .002$ ) was a significant predictor of the 'Higher loyalty' rationalization acceptance. These findings confirm our expectation that an egoistic ethical climate in an organization ('Self-interests' type) represents the most suitable context for employees to accept corruptive rationalizations.

Table 1. Pearson correlations between types of ethical climate and corruptive rationalizations (N=306).

|                       | Denial<br>Illegality | Denial<br>Responsibility | Denial<br>Injury | Denial<br>Victim | Social<br>Weighting | Higher<br>Loyalties |
|-----------------------|----------------------|--------------------------|------------------|------------------|---------------------|---------------------|
| Self-Interest         | ,175**               | ,218**                   | ,053             | ,091             | ,215**              | ,162**              |
| Profit & Efficiency   | ,121*                | ,027                     | -,039            | ,077             | -,034               | ,119*               |
| Friendship Team       | -,057                | -,229**                  | -,114*           | ,055             | -,228**             | ,040                |
| Social Responsibility | -,041                | -,142*                   | -,162**          | -,035            | -,137*              | ,059                |
| Personal Morality     | ,053                 | -,141*                   | -,045            | -,046            | -,042               | ,069                |
| Org Rules Procedures  | ,016                 | -,032                    | -,058            | -,006            | -,110               | ,089                |
| Laws Prof Code        | ,074                 | -,127*                   | -,152**          | -,023            | -,067               | ,087                |

\*\* . Correlation is significant at the 0.01 level (2-tailed). \* . Correlation is significant at the 0.05 level (2-tailed).

Table 2. MRA of seven types of ethical climate, DVs are corruptive rationalizations (N=306).

|                              | R           | R <sup>2</sup> | F     | df1/2 | p           |
|------------------------------|-------------|----------------|-------|-------|-------------|
| <b>Denial Illegality</b>     | <b>,252</b> | <b>,063</b>    | 2,879 | 7/298 | <b>,006</b> |
| <b>Denial Responsibility</b> | <b>,289</b> | <b>,084</b>    | 3,880 | 7/298 | <b>,000</b> |
| <b>Denial Injury</b>         | ,190        | ,036           | 1,600 | 7/298 | ,135        |
| <b>Denial Victim</b>         | ,194        | ,038           | 1,668 | 7/298 | ,116        |
| <b>Social Weighting</b>      | <b>,266</b> | <b>,071</b>    | 3,237 | 7/298 | <b>,003</b> |
| <b>Higher Loyalties</b>      | <b>,237</b> | <b>,056</b>    | 2,525 | 7/298 | <b>,015</b> |

#### 4. Discussion

The main goal of this study was to analyze the relationship between employees' perception of the ethical climate in their organizations, on one hand, and the estimated level of acceptance/refusal of various kinds of corruptive rationalizations, on the other hand. Our results clearly indicate that the ethical climate named as 'Self-interest' represents the most suitable context for accepting the justifications of corrupt intentions and acts. The perception of a 'Self-interest' ethical climate includes awareness that in such an organization everyone is for him/herself, that everyone takes care of his/her own interests first, protecting only what is best for them alone. Instead of admitting that they behave unethically, employees in such an ethical climate are prone to deny illegality since the law is not impartial and its application is inconsistent. Furthermore, employees in the 'Self-interest' climate tend to avoid personal responsibility for the consequences of their unethical actions and prefer to transfer such responsibility to others. They also recall such behavior as a common local practice or less immoral than common local behavior of others. Finally, this kind of climate also predicts employees' readiness to sacrifice universal principles and values and to justify their unethical behavior as being beneficial for the group and its interests (Stachowicz-Stanusch & Simha, 2013; Gorsira et al., 2018). Our results also indicate that the egoistic ethical climate with the loci on an organization ('Profit & Efficiency') is associated with readiness of employees to justify the company's unethical decisions by criticizing the law and its application. On the contrary, in the climate where people make decisions to protect their common interests ('Friendship & Team'), we find the tendency among employees to reject the justification by qualifying others as being far more immoral (Majstorović et al., 2020). These findings suggest that, if organizational management wants to have control over employees' attitudes towards ethical issues, they should undertake an intervention that will promote group cohesion and positive attitudes towards common goals and interests. Otherwise, egoistic ethics, either on a personal or organizational level, will probably generate justifications for personal misbehavior or for organizational unethical business practices.

#### 5. Conclusions

Empirical findings of this study show that the organizational ethics climate perceived by employees as egoistic will probably contribute to establishing cognitive strategies to justify individual or collective unethical behavior. The ethical climate perceived as friendship and team interests protective should have the opposite effect in terms of rejecting corruptive rationalizations.

## References

- Anand, V., Ashforth, B. E., & Joshi, M. (2004). Business as usual: The acceptance and perpetuation of corruption in organizations. *Academy of Management Executive*, 18, 39–53. <https://doi.org/10.5465/ame.2004.13837437>
- Ashforth, B. E., & Anand, V. (2003). The normalization of corruption in organisations. *Research in Organizational Behavior*, 25, 1–52. [https://doi.org/10.1016/S0191-3085\(03\)25001-2](https://doi.org/10.1016/S0191-3085(03)25001-2).
- Cullen, J. B., Victor, B., & Bronson, J. W. (1993). The ethical climate questionnaire: An assessment of its development and validity. *Psychological Reports*, 73(2), 667-674. <https://psycnet.apa.org/doi/10.2466/pr0.1993.73.2.667>
- Cullen, J., Parboteeah, P., & Victor, B. (2003). The effects of ethical climates on organizational commitment: a two-study analysis. *Journal of Business Ethics*, 46, 2, 127-141.
- Fleming, P., Zylidopoulos, S., Boura, M., & Lioukas, S. (2022). How corruption is tolerated in the Greek public sector: Toward a second-order theory of normalization. *Business & Society*, 61(1), 191-224. <https://doi.org/10.1177%2F0007650320954860>
- Gorsira, M., Steg, L., Denkers, A., & Huisman, W. (2018). Corruption in organizations: Ethical climate and individual motives. *Administrative Sciences*, 8(4), 1-19. <https://doi.org/10.3390/admsci8010004>
- Hauser, C. (2019). Fighting against corruption: Does anti-corruption training make any difference? *Journal of Business Ethics*, 159, 281-299. <https://doi.org/10.1007/s10551-018-3808-3>
- Kia, N., Halvorsen, B., & Bartram, T. (2019). Ethical leadership and employee in-role performance: The mediating roles of organisational identification, customer orientation, service climate, and ethical climate. *Personnel Review*, 48, 7, 1716-1733.
- Kish-Gephart, Jennifer J., David A. Harrison, & Klebe Treviño, L. (2010). Bad apples, bad cases, and bad barrels: Meta-analytic evidence about sources of unethical decisions at work. *Journal of Applied Psychology* 95, 1–31. <https://doi.apa.org/doi/10.1037/a0017103>
- Majstorović, N. (2011). The corruptive rationalizations scale (Kopter-2). Unpublished material.
- Majstorović, N. (2012). *Korupcija: Uzroci, ekspanzija i intervencija* [Corruption: causes, expansion and intervention]. Akademski knjiga. ISBN: 978-86-6263-006-3.
- Majstorović, N., Jovanović, T., & Đajić, B. (2020). Ethical dilemmas at work: The significance of the ethical climate and corruptive rationalizations for the resolution of ethical dilemmas at work. *Teme*, 44(4), 1201-1227. <https://doi.org/10.22190/TEME190413073M>
- Martin, K. D.; Cullen, J. B. 2006. Continuities and extensions of ethical climate theory: a metaanalytic review, *Journal of Business Ethics*, 69(2), 175–194. <http://dx.doi.org/10.1007/s10551-006-9084-7>
- Mayhew, B. W., & Murphy, P. R. (2009). The impact of ethics education on reporting behavior. *Journal of Business Ethics*, 86(3), 397–416. <https://doi.org/10.1007/s10551-008-9854-5>.
- Nahartyo, E. & Haryono. (2018). Magnitude of corruption, rationalization, and internal control quality: An experimental study on subsequent offense. *Jurnal Akuntansi dan Keuangan Indonesia*, 15(2), 164-179. <https://doi.org/10.21002/jaki.2018.09>
- Newman, A., Round, H., Bhattacharya, S., & Roy, A. (2017). Ethical climates in organizations: A review and research agenda. *Business Ethics Quarterly*, 27(4), 475-512.
- Pagliaro, S., Lo Presti, A., Barattucci, M., Giannella, V. A., & Barreto, M. (2018). On the effects of ethical climate(s) on employees' behavior: A social identity approach. *Frontiers in Psychology*, 9, 960. <https://doi.org/10.3389/fpsyg.2018.00960>
- Rose-Ackerman, S. (2010). The law and economics of bribery and extortion. *Annual Review of Law and Social Science*, 6, 217–38. <https://doi.org/10.1146/annurev-lawsocsci-102209-152942>
- Stachowicz-Stanusch, A. & Simha, A. (2013). An empirical investigation of the effects of ethical climates on organizational corruption. *Journal of Business Economics and Management*, 14(Supplement 1), 433-446. <https://doi.org/10.3846/16111699.2012.744345>
- Transparency International. (2022). *Corruption Perceptions Index 2021*. Retrieved from <http://www.transparency.org/cpi>
- Victor, B. & Cullen, J. B. (1988). The organizational bases of ethical work climates. *Administrative Science Quarterly*, 33(1), 101-125. <https://psycnet.apa.org/doi/10.2307/2392857>



## THE RELATIONSHIP BETWEEN HAZARD PERCEPTION, RISK ASSESSMENT AND DIFFERENT DRIVING STYLES: LITHUANIAN SAMPLE

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### Abstract

Scientists agree that not only personality traits and emotions, but also cognitive characteristics have a great influence on developing individual driving style. Usually, the analysis of driving style includes cognitive skills related to memory and attention, unreasonably not taking into account perceptual skills. Cognitive factors as hazard anticipation and risk assessment are crucially important for risky actions while driving and traffic accidents. However, there is a lack of studies on how road hazard perception skills and risk assessment could influence individual driving style, especially for professional and non-professional drivers. So, this study aims to evaluate the relation between different driving styles, road-related hazard perception and risk assessment among professional and non-professional drivers in Lithuania.

One hundred twenty-three drivers (mean age 37.04 years) participated in online study. Eighty-nine participants were non-professional, 34 – professional drivers (the main job function is directly related to driving). The mean of driving experience was 16.2 years. Seventy-four percent of all participants drive on daily basis. Different driving styles were measured with Multidimensional Driving Style Inventory (Taubman-Ben-Ari et al., 2004). Forty-four self-reported items evaluated patient - careful, angry - hostile, anxious and reckless-careless driving styles. Hazard perception skills was tested by 12 short video clips in Lithuanian hazard prediction test (Endriulaitiene et al., in press). Risk assessment was measured by self-reported 34 – item scale (Rosenbloom et.al., 2008).

Professional drivers reported more risky, specifically angry-hostile and reckless-careless, driving style than non-professional drivers. There was no difference in anxious and careful-patient driving styles. Also, professional and non-professional drivers reported having similar road-related hazard perception skills and quite similar risk assessment. Correlational analysis showed that low risk assessment significantly related to more angry/hostile driving style in non-professional driver group. High risk assessment significantly correlated to more reckless/careless driving style driving style, while better hazard perception skills significantly related to aggressive/hostile driving style in professional drivers' group.

**Keywords:** *Driving styles, road hazard perception skills, risk assessment, professional drivers, non-professional drivers.*

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### 1. Introduction

Due to high number of people injured and killed in road accidents every year, road safety still remains one of the priority areas in the world. In recent years, the main focus of research is mainly on young and novice drivers. However, professional drivers' unsafe behavior on the road is equally dangerous and harmful at individual, organizational and societal levels. Recent research revealed that on average 7600 drivers die in road accidents at work per year (International Labor Organization, 2018). Seventy percent of these accidents are associated with employees' risky behavior on the road (e.g., speeding or dangerous maneuvers) (Xia, et al., 2020). Thus, the analysis of psychological antecedents of the driving peculiarities in professional as well as non-professional drivers' group is equally important for traffic psychology research.

Scientists agree that driving (behavior on the road) must be seen as a dynamic phenomenon, changing on a continuum from safe to extremely risky, dangerous driving. Some scientists suggest a multicomponent assessment by focusing on driving style (Freuli et.al., 2020; Useche et.al., 2020; Taubman - Ben-Ari, Skvirsky, 2016). Driving style is described as the sets of individual traits that characterize the way people usually drive, including dimensions related to their driving performance, such as attention and caution, average speed, emotions and behaviors while driving, in addition to attitudes, beliefs and values held towards road safety (Useche et.al., 2020; Taubman-Ben-Ari & Skvirsky, 2016). There is a four-dimensional model of driving styles provided by Taubman-Ben-Ari and Skvirsky (2016):

(1) *reckless and careless* driving style refers to deliberate violations of safe driving norms and the seeking of sensations and thrills while driving; (2) *anxious* driving style reflects feelings of alertness and tension, as well as ineffective engagement in relaxing activities during driving; (3) *angry and hostile* driving style refers to expressions of irritation, rage, and hostility while driving, along with a tendency to act aggressively on the road; (4) *patient and careful* driving style reflects well-adjusted driving behaviors, such as planning ahead, paying full attention to the road, displaying patience, courtesy, and calm behind the wheel, and obeying the traffic rules. It was found that reckless/careless, anxious and angry/hostile driving styles are consistently associated with traffic crashes (Useche et.al., 2020). It should be emphasized that comparison analysis of driving styles analysis in different driver groups is still rare. It remains unclear whether professional and non-professional drivers possess different driving styles and if so, are these differences depend on driving competences or other psychological factors, especially cognitive ones.

The researchers agree that safe behavior on the road depends on the driver's experience, competence and an ability to prioritize traffic information, distinguish real and potential hazards from other information, and respond to the situations on the road adequately. Thus, cognitive abilities are important for safe driving style. Researchers confirm that driving experience and successful management of difficult driving situations improve driving competence and an ability to detect, assess and react to potential hazards arising in traffic (Crundall, Kroll, 2018). Studies have shown that trained professional drivers recognize and identify more road hazards and do this faster than non-professional drivers (Crundall, Kroll, 2018). However, good road hazard anticipation skills do not necessarily enhance risk assessment (subjective assessment of behavior/situation riskiness hereinafter called as risk assessment) or even more – motivation to drive in safe style. Evidence suggests that professional drivers take risks on the road not because they do not see the danger on the road or are unaware of how to respond to it, but because they trust their competence, have over-confidence in their driving skills and do not consider the situation as personally dangerous for them (Crundall, Kroll, 2018). So, it is clear that non-professional drivers should have poorer hazard perception skills and low risk assessment. However, still it remains unclear how hazard perception abilities and risk assessment are directly related to different driving styles even regardless of driving competencies. Thus, the aim of this study is to assess the relation between different driving styles, road-related hazard perception skills and risk assessment among professional and non-professional drivers in Lithuania.

## 2. Method

### 2.1. Participants

One hundred twenty-three drivers (72.4% non-professional, 27.6% professional drivers) participated in online study on voluntary basis. Participants of the study were invited via social media (mostly Facebook). Those participants, who read informed consent and agreed to the terms of the study, were repeatedly informed about data protection and confidentiality issues, only after that the questionnaire was provided. The main inclusion criterion was solely the possession of a valid driver license for non-professional drivers. All participants were asked if they're main job function is directly related to driving. Those, who chose "no" were assigned to non-professional driver, group, those who chose "yes" were treated as professional drivers. The characteristics of the sample are provided in Table 1.

Table 1. Sociodemographic characteristics of the sample.

| Variable                    | Non-professional drivers | Professional drivers | Total sample |
|-----------------------------|--------------------------|----------------------|--------------|
| Size                        | 89                       | 34                   | 123          |
| Males                       | 29                       | 21                   | 50           |
| Females                     | 60                       | 13                   | 73           |
| Age in years                |                          |                      |              |
| Mean                        | 37.10                    | 36.8                 | 37.04        |
| SD                          | 12.2                     | 11.1                 | 11.9         |
| Driving experience in years |                          |                      |              |
| Mean                        | 15.7                     | 17.4                 | 16.2         |
| SD                          | 11.5                     | 11.3                 | 11.4         |
| Driving frequency           |                          |                      |              |
| less than once per week     | 7.9%                     | -                    | 5.7%         |
| 1-3 times in a week         | 23.6%                    | 11.8%                | 20.3%        |
| daily driving               | 68.5%                    | 88.2%                | 74%          |
| Average mileage per week    |                          |                      |              |
| Up to 50 km                 | 16.9%                    | 2.9%                 | 13%          |
| 50 – 100 km                 | 15.7%                    | 8.8%                 | 13.8%        |
| 101- 200 km                 | 31.5%                    | 26.5%                | 30.1%        |
| 201 – 500 km                | 31.5%                    | 23.5%                | 29.3%        |
| More than 500 km            | 4.5%                     | 38.2%                | 13.8%        |

Comparison analysis showed that non-professional and professional drivers were similar in age (Student's  $t = .091$ ,  $df = 121$ ,  $p > .05$ ) and did not differ significantly in driving experience (Student's  $t = -.764$ ,  $df = 121$ ,  $p > .05$ ). It was found no significant difference in driving frequency ( $\chi^2 = 5.65$ ,  $df = 2$ ,  $p = .59$ ). However, professional drivers had significantly higher average mileage per week than non-professional drivers ( $\chi^2 = 25.50$ ,  $df = 4$ ,  $p < .0001$ ).

## 2.2. Instruments

The multidimensional driving style inventory (MDSI; Taubman - Ben-Ari et al. 2004) was used to measure different driving styles. Forty-four items evaluated four different driving styles: a) reckless/careless; b) anxious; c) aggressive/hostile and d) careful/patient. Higher scores of each scale describe driving manner of each driver. Authors present this inventory as reliable for different drivers' group (Taubman - Ben-Ari et al. 2004). Originally internal consistency is quite good (Cronbach  $\alpha .72 - .86$ ), results in Lithuania professional and non-professional drivers' sample show average internal consistency (Cronbach  $\alpha$  ranged from .54 to .85).

Hazard perception skills were measured with newly developed Lithuanian hazard prediction test LHP12 (Endriulaitienė et al., in press). Participants were shown 12 video clips from the driver's perspective. Every single clip contained one hazard with a precursor which help to identify the situation as hazardous. After the clips were automatically stopped, participants were asked "What happens next?" and were asked to choose only one of four possible answers. The time to place the answer was not limited (for more see Endriulaitienė et al., in press). The length of the clips varied from 9 sec. to 37 sec. The total number of correct answers was calculated, higher score showed better hazard perception skills.

Risk assessment was measured by self-report risk perception scale, developed by Rosenbloom and others (2008). The scale consists of 34 items, each item describes different driving-related situation. Participants were asked to rate riskiness of each situation on Likert scale, from 1 – not risky at all, to 5 – very risky. The higher scores indicate risk assessment as high. Previous studies confirm good internal consistency of scale (Cronbach  $\alpha .91$ ) (Rosenbloom et al., 2008). Similarly, internal consistency of scale in this study is high – Cronbach  $\alpha = .92$ .

## 3. Results

Descriptive statistics of variables used in the study (hazard perception, risk assessment scores and scores of four driving styles: reckless/careless, anxious, aggressive/hostile, careful/patient) are introduced in Table 2. The results revealed that the mean value of hazard perception skills was quite small (3.7 and 3.5 right answers out of 9 and none of participants from both groups reached the maximum score) for both drivers' groups which indicate that despite driving experience both drivers' groups had similar difficulties to recognize and indicate hazards in real life driving situations. Contradictory results may be noticed in self-report risk assessment. The lowest observed score of risk assessment in the both samples suggest tendency to perceive and evaluate driving situations as risky. Mean analysis of different driving styles showed the tendency to agree mostly with statements about careful and patient driving styles in both non-professional and professional drivers (mean score is quite close to maximum value).

Table 2. Descriptive statistics of variables used in the study.

| Variable                         | Drivers Group     | N  | Minimum value | Maximum value | Mean  | Standard Deviation |
|----------------------------------|-------------------|----|---------------|---------------|-------|--------------------|
| Hazard perception                | Non-professionals | 89 | 0             | 9             | 3.7   | 1.7                |
|                                  | Professionals     | 34 | 0             | 7             | 3.5   | 1.9                |
| Risk assessment                  | Non-professionals | 89 | 69            | 164           | 118.9 | 19.1               |
|                                  | Professionals     | 34 | 81            | 170           | 119.8 | 17.5               |
| Reckless/careless driving style  | Non-professionals | 89 | 11            | 41            | 20.1  | 6.8                |
|                                  | Professionals     | 34 | 13            | 43            | 23.3  | 7.2                |
| Anxious driving style            | Non-professionals | 89 | 17            | 58            | 28.9  | 7.4                |
|                                  | Professionals     | 34 | 17            | 51            | 28.1  | 7.4                |
| Aggressive/hostile driving style | Non-professionals | 89 | 5             | 20            | 9.3   | 3.5                |
|                                  | Professionals     | 34 | 5             | 25            | 11.1  | 4.3                |
| Careful/patient driving style    | Non-professionals | 89 | 20            | 54            | 39.1  | 5.6                |
|                                  | Professionals     | 34 | 34            | 50            | 40.7  | 4.6                |

Further, comparison analysis of the main variables was implemented in non-professional and professional drivers' groups. Results showed no significant difference in hazard perception skills (Student's  $t = .439$ ,  $df = 121$ ,  $p > .05$ ) and risk assessment (Student's  $t = -.243$ ,  $df = 121$ ,  $p > .05$ ) among

non-professional and professional drivers. Also, no significant difference was found in possession of anxious (Student's  $t = .571$ ,  $df = 121$ ,  $p > .05$ ) and careful/patient (Student's  $t = -1.485$ ,  $df = 121$ ,  $p > .05$ ) driving styles in both drivers' groups. However, professional drivers possessed significantly higher aggressive/hostile (Student's  $t = -2.258$ ,  $df = 121$ ,  $p = .02$ ) and reckless/careless (Student's  $t = -2.334$ ,  $df = 121$ ,  $p = .02$ ) driving style than non-professional drivers. Therefore, further correlational analysis was made in two separate drivers' groups.

Table 3. The results of correlational analysis among non-professional and professional drivers.

|                          | Reckless/careless<br>driving style | Anxious<br>driving style | Aggressive/hostile<br>driving style | Careful/patient<br>driving style |
|--------------------------|------------------------------------|--------------------------|-------------------------------------|----------------------------------|
| NON-PROFESSIONAL DRIVERS |                                    |                          |                                     |                                  |
| Hazard perception        | -.12                               | -.10                     | -.06                                | .006                             |
| Risk assessment          | .14                                | -.16                     | <b>-.20*</b>                        | .02                              |
| PROFESSIONAL DRIVERS     |                                    |                          |                                     |                                  |
| Hazard perception        | -.21                               | .13                      | <b>.30*</b>                         | .03                              |
| Risk assessment          | <b>.29*</b>                        | .12                      | .07                                 | -.16                             |

\* Bolded statistically significant correlational coefficients where  $p < .05$

The results, presented in Table.3, showed that low risk assessment was significantly related to more aggressive/hostile driving styles in non-professional drivers' group. Risk assessment as well as hazard perception skills were not significantly related to the rest of the driving styles among non-professional drivers. The same correlational analysis in professional drivers revealed that better hazard perception skills significantly related to more angry and hostile driving while high risk assessment were related to more reckless and careless driving style of professional drivers. No other significant relations were found in professional drivers' group.

#### 4. Discussion

The main aim of the present study was to evaluate the relationship between driving styles, hazard perception skills and risk assessment in non-professional and professional drivers' group. This study results support previous evidence that better hazard perception skills, but low risk assessment relate to risky driving styles (Crundall, Kroll, 2018). The results indicate that professional drivers with better hazard perception skills tend to drive in aggressive and hostile manner. This might be explained by assumption that high driving experience and successful dealing with hazardous situations while driving form exaggerated competence which results in strong superiority feeling towards others. This may lead to higher ignorance of how aggressive/hostile driving style can be dangerous for other drivers' safety. Also, the findings indicate that high risk assessment are related to more reckless/careless driving style in professional drivers' group. Again, high sense of risk and subjective feeling of possible successful dealing with risky situations enhance strong feeling of competence and perhaps stronger willingness to take risks while driving. Therefore, professional drivers behave recklessly on the road, even though greater risk assessment should deter from unsafe driving (Rosenbloom et.al., 2008).

It was found that non-professional drivers with greater risk assessment tend to drive in aggressive/hostile manner. In this case, not driving experience or competence itself, but cognitive ability to adequately evaluate the dangerousness of displayed aggressive/hostile style is the most important factor. Low risk assessment indicates low cognitive competence to perceive potential and/or real damage while driving in an aggressive/hostile style (Rosenbloom et.al., 2008). Thus, non-professional drivers ignore that some aggressive/hostile acts while driving (e.g., screaming and gesturing with hands inside the car) have a negative effect for attentiveness, motor skills etc., which leads to higher injury risk.

Finally, it was expected that more qualified and experienced drivers possess better road-related hazard perception skills and greater risk assessment than non-professional drivers (Crundall, Kroll, 2018). The results of this study do not confirm these findings. It was found that professional and non-professional drivers have quite similar hazard perception skills and similar risk assessment. This result might depend on quite small professional drivers sample size: data of 34 professional drivers were compared to data from 89 non-professional drivers. Also, significant differences were not found perhaps due to quite similar participants age and driving experience. However, this study findings supports the idea that professional drivers, who drive frequently and usually are obliged to drive longer distances, tend to drive in more aggressive/hostile or reckless/careless way than those, who are not professional drivers (Useche et.al., 2020). There is an assumption that the more driver is experienced to deal with various difficult driving situation, the more driving self-efficacy emerge, the less critical evaluation of riskiness in own driving is noticed. Experienced drivers usually have greater subjective control and invulnerability

feeling which tend to get stronger with driving frequency and higher mileage regardless of obligation to drive in professional and safe way.

The limitations of the study should be taken into account. Only hazard prediction skills were measured with objective measure, solving the real-life hazardous situations while risk assessment and driving styles were evaluated by self-report method. For further studies, it would be useful to replicate the study with driving simulator exploring components of driving styles in simulated driving tasks. Also, it would be useful to develop risk identification and then evaluation test from real life driving situations. A quite small professional drivers sample size is an issue of this study. A larger professional drivers sample perhaps would allow noticing more differences in risk and hazard perception skills.

## 5. Conclusions

Non-professional and professional drivers have similar road-related hazard perception skills and risk assessment. However, professional drivers tend to drive in more reckless/careless and angry/hostile style than non-professional drivers. Professional drivers higher scores of risk assessment drive in more reckless/careless way. Also, professional drivers with while better hazard perception skills drive in more aggressive/hostile style. Non-professional drivers with lower risk assessment scores drive in more angry/hostile driving style.

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### *References*

- Crundall, D., & Kroll, V. (2018). Prediction and perception of hazards in professional drivers: Does hazard perception skill differ between safe and less-safe fire-appliance drivers? *Accident Analysis & Prevention*, 121, 335-346.
- Endriulaitienė A, Šeibokaitė L, Markšaitytė R, Slavinskienė J, Crundall D, Ventsislavova P. In press. Correlations among self-report, static image, and video-based hazard perception assessments: The validity of a new Lithuanian hazard prediction test. *Accid. Anal. Prev.*
- Freuli, F., De Cet, G., Gastaldi, M., Orsini, F., Tagliabue, M., Rossi, R., & Vidotto, G. (2020). Cross-cultural perspective of driving style in young adults: psychometric evaluation through the analysis of the multidimensional driving style inventory. *Transportation research part F: traffic psychology and behaviour*, 73, 425-432.
- Rosenbloom, T., Shahar, A., Elharar, A., & Danino, O. (2008). Risk perception of driving as a function of advanced training aimed at recognizing and handling risks in demanding driving situations. *Accident Analysis & Prevention*, 40(2), 697-703.
- Taubman-Ben-Ari, O., & Skvirsky, V. (2016). The multidimensional driving style inventory a decade later: Review of the literature and re-evaluation of the scale. *Accident Analysis & Prevention*, 93, 179-188.
- Taubman-Ben-Ari, O., Mikulincer, M., & Gillath, O. (2004). The multidimensional driving style inventory—scale construct and validation. *Accident Analysis & Prevention*, 36(3), 323-332.
- Useche, S. A., Cendales, B., Alonso, F., & Orozco-Fontalvo, M. (2020). A matter of style? Testing the moderating effect of driving styles on the relationship between job strain and work-related crashes of professional drivers. *Transportation research part F: traffic psychology and behaviour*, 72, 307-317.
- Xia, N., Xie, Q., Hu, X., Wang, X., & Meng, H. (2020). A dual perspective on risk perception and its effect on safety behavior: A moderated mediation model of safety motivation, and supervisor's and coworkers' safety climate. *Accident Analysis & Prevention*, 134, 105350.

## BEHAVIOURAL SELF-REGULATION AND EMPLOYEES' HEALTH

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### Abstract

The main goal of this study was to examine the relationship between the type of behavioural self-regulation and psychophysical health of employees in the Republic of Serbia. Following the Self-Determination Theory (SDT; Deci & Ryan, 1985, 2002), Hodgins and Knee (2002) proposed that human beings possess an inherited organismic core self, which develops in a social context that fosters or precludes the fulfilment of any or all three basic psychological needs: relatedness, competence, and autonomy. The quality of social support during child's development are theorized to yield three broad types of ego-systems depending on how many needs are fulfilled. These three ego-systems include the integrated self (int-s), the ego-invested self (e-i-s), and the impersonal self (imp-s), differing in the level of autonomy and integration in behavioural self-regulation. Previous studies indicate that level of needs satisfaction and integration of self is related to a better health and health protective behaviour (e.g., Ntoumanis et al., 2021; Ng et al., 2012; Hodgins et al., 1996). The psychophysical health was considered here as the absence of health disorder symptoms within five domains: physical health, depression reactions, fatigue, fear and anxiety, and social functioning. The data were gathered from an at-hand sample of 331 employees, with different work tenure (13 years in average), gender (65% were women), and with the average age of 39. Two questionnaires were applied to gather data on self-regulation of everyday behaviour and data on five dimensions of health. The ego-functioning questionnaire (EFQ; Majstorović, 2007,  $\alpha_{(int,e-i,imp)} = .75; .75; .88$ ) is a 30-items tool administered to estimate the dominant type of self-regulation, while psychophysical health scale (SPFZ-1; Majstorović, 2011;  $\alpha = .91$ ) with 23 items asks employees to self-evaluate the frequency of health disorder symptoms. Based on scores greater than mean value on one EFQ subscale and below mean value on the remaining two, the sample size was reduced to 128 participants and three groups with one dominant type of self-regulation were formed. Univariate ANOVA revealed that employees with a dominant impersonal self-regulation, compared to integrated and ego-invested regulation, report significantly more frequent symptoms on all health domains. Work tenure, gender, and age of employees do not moderate this relationship. It was concluded that these results corroborate an organismic hypothesis of self with better health expected within more authentic and more integrated ego-system. Implications of SDT based health interventions in work setting are discussed.

**Keywords:** *Self-determination, behavioural regulation, psycho-physical health, employees.*

### 1. Introduction

The present study relies on a conceptualization of self that was devised by Holly S. Hodgins and Raymond Knee (2002) from the Self-determination theory of human motivation and personality (SDT; Deci & Ryan, 1985, 2002, 2012). SDT posits that humans are proactive beings inherently striving for psychological growth and integration. Here we wanted to examine if different types of self-regulation, originating from different levels of growth and integration, do correlate differently with the indicators of employees' psycho-physical health.

#### 1.1. Self-regulation and health

Following the Self-Determination Theory, Hodgins and Knee (2002) proposed that human beings inherit an organismic core self, which develops in a social context that fosters or precludes the fulfilment of three basic psychological needs: need for relatedness with important others, need for competence, and need for autonomy. The developmental process is initiated by gratification of these needs within a given social environment. If beneficial to an individual, such an environment will foster the actualization of core self's potentials, such as a main motivation apparatus and cognitive developmental dispositions. Hodgins and Knee (2002) proposed that a supportive social environment

makes ego-functioning more open to life experiences, and more prone to the autonomous regulation of behaviour. On the other hand, stifling social conditions create self-regulation more dependent on how successful and adaptive the system is when encountered with barriers and novelties. Different social conditions during a child's development are hypothesized to yield three types of ego-systems; the integrated self, the ego-invested self, and the impersonal self. The integrated self represents a harmonious ego-system developed in a supportive social environment that fulfils all three basic psychological needs. Individuals with the integrated self-regulation value who they truly are, develop unconditional self-worth, and place importance on their authentic inner impulses. They are intrinsically motivated towards most of their actions, their perception is more objective, they enjoy social contact, they are open to change and novelty, and willing to explore reality. The ego-invested self is a system that develops when an individual lacks autonomy support during childhood. Instead of an authentic development led by inner impulses, the child internalizes external pressures and constraints. Consequently, a child adopts a sense of self-worth based on a constructed (artificial, false) self-image that becomes contingent on social approval. As a result, individuals with ego-invested regulation are energized by extrinsic goals such as money, power, and popularity. The impersonal self represents the system with the lowest level of self-integration in which three basic psychological needs have gone critically unmet. Individuals with impersonal self-regulation show a lack of intention to act or intention to finish action as soon as possible. This system may be easily aroused, overwhelmed by information, and flooded by negative thoughts and feelings. Therefore, these individuals are prone to avoid novelties, prefer routines and repetitive actions, and engage in social auto-isolation (Hodgins & Knee, 2002).

Previous studies indicate that both, the level of needs satisfaction and the level of integration of self, are related to the general health, health protective behaviour, social functioning, and moral integrity (e.g., Kasser and Ryan, 1993, 1996; Hodgins et al., 1996; Ng et al., 2012; Liu et al., 2020; Ntoumanis et al., 2021). Kasser and Ryan (1993, 1996) found that the level of intrinsic aspirations correlated positively with self-actualization and vitality, and negatively with depression, narcissism and physical health symptoms. Extrinsic aspirations, on the other hand, were negatively associated with measures of individual well-being. Hodgins, Koestner, and Duncan (1996) also discovered that controlled functioning probably led to more defensiveness in social behaviour. In terms of the integration of self, Hodgins, Liebeskind and Schwartz (1996) found that autonomous regulation of behaviour among adults was associated with readiness to take responsibility for their own wrongdoing. However, ego-invested and impersonal types of regulation were related to more frequent defensive behaviour (i.e., fewer apologies for wrongdoing, and more lies in order to avoid consequences). In terms of the application of SDT-based intervention in human health improvement, Ng et al. (2012) published the first review of such a kind. Their conclusion was that perception of psychological needs support was a predictor of better psycho-physical health. In particular, they found that a large positive effect on health was the gratification of the need for competence. Furthermore, these authors claimed that the importance of autonomous support alone for the psycho-physical health status was small. Gillison et al. (2019) reviewed the effects of 18 SDT-based intervention techniques (e.g. Provide optimal challenge, Explore reasons, Encourage social support seeking techniques) in 74 studies and find that combined techniques in a need-supportive environment improve autonomy, relatedness and competence satisfaction and motivation. Ntoumanis et al. (2021) reviewed 73 studies about the effects of SDT interventions on health and found a significant positive effect of increased need support for psycho-physical health. They explain this effect by increased 'self-determined motivation and support from social agents' (p. 214). Manganelli et al. (2018) analyse an organizational support in satisfaction of employees' psychological needs and they promote organizational program that is comprised of three elements: 1. job design change (more autonomy in work, task identity, feedback, and significance of their work), 2. interpersonal relationships/leadership style (adopting transformational leadership style and empowering employees), and 3. compensation policy (to avoid contingent pay and to use base pay instead, compensate on a fair and just manner). Previous empirical studies also indicate that satisfaction of basic psychological needs represents 'basic mechanisms contributing to the effects of perceived organizational support on hedonic and eudaemonic well-being' (Gillet et al., 2012, p. 447). Regulation that is more autonomous means less stress and better health in the presence of high job demands than did those low in autonomous motivation (Trepanier et al., 2013). There is no need to emphasize the significance of employees' health for their work motivation and achievements, and for the business performance of an entire organization.

Based on these findings, we may assume that measures of impersonal self-regulation, compared to other two systems, will be positively associated with indicators of deteriorated psycho-physical health. Also, following the theoretical conceptualization of the impersonal type of self-regulation, we hypothesize that employees with all three psychological needs deprived and with low integration and autonomy in the regulation of their behaviour, will report more symptoms of poor psycho-physical health.

## 1.2. Objectives

The main goal of this study was to examine the relationship between the type of behaviour al self-regulation and psychophysical health of employees in the Republic of Serbia. More specifically, we wanted to examine if employees with different types of self-regulation report different frequencies of psycho-physical health symptoms.

## 2. Methods

### 2.1. Participants

The data were gathered from an at-hand sample of 331 employees, with different organizational roles (17.5% were managers), work tenure (13 years on average), gender (65% were women), and with an average age of 39. Based on the criterion of scores greater than mean value on one EFQ subscale and below mean value on the remaining two, the sample size was reduced to 128 participants and three groups were formed with one dominant type of self-regulation. Therefore, all data analyses were conducted on a sample of 128 employees.

### 2.2. Variables and instruments

The type of self-regulation refers to an individual's orientation in everyday behaviour regulation that relies either on authentic personal impulses or on non-authentic impulses originating from internalized social pressures and constraints. The integrating self represents an autonomous mode of behavioural regulation while the ego-invested self and the impersonal self represent two controlling regulation orientations. Psychological health was conceptualized as the absence of health disorder symptoms within five domains: physical health, depression reactions, fatigue, fear and anxiety, and social functioning. Two questionnaires were applied to gather data on self-regulation of everyday behaviour and to gather data on five dimensions of health. The ego-functioning questionnaire (EFQ; Majstorović, 2007,  $\alpha_{(int,e-i,imp)} = .75; .75; .88$ ) is a 30-item tool administered to estimate the dominant type of behavioural self-regulation, while the psychophysical health scale (SPFZ-1; Majstorović, 2011;  $\alpha = .91$ ) with 23 items asks employees to report the frequency of health disorder symptoms in past several weeks.

## 3. Results

According to correlations presented in Table 1, the impersonal type of behavioural regulation is significantly associated with more symptoms of disturbed health across all its dimensions. On the other hand, the integrated self correlates with fewer symptoms of depression reactions and social dysfunctionality. Interestingly, artificial self-regulation is not in correlation with symptoms of any health dimension.

Table 1. Pearson correlations between types of self-regulation and aspects of employees' health (N=128).

|                             | Impersonal self | Ego-invested self | Integrated self |
|-----------------------------|-----------------|-------------------|-----------------|
| Physical health symptoms    | .326**          | -.098             | -.105           |
| Fear and anxiety            | .403**          | .054              | -.153           |
| Depression reactions        | .465**          | -.058             | -.221*          |
| Fatigue                     | .455**          | -.005             | -.129           |
| Social dysfunction symptoms | .498**          | -.121             | -.214*          |

\*\* . Correlation is significant at the 0.01 level (2-tailed).

\* . Correlation is significant at the 0.05 level (2-tailed).

Univariate ANOVA revealed a significant difference among three groups of employees regarding the frequency of general health symptoms they reported (Table 2, Figure 1). The Bonferroni post-hoc test indicated that employees with a dominant impersonal self-regulation, compared to integrated and ego-invested regulation, report significantly more frequent symptoms in general as well as on all health dimensions (F-values ranged from 4.048 for Physical health to 15.146 for Social dysfunction).

Table 2. Three types of self and general health symptoms (N=128).

| Source        | Type III Sum of Squares | df  | Mean Square | F        | Sig. | Partial Eta Squared |
|---------------|-------------------------|-----|-------------|----------|------|---------------------|
| Intercept     | 387.021                 | 1   | 387.021     | 2414.847 | .000 |                     |
| Self Category | 4.401                   | 2   | 2.201       | 13.730   | .000 | .180                |
| Error         | 20.033                  | 125 | .160        |          |      |                     |



Figure 1. Health symptoms mean frequency and three types of self (N=128).



It was also found that demographics mainly do not moderate this relationship. Employees with the dominant impersonal self-regulation report significantly more health symptoms on almost all health dimensions regardless of their gender, level of education, work role or tenure. There are only two exceptions regarding the frequency of physical health symptoms. Namely, employees with a dominant impersonal self do not report more physical health symptoms if they are females ( $F_{(2, 80)} = 1.98, p > .05$ ), and if they are of a B.A. degree or of a higher education ( $F_{(2, 53)} = .63, p > .05$ ). Work tenure (up to 15 years or above 15 years of work) as well as, work role (manager, subordinate) does not moderate main relationship. Differences between the three groups of employees according to all other health dimensions remained significant, regardless of their demographics.

#### 4. Discussion

The main objective of this study was to examine if employees with different types of self-regulation of everyday behaviour report different frequencies of psycho-physical health symptoms. Our results consistently indicate a difference between employees with impersonal self and two other groups in four of five health dimensions. The integrated self-regulation is independent from reported symptoms or negatively correlates with them, while the ego-invested regulation is clearly independent from the health status indicators. These findings confirm our hypothesis that behavioural regulation based on amotivation state and thwarted needs for autonomy, competence and relatedness is significantly associated with the frequent symptoms of poor health. With the exception of the frequency of physical health symptoms, the self-regulation-health relationship seems to be very consistent regardless of employees' demographics. This is in accordance with previous findings (Ng et al., 2012) and it can serve as a ground for SDT-based interventions within organizations. Such interventions should have the goal of increasing employees' health by providing support in satisfying their needs for competence and relatedness. Activities such as providing an optimal work challenge to the individual's or group's potential, giving performance feedback, or providing support in identifying barriers to desired performance will gratify the need for competence among employees. In addition, the intervention that includes giving social support, public affirmation of personal interests of all in the group, or providing emotional support and expressing interest in each individual will increase the relatedness need satisfaction of employees. The expected outcome of such intervention would be more self-determined behaviour followed by increased intrinsic work motivation, greater hedonic and eudaimonic well-being, work enjoyment, less burnout and more creativity at work (Deci, Olafsen and Ryan, 2012).

#### 5. Conclusions

It was concluded that results of this study corroborate an organismic hypothesis of self with psycho-physical health dimensions such as fear and anxiety, depression reaction, fatigue, and social functioning, being affected by the level of self-determination. Significantly more frequent ill health symptoms were detected among employees with impersonal self-regulation. In order to increase the level of self-determination, SDT-based organizational interventions were discussed and recommended.

## References

- Deci, E. L. & Ryan, R. M. (1985a). *Intrinsic motivation and self-determination in human behaviour*. New York: Plenum Press. <http://dx.doi.org/10.1007/978-1-4899-2271-7>
- Deci, E. L. & Ryan, R. M. (2002). *Handbook of Self-Determination Research*. Rochester: The University of Rochester Press.
- Deci, E. L., & Ryan, R. M. (2012). Self-determination theory. In P. A. M. Van Lange, A. W. Kruglanski, & E. T. Higgins (Eds.), *Handbook of theories of social psychology* (pp. 416–436). Sage Publications Ltd. <https://doi.org/10.4135/9781446249215.n21>
- Deci, E. L., Olafsen, A. H., & Ryan, R. M. (2017). Self-determination theory in work organizations: The state of a science. *Annual review of organizational psychology and organizational behaviour*, 4, 19-43. <https://doi.org/10.1146/annurev-orgpsych-032516-113108>
- Gillet, N., Fouquereau, E., Forest, J., Brunault, P., & Colombat, P. (2012). The impact of organizational factors on psychological needs and their relations with well-being. *Journal of Business and Psychology*, 27(4), 437-450. <https://doi.org/10.1007/s10869-011-9253-2>
- Gillison, F. B., Rouse, P., Standage, M., Sebire, S. J., & Ryan, R. M. (2019). A meta-analysis of techniques to promote motivation for health behaviour change from a self-determination theory perspective. *Health psychology review*, 13(1), 110-130. <https://doi.org/10.1080/17437199.2018.1534071>
- Hodgins, S. H. & Knee, R. C. (2002). The Integrating Self and Conscious Experience. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of Self-Determination Research*. Rochester: The University of Rochester Press.
- Hodgins, H. S., Liebeskind, E. & Schwartz, W. (1996). Getting out of hot water: Facework in social predicaments. *Journal of Personality and Social Psychology*, 71, 300-314. <https://doi.org/10.1037/0022-3514.71.2.300>
- Hodgins, H. S., Koestner, R., & Duncan, N. (1996). On the compatibility of autonomy and relatedness. *Personality and Social Psychology Bulletin*, 22, 227-237. <https://doi.org/10.1177/0146167296223001>
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin*, 22, 280-287. <https://doi.org/10.1177/0146167296223006>
- Kasser, T., & Ryan, R. M. (1993). A dark side of the American dream: Correlates of financial success as a central life aspiration. *Journal of Personality and Social Psychology*, 65, 410-422. <https://doi.org/10.1037/0022-3514.65.2.410>
- Liu, Y., Raza, J., Zhang, J., Zhu, N., & Gul, H. (2020). Linking autonomy support and health at work: The self-determination theory perspective. *Current Psychology*, 1-13.
- Majstorović, N. (2011). The psycho-physical health scale (SPFZ-1). Unpublished material.
- Majstorović, N. (2007). The ego-functioning questionnaire (EFQ). Unpublished material.
- Manganelli, L., Thibaut-Landry, A., Forest, J., & Carpentier, J. (2018). Self-determination theory can help you generate performance and well-being in the workplace: A review of literature. *Advances in Developing Human Resources*, 20(2), 227-240. <https://doi.org/10.1177/1523422318757210>
- Ng, J. Y., Ntoumanis, N., Thøgersen-Ntoumani, C., Deci, E. L., Ryan, R. M., Duda, J. L., & Williams, G. C. (2012). Self-determination theory applied to health contexts: A meta-analysis. *Perspectives on Psychological Science*, 7(4), 325-340. <https://doi:10.1177/1745691612447309>
- Ntoumanis, N., Ng, J. Y., Prestwich, A., Quested, E., Hancox, J. E., Thøgersen-Ntoumani, C., ... & Williams, G. C. (2021). A meta-analysis of self-determination theory-informed intervention studies in the health domain: effects on motivation, health behaviour, physical, and psychological health. *Health Psychology Review*, 15(2), 214-244. <https://10.1080/17437199.2020.1718529>
- Trépanier, S. G., Fernet, C., & Austin, S. (2013). The moderating role of autonomous motivation in the job demands-strain relation: A two sample study. *Motivation and Emotion*, 37(1), 93-105. <https://10.1007/s11031-012-9290-9>

# **“NO POST-TRAUMA AFTER TRAUMA?” A QUALITATIVE STUDY WITH REFUGEE HELPERS BEING CONFRONTED WITH SEQUENTIAL TRAUMATIZATION**

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## **Abstract**

This presentation focuses on the stressors of helpers and aid workers who are confronted with trauma of refugees. Based on empirical data, I want to provide a closer look at these specific stressors. About the background: According to the UN High Commissioner for Refugees (UNHCR), there are currently nearly 26.4 million refugees, about half of them are under the age of 18. A majority of them have been exposed to multiple traumatic experiences, such as internal displacement, extreme violence, and torture. Meeting the needs of this vulnerable group is a major challenge for host countries and is often covered by professional helpers or volunteers. Since helpers are repeatedly confronted with severe trauma of the primary victims, they often are affected themselves. The effect of secondary trauma stress is already established in scientific literature and documented in the DSM-5.

What is still lacking in terms of conceptualization are two main aspects: Firstly, traumatized refugees do not only suffer from post-traumatic stress disorder (PTSD) but their traumatization is much more complex. Clinical trauma research often runs the risk to cut the consequences of war and flight too short. According to this, I would like to introduce the concept of sequential traumatization as an alternative approach for understanding traumatization in this context. Originally coming from a study of holocaust survivors, it describes trauma as an ongoing and long-lasting process and thus contrasts with the concept of post-traumatic stress disorder. Among other aspects the formulation of sequential traumatization integrates decreased resilience, cultural as well as socio-economical aspects of trauma. And secondly, refugee helpers are therefore not only confronted with primary victim PTSD, but also the more complex form of sequential trauma. That means, their stressors cannot be separated from a range of socio-political and societal conditions. The Helpers may face secondary sequential traumatic stress (SSTS).

Our research question focuses on these specific stressors caused by confrontation with sequential trauma. Eighteen interviews were conducted with supporters in the context of flight and asylum. According to our results helpers have to deal with fears, excessive demands as well as with feelings of guilt, ambiguities of hope and despair and the endurance of uncertainty and injustice. In addition to empathy and direct confrontation with trauma, it is above all social approaches and political decisions that make supporters feel angry, powerless and helpless in the context of war, flight and, asylum.

**Keywords:** *War and conflict, refugees, PTSD, secondary traumatization, sequential traumatization.*

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## **1. Introduction and theoretical background**

In the past years, millions of people around the world had to flee. According to the UN High Commissioner for Refugees (UNHCR), there are currently nearly 26.4 million refugees, about half of them are under the age of 18. One in every 95 people on the planet has had to leave their homes due to conflict or persecution. A majority of these refugees have been exposed to multiple traumatic experiences, such as internal displacement, extreme violence and torture before and during their flight. These people have an increased risk of developing a mental disorder (BPTK, 2015). Studies show that up to 87% of people who have been victims of torture develop trauma related disorders (Wirtgen, 2009). Therefore, it can be assumed that refugees are a highly vulnerable group whose arrival is accompanied by considerable challenges for the society of the respective host country, both on social and personal level. The arrival in the host country, should be seen as a process rather than an event. In this process professionals such as civil servants, psychotherapists, doctors, social workers and volunteers play a key role. When supporting asylum seekers, the fields of activity for professional and volunteer supporters are very broad. The activities concern not only mental and physical health issues, but also areas such as

asylum, aliens, settlement and residence law, subsidiary protection, public relations and clarification of the housing situation, to name a few.

Victims traumatized by war and flight are often a source of demanding uncertainty, stress and overwhelm for caregivers, especially with regard to the traumatization itself. However, further challenges for professionals and volunteers arise from the confrontation with social structures in the context of war and flight: They are burdened by controversial debates and political decisions that often have serious consequences such as the assessment of safe countries of origin. They also might experience that their efforts are never enough, because while they try to take care of the arrivals, new people are forced to set out every day. In addition, asylum status can be uncertain for a long time after arrival, and "negative decisions" and the threat of deportation may have further traumatizing effects as strong feelings of powerlessness, helplessness, and lack of control and carry the risk of secondary traumatization (Johnson & Thompson, 2008)

Secondary trauma stress is already established in scientific literature and has found its way into the DSM-5. Secondary traumatization according to Figley (1995) has gained much importance in research over the last three decades and refers to the fact that people can become traumatized themselves through indirect confrontation with a trauma. Secondary traumatization is defined by some professionals as the "contagion" of typical post-traumatic symptoms in the context of working with traumatized clients (Daniels, 2008, p. 100). This approach refers to the fact that treatment providers themselves may develop stress reactions associated with posttraumatic stress disorder (intrusions, hyperexcitability, and avoidance). Traumatic experiences can also be accompanied by a lasting shatter of one's assumptions of the world and self (Janoff-Bulmann, 1989). In order to analyze the stressors of refugee aid workers and their specific type of trauma I would like to introduce the concept of sequential traumatization and to discuss the limitations of (western) PTSD concept.

## **2. Sequential traumatization as an alternative approach for understanding consequences of extreme trauma**

The diagnosis post-traumatic stress disorder (PTSD) often plays an important role when it comes to refugees' mental health and residency issues. It is the most common diagnosis within trauma related disorders (Bozorgmehr et. al., 2016; BPTK, 2015, Bittenbinder & Patel, 2017). However, PTSD diagnose has repeatedly come under criticism (Becker, 2006; Andreatta, 2018). The two central points of criticism that are crucial for this work are: First, the diagnosis deals exclusively with the characteristics of the traumatized person and describes the trauma response as pathological symptoms. The structural and political factors are completely excluded. And secondly, it should also be noted that the diagnosis PTSD assumes that the traumatic event has already been overcome- so to say *post-traumatic*. In the host country, however, refugees are usually exposed to structures and political conditions that are accompanied by further insecurities, subjectively sensed threats and feelings of helplessness, such as an unclear title of residence, lengthy asylum procedures, financial hardships, language deficits and experiences of discrimination (Bittenbinder & Patel 2017; Becker, 2006). Clinical trauma research cuts the consequences of war and persecution too short, when it is only described in this post-trauma disorder.

The concept of "sequential traumatization" by Keilson (2005) offers an alternative approach dealing with trauma in the context of human rights violations and flight. In this concept, trauma is not described as a time-limited (one-time) event, but as an ongoing process with different sequences. Sociopolitical contexts have a strong influence on whether events are of traumatic quality. Contrary to the formulation of post-traumatic stress disorder, traumas are therefore not events that can simply be limited in time. In the model of sequential traumatization (Keilson, 2005; Becker, 2006), characteristics of traumatic preconditions, such as the development of tension and poverty, which lead to increasing oppression, worry, and fear, are described even before the traumatic process begins. The actual persecution, the terror, the torture and the expulsion, take place in a later sequence. The flight itself clearly also holds traumatic potential, but there is no actual post-traumatic point of time "after" the flight. Rather, refugees and asylum seekers find themselves trapped in a chronicized provisionality. The traumatic consequences may become apparent in this particular sequence. Since trauma is defined (Fischer & Riedesser, 2020) as powerlessness, helplessness, being fully exposed, and lack of agency and control, then the sequences experienced in the host country are often additionally traumatic. Keilson even emphasizes that the period after the end of the war can be described as the most haunting and painful (Keilson, 2005, p. 58).

Helpers in the field of flight and asylum are thus directly confronted with sequential trauma dynamics of primary victims. Their work therefore takes place in a sequence that is extremely important for the health of the refugees. In this way, they could positively influence the traumatic process and contribute significantly to their recovery. Hence, their work is relevant to society as a whole and at the

same time it is accompanied by complex challenges that are rooted in the structure of the host country. This means that they are not only indirectly confronted with stories of war, violence and flight, but that they are themselves directly affected by structural conditions and political decisions, such as deportation practices or push-backs, which lead directly to the question of the potential risk of secondary traumatization.

### 3. Objectives

In line with these considerations, I want to point out, that the secondary traumatization of refugee helpers can follow the logic of sequential traumatization. It must be assumed that the challenges for refugee supporters are complex and structurally anchored and that the helpers find themselves exposed to secondary sequential trauma stress (SSTS). Based on empirical data, this article aims to provide a close look at these specific stressors of helpers and aid workers who are confronted with the trauma of refugees.

### 4. Methods

For this study, 18 problem-centered interviews according to Witzl (2012) were conducted with refugee aid workers. The study population consists of both professional and volunteer helpers, currently working with refugees in Austria and Germany. They had been working in the field between three and 16 years. The youngest interviewee is 31 and the oldest 65 years old. The interviews were analyzed for content following Mayring (2010), using the computer program MAXQDA. The specific stresses were categorized by type into different thematic clusters, such as trauma-related and sociopolitical stressors and examined for their effects on workers. To ensure comprehension, quoted phrases were translated into English, as the interviews were conducted and analyzed in German.

### 5. Results

#### 5.1. Confrontation with traumatic stories and physical reactions of refugees

All interviewees report having been confronted with traumatic stories of violence and torture. In addition, they also repeatedly witness how the refugees experience violent physical reactions, such as panic attacks, trembling or sweating. They face trauma-related reactions such as nightmares, speechlessness, suicidality and self-injurious behavior. *"He is in a very bad shape; he has announced several times that he will kill himself. (12).*

The interviewees talk about being infected by the trauma reactions of the refugees, about the loss of a sense of security and the emergence of fear and deep grief. *"[...] I just couldn't stop crying." (110).*

#### 5.2. Difficulties in dealing with feelings of guilt and keeping boundaries

The refugees' often painful biographies, which often contrast with one's own prosperity, evoke feelings of guilt among helpers and make it difficult for them to maintain their own boundaries, both in care and in relationships. Defining their own role is not always easy, and exaggerated ideas and expectations of oneself can arise, which then cannot be fulfilled. In addition, there are reports of an enormous workload, many overtime hours and difficulties in drawing clear boundaries between work and private life. Some interviews indicate that there is a certain narrowing of professional issues in private life.

#### 5.3. Confrontation with the political system, society and authorities

The helpers also perceive a change in public discourse about refugees and asylum seekers and in general social engagement. *In the beginning there was a great willingness to help [...]. And then came such a tiredness, an exhaustion (14).*

Many decisions made by the authorities regarding the asylum seekers meet with clear disapproval from the interviewees. A lack of understanding, anger and even contempt for institutions and politics become clear. The way the authorities treat refugees during their asylum hearings is perceived as particularly stressful. In this official hearing, the asylum seekers are supposed to be given the opportunity to explain their reasons for fleeing. However, the aid workers accuse that the procedure of the officials is "disastrous" and the procedures remain untransparent. The decisions made by the authorities regarding the residence status and thus the further life of the refugees in many cases are also considered untenable and make the supporters start to doubt their own political system: *What is happening has nothing to do with the rule of law. (15).* It becomes clear that the authorities and their employees are accused of arbitrariness and the supporters feel that the refugees are at their mercy. The supporters also experience

waiting for the asylum decision as extremely stressful for the refugees. They report that they repeatedly experience how their mental health deteriorates under the continuing uncertainty.

The problems associated with the deportation of refugees are also central to this discussion. They are essentially responsible for feelings of powerlessness and helplessness among the aid workers. The fact that the authorities would sometimes leave people in the dark for years is experienced as cruelty. The helpers state that they feel the need to help the refugees out of this situation and to support them in planning an appropriate future, but due to the socio-political circumstances they are only partially successful in doing so, so that they themselves feel powerless and at the mercy of the situation. The supporters also become witnesses of negative asylum decisions and are themselves directly affected by the decision. " *One suffers [...] and cannot sleep until the decision is made.* (15). The deportations represent a demanding burden for interviewees.

## 6. Summary and discussion

In summary, it is to say that the helpers have to deal with feelings like fear, anger, guilt and as well with excessive demands, ambiguities of hope and despair and the endurance of uncertainty and injustice. In addition to empathy and direct confrontation with trauma, it is above all social approaches and political decisions that make supporters feel angry, powerless and helpless in the context of war, flight and, asylum. The confrontation with experienced traumas, poverty, lack of opportunities, helplessness and responsibility can lead to the loss of basic feelings of security and central values and assumptions. The daily experienced vulnerability of life can lead to a lack of perspective and doubts about themselves, the world, fellow human beings and, above all, about justice and law. Helpers experience ineffectiveness and powerlessness through their work. It is above all the impossibility of exerting influence and thus the inability to act, especially through banishment to long waiting times and unclear decision-making processes, that supporters explicitly state as their main stressor.

As described in the concept of sequential traumatization (Keilson, 2005; Becker 2006), the factors that provoke and reinforce traumatic stress among refugee helpers cannot be linked to single time limited events, but have a processual character, as is the case with primary victims. The present study has shown that the stresses of working with war traumatized people are complex and multiple and are reflected above all in changed world assumptions (cf. Janoff-Bulman, 1989) and can therefore have traumatizing effects (cf. Fischer & Riedesser, 2020). Especially the belief in a "just world" and one's own security have suffered from the witnessed experiences of the refugees. It is evident from the interviews that studies of secondary traumatization in the context of sequential traumatization with a mere focus on PTSD associated symptoms are not sufficient. Thus, it can be clearly stated that the traumatic stress experienced by the helpers can be assessed as secondary sequential traumatic stress (SSTS).

It has also been shown that the burdens and challenges faced by those providing assistance cannot be detached from the socio-political context and that the effects of the traumas suffered by refugees and asylum seekers must also be seen in the socio-political context. In other words, it is not enough to focus only on the individuals. As a consequence of these findings, it seems necessary not to emphasize exclusively on war and flight situations as traumatizing elements, but also in particular to increase the accountability of the host countries and their social and structural conditions and support systems.

## References

- Andreatta, P. (2012). *Erschütterung des Selbst- und Weltverständnisses durch Traumata: Auswirkungen von primärer und sekundärer Traumaexposition auf kognitive Schemata.* (4th ed.) Kröning: Asanger.
- Andreatta, P. (2018). Traumatisierung von Kindern durch Krieg und Flucht sowie ein kritischer Blick auf den klinischen Traumadiskurs. *Psychologie und Gesellschaftskritik*, 166/167, 75-95.
- Becker, D. (2006). Die Erfindung des Traumas – verflochtene Geschichten. Freiburg: Edition Freitag.
- Bittenbinder, E., & Patel, N. (2017). Systemische Praxis in globalen Zusammenhängen– zwischen Solidarität und Abwehr. *Familiendynamik*, 42(1), S.18–26
- Bozorgmehr, D. med Ms. K., Mohsenpour, A., Saure, D., Stock, C., Loerbroks, A., Joos, S., & Schneider, C. (2016). Systematische Übersicht und „Mapping“ empirischer Studien des Gesundheitszustands und der medizinischen Versorgung von Flüchtlingen und Asylsuchenden in Deutschland (1990–2014). *Bundesgesundheitsblatt – Gesundheitsforschung – Gesundheitsschutz*, 59(5), 599–620

- BPTK, 2015 Bundespsychotherapeutenkammer, BPTK-Standpunkt: Psychische Erkrankungen bei Flüchtlingen. [www.bptk.de/mindestens-die-haelfte-der-fluechtlinge-ist-psychisch-krank/.03.24.22](http://www.bptk.de/mindestens-die-haelfte-der-fluechtlinge-ist-psychisch-krank/.03.24.22)
- Daniels, J. (2008). Sekundäre Traumatisierung. *Psychotherapeut*, 53 (2), 100–107.
- Figley, C. R. (1995). Compassion Fatigue as Secondary Traumatic Stress Disorder: An Overview. In: C. R. Figley (Eds.), *Compassion Fatigue. Coping with secondary traumatic stress disorder in those who treat the traumatized*, p.1–20.
- Fischer, G.& Riedesser, P. (2020). *Lehrbuch der Psychotraumatologie*. (5th ed.). Stuttgart: UTB
- Johnson, H. & Thompson A. (2008): The development and maintenance of post-traumatic stress disorder (PTSD) in civilian adult survivors of war trauma and torture: a review. *Clinical psychology review* 28 (1), 36–47
- Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social Cognition*,7, 113–136.
- Keilson, H. (2005). *Sequentielle Traumatisierung bei Kindern. Untersuchung zum Schicksal jüdischer Kriegswaisen*. Gießen: Psychosozial-Verlag.
- Mayrin, P. (2010). *Qualitative Inhaltsanalyse. Grundlagen und Techniken* (11th ed.). Weinheim, Basel: Beltz.
- UN Refugee Agency UNHCR (2020), <https://www.unhcr.org/dach/at/ueber-uns/zahlen-im-ueberblick/.03.24.22>.
- Wirtgen, W. (2009). Traumatisierte Flüchtlinge: Psychische Probleme bleiben meist unerkannt. *Deutsches Ärzteblatt* 2009; 106(49): A2463- A2465.
- Witzel A & Reiter H. (2012) *The problem-centred interview: Principles and practice*. London: SAGE

## GENES AS A DEFENSE TO HOMICIDE: TRENDS IN NEUROCRIMINOLOGY

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### Abstract

One of the emerging areas in the field of neurocriminology is the unearthing of a possible relationship between genes and violent criminal behaviors. Several recent studies revealed strong links between genetic variation in a monoamine oxidase gene (MAOA) and aggressiveness. The gene is responsible for translating enzymes key for catabolizing amine neurotransmitters such as dopamine, serotonin, and noradrenaline that are related to mood and behaviors. Critical changes of these genes result in Brunner syndrome characterized by lower intelligence quotient, problematic impulsive behavior, and unpredictable mood swings. Moreover, the gene has been associated with a variety of psychiatric disorders such as antisocial personality, as well as gang involvement, and a rise in weapons use. In the last two decades, a significant increase in the use of neuroscientist experts to testify in criminal proceedings has been relied upon across the United States. Based on a qualitative analysis of relevant case law, the study finds that the gene can be linked with the violent behaviors of offenders, and defense attorneys can readily get the evidence admitted at trial. However, this study shows that the behavioral genetic defense fails in two-thirds of murder cases. The extent to which genes can be blamed for antisocial behavior remains illusory. This body of court rulings suggests that the so-called “warrior gene” defense fails to exonerate an individual for homicide.

**Keywords:** *Warrior gene, neurocriminology, MAOA gene, MAOA-L, criminal defense.*

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### 1. Introduction

One of the emerging aspects of modern development in the field of neurocriminology is the unearthing of a possible relationship between genes and violent criminal behaviors. Studies have revealed that there are strong links between genetic variation and aggressiveness related to the enzyme monoamine oxidase (MAO) (McDermott et al., 2009). In a landmark study, Dutch professor Han Brunner noted the absence of the enzyme when he was studying family members’ odd and sometimes violent behaviors. Testing revealed that the family’s nine male members exhibited an alternative form of a gene that leads to an absence of the enzyme MAO responsible for breaking down key neurotransmitters. In addition, the males had a reduced IQ, introverted nature, and poor social interactions. It was postulated that these individuals become vulnerable to risk-taking and frequent violent outbursts (Brunner et al., 1993).

Nearly a decade later, Duke professor Avshalom Caspi and colleagues demonstrated that children who suffered maltreatment were less likely to demonstrate aggressive behavior in adulthood if they possessed a gene that resulted in high levels of MAO (Caspi et al., 2002). The MAOA gene is responsible for translating enzymes that catabolize amine neurotransmitters such as dopamine, serotonin, and noradrenaline that are related to mood and behaviors. In short, Dr. Caspi correlated childhood mistreatment in those with low levels of MAOA with higher levels of social deviance and involvement in other criminal activities.

In 2006, New Zealand researchers seeking a biomarker for addictive behavior and response to substance use noted a high number of MAOA repeats among Maori tribal research participants (Lea & Chambers, 2007). These MAOA repeats had previously been linked with aggressive responding, and so the MAOA was quickly dubbed the “warrior gene.” The number of variable number of tandem repeats (VNTR) of the genetic allele has been mapped to a propensity for aggressive responding because these repeats impact the efficiency of gene expression and, in turn, enzymatic activity. Repeats numbering 2, 3, and 5 manifest as a lower level of MAOA activity (MAOA-L), and, consequently, a higher propensity for violent responding, whereas 3.5 and 4 repeats result in normal levels (Gardner, 2020).

This intriguing gene continues to be studied. A Finnish study carried out to assess the genes of nearly 900 convicted offenders who were classified according to the severity of the crime showed that



most extreme violence or crimes match the warrior gene groups of the offender (Tiihonen et al., 2015). This study was pivotal in illustrating that the most violent antisocial behaviors and crimes committed have a close relation to the MAOA-L genotype. This research concluded that, even though other factors may contribute, the MAOA-L gene strongly accounted for the highest likelihood of violent crimes and other antisocial behaviors. Moreover, the gene has been associated with a variety of antisocial behaviors, gang membership involvement, and an increase in weapon uses (Beaver et al., 2010).

In the last two decades, a significant rise in the use of neuroscientific evidence in U.S. criminal proceedings has been observed. The extent to which genes can be blamed for criminal behavior, in particular homicide, has yet to be fully understood. But based on these preliminary findings from court cases in which the defense employed the defendant's positive MAOA-L as a defense, several jurisdictions do allow evidence that the gene can be linked with the violent behaviors of offenders. However, in the majority of cases, the behavioral genetic defense does not alter the case outcome.

## 2. Methods

Westlaw's electronic legal database was searched for cases with no beginning date restriction up to August 15, 2021 to identify court documents from criminal cases referencing the MAOA genotype. Search terms included MAO, MAO-A, MAOA, MAOA-L, and monoamine oxidase. The legal database search contained selected trial and appellate court documents from state and federal jurisdictions throughout the United States.

## 3. Results

The search yielded records from eleven criminal cases. All of the cases involved defense of homicide in various stages of the judicial process, from conviction to sentencing to appeal. The cases range in date from 1995, a mere two years following the original study linking the gene to violent behavior, to 2020. The cases were, then, categorized according to whether the genetic make-up of the defendant was deemed admissible or inadmissible. The genetic evidence was deemed admissible in six of the eleven cases. In the other five cases, genetic evidence was either deemed inadmissible or genetic testing was denied. These cases were examined and socio-legal conclusions were drawn concerning the viability of a behavioral genetic defense. One-third of cases where genetic evidence was admitted showed favorable outcomes for the accused, either as a down-graded charge or reduction in sentencing. However, in two-thirds of cases where the genetic evidence was admitted and used as a defense to homicide, there was no change in the case outcome.

### 3.1. Cases in which MAOA genetic evidence was admissible

The first recorded criminal proceeding where MAOA behavioral genetic evidence was deemed admissible in a defense to murder was *State of Tennessee v. Waldroup* (2011). Waldroup shot and killed his wife's friend following a dispute and attempted to sexually assault and murder his estranged wife. Evidence was admitted from a forensic psychiatrist who opined that Waldroup harbored a genetic predisposition to violent impulses in the form of the MAOA-L gene and he was also abused as a child. The jury found him guilty of a lesser offense, voluntary manslaughter predicated on diminished capacity to formulate the requisite intent for first- or second-degree murder.

A year later, the defendant in an Arkansas case was spared the death penalty during sentencing of his murder conviction (*State of Arkansas v. Bourassa*, 2012). Bourassa, who had bludgeoned an elderly church-goer to death in 2010, tested positive for the MAOA 3R variant and also suffered significant childhood trauma and sexual assault. This evidence was admitted during the sentencing phase and he was given a life sentence instead of capital punishment.

In *People v. Adams* (2014), the Supreme Court of California addressed the question of whether genetic evidence can be used to elicit sympathy from the jury. Adams, a gang member, shot three rival gang members at close range in 1994. He was convicted of triple homicide, as well as carjacking. Genetic testing presented by the defense at sentencing showed that Adams had inherited the 3-repeat allele MAOA gene. In addition, expert testimony was presented that the defendant had been severely maltreated as a child, and that he had learning disabilities, abnormal EEG, and structural differences related to impulse-control on neuroimaging. The defendant received the death penalty which was upheld on appeal.

In *State of Missouri v. Driskill* (2015), while under the influence of drugs, the defendant raped, murdered, and subsequently burned the bodies of an elderly couple who had earlier caught him stealing from their yard shed. Multiple neuro- and psychiatric experts testified that Driskill had numerous psychiatric disorders, that he was positive for the MAOA gene linked to violent behavior, and that he had suffered childhood abuse. The defendant was sentenced to death.

In *Colbert v. State of Tennessee* (2015), the defendant kidnapped, raped, and killed his girlfriend by shooting, strangulation, and driving over her. To avoid the death penalty, the defendant pleaded guilty. During sentencing, a molecular geneticist presented evidence of genetic predisposition to violence via the MAOA-L gene. There were no allegations of childhood mistreatment. The maximum available sentence was assigned: life in prison. Colbert appealed, citing ineffective assistance of counsel for the defense's disinclination to present genetic evidence at trial. The trial court judgment was affirmed.

Finally, most recently, in *Wells v. State of Texas* (2020), Wells shot and killed his pregnant girlfriend and her relative. The trial court sentenced him to death, triggering an automatic appeal. At trial, a multitude of experts examined, tested, and testified that Wells harbored the MAOA gene, that he had suffered complex developmental trauma, and that multiple factors converged resulting in impulsive propensities. His trial defense was predicated on a propensity for violence due to factors beyond his control, including genetics, his brain structure, and his childhood environment. Furthermore, evidence was excluded of an Italian psychiatrist with a PhD in neuroscience who testified that, in addition to the MAOA gene, Wells' genetic profile was positive for a variant of the 5HTTLPR gene, the rs25531 gene, the DRD4-2/11 gene, and the STin2 gene—all linked to various psychiatric vulnerabilities, hyperactivity, impulsivity, and violence. The expert concluded that having this many genetic predispositions would heighten one's propensity to violent behavior exponentially. Ultimately, the court found the "panoply" of genetic evidence to be scientifically unreliable. The trial court was affirmed.

### 3.2. Cases in which genetic evidence was inadmissible or otherwise excluded

The most significant case in this category is the recent case of *State of New Mexico v. Yopez* (2015). Yopez killed his mother-in-law's boyfriend after an argument and burned the body. He was convicted of second-degree murder. The trial court excluded evidence offered by the defense concerning Yopez's MAOA gene and heightened susceptibility to violence, and the appellate court reversed. The Supreme Court of New Mexico ultimately held that: 1) expert testimony that the defendant was predisposed to impulsive violent behavior due to low levels of MAOA activity was not supported by scientific methodology; 2), the study finding that people with no-activity MAOA genotype were impulsively aggressive did not support defense expert opinions that, on the basis of the defendant's low-activity MAOA genotype, he was predisposed to impulsive aggression; and 3) evidence of mere genetic susceptibility to a given mental condition is not relevant on the issue of deliberate intent, at least in the absence of evidence that such susceptibility is so well understood and has such strong predictive value as to be clinically validated as an indicator of the mental condition.

In three of the five remaining cases, the appellate court ruled that failure to mount a genetic defense predicated on the MAOA gene/environment interaction and resultant heightened violent propensity did not amount to "ineffective assistance of counsel." Specifically, in *Mobley* (1995), the defendant shot and killed a pizza store manager. Mobley had an affluent background, but family members testified to the violent tendencies of several male relatives. Nonetheless, the family tree differed markedly from the X-linked pattern of the Dutch family which was the subject of Brunner's 1993 study. The motion for genetic testing was denied because "the theory behind the request for funds will not have reached a scientific stage of verifiable certainty in the near future" and "Mobley could not show that such a stage will ever be reached" (*State v. Mobley*, 1995, p. 263).

Again, in the court-martial proceeding *United States v. Duran* (2014), a hallucinating marine attacked with a machete a military officer who then lived. Evidence was presented that the defendant suffered from atypical psychosis, PTSD, depression, schizoid personality disorder, and a history of child abuse. Experts testified that Duran was able to formulate the requisite intent, to appreciate the wrongfulness of his act (primarily because he fled the scene), and competent to stand trial. The U.S. Government denied genetic testing, asserting that "[t]he science on the connection between this MAOA gene and aggression is not settled" (Government Answer of 15 Jul 2013 at 23). He was convicted and sentenced to 15 years confinement, in addition to total forfeitures, reduction to pay grade E-1, and a dishonorable discharge. On appeal, Duran argued that genetic testing for the MAOA-L gene was "reasonable professional assistance" and that failure to pursue it amounted to deficient performance. The petition was denied and the judgment affirmed.

Similarly, in *Bathgate* (2001), where the defendant had pleaded guilty to stabbing and killing a man, the court denied a writ of *habeas corpus* for failure to follow Maine's state procedure. Bathgate based his writ on ineffective assistance of counsel for failure to mount a behavioral genetic defense based on the MAOA-L gene. Bathgate did not, as is required, bring and preserve this issue for appeal at the state level. In essence, no Certificate of Appealability was issued by the appellate court because there was no substantial issue that could be presented on appeal.

Lastly, in *State of Tennessee v. Idellfonso-Diaz* (2006), the defendant was found guilty of premeditated murder after he struck a pregnant woman while driving, then returned to the scene and shot

the pregnant woman, killing her and her unborn child. The defendant failed to test positive for the MAOA gene but instead tested positive for a gene linked to depression. An expert witness also testified that the defendant exhibited a mild brain abnormality on PET, a history of abuse, PTSD, and was intoxicated at the time of the murders. The expert did not testify that these various vulnerabilities to violence, genetic and otherwise, did not completely render him lacking in capacity to formulate the requisite intent. Rather, he testified that “all of these factors together would have impaired him, to some extent” (*State v. Idellfonso-Diaz*, 2006, at 2). The State of Tennessee moved to prohibit this expert’s testimony, and the trial court overruled. The appellate court deemed this ruling an error and remanded the case for further proceedings.

#### 4. Discussion

There are a number of study limitations related to the heterogeneity of the case pool. Firstly, the biggest impact that might be realized in mounting a behavioral genetic defense is a reduction in sentencing from death penalty to prison term. However, states differ as to their punishment jurisprudence. For example, one cannot accurately compare the impact of this neuroscientific defense upon juries in Texas and Maine where implementation of the death penalty is concerned, the latter having abolished the death penalty in 1887 and the former having a long history of imposing the death penalty in capital cases (Death Penalty Information Center, 2022). In some jurisdictions, life in prison or lengthy prison sentence is the only punishment available. Factoring in a genetic predisposition to violence might be likely to move a jury or judge not to impose the death penalty, but determining an appropriate sentence reduction in terms of years when the death penalty was never sought would be more difficult. Secondly, we also see that a downgraded charge might result from the use of genetic testing. Again, not every state offers this option. And particular fact patterns may support a lesser offense and a downgraded charge may not be a result of the jury’s incorporation of the MAOA-violence genetic linkage. For example, the Waldroup case is one in which a first-degree murder charge, which requires premeditation, was downgraded to involuntary manslaughter, which instead requires a “state of passion produced by adequate provocation sufficient to lead a reasonable person to act in an irrational manner.” It is difficult to determine from the written opinion whether there existed some level of provocation or the jury simply “shoehorned” the impulsivity feature of MAOA-L into the definition of diminished capacity. Similarly, for the court to admit scientific evidence, especially that relates to genes as a criminal defense, it must meet the *Frye* or *Daubert* evidentiary standard which differs from state to state. Thirdly, to emphasize the markedly differing fact patterns, there was clear evidence of advanced planning in some cases, and in others, the fact pattern is much more impulsive in nature. For example, in *Driskill* and *Adams*, evidence painted a picture of a planned revenge killing rather than impulsive homicide. Fourth, this research does not address the thought process of the juries and judges involved. Some research has shown that juries are much more likely to factor in structural brain compromise (visible on neuroimaging) than evidence of biochemical changes in decisions to downgrade the charge or reduce sentencing (although this was not evident in the *Adams* case). In addition, if the jury is taking the behavioral genetic evidence to heart, it remains unclear whether the genetic predisposition warrants exoneration or the jury, then, becomes concerned about recidivism.

Recently, three judges in separate jurisdictions (*Mobley*, *Duran*, and *Bathgate*) ruled that a genetic defense does not constitute “reasonable professional assistance;” failure to mount such a defense is not ineffective assistance of counsel and the defendant is not entitled to genetic testing. However, it is well-settled law that failure to employ DNA testing on evidence is ineffective assistance, and failure to raise the insanity defense in a homicide case as an affirmative defense is ineffective assistance of counsel. Ineffective assistance of counsel in these particular contexts is new ground.

Finally, in the case of *Yepez*, which is the only case in which admissibility of the MAOA gene was solely at issue, the court disallowed the evidence mainly because the science has not determined a one-to-one relationship exists between having the gene and committing the violent act. However, in *Adams*, expert testimony, ruled admissible, likened harboring the MAOA-L and child abuse connection to harboring a bad heart gene and being fed a poor diet.

#### 5. Conclusion

Despite study limitations, a number of conclusions can be drawn. In a majority of cases in which the defendant employs a behavioral genetic defense predicated on MAOA-L, via expert testimony and accepted science, the gene can be linked with the violent behavior of offenders, and, thus, defense attorneys can readily get this evidence admitted at trial. However, this evidence is unlikely to change the outcome for the defendant. In order to alter the case outcome, the defense’s expert must be able to testify

that the genetic profile coupled with past child abuse renders the defendant completely unable to formulate the requisite intent, or premeditation, for homicide. Testimony that the gene/abuse presence is but one contributing factor will be inadequate to affect the outcome in the guilt phase. As for the sentencing phase, testimony of MAOA-L can be used to mitigate the circumstances; the most likely outcome favorable to the defense is the sentence reduction of life sentence in lieu of the death penalty. Lengthy sentences, however, have not been reduced. Appeals in recent years brought by defendants who have alleged ineffective assistance of counsel for the attorney's failure to pursue a genetic defense in the homicide case have been denied. It remains to be seen whether these types of defenses will be deemed "reasonable professional assistance" in the future. The extent to which genes can be blamed for antisocial behavior in the United States remains illusory, as court rulings suggest that the so-called "warrior gene" defense is unsuccessful in exonerating an individual for homicide.

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### References

- Aono, D., Yaffe, G., & Kober, H. (2019). Neuroscientific evidence in the courtroom: A review. *Cognitive Research: Principles and Implications*, 4(1), 1-20.
- Bathgate v. Landry*, No. 2-15cv221 (2016).
- Beaver, K., DeLisi, M., Vaughn, M., & Barnes, J.C. (2010). Monoamine oxidase A genotype is associated with gang membership and weapon use. *Comprehensive Psychiatry*, 51(2):130-4.
- Brunner, H., Nelen, M., Breakefield, H. Ropers, H., & van Oost, B. (1993). Abnormal behavior associated with a point mutation in the structural gene for monoamine oxidase A. *Science*, (262), 578-580.
- Caspi, A., McClay, J., Moffitt, T.E., Mill, J., Martin, J., Craig, I.W., Taylor, A., & Poulton, R. (2002). Role of genotype in the cycle of violence in maltreated children. *Science*, 297(5582), 851-4.
- Colbert v. State*, No. W2013-02768-CCA-R3-PC (2015).
- Death Penalty Information Center (2022). Retrieved March and 1, 2022, from <https://deathpenaltyinfo.org>
- Denno, D.W. (2006). Revisiting the legal link between genetics and crime. *Law and Contemporary Problems*, 69, 209-258.
- Dorfman, H. M., Meyer-Lindenberg, A., & Buckholtz, J. W. (2014). Neurobiological mechanisms for impulsive-aggression: The role of MAOA. In K. A. Miczek, & A. Meyer-Lindenberg (Eds.), *Neuroscience of aggression* (pp. 297-313). Berlin Heidelberg: Springer.
- Gardner, A. (2020). The warrior gene. *Nutrigenetics*.
- Huang, Y.Y., Cate, S.P., Battistuzzi, C., Oquendo, M. A., Brent, D., & Mann, J. J. (2004). An association between a functional polymorphism in the monoamine oxidase A gene promoter, impulsive traits and early abuse experiences. *Neuropsychopharmacology*, 29(8), 1498-1505.
- Im, S., Jeong, J., Jin, G. et al. (2019). MAOA variants differ in oscillatory EEG & ECG activities in response to aggression-inducing stimuli. *Scientific Reports*, 9, 2680.
- Lea, R. & Chambers, G. (2007). Monoamine oxidase, addiction, and the "warrior" gene hypothesis. *New Zealand Medical Journal*, 120 (1250), U2441.
- McDermott, R. Tingley, D. Cowden, J. Frazzetto, G. & Johnson, D. (2009). Monoamine oxidase: A gene (MAOA) predicts behavioral aggression following provocation. *PNAS*, (106), 2118-2123.
- Mentis, A.F.A., Dardiotis, E., Katsouni, E. et al. (2021). From warrior genes to translational solutions: Novel insights into monoamine oxidases (MAOs) and aggression. *Translational Psychiatry*, 11, 130.
- Mobley v. State*, 265 Ga. 292, 455 S.E.2d 61 (1995).
- People v. Adams*, 336 P.3d 1223, 60 Cal. 4th 541, 179 Cal. Rptr. 3d 644 (2014).
- State v. Bourassa*, No. 19CR-10-258 (2012).
- State v. Driskill*, 459 S.W.3d 412 (2015).
- State v. Idellfonso-Diaz*, No. M2006-00203-CCA-R9-CD (2006).
- State v. Waldroup*, No. E2010-01906-CCA-R3-CD, 2011 WL 5051677 (2011).
- State v. Yepez*, No. D-101-CR-201200758 (2015).
- Tiihonen, J., Rautiainen, M. R. et al. (2015). Genetic background of extreme violent behavior. *Molecular Psychiatry*, 20(6), 786-792.
- United States v. Duran*, 2014 WL 341587 (2014).
- Wells v. State*, 611 S.W.3d 396 (2020).

## **POLYAMOROUS TRIOS IN FAMILY LAW AND CANADIAN SCHOOLS WHAT IS NORMAL FOR STUDENTS IN TODAY'S CLASSROOM?**

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### **Abstract**

Culturally significant norms and acceptance play a role in what is considered 'normal' activities compared to pathology. Recent reports of domestic slavery have occurred in West Vancouver elite homes in British Columbia paralleling earlier accounts in Hong Kong where documented cases of international domestic servants have been mistreated. Confusing messages are portrayed to children with conflicting movies and stereotypes regarding sexual health and healthy work relationships. Agiliga (2013) contemplated if Black women could use BDSM as a way to regain sexual agency; while literature records poly relationships as evident in First People's culture (TallBear, 2020) and Maori Indigenous story telling (Hutchings & Aspin, 2007). Religion is also a consideration for the acceptance of polygamy (Foster, 2010) and marital discipline (Deshotels et al. 2019); despite a 2014 court ruling in Britain, that "singled out spanking as an unacceptable BDSM activity" (Khan, 2020, p. 367) for unwedded couples. Khan (2020) notes that Family Law is a "sticky area". In one comparison, Khan (2020) notes "The judge justified the branding of his (the husband's) initials into his wife's buttocks 'because the participants were a wedded couple and the incident took place in the sanctified space of the 'marital home' (p. 366).

This qualitative study asked stakeholders in the field of education to respond to questions regarding surveillance in schools on personal devices while at school and while using school electronic resources. Participants were asked questions related to their understanding of bring your own device (BYOD) policies at school and away from school as well as their understanding of inappropriate behaviour as it is defined by their school and school board. Various stakeholders responded to the questions from an accountability and personal responsibility perspective, noting a typology of "reporter" for each stakeholder group, noting students seldom reported on each other. Participants were further asked to reflect on their personal knowledge of privacy and personal devices through a background survey that asked stakeholders to select one or more options from a provided list (brand new, don't know anything, still learning, feel comfortable using it in education settings, have questions, know a little, have more to learn, am an expert, help other people, other). Data collected during the study indicated surveillance is attributed to five themes: well-being, assessment, policy, security, punitive, with the majority of responses attributed to policy, security and punitive and one participant relating the use of surveillance for monitoring well-being and useful for student assessment.

**Keywords:** *Polyamorous families, religion, family law, sexual health in schools.*

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### **1. Introduction**

Recent media coverage in Canada has portrayed various examples of polyamorous related Family Law and Bondage Discipline, Dominant Submissive, Sadism and Masochism (BDSM) criminal court decisions depicting a growing trend that is fast becoming prevalent in today's classrooms. In 2021, the British Columbia Supreme Court ordered all three members of a polyamorous 'triad' should be registered as parents of the two-and-a-half-year-old boy they are raising together as a family. The decision noted a 'gap' in provincial law which did not leave room for "anyone but a birth mother and a 'presumed' biological father" on the birth certificate. Further stating legislature did not foresee this possibility nor contemplate polyamorous families. Interestingly, the court order anonymized the parties.

### **2. Theoretical framework**

Culturally significant norms and acceptance play a role in what is considered 'normal' activities compared to pathology (Brown, 2010; Campi, 2021; De Neef, 2019; El Feki et al., 2014; Goh, 2019; Kleinplatz, & Moser, 2014; McBride, 2020; Totten, 2016; Trammell, 2020; van Beerschoten, 2014;

Vipond, 2019; Weinberg, 2006; Weismantel, 2014; Weiss, 2008). Students in schools may attend school with different concepts of acceptable behaviour, beliefs about other cultures, and various understandings of what a healthy relationship is based on the family home environment (Sandnabba, 2002). Agiliga (2013) contemplated if Black women could use BDSM as a way to regain sexual agency; while literature records poly relationships as evident in First People's culture (TallBear, 2020) and Maori Indigenous story telling (Hutchings & Aspin, 2007). Colonized countries have been observed for the past quarter century for crimes related to domestic workers. Attempts to reduce Filipina domestic workers to a less threatening, gender-neutral (or masculine) image is representative of general anxieties about the sexuality of foreign domestic workers in Hong Kong, and the threat that they are thought to pose to Chinese women employers in particular, the Chinese family in general, and Hong Kong society at large as it makes the transition from British colony to Special Administrative Region of the People's Republic of China- (Constable, 1997, p. 539).

Privileged homes are just as likely as unprivileged to expose students to harm and growing cultural acceptance of 'normal' BDSM is increasingly becoming an aspect of both Family Law and sexual health in Canada. Canadian Recent reports of domestic slavery have occurred in West Vancouver elite homes in British Columbia paralleling earlier accounts of Filipina domestic workers in Hong Kong (Constable, 1997) where documented cases of international domestic servants have been mistreated, "Filipina domestic workers in Hong Kong are viewed as sexually threatening and thus in need of strict discipline" (p. 539).

Religion is also a consideration (Asad, 1987) for informing students beliefs regarding the normality of sex. Dylewski and Prokop (2019) document the religious influence in their book the history of prostitution "In antiquity, prostitution was connected with a secular rite" (Sanger, 2015 as cited on, p. 1). Further religious themes and family cultures may decipher a student's understanding, acceptance, or abhorrence of polygamy (Foster, 2010; Goodyear, 1984) and marital discipline (Carmack et al., 2015; Deshotels et al. 2019). "A remarkable feature of monastic discipline is that it explicitly aims to create, through a programme of communal living, the will to obey" (Asad, 1987, p. 159).

Family structures may also play a role in a student's understanding of normalacy, and sexual relationships as is the case in the varying differences for sexual assault and acceptable behaviour as interpreted by the courts. For some children with parents married and in open relationships, healthy relationships may represent a diferent perspective than a child that comes from a single parent or divorced home (Brown, 2010; Dylewski & Prokop, 2019). A 2014 court ruling in Britain, "singled out spanking as an unacceptable BDSM activity" (Khan, 2020, p. 367) for unwedded couples. Khan (2020) notes that Family Law is a "sticky area". In one comparison, Khan (2020) notes "The judge justified the branding of his (the husband's) initials into his wife's buttocks 'because the participants were a wedded couple and the incident took place in the sanctified space of the 'marital home' (p. 366).

Popular culture present in film and romance novels may contrast newspaper reports detailing teenagers who are exposed to BDSM or sexual trios by parents and mothers involving their children in sexual trysts. Painting a bleak picture for schools to account for cultural norms and family dynamics.

Confusing messages are also portrayed to children on social media (Albury, 2018) and pop culture with conflicting movies and stereotypes regarding sexual health and healthy work relationships (Bartsch et al., 2016). Sroczynski (2017) remarks "Fifty Shades of Grey is a great step back as it reiterates traditionalist stereotypes concerning sexuality and gender roles" (p. 98).

Confusing messages are also provided by medical professionals (Sheppard, 2019) and noted by Herbitter et al. (2021) "The aim of this narrative review is to integrate the published literature on mental health provider bias against the less recognized groups who may be marginalized due to their sexual identities or sexual and relationship practices" (abstract). The potential for bias (Madill & Zhao, 2021; Ortmann, & Sprott, 2012; Oddie, 2020; Sheela, 2008) against less recognized and marginalized groups in the wake of recent reforms for Ontario teachers to be certified for sexual abuse prevention and tasked with surveillance of students lends itself to the considerations for bias amongst various stakeholders within the education field. With this consideration for bias comes a responsibility for safeguards against marginalized and vulnerable populations for inaccurate portrayals and subjective observations or interpretations.

### 3. Methodology

This qualitative study asked stakeholders in the field of education to respond to questions regarding surveillance in schools on personal devices while at school and while using school electronic resources. Participants were asked questions related to their understanding of bring your own device (BYOD) policies at school and away from school as well as their understanding of inappropriate behaviour as it is defined by their school and school board. Various stakeholders responded to the

questions from an accountability and personal responsibility perspective, noting a typology of “reporter” for each stakeholder group, noting students seldom reported on each other. Participants were further asked to reflect on their personal knowledge of privacy and personal devices through a background survey that asked stakeholders to select one or more options from a provided list (brand new, don’t know anything, still learning, feel comfortable using it in education settings, have questions, know a little, have more to learn, am an expert, help other people, other).

#### 4. Findings

Data collected during the study indicated surveillance is attributed to five themes: well-being, assessment, policy, security, punitive, with the majority of responses attributed to policy, security and punitive and one participant relating the use of surveillance for monitoring well-being and useful for student assessment. Four key findings from the study are of particular relevance for this paper (1) A person’s understanding of the term vulnerable or marginalized dictates their assumptions (2) Understanding or appropriate or inappropriate is potentially a personality trait (3) The teachers in the study are assumed to conduct the majority of surveillance on a day-to-day basis of students while at school on a device (4) Life experiences of stakeholders, regardless of role, may be a key factor in the voice of the stakeholder and the acceptance, promotion or regulation of a policy (5) Teachers conducting surveillance may be unaware of the potential consequences for a student in breach of a technology policy, as it may be outside of their scope to determine punishment or record frequencies of severity or violations.

The potential for bias, lack of voice and assumptions against less recognized and marginalized groups when conducting surveillance of students creates a need for safeguards against marginalized and vulnerable populations for inaccurate portrayals and subjective observations or interpretations. Additionally, student engagement and concealment of identity based on intentional or unintentional and subjective portrayals of “appropriate” may cause teachers to become vulnerable for both acting and refraining from acting. Considerations related to the potential for medical bias towards specific activities raises considerations related to educational stakeholders bias as well and suggests a potential gap or need for conversations and open dialogues about how best to support students well-being, while encouraging transparency in schools.

#### References

- Albury, K. (2018). Sexual expression in social media. In J. Burgess, A. Marwick, & T. Poell *The sage handbook of social media* (pp. 444-462). SAGE Publications Ltd, <https://www-doi-org.myaccess.library.utoronto.ca/10.4135/9781473984066.n25>
- Agiliga, A. U. (2013). Reclaiming and Asserting Sexual Agency: Black Women in Sodomasochism. Asad, T. (1987). On ritual and discipline in medieval Christian monasticism. *Economic and Society*, 16(2), 159-203.
- Bartsch, A., Mares, M. L., Scherr, S., Kloß, A., Keppeler, J., & Posthumus, L. (2016). More than shoot-em-up and torture porn: Reflective appropriation and meaning-making of violent media content. *Journal of Communication*, 66(5), 741-765.
- Brown, T. O. (2010). “If Someone Finds Out You’re a Perv:” *The Experience and Management of Stigma in the BDSM Subculture* (Doctoral dissertation, Ohio University).
- Campi, A. (2021). Cultivating Authoritarian Submission: Race and Gender in Conservative Media. *Theory & Event*, 24(2), 456-482.
- Carmack, H. J., DeGroot, J. M., & Quinlan, M. M. (2015). “A View from the Top” Crafting the Male “Domdentity” in Domestic Discipline Relationships. *The Journal of Men’s Studies*, 23(1), 63-78.
- Charmaraman, L., Hodes, R., & Richer, A. M. (2021). Young Sexual Minority Adolescent Experiences of Self-expression and Isolation on Social Media: Cross-sectional Survey Study. *JMIR Mental Health*, 8(9), e26207.
- Constable, N. (1997). Sexuality and discipline among Filipina domestic workers in Hong Kong. *American ethnologist*, 24(3), 539-558.
- De Neef, N., Coppens, V., Huys, W., & Morrens, M. (2019). Bondage-discipline, dominance-submission and sadomasochism (BDSM) from an integrative biopsychosocial perspective: A systematic review. *Sexual Medicine*, 7(2), 129-144.
- Dylewski, L., & Prokop, P. (2019). History of prostitution. *Encyclopedia of Evolutionary Psychological Science*, eds TK Shackelford and VA Weekes-Shackelford (Cham: Springer). doi: 10, 978-3.

- El Feki, S., Aghazarian, E., & Sarras, A. (2014). Love is culture: Al-Hubb Thaqafa and the new frontiers of sexual expression in Arabic social media. *Anthropology of the Middle East*, 9(2), 1-18.
- Goh, J. N. (2019). Afterword: Erotic dreams, theology, and the word-(re) made-flesh. In *Unlocking Orthodoxies for Inclusive Theologies* (pp. 233-242). Routledge.
- Goodyear, I. (1984). Joseph Smith and Polygamy: An Alternative View. *The John Whitmer Historical Association Journal*, 4, 16-21.
- Herbitter, C., Vaughan, M. D., & Pantalone, D. W. (2021). Mental health provider bias and clinical competence in addressing asexuality, consensual non-monogamy, and BDSM: a narrative review. *Sexual and Relationship Therapy*, 1-24.
- Hutchings, J., & Aspin, C. (Eds.). (2007). *Sexuality and the stories of indigenous people*. Huia Publishers.
- Jones, Z. (2020). *Pleasure, Community, and Marginalization in Rope Bondage: A qualitative investigation into a BDSM subculture* (Doctoral dissertation, Carleton University).
- Karaian, L. (2014). Policing 'sexting': Responsibilization, respectability and sexual subjectivity in child protection/crime prevention responses to teenagers' digital sexual expression. *Theoretical criminology*, 18(3), 282-299.
- Khan, U. (2020). Kinky identity and practice in relation to the law. In *Research Handbook on Gender, Sexuality and the Law*. Edward Elgar Publishing.
- Kleinplatz, P. J., & Moser, C. (2014). Sadomasochism and the Social Sciences: A Review of the Sociological and Social Psychological Literature. *Sadomasochism*, 27-50.
- Madill, A., & Zhao, Y. (2021). Are Female Paraphilias Hiding in Plain Sight? Risqué Male–Male Erotica for Women in Sinophone and Anglophone Regions. *Archives of sexual behavior*, 1-14.
- McBride, B., Shannon, K., Bingham, B., Braschel, M., Strathdee, S., & Goldenberg, S. M. (2020). Underreporting of violence to police among women sex workers in Canada: amplified inequities for im/migrant and in-call workers prior to and following end-demand legislation. *Health and human rights*, 22(2), 257.
- Oddie, M. (2020). *BDSM and Women's Gendered Embodiment: Other-Than-Sex Pleasure, Pain, and Power* (Doctoral dissertation, Queen's University (Canada)).
- Ortmann, D. M., & Sprott, R. A. (2012). *Sexual outsiders: Understanding BDSM sexualities and communities*. Rowman & Littlefield Publishers.
- Sandnabba, N. K., Santtila, P., Alison, L., & Nordling, N. (2002). Demographics, sexual behaviour, family background and abuse experiences of practitioners of sadomasochistic sex: A review of recent research. *Sexual and relationship Therapy*, 17(1), 39-55.
- Sheppard, E. (2019). Reflections on methods in research in sex and sexuality with disabled people. *INSEP—Journal of the International Network for Sexual Ethics and Politics*, 3(1), 9-10.
- Sheela, C. S. (2008). The state of discipline: Chinese masculinity and BDSM in Singapore.
- Sroczyński, M. (2017). Violence and Sexuality—from Transgressive de Sade to Consumerist Grey. *Spółeczeństwo. Edukacja. Język*, 5.
- TallBear, K. (2020). Identity is a poor substitute for relating: Genetic ancestry, critical polyamory, property, and relations. In *Routledge Handbook of Critical Indigenous Studies* (pp. 467-478). Routledge.
- Totten, G. (2016). Editor's Introduction: Negotiating Trauma and Affect. *MELUS: Multi-Ethnic Literature of the United States*, 41(1), 1-5.
- Trammell, A. (2020). Torture, Play, and the Black Experience. *G| A| M| E Games as Art, Media, Entertainment*, 1(9).
- van Beerschoten, K. H. (2014). *BDSM Experiences, Relationships, and Scenes in Southern Dominants* (Doctoral dissertation, Institute for Clinical Social Work (Chicago)).
- Vipond, E. (2019). Becoming Culturally (Un) intelligible: Exploring the Terrain of Trans Life Writing. *a/b: Auto/Biography Studies*, 34(1), 19-43.
- Weinberg, T. S. (2006). Sadomasochism and the social sciences: A review of the sociological and social psychological literature. *Journal of homosexuality*, 50(2-3), 17-40.
- Weismantel, S. Z. (2014). From sadomasochism to BDSM: rethinking object relations theorizing through queer theory and sex-positive feminism.
- Weiss, M. D. (2008). Gay shame and BDSM pride: Neoliberalism, privacy, and sexual politics. *Radical History Review*, 2008(100), 87-101.



# LEXIAD, THE FIRST DYSLEXIA-SPECIFIC CYRILLIC FONT COMPARED TO THE POPULAR TIMES NEW ROMAN AND ROBOTO FONTS WHEN READ BY ADULTS

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## Abstract

The LexiaD font was developed for Russian-speaking people with reading disorders (dyslexia) (Alexeeva et al., 2020). LexiaD demonstrated an advantage in letter feature extraction and information integration over other modern Cyrillic fonts (PT Sans and PT Serif) while reading by primary school dyslexic and non-dyslexic children. However, for dyslexic and non-dyslexic adolescents, the familiar Arial font was more effective (Alexeeva, Zubov, 2020).

In this study, we tested two possible reasons for the advantages of Arial: familiarity or its structure. LexiaD was compared to Times New Roman (TNR; another familiar font) and Roboto (a font similar to Arial, but less familiar than TNR) when reading texts printed on a paper page. The study involved 42 adults without reading disorders. The previous studies did not show that the font effect interacts with the participant group (with/without dyslexia).

The participants read silently three parts of the text about Easter Island and answered comprehension questions. The texts and tasks were borrowed from The Program for International Student Assessment (PISA). During the reading, eye movements were recorded using a mobile tracker (PupilCore) with a sampling frequency of 200 Hz. The mean word reading rate (reading speed) and the mean number of fixations per word were analyzed.

Mixed-design ANOVA showed a significant difference between the fonts in reading speed ( $p=0.05$ ) and the number of fixations ( $p=0.03$ ). LexiaD was inferior to Roboto in both measures. There was no evidence that the control fonts differed from each other or LexiaD differed from TNR.

Thus, it could be assumed that the design made Arial a facilitating font in the previous study. A longitudinal study of LexiaD is required to test how it will perform when it becomes more familiar to readers.

**Keywords:** *Dyslexia, font, mobile eye-tracker, printed text, Russian.*

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## 1. Introduction

According to International Dyslexia Association: “Dyslexia is a specific learning disability that is neurological in origin. It is characterized by difficulties with accurate and/or fluent word recognition and poor spelling and decoding abilities. These difficulties typically result from a deficit in the phonological component of language that is often unexpected concerning other cognitive abilities and the provision of effective classroom instruction. Secondary consequences may include problems in reading comprehension and reduced reading experience that can impede the growth of vocabulary and background knowledge” (International Dyslexia Association, 2021)

Five main theories explain the origin of the reading difficulties (Grigorenko, 2010). The first and the most popular theory of the deficiency is related to phonematic processing. Namely, people with dyslexia have difficulties creating grapheme-phoneme associations, saving, representing, and activating phonemes (Ramus et al., 2003). Fast auditory processing deficit theory implies that dyslexia may be caused by difficulties in processing auditory information (Tallal, 1980). The theory of deficits in cerebellar functioning is based on the fact that people with dyslexia often have problems with motor skills (Haslum & Miles, 2007). The double deficit theory means that people with dyslexia have two main difficulties – phonological processing and naming speed (Wolf & Bowers, 1999).

In this study, we adhere to the theory of visual deficiency. People with dyslexia face difficulties related to the graphic component of text – letters often change places and become blurred (Stein & Walsh, 1997). Thus, for the subset of people with dyslexia whose reading problems are related to visual processing, the intervention would be to use special fonts that prevent letters from moving down the line and getting mixed up with other letters. In line with this, dyslexia-friendly Latin fonts have been created, such as Dyslexie, OpenDyslexic, Read Regular, EasyReading™, etc. Still, only one of them (EasyReading™) proved effective (Bachmann & Mengheri, 2018). The Latin fonts were developed based on the personal intuition of the font designers about what letters are visually similar. In the present project, the Cyrillic dyslexia-friendly font LexiaD was created based on empirically derived data on the similarity of Cyrillic letters (Alexeeva, Dobrego, & Zubov, 2020).

LexiaD was empirically tested (silent reading using eye-tracker) in several age groups and compared with different control fonts. In primary school children (Alexeeva et al., 2020) with and without reading difficulties, it was shown that in several aspects, LexiaD was faster to read than modern and highly rated by font experts Cyrillic fonts PT Sans and PT Serif. Namely, LexiaD demonstrated an advantage in letter feature extraction (measured by a word's first fixation duration) and information integration (measured by a word's total viewing time). For dyslexic and non-dyslexic adolescents, on the other hand, the effectiveness of LexiaD wasn't proved (Alexeeva, Zubov, & Konina, under revision). In that case, LexiaD was compared with Arial. Overall, Arial surpassed LexiaD in reading speed, but the difference between the fonts disappeared by the end of the experiment. Perhaps, it was because the participants were getting used to LexiaD. Alexeeva, Zubov, and Konina (under revision) suggested two possible reasons why LexiaD did not show the advantage in reading by adolescents: specific letters' design of Arial or its familiarity. For example, Arial is a well-known font that is used as the default font in Google Docs. The subsequent study was conducted to verify these assumptions.

This time LexiaD was compared to Roboto (a font that is similar to Arial) and Times New Roman (another popular and commonly used font) in adolescents (Alexeeva, Zubov, & Konina, submitted) who read silently printed texts. Non-dyslexic adolescents were recruited since the previous studies (Alexeeva et al., 2020, under revision) did not show that the font effect interacted with the participant group (with/without dyslexia). That study didn't show the difference between Roboto and Times New Roman, but both fonts proved to be more effective than LexiaD. Thus, it seems that LexiaD is probably inferior to both familiar fonts and fonts similar to Arial. The drawback of the study was that the authors measured the familiarity of the control font empirically. Roboto is the default font of Google applications, including YouTube, and thereby it is familiar to adolescents too.

In the present study, we aimed to overcome the drawback by collecting familiarity ratings for LexiaD and the control fonts. Overall, we replicated the study procedure by (Alexeeva et al., submitted), meaning the LexiaD was compared with Times New Roman and Roboto, but adults instead of adolescents were involved this time. We believe that adults have more reading experience than adolescents. Therefore, if familiarity was a key factor of better performance in the previous studies, it would be more pronounced in reading by adults: Times New Roman would have an advantage over LexiaD, and Roboto would not have it, or the advantage would be smaller since this font is not as familiar. If Roboto surpassed LexiaD and TNR did not, then it would point that the design of Roboto (and of Arial)<sup>1</sup> facilitates reading. The latter would be particularly the case if the higher familiarity rating for Roboto than TNR was determined.

In addition, we collected the participants' subjective preference for each font for explorative analysis. In particular, we asked participants to assess subjective easiness of reading and subjective similarity.

## 2. Method

### 2.1. Participants

A total of 42 non-dyslexic adults participated in the study (8 males and 36 females). All of them were native speakers of Russian and had a normal or corrected vision. The average age of participants was 21.4 years. This study was approved by the Ethics Committee at St. Petersburg State University, Russia (protocol No. 02-173 on 20.02.2019).

### 2.2. Materials and design

Two texts about Mars (Grigorenko, 2012) were training, and three texts (related to each other) about Rapanui were sampled from the Programme for International Student Assessment manual (PISA,

<sup>1</sup>Both fonts are similar to Helvetica (<https://medium.com/@zkooyer/the-case-for-roboto-acfc00a3008>; <https://creativepro.com/helvetica-vs-arial-difference>)

2020). There were 280 words in the first text, 218 words in the second, and the third text contained 191 words. Training texts were presented to familiarize participants with the procedure. There were 8 statements after the second training text: half of them corresponded to the text, the other did not. Participants were asked to choose correct statements. After each of three texts about Rapanui, there were 8 comprehension questions in total. Each text was printed on a separate piece of paper and presented in three different fonts: Roboto (14 pt, 1.5 line spacing), Times New Roman (13 pt, 1.45 line spacing) and LexiaD (16 pt, single line spacing). Physical letter and line spacing sizes (in pixels) were the same. There were 6 experimental protocols in total (depending on font order). Participants randomly were assigned to protocols.

### **2.3. Equipment**

Eye movements were recorded using the Pupil Core Eye Tracker (by Pupil Labs) with a frequency of 200 Hz. The distance between the eye tracker and piece of paper, where texts were printed, was between 600 and 700 mm.

### **2.4. Procedure**

Before starting the experiment, each participant listened to instructions and was familiarized with the procedure of calibration. Then calibration took place (which was repeated before each text). After the calibration participants read two training texts and answered corresponding questions. Then participants read three experimental texts, and after each part, they answered comprehension questions. During all reading tasks, eye movements were recorded. When participants were answering questions, the recording was stopped. Each text stood in front of a laptop screen at eye level; the laptop served as a stand. At the end of the experiment, participants were asked to choose the font they considered easy to read (subjective easiness) and the font they liked the most (subjective appeal). In addition, the familiarity rate for each font was collected using a seven-point Likert scale. The duration of the experiment was between 15-25 minutes.

## **3. Analysis and results**

### **3.1. Dependent and independent variables**

In reading speed analysis our independent variable (IV) was font (3 levels: LexiaD, Times New Roman, Roboto; a within-participant variable). As for a controlled effect (a covariate: a between-participant variable), we used comprehension accuracy. It was measured as % of the sum of correct answers to questions after training and experimental texts. All questions were rated as 1 point.

When we look at something our eyes are constantly jumped (eye jumps were called saccades). Between saccades the eyes are relatively still. These time intervals are called fixations. During fixations visual input is processed. The mean word reading time (MWRT) and the mean number of fixations on a word (MNFW) were chosen as dependent variables (DV). To calculate the mean word reading time, we divided the sum of the duration of all fixations on the text by the total number of words. The mean number of fixations on a word was calculated similarly, the total number of fixations on the text was divided by the number of words. Since the texts were of different lengths, this averaging allowed us to compare texts with each other. All measures were calculated for each participant and for each font separately to estimate the overall reading speed.

As for familiarity rating analysis, the IV was font with same three levels. The DV was familiarity rate (from 1 to 7 point).

In subjective preference analyses the effect of a font (the IV with three levels) was assessed for frequency distribution of each of three possible answers (LexiaD, Times New Roman, Roboto).

### **3.2. Preprocessing**

Reading speed analysis. The fixations were defined using the Pupil Player application (developed by Pupil Labs) with following parameters: min duration: 80 ms; max duration: 1000 ms; dispersion: 1.5°. The data of four participants were excluded from the analysis due to poor quality of eye tracking.

Familiarity rating. 29 out of 42 participants provided familiarity rate for each font.

Subjective preference. 37 and 39 out of 42 participants provided subjective easiness to read and subjective appeal of each font, correspondently.

### **3.3. Analysis**

The analysis was performed in the R environment. The graphs were generated using the ggplot package. For each reading speed dependent variable, we performed mixed-designed ANOVA using *aov*

function. Each of DVs was log-transformed to meet normal distribution requirement. Tukey-adjusted post hoc analysis was conducted using *emmeans* and *pairs* functions from package *emmeans*). Familiarity rating was analyzed using repeated measure ANOVA with subsequent Tukey-adjusted post hoc test (same functions as for reading speed analysis were run). The familiarity rate was z-transformed based on mean and standard deviation for each participant across all three assessments for the three fonts. Chi-square was used for each preference variable (function *chisq.test*). Post-hoc tests were conducted using the same analysis (Chi-square test) but with Bonferroni adjustment.

### 3.4. Results

Figure 1 shows the mean word reading time for LexiaD, Roboto and Times New Roman. Figure 3 and 4, show similar data for the mean number of fixations on the word and familiarity rate respectively.

Figure 1. The mean word reading time depending on a font

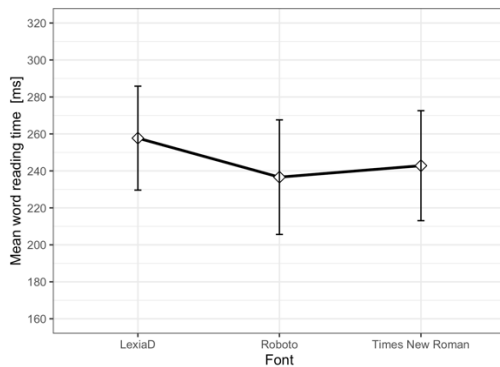


Figure 2. The mean number of fixations on a word depending on a font

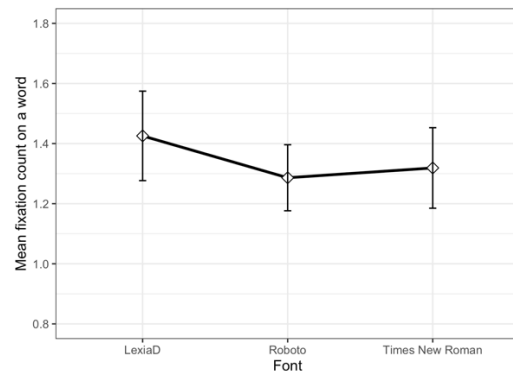
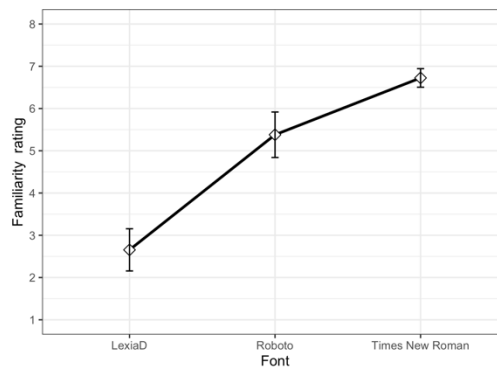


Figure 3. Familiarity rating for each font



There was a significant font effect for the mean word reading time ( $F(2, 74) = 3.06, p = 0.05$ ) and the mean number of fixations on a word ( $F(2, 74) = 3.65, p = 0.03$ ). Pairwise comparisons revealed that reading in LexiaD was significantly slower than reading in Roboto ( $p=0.04$ ) and texts typed in LexiaD had significantly more word fixations than ones typed in Roboto ( $p=0.03$ ). There was no evidence that the control fonts differed from each other or LexiaD differed from TNR in both measures ( $ps>0.05$ ). We also found that fonts differed depending on subjective familiarity ( $F(2, 56) = 12.00, p < 0.001$ ). Multiple comparisons showed that LexiaD was less familiar than both Times New Roman and Roboto ( $p<0.001$  and  $p=0.03$ , respectively) but the difference between the control fonts did not reach significance ( $p=0.06$ ).

As for subjective preferences, the frequency distribution of answers about easiness of reading was following: 8% of participants preferred LexiaD, 51% — Roboto and 42% — Times New Roman. The chi-square test showed the main effect of font ( $X^2(2, N=37) = 11.24, p = 0.003$ ). Post-hoc analysis revealed that both control fonts differed significantly from LexiaD (Times New Roman:  $p=0.004$ ; Roboto:  $p<0.001$ ). The same analysis was conducted for subjective appeal. 56% of participants liked Times New Roman the most, 21% — Roboto and 23% — LexiaD. Again, the font effect was significant ( $X^2(2, N=39) = 9.38, p = 0.009$ ). Post-hoc analysis showed that Times New Roman was preferred more often than Roboto ( $p=0.01$ ), but preferences for the other pair of fonts were not significantly different ( $p>0.05$ ).

#### 4. Discussion

The results showed that Roboto had an advantage over LexiaD while reading by adults both in an empirically measured and a subjectively assessed reading speed. Participants considered a text presented in Roboto to be easier to read than one in LexiaD; they made fewer fixations on a word and spend less time on a word to recognize it when a text was typed in Roboto compared to LexiaD. Times New Roman outperformed LexiaD in subjective easiness of reading and subjective appeal. More readers preferred Times New Roman compared to LexiaD in both preference measures.

Since we did not find evidence that the control fonts differed between each other in relation to subjective familiarity (however, both fonts were considered to be more familiar than LexiaD), but Roboto had an advantage over LexiaD in eye-tracking measured reading speed and Times New Roman did not, we can speculate that it was the letter design (and not the familiarity) that helped Roboto outperform LexiaD in the present study and in the study where the control font was Arial (Alexeeva et al., under revision). Bear in mind that Roboto and Arial are similar to each other (see Introduction). It is worth noting that there is a limitation to the conclusion since it was partly based on insignificant results. A longitudinal study of LexiaD is required to test how it will conduct when it becomes more familiar to readers.

In the study with the same procedure in adolescents both controlled fonts outperformed LexiaD in the mean number of fixations on a word (Alexeeva et al., submitted) thus showing some advantage in reading speed. This suggests that the choice of the facilitating font probably depends on an age group. However, this suggestion is preliminary too, since insignificant results were involved to come up with it.

#### Acknowledgements

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#### References

- Alexeeva, S., Dobrego, A., & Zubov, V. (2020). *Towards the First Dyslexic Font in Russian*. In Proceedings of the Second Workshop on Linguistic and Neurocognitive Resources (pp. 9-14).
- Alexeeva, S., Zubov, V., & Konina, A. (under revision). *The effect of a dyslexia-specific Cyrillic font, LexiaD, on reading speed in adolescents*. *Primenjena Psihologija*.
- Alexeeva, S., Zubov, V., & Konina, A. (submitted). *LexiaD, a dyslexia-specific Cyrillic font, proved to be less effective than Times New Roman and Roboto*. *The Russian Journal of Cognitive Science*.
- International Dyslexia Association (2021). *Definition of dyslexia*. Retrieved 14 December, 2020, from <https://dyslexiaida.org/definition-of-dyslexia/>.
- Bachmann, C., & Mengheri, L. (2018). *Dyslexia and fonts: Is a specific font useful?* *Brain Sciences*, 8(5), 89.
- Grigorenko, E. L. (2010). *Biological Nature of Dyslexia: Brief Literature Review and the Examples of Studies*. *Psychology. Journal of Higher School of Economics*, 7(4), 20-45.
- Grigorenko, E. (2012) *Individual variation in cognitive development of reading and writing skills acquisition by primary school children: A doctoral dissertation*.
- Haslum, M. N., & Miles, T. R. (2007). *Motor performance and dyslexia in a national cohort of 10-year-old children*. *Dyslexia*, 13(4), 257-275.
- PISA. (2020). PISA: reading literacy. RIKZ. [PISA: chitatel'skaya gramotnost']
- Ramus, F., Rosen, S., Dakin, S. C., Day, B. L., Castellote, J. M., White, S., & Frith, U. (2003). *Theories of developmental dyslexia: insights from a multiple case study of dyslexic adults*. *Brain*, 126(4), 841-865.
- Stein, J., & Walsh, V. (1997). *To see but not to read; the magnocellular theory of dyslexia*. *Trends in neurosciences*, 20(4), 147-152.
- Tallal, P. (1980). *Auditory temporal perception, phonics, and reading disabilities in children*. *Brain and language*, 9(2), 182-198.
- Wolf, M., & Bowers, P. G. (1999). *The double-deficit hypothesis for the developmental dyslexias*. *Journal of educational psychology*, 91(3), 415.

# LINKING MODAL AND AMODAL REPRESENTATIONS THROUGH LANGUAGE COMPUTATIONAL MODELS

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## Abstract

Language computational models such as Latent Semantic Analysis (LSA) has been criticized for not having direct contact with the real world. However, recent findings have shown the ability of the LSA to capture embodied features such as words' emotional content. In the present study we tested whether LSA can predict the emotions contained in short written texts such as tweets. It was found that a multiple logistic regression model receiving as input LSA information classified correctly 73,9% of the tweets analyzed according to the emotional content. These results provide additional evidence underlying the representative power of abstract symbols and showing the link between modal representations (emotional) and amodal representations (abstract symbols) through the LSA.

**Keywords:** Latent semantic analysis (LSA), computational language, embodiment, representation, tweets.

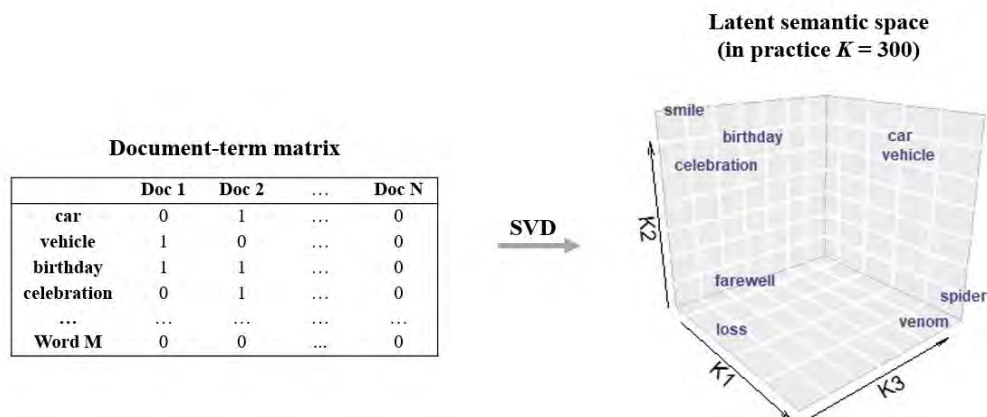
## 1. Introduction

Latent Semantic Analysis (LSA) is a language computational model that represents human semantics in a formal metric (Landauer & Dumais, 1997). Processing a large corpus of texts, LSA reflects the semantic relations within words creating a semantic space where words are represented as vectors (Deerwester et al., 1990).

The analysis begins segmenting the linguistic corpus into words and documents (i.e. paragraphs) and storing this information in a document-term matrix. Then, applying a dimensionality reduction technique such as the singular value decomposition (SVD), LSA searches for the number  $K$  of independent components that best resumes the information of the matrix. Thus, it creates the  $K$  dimensional semantic space where words are represented as vectors with coordinates on each of the  $K$  dimensions retained (Deerwester et al., 1990) (Figure 1).

The number of dimensions retained are those with which LSA obtains the best results simulating the human behavior (e.g. in a vocabulary task such as *TOEFL*). After a large number of experiments, 300 seems to be the number of dimensions that best represents human semantics (See Landauer et al., 1998 for a more extended explanation).

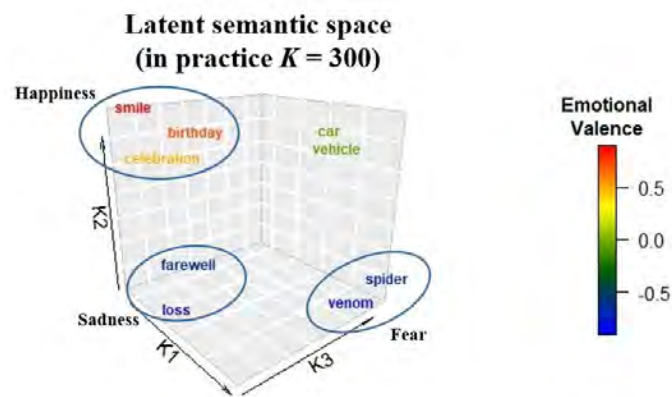
Figure 1. Latent semantic space generation. Note that this figure shows a simplified representation in three dimensions ( $K = 3$ ).



LSA has been criticized by the embodied theories of cognition and language (Barsalou, 1999; De Vega, 2005; Glenberg & Robertson, 2000). These approaches state that any mental process, such as language comprehension, must be grounded in the real world. They claim that LSA is unable to make contact with reality because it only processes abstract symbols without linking them to their real world referents. In response to these critiques, Landauer (1999) argues that the abstract symbols with which LSA operates are richer in information. In the end, the way humans use words like “spider” or “venom” reflects what they have learned from their real-world experience. The symbol interdependency hypothesis (Lowerse, 2011, 2018) also underlines the representative power of abstract symbols. This hypothesis proposes that corporeal properties of the real world are encoded in both modal representations (visual, auditory, emotional, etc.) and amodal representations (abstract symbols).

Recent studies (Martínez-Huertas et al., 2021) found that neural network models receiving as input LSA information were able to predict the emotional content of a sample of words. These results emphasize the idea that abstract symbols processed by computational models capture features grounded in human’s world (Figure 2).

Figure 2. Amodal representations encode embodied features such as the emotionality (i.e. emotional category and valence) of words.



Based on these ideas, in the present study we test whether the LSA can detect the emotional content of short written texts such as tweets. Considering the recent findings (Martínez-Huertas et al., 2021), we expect LSA to perform properly. Thus, this study would provide new evidence in accordance with the perspectives that emphasize the representative power of symbols.

## 2. Method

### 2.1. Data sampling and vectorization in the latent semantic space

Twitter is one of the most widely used social networks where users share their life experience by short written texts such as tweets (Twitter, Inc, 2021). Using the advanced search filters from Twitter we collected all tweets including the words “he sentido...” (“I felt...”) published from July 26, 2019 to March 30, 2020 in Spain. We considered that texts including this expression could contain emotional features expressing positive or negative affect. After data cleaning (i.e. removing incomprehensible tweets), the final sample of tweets was 522.

We used Gallito Studio software (Jorge-Botana et al., 2013) to generate the semantic space ( $K = 300$ ) and vectorize the tweets. The space was created from a journalistic corpus composed of 150.802 documents and 23.835 words that came from articles written in 2019 in the Spanish newspapers El País and El Mundo.

### 2.2. Neural network models, human criterion and logistic regression

We connected to GallitoAPI (an API that allows to use Gallito Studio software online) and used the neural network models trained to propagate the emotionality of words using the latent semantic space information (Martínez-Huertas et al., 2021). In the present study, the neural network models receive as input the LSA coordinates of each tweet and give as output the four independent variables: degree of happiness, sadness, fear and anger contained on the text on a scale from 0 to 1.

To define the dependent variable (human criterion), the first author evaluated and classified the  $N = 522$  tweets according to their emotional content in positive or negative valence. A total of 192 tweets

were classified as positive and 330 as negative ( $n_{\text{positive}} = 192$ ;  $n_{\text{negative}} = 330$ ). Testing the reliability of the evaluation, we found total agreement (*Cohen's kappa* = 1,00) on a subsample of 100 tweets between the first author and two expert judges in Psychology (a 61-year-old man and a 54-year-old woman, professors at the Faculty of Psychology of the Universidad Autónoma de Madrid).

Then, we fitted a multiple logistic regression model to classify the tweets as *positive* = 0 or *negative* = 1 (dependent variable) based on the LSA information (the four independent variables: *degree of happiness*, *sadness*, *fear* and *anger*). The cutoff point to classify a tweet as negative was set at 0.5.

The whole analysis (connection with GallitoAPI and statistical tests) was conducted using R software (R Core Team, 2021).

### 3. Results

The null model (i.e. the simplest model), which does not include any independent variable classifies all tweets as negative ( $-2LL_0 = 686,726$ ; 63,2% of tweets correctly classified).

The logistic regression model with the four independent variables fitted the data significantly better than the null model ( $G^2_{(4)} = 140,678$ ,  $p < 0,001$ ) and explains 32% of the dependent variable variance ( $R^2_{\text{Nagelkerke}} = 0,32$ ). As shown in Table 1, 73,9% of the tweets were correctly classified according to the human criterion.

As can be noted from the table, only the *degree of happiness* (*logit B* = -0,912;  $p < 0,001$ ) and *sadness* (*logit B* = 1,068;  $p < 0,001$ ) contributed to explain the observed variance of the dependent variable (i.e. to improve predictions). Considering how the dependent variable has been operationalized (*positive* = 0, *negative* = 1), the positive sign of *degree of sadness* (*logit B* = 1,068) indicates that augmenting the amount of sadness of a tweet would increase the probability of being classified as negative. Thus, augmenting the *degree of sadness* one unit would increase 191% the *odds* of being classified as negative ( $\text{Exp}(B)^{\text{degree\_sadness}} = 2,91$ ). In contrast, augmenting the *degree of happiness* (*logit B* = -0,912) one unit would decrease 60% the *odds* of being classified as negative ( $\text{Exp}(B)^{\text{degree\_happiness}} = 0,40$ ).

Table 1. Logistic regression results: a) classification and b) coefficients.

| a)                         | Model prediction |          | % tweets correctly classified |
|----------------------------|------------------|----------|-------------------------------|
| First author evaluation    | Positive         | Negative |                               |
| Positive                   | 102              | 90       | Positives = 53,1%             |
| Negative                   | 46               | 284      | Negatives = 86,1%             |
|                            |                  |          | Total = 73,9%                 |
| b) Regression coefficients |                  |          |                               |
|                            | Logit B          | p value  | Exp (B) IC 95%                |
| Degree of happiness        | -0,912           | 0,000    | 0,402 0,296 – 0,545           |
| Degree of sadness          | 1,068            | 0,000    | 2,909 1,723 – 4,911           |
| Degree of fear             | -0,012           | 0,969    | 0,988 0,551 – 1,772           |
| Degree of anger            | 0,574            | 0,067    | 1,776 0,960 – 3,287           |

### 4. Discussion and conclusions

The results obtained in the present study show that the evaluation of the emotional valence (i.e. positive or negative) of tweets performed by neural networks model receiving as input LSA information concurs with human criterion. Using the output generated by the neural networks as independent variables (*degree of happiness*, *sadness*, *fear* and *anger*), the multiple logistic regression model classified correctly 73,9% of the tweets, which is a considerably high hit rate. Moreover, the estimated regression coefficients for the statistically significant variables (*degree of happiness* and *sadness*) are consistent with theory. Augmenting the sadness (i.e. negative affect) in a tweet increases the probability of being classified as negative. However, increasing the happiness (i.e. positive affect) decreases the probability of being classified as negative.

It is important to note that the neural networks used in this study were trained to predict the emotionality of words instead of short written texts such as tweets. In addition, the human criterion that defined the dependent variable was based on the judgement of a single participant (the first author). These limitations can be overcome in future research introducing software tools (e.g. R software) to automate the data collection process. Large amounts of data (i.e. tweets) will make it possible to train neural network models to predict the emotionality of tweets and also to improve the criterion validity (e.g. holding-out subsamples of tweets to be evaluated by humans).



Considering the performance of the logistic regression model (i.e. considerably high hit rate and coefficients consistent with theory), the results obtained in the present study are consistent with the ideas of Landauer (1999), Louwerse (2011, 2018) and Martínez-Huertas et al. (2021) and emphasize the representative power of symbols showing that amodal representations processed by LSA encode embodied features such as the emotionality of the tweets.

## References

- Barsalou, L. W. (1999). Perceptual symbol systems. *Behavioral and brain sciences*, 22(4), 577-660.
- De Vega, M. (2005). Lenguaje, corporeidad y cerebro: Una revisión crítica. *Revista Signos*, 38(58).
- Deerwester, S., Dumais, S. T., Furnas, G. W., Landauer, T. K., & Harshman, R. (1990). Indexing by Latent Semantic Analysis. *Journal of the American Society for Information Science*, 41(6), 391-407.
- Glenberg, A. M., & Robertson, D. A. (2000). Symbol grounding and meaning: A comparison of high-dimensional and embodied theories of meaning. *Journal of Memory and Language*, 43(3), 379-401.
- Jorge-Botana, G., Olmos, R., & Barroso, A. (2013). Gallito 2.0: A natural language processing tool to support research on discourse. In *Proceedings of the 23th Annual Meeting of the Society for Text and Discourse*, Valencia, España, 16-18 Julio.
- Landauer, T. K. (1999). Latent semantic analysis (LSA), a disembodied learning machine, acquires human word meaning vicariously from language alone. *Behavioral and brain sciences*, 22(4), 624-625.
- Landauer, T. K., & Dumais, S. T. (1997). A solution to Plato's problem: The latent semantic analysis theory of acquisition, induction, and representation of knowledge. *Psychological Review*, 104(2), 211-240.
- Landauer, T. K., Foltz, P. W., & Laham, D. (1998). An introduction to latent semantic analysis. *Discourse Processes*, 25(2-3), 259-284.
- Louwerse, M. M. (2011). Symbol interdependency in symbolic and embodied cognition. *Topics in Cognitive Science*, 3(2), 273-302.
- Louwerse, M. M. (2018). Knowing the meaning of a word by the linguistic and perceptual company it keeps. *Topics in Cognitive Science*, 10(3), 573-589.
- Martínez-Huertas, J. Á., Jorge-Botana, G., Luzón, J. M., & Olmos, R. (2021). Redundancy, isomorphism, and propagative mechanisms between emotional and amodal representations of words: A computational study. *Memory & Cognition*, 49(2), 219-234.
- R Core Team (2021). R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.R-project.org/>
- Twitter, Inc. (2021). *Twitter*. Microsoft Store. <https://www.microsoft.com/es-es/p/twitter/9wzdncrfj140?activetab=pivot:overviewtab>

## CHANGES IN THE STATE OF MEDICAL STUDENTS DURING PARTICIPATION IN A PERCEPTUAL EXPERIMENT

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### Abstract

The goal of this work was to study the changes in the psychological, psychophysiological, and physiological state of the subjects - medical students of junior and senior courses before and after participating in a perceptual experiment. We have developed a comprehensive methodological approach that allows us to evaluate the interaction of medical students with children with atypical development (AD). The approach includes an assessment of the psychophysiological and psychological state of the study participants, conducting a perceptual study, recording and analyzing the mimic expression and speech of the subjects. During the perceptual experiment, students are presented with test sequences containing speech signals of children with typical development (TD) and AD (Down syndrome; autism spectrum disorders) and a video test containing behavioral patterns of AD children. During the perceptual experiment, a parallel video recording of the behavior of the auditors is carried out, which makes it possible to verify their answers using the specialized software FaceReader, which determines the true emotional state of a person by his facial expression. After the perceptual experiment, the auditors answer questions regarding their relationship to the listened speech signals. The psychoemotional status of students is determined before and after the experiment using a battery of psychological tests. The change in the state of the subjects was determined by instrumental spectrographic analysis of their speech recorded before and after participating in the experiment. The speech material was analyzed using the Cool Edit Pro audio editor. The study participants were 40 students of the St. Petersburg State Pediatric Medical University - adult native speakers of the Russian language. The subjects were divided into 2 groups. The first group consisted of students of the first and second courses; the second group - students of the fifth and sixth courses. In the course of the work, original data were obtained on the acoustic characteristics of speech, reflecting the state of medical students before and after participating in a perceptual experiment aimed at recognizing the type of child development. According to the results of psychological testing, it was found that the students of the second group experienced less emotional tension before the start of the study, compared with the subjects of the first group. Relationships between the psychological parameters of the subjects and the success of the tasks of the perceptual experiment were determined.

The work is financially supported by the Russian Science Foundation (project 19-78-00057).

**Keywords:** *Speech, atypical development, typical development, perceptual experiment.*

### 1. Introduction

The method of perceptual experiment is widely used in the study of various aspects of the speech of children with typical and atypical development (e.g., Lyakso, et al., 2020; Grigorev, Frolova, Lyakso, 2018). Based on the material in different languages, the ability to recognize the state of the speaker by the characteristics of his voice is shown (e.g., Paulmann, Uskul, 2014; Chronaki et al., 2018). It is known that the definition of emotions in speech is influenced by the duration and values of the pitch of the speech signal. Based on the material of the English, it has been established that emotional speech can be characterized by a change in the rate of speech, compared with speech in a calm state (Abelin, Allwood, 2000).

Nowadays in Russia, there are insufficient systematized data on the degree of preparedness of medical students and graduates to interact with children with atypical development (AD). The goal of this work was to study the changes in the psychological, psychophysiological, and physiological state of the medical students of junior and senior courses before and after participating in a perceptual experiment.

## 2. Materials and methods

The study participants were 40 students of the St. Petersburg State Pediatric Medical University - adult native Russian speakers. The students were divided into 2 groups. The first group consisted of students of the first and second courses ( $n=20$ , average age -  $19.4\pm 1.3$  years, 7 men and 13 women, without experience of interacting with children - 2, with household experience - 15, with professional experience - 3); the second group - students of the fifth and sixth years of medical and pediatric faculties ( $n=20$ , average age -  $23.9\pm 3.5$ , 2 men and 18 women, with household experience - 8, with professional experience - 12). Household experience means the presence of their own children, the presence of younger brothers or sisters in the family, children in the families of friends or relatives with whom the subjects interact regularly, professional experience means the experience of working as a nurse in children's medical institutions, long-term volunteering.

To assess the current physiological and psychophysiological state before the perceptual experiment, the informants tested: determination of heart rate (HR) and blood oxygen saturation using a pulse oximeter (ChoiceMMed MD300 C22); psychological testing - the Spielberger test for identifying personal and situational anxiety; WAM test (well-being, activity, mood, Doskin et al, 1973); Sheehan Patient-Rated Anxiety Scale (SPRAS); Zung Self-Rating Depression Scale (SDS); Luscher's 8-color test (reflection of the subject's focus on a certain activity, mood, functional state and the most stable personality traits). The SPRAS, SDS, and the Spielberger Personality Anxiety Test were performed to assess the condition of the subjects prior to the start of the study in order to identify links between depression and anxiety scores and the success of performing tasks in the perceptual experiment. These tests have been repeatedly used to identify the level of anxiety and depression in medical students (for example, Molchanova et al., 2020; Tolmachev et al., 2020). Situational anxiety, according to Spielberger, the WAM test and the Luscher's 8 - color test was carried out to control the current psychological state of the subject.

Before the perceptual experiment, the subjects in the form of a dialogue with the experimenter were asked to answer a series of questions that would allow them to establish their attitude towards children with typical and atypical development (7 questions).

After determining the current psychophysiological state of the student, a perceptual experiment was carried out. Speech samples were selected from the AD\_CHILD.RU database (Lyakso et al., 2019). Test sequences were created using the Cool Edit Pro 2.1 sound editor. Three test sequences, containing the speech of children 6-8 years of age, 18 children with atypical development (AD) (10 children with autism spectrum disorders (ASD) and 8 children with Down syndrome (DS)) and 6 typically developing (TD) children were created. Each group of children included the equal number of boys and girls the interval between speech samples in the test sequences is 5 s, each sound fragment is repeated once. Test sequences contain 30 speech samples, thus, the total number of speech fragments is 90 (45 fragments for TD and AD children each). The choice of children with ASD and DS is due to the specific features of their speech, which manifest themselves at different levels of organization of speech communication and behavior (Olivati et al., 2017, Bonneh et al., 2011, Kent, Vorperian, 2013; Wolk, Brennan, 2016). When listening to audio tests, the subjects filled out specially designed questionnaires. On the questionnaire, opposite each number indicating the number of the sound fragment, the auditors had to indicate in the appropriate columns the type of development of the child (typical/atypical), his age, gender, whether the meaning of what was said was clear, whether there was any peculiarity (specificity) of speech.

To assess the ability of the subjects to recognize the type of development of the child, a video test was created containing fragments of the behavior of AD children's. The video test included video recordings of the behavior of 9 children with ASD (5 boys and 4 girls) and 3 children with DS (2 boys and 1 girl). Fragments are arranged in random order there are no pauses between video fragments. When creating a video test, the audio track was removed from all video fragments in order to exclude the influence of children's speech and/or voice-over on the results of a perceptual experiment.

After watching the video test, the subjects answered questions about their feelings (4 questions). Then, the physiological and psychophysiological parameters of the students (registration of HR and determination of blood oxygen saturation using a pulse oximeter, the Spielberger method for detecting situational anxiety; the WAM test, the 8-color Luscher test) were reevaluated.

During the dialogue, the subjects' speech was recorded using a Marantz PMD660 recorder with a Sennheiser e-835S external microphone. The speech material was analyzed using the Cool Edit Pro audio editor. The utterance duration, the duration of pauses in utterances after the removal of the experimenter's speech, the average values of the pitch for the phrase, the minimum and maximum values of the pitch, the range of pitch, the rate of speech were determined (determined as the number of syllables uttered per second (Grigorev et al., 2018)).

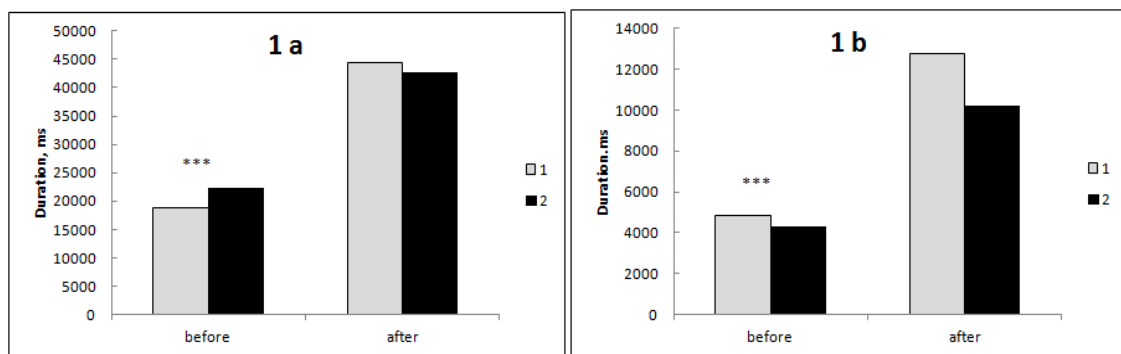
Statistical analysis was carried out using the STATISTICA 10.0 program. The study was approved by the Ethics Committee of Saint Petersburg State University.

### 3. Results

Based on the instrumental analysis of speech, it was found that the utterances duration of students of both groups is significantly lower ( $p < 0.001$ , nonparametric Mann-Whitney U test) before the perceptual experiment than after participation in the experiment. Prior to the beginning of the perceptual experiment, the duration of utterances (median values) for students of the 1st group was 18.8 s, for the students of the 2nd group - 22.2 s; after participating in the perceptual experiment, the students of the 1st group - 44.4 s, the students of the 2nd group - 42.8 s (Figure 1a). Significant differences between the groups not found.

The pauses duration in the speech of students of both groups is significantly lower before participation in the perceptual experiment than after it (Figure 1b). The duration of pauses (median values) for the students of the first group before participating in the perceptual experiment is 4.8 s, for the students of the second group - 4.3 s; after participation in the experiment - 12.7 s for students in the first group and 10.2 s for students in the second group. The ratio of the number of pauses in the utterance before and after the perceptual experiment does not change: before participation in the perceptual experiment it was  $24.2 \pm 9.5\%$  of the students in the 1st group and  $25.7 \pm 9.6\%$  of the 2nd group; after participation in the experiment -  $25.3 \pm 6.8\%$  in the 1st group and  $27.2 \pm 8.8\%$  in the 2nd group).

Figure 1a. The total duration of the utterances of the subjects during the dialogue with the experimenter; 1b - the total duration of pauses in the speech of the subjects during the dialogue with the experimenter. On the horizontal axis - recording time, on the vertical - duration, ms. Gray columns are data for students of the first group, black columns - for students of the second group. \*\*\* -  $p < 0.001$ , Mann-Whitney U test.



There were no significant differences in the rate of speech between the students of the first and second groups, as well as between the time of recording speech material: before the perceptual experiment, the rate of speech (median values) for the students of the first group was 4.1 syllables per second, for the students of the second group - 3.7; after the perceptual experiment, the students of the first group had 3.9 syllables per second, the students of the second group - 3.6. There were no significant differences between the students of both groups, as well as between the recordings before and after the perceptual experiment, in the average pitch values, the minimum and maximum values of the pitch, the range of the pitch.

Based on the results of psychological testing, it was found that, according to the Luscher's 8 color test, prior to the start of the perceptual experiment, the indicators of emotional tension of the students of the second group are lower than those of the students of the first group - regression analysis ( $F(1,38)=4.811$   $p < 0.034$   $R^2=0.112$   $\beta=-0.335$ ). These results are confirmed by discriminant analysis ( $F(4,35)=2.446$   $p < 0.065$  Wilks' -  $\Lambda=0.875$ ). According to the results of other psychological tests, there were no significant differences between the groups.

It was found that the students of both groups are significantly better at recognizing the state of TD children. There were no statistically significant differences between the 2 groups in terms of the success by recognizing the child's psychoneurological state. There were no differences in the level of recognition of the psychoneurological state in children with ASD and DS. When performing the task of recognizing the gender of children, the students of both groups significantly better ( $p < 0.001$ ) recognize the male than the female in AD children. The students of the 2nd group were significantly better at recognizing the gender of TD girls than boys ( $p < 0.001$ ); the female gender in TD children, compared with the students of the 1st group ( $p < 0.05$ ).

The both groups of students significantly better ( $p < 0.001$ ) determine the age of TD children compared to AD children. They are indicated the age of TD children's close to the real, and the age of AD children's is lower than the real.

The both groups of students more often noted that they understood what was said by the child if the speech belonged to TD children, compared with AD children ( $p < 0.001$ , Mann-Whitney U test). When analyzing the recognition of a child's psychoneurological state by a video test, it was found that all the subjects correctly noted the presence of AD children on the video recording, however, 50% of the subjects in both groups answered that TD children were also present in the tests.

Based on the multiple regression analysis  $F(16,20)=6.56$ ,  $R^2=0.84$  the experience of the subjects ( $\beta=-0.645$   $p=0.000$ ), the scores of the WAM test "mood" after the study ( $\beta=-0.397$   $p=0.002$ ) is associated with the recognition of the psychoneurological state of AD children;  $F(8,28)=4.678$ ,  $R^2=0.572$  the difference between the "mood" WAM score before and after the study ( $\beta=0.584$   $p=0.000$ ) is associated with the recognition of the psychoneurological state of TD children.

For the first group of students, on the basis of Spearman's correlation analysis of 73 indicators, it was found that: Luscher test indicators at the end of the study are associated with recognition of the state of TD children's ( $r = -0.48$ ); the values of the WAM scores ("well-being" at the beginning of the study) - with the recognition of the age of the AD children's (0.45). Correlation analysis of 31 indicators revealed the correlation between students anxiety when communicating with AD children, and indicators of SDS (0.76), SPRAS (0.60), WAM ("mood" after the study) (-0.61) and personal anxiety (0.74) tests (students who are anxious when interacting with AD children are more anxious).

For the second group of students, based on Spearman's correlation analysis of 73 indicators, it was found that the values of the Luscher test at the beginning of the study are associated with the recognition of the gender of AD children's ( $r = 0.45$ ); SDS scores – with SPRAS scores (0.70), personal anxiety scores (0.65), the age recognition of TD children's (-0.59); SPRAS scores – with the values of personal anxiety (0.65) and situational anxiety at the end of the study (0.59), the recognition of the state of TD children (-0.54), the recognition of the age of TD children (-0.49); WAM scores ("well-being" at the beginning of the study) - with the values of personal anxiety (-0.64), the recognition of the state of TD children (0.57); WAM scores ("activity" at the beginning of the study) - with the values of personal anxiety (-0.49), the recognition of the state of AD children (-0.47), the recognition of the age of TD children (0.56); WAM scores ("well-being" at the end of the study) - with the values of personal anxiety (-0.53), the recognition of the state of TD children (0.63); WAM scores ("activity" at the end of the study) - with the values of personal anxiety (-0.50), the age recognition of TD children (0.52); WAM scores ("mood" at the end of the study) with recognition of the state of TD children (0.51).

Correlation analysis of 40 indicators revealed links between whether students experience anxiety when communicating with AD children and the experience of the subjects (-0.63), SDS (-0.82), SPRAS (-0.66) test scores (more experienced students do not experience anxiety when communicating with AD children).

Based on regression analysis for students of the 1st group: indicators of the Luscher test at the end of the study are associated with the recognition of the state of TD children  $F(1,18)=9.901$   $p < 0.005$  ( $R^2=0.355$   $\beta=-0.596$ ). Based on regression analysis for students of the 2nd group: SDS scores are associated with the recognition of the age of TD children  $F(1,18)=7.88$   $p < 0.012$  ( $R^2=0.304$   $\beta=-0.552$ ). SPRAS scores are associated with the recognition of the age of TD children  $F(1,18)=6.264$   $p < 0.022$  ( $R^2=0.258$   $\beta=-0.508$ ). WAM scores ("activity" at the beginning of the study) are associated with the recognition of the state of AD children  $F(1,18)=4.52$   $p < 0.048$  ( $R^2=0.201$   $\beta=-0.448$ ), the recognition of the age of TD children  $F(1,18)=7.072$   $p < 0.016$  ( $R^2=0.282$   $\beta=0.531$ ). WAM scores ("well-being" at the end of the study) are associated with the recognition of the state of TD children  $F(1,18)=5.987$   $p < 0.025$  ( $R^2=0.25$   $\beta=0.5$ ). WAM scores ("activity" at the end of the study) are associated with the recognition of the age of TD children  $F(1,18)=6.918$   $p < 0.017$  ( $R^2=0.278$   $\beta=0.527$ ).

#### 4. Conclusion

The original data on the acoustic characteristics of speech, reflecting the state of medical students before and after participating in a perceptual experiment aimed at recognizing the type of child development were obtained. It is shown that before participating in a perceptual experiment, the subjects have a significantly shorter duration of utterances than after participating in it; after the experiment, the subjects answer the experimenter's questions in more detail, while the total duration of the pauses also increases. The general ratio of the number of pauses in the utterance before and after the perceptual experiment does not change, nor do the parameters reflecting the emotional state of the auditors - the rate of speech and the pitch value.

It was found that students of both groups are significantly better at recognizing the psychoneurological state of TD children compared to children with ASD and DS. It was revealed, that students of both groups are significantly better at recognizing the male gender in AD children compared to the female gender; the students of the second group better recognize the female gender in TD children

than the male one. Students of both groups better recognize the age of TD children, compared with the age of AD children, while the subjects indicate the age of TD children close to the real one, and the age of AD children is lower than the real one. The results that the state of TD of children is recognized better than the state of AD children correlate with the data for 11-12 years old children (Frolova et al, 2019), about age recognition - with the results for 8-9 years old children (Lyakso et al., 2020).

According to the results of psychological testing, it was found that the students of the second group experienced less emotional tension before the start of the study, compared with the subjects of the first group. Correlations between the psychological parameters of the subjects and the success of performing the tasks of the perceptual experiment were revealed.

It can be assumed that medical students of the last years are generally ready for successful interaction with children with typical and atypical development and for the successful provision of medical care for them, since their psychological indicators of anxiety did not change by the end of the study.

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## References

- Abelin, Å., Allwood, J. (2000). Cross linguistic interpretation of emotional prosody. *ISCA workshop on Speech and Emotion. Newcastle, Northern Ireland*, pp.110–113.
- Bonneh, Y., Levanon, Y., Dean-Pardo, O., Lossos L., and Adini, Y. (2011). Abnormal speech spectrum and increased pitch variability in young autistic children. *Frontiers in Human Neuroscience* P.237.
- Chronaki, G., Wigelsworth, M., Pell, M. D., & Kotz, S. A. (2018). The development of cross-cultural recognition of vocal emotion during childhood and adolescence. *Scientific Reports*, 8(1), P.8:8659.
- Grigorev, A. S., Gorodnyi, V. A., Frolova, O. V., Kondratenko, A. M., Dolgaya, V. D. & Lyakso, E. E. (2018). Acoustic and Perceptual Features of the Emotional Speech of Adolescents Aged 14–16 Years. *Neuroscience and Behavioral Physiology*. 50, 9, pp. 1224-1231.
- Doskin V.A., Lavrentieva N.A., Miroshnikov M.P., Sharay V.B. (1973). Test of differentiated self-assessment of the functional state. *Questions of psychology, No. 6.*, pp. 141-145 (in Russian).
- Frolova, O., Gorodnyi, V., Nikolaev, A., Grigorev, A., Grechanyi, S., Lyakso, E. (2019). Developmental disorders manifestation in the characteristics of the child's voice and speech: perceptual and acoustic study. *Lecture notes in computer science 11658 LNAI* pp. 103-112.
- Grigorev, A., Frolova, O., Lyakso, E. (2018). Acoustic features of speech of typically developing children aged 5–16 years. *Communications in Computer and Information Science, AINL 930*, pp. 152-163.
- Kent, R. D., Vorperian, H.K. (2013). Speech impairment in Down syndrome: a review. *J Speech Lang Hear Res* 56(1): pp. 178-210.
- Lyakso, E., Frolova, O., Grigorev, A., Gorodnyi, V., Nikolaev, A. & Kurazhova, A. (2020) Speech Features of 13–15 Year-Old Children with Autism Spectrum Disorders. *Springer Nature (Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics); vol. 12335 LNAI)*, pp. 291-303.
- Lyakso E., Frolova O., Kaliyev A., Gorodnyi V., Grigorev A., Matveev Y. (2019) AD-Child.Ru: Speech Corpus for Russian Children with Atypical Development. *A. A. Salah et al. (Eds.): SPECOM 2019, LNAI 11658*, pp. 299–308.
- Lyakso E.E., Frolova O.V., Nikolaev A.S., Gorodny V.A., Grigorev A.S., Kurazhova A.V. (2020) Gender, age, condition of the child: a perceptual study of the speech of children aged 8-9 years, typically developing, with autism spectrum disorders and down syndrome. *Theoretical and applied linguistics*. 6 3 pp. 61-76 (in Russian).
- Molchanova Zh. I., Israfilova A. M., Bekivova D. R. (2020). The study of anxiety and depression in students of the Khanty-Mansiysk State Medical Academy. *Scientific Medical Bulletin of Ugra, No. 3*, pp.22-27 (in Russian).
- Olivati, A., Assumpção, F., Misquiatti A.R.N. (2017) Análise acústica do padrão entoacional da fala de indivíduos com Transtorno do Espectro Autista/Acoustic analysis of speech intonation pattern of individuals with Autism Spectrum Disorders. *CoDAS* 29(2) e20160081.
- Paulmann, S. & Uskul, A. K. (2014). Cross-cultural emotional prosody recognition: Evidence from Chinese and British listeners. *Cognition and Emotion*, 28, pp. 230–244.
- Tolmachev D.A., Sabrekova K.A., Ablinova N.G. (2020). The study of the indicator of anxiety in students of medical universities. *MODERN SCIENCE. No. 4-3*, pp.296-299 (in Russian).
- Wolk L., Brennan C. (2013). Phonological investigation of speech sound errors in children with autism spectrum disorders. *Speech, Language and Hearing* 16(4) pp. 239-246.

# SPATIO-TEMPORAL CUBE FOR VISUALIZING CULTURAL COLLECTIONS: EXPLORING A USER-FRIENDLY ROTATIONAL REPRESENTATION WITH DIFFERENT SPATIAL ABILITY

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## Abstract

In this study, we compared two rotational representations of a spatio-temporal cube displaying a cultural collection data to determine which was more useful for information search. While the horizontal data plane of the cube represented a geographical map, the vertical axis showed time as an upward spatial dimension. Users manipulated the cube to find the country and time period in which artworks with the characteristics specified in the questions were most used. In the viewpoint rotation condition, the background flowed in conjunction with a horizontal rotation as if the users moving around the stationary cube. In the cube rotation condition, the cube was rotated in front of the user's eyes, and the background did not change. The users were able to search information more accurately when using the viewpoint rotation than the cube rotation. This was true for both users with high and low spatial abilities. This finding is discussed in terms of how the environmental reference frame supports users' spatial cognition.

**Keywords:** *Data visualization, cultural collection, spatio-temporal cube, rotational representation, spatial ability.*

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## 1. Introduction

One way to visually capture the period of artworks and their geographical relationships is to represent it in three-dimensional (3D) spatio-temporal space (Windhager et al., 2020). These 3D visualization system is expected to represent complex relationships in a visually comprehensible way, sometimes encouraging users to make discoveries they did not intend to make. However, while presenting information in a three-dimensional space can integrate a variety of information, there is a possible risk that users who do not have a high spatial ability will not benefit from it. This is because spatial abilities not only compensate for the lack of spatial information in 2D representations, but are also necessary for learning in 3D representations (Krüger & Bodemer, 2021). For example, if users lose track of which direction they are looking from when manipulating the cube, there will be more errors and misunderstandings in searching spatial information, such as mistaking the bias of the east-west distribution of artworks for the north-south bias. Therefore, it is important to create a system that reduces the burden on the spatial ability of users and improves the convenience of using 3D visualization system.

From this point of view, we focuses on two types of rotational representations of cubes in a 3D visualization system. There are at least two ways to represent the rotation of the cube in which the information is placed. One is "cube rotation", which is a representation of cube rotating in front of the user's eyes against a fixed background. The other is "viewpoint rotation", an expression in which the user's viewpoint rotates around the cube and the background changes. Both representations do not differ in the visual change of the rotating cube itself, but according to the spatial reference frames theory, they may have different effects on the user's information search. McNamara et al. (Mou & McNamara, 2002; Rump & McNamara, 2006) classifies the criteria for specifying locations and directions into two types: egocentric and environmental (allocentric) reference frame. Egocentric reference frame is those defines the location with respect to the observer, whereas environmental reference frame defines the location relative to objects other than observer. The point here is that we can use the external objects that make up the environment as directional cues to indicate the location of something.

In both the viewpoint rotation and cube rotation conditions, the relationship between the user and the cube changes during operation of the system. However, under the viewpoint rotation condition, the relationship between the cube and the background objects is maintained. For example, taking Figure 5 (b) as an example, we can see that the spatial relationship between the door and the cube is always constant even if the cube rotates and changes its orientation. Therefore, under viewpoint rotation conditions, it is predicted that users will be able to use the background environment as a stable orientation cue to correctly

understand the spatial state of the cube and to search for information. However, this hypothesis has not yet been tested. It is also an open question whether, if viewpoint rotation supports users' information search, it is true for both users with high and low spatial abilities or only for one of the two groups. This study investigates which of the two rotation representation methods, cube rotation and viewpoint rotation, facilitates users' information search using 3D visualization system, and whether it is related to individual differences in users' spatial ability.

## 2. Method

### 2.1. Users

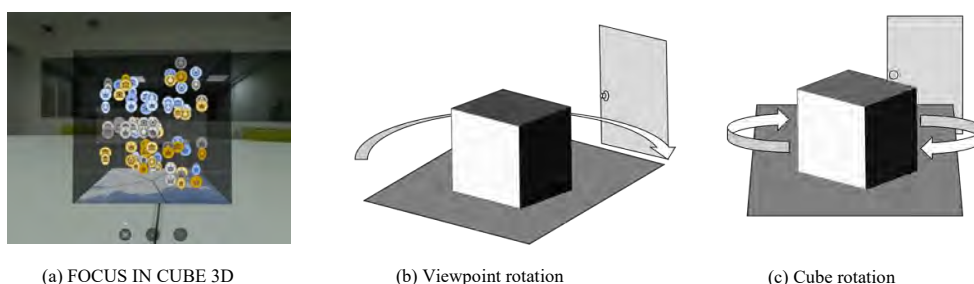
Twenty four students in Hiroshima international university participated in the experiments (12 men, 12 women). As a reward, they received a 1,000 yen quo card as a reward, which can be used at various stores in japan.

### 2.2. Materials and design

**Search task** Images of fictional artworks, coins and potteries, were used. FOCUS IN CUBE 3D created by DNP (see Figure 1 (a)) was used to represent the fictional artwork. Users were able to view the artworks by interactively switching their viewpoints, for example, from the outside of the cube to get a bird's-eye view of the entire artworks, or from the inside of the cube to look at the local area in detail. The horizontal and depth axes of the cube were used as the coordinate axes to express the production location of the artworks. On the bottom of the cube composed of these two axes, a square map divided into five countries by border lines were presented. The time axis is divided into five periods by lines drawn horizontally along the sides of the cube. The images of the fictional artworks were displayed inside the cube according to the spatial and temporal coordinates assigned to each image in advance. The cube was operated on a 20-inch, 4K touch panel; tracing the cube with one finger rotated the cube in the direction of the finger traced. When two fingers touched the screen, expanding the space between the fingers brought the cube closer (expansion), and contracting it brought it further away (contraction). The cube had a highlight function that made only groups of artworks that were in line with the characteristics of the theme of interest emit light and stand out. Each side of the cube had a translucent rectangular label, which contained the name of the theme (motifs, textures, colors, and shapes) in Japanese and a circular button. By pressing the button in the label, the display on the side of the cube switched from a main category showing the theme to a subcategory showing the features of the selected theme. When the users rotated the element they wanted to filter to the front, the artworks that matched that feature emitted light in the color. Behind the cube, a picture of the room taken by a 360° camera was displayed. In the viewpoint rotation condition (see Figure 1 (b)), the cube was displayed on a pedestal fixed to the desk in the room. When the cube was rotated in this condition, the background changed accordingly, visually expressing the user's movement around the cube placed on the desk. In the cube rotation condition, there was no pedestal, and the cube was displayed directly on the desk (see Figure 1 (c)). Under this condition, the background did not change when the cube was rotated, and the cube rotating in front of the user was expressed.

In the search task, the users searched for the country or period of artworks with specific characteristics using the filtering function of (i.e., by rotating) the cube. For the country-attribute question, the users were shown a chronological sheet with a target period out of the five was painted gray, and asked to "Check the country in which [pottery or coin] with [particular feature] was used the most in the target period", and required to check the appropriate country on the map with check box. For the period-attribute question, the users were shown a country map with a target country out of the five was painted gray, and asked to "Check the period in which [pottery or coin] with [particular feature] was used the most in the target country", and required to check the appropriate period on the chronological sheet with check box.

Figure 1. Example of FOCUS IN CUBE 3D used in each of the cube rotation and viewpoint rotation conditions, a schematic diagram of each rotation, and layout of the room.



(a) FOCUS IN CUBE 3D

(b) Viewpoint rotation

(c) Cube rotation



**Mental rotation test (MRT)** We used the mental rotation test (MRT) to assess an individual's spatial ability; the MRT is a test that requires imagining the movement or form of an object (e.g., Cooper, 1975; Shepard & Metzler, 1971) and is used specifically to measure an individual's mental transformation ability (Kung & Hamm, 2010; Searle & Hamm, 2017). Images of the letters F and R were used. The experimental program for the MRT was created with the programming tool Hot soup processor and displayed on a 13-inch touch screen (Microsoft surface pro 8). In the task, the fixation point (+) was displayed on the screen for 2 seconds, and the normal or mirror image of F or R was presented at an orientation rotated from 0° to 315° (relative to upright direction) in 45° increments. At the bottom of the screen, there were rectangular buttons on the left and right corners, with the left button labeled "Normal (正立)" and the right button labeled "Mirror (鏡映)" in Japanese. When either button was pressed, the response time and whether the answer was correct or incorrect were recorded, and the fixation point was displayed again for the next trial (see Figure 3). The task was completed after 32 trials (letter: 2 x angle: 8 x normal/mirror: 2).

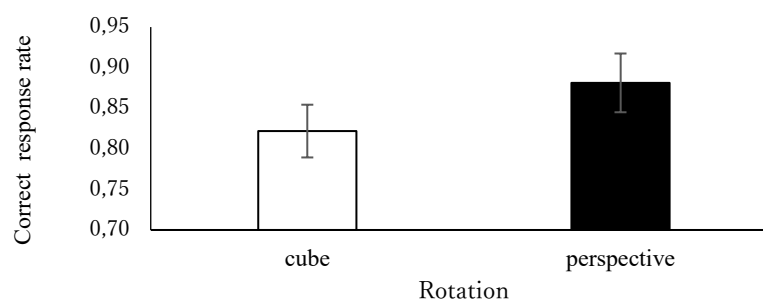
### 2.3. Procedure

The experiment was conducted on each user. Users performed in the following order: practice operating the touch panel, practice and main trials of the search task, and MRT.

## 3. Results

For each user, the correct response time and correct response rate for the search task and the MRT were calculated. For MRT, the values for each angle from 0° to 315° were replaced by the average value from 0° to 180° (the original value was used for 0° only). The slope of the approximate line for the increase of the correct response time for each angle was calculated for each individual. Three users whose correct response rate was below the chance level in the four conditions consisting of the combination of rotation representation (viewpoint, cube) and attribute (country, period) in the search task, and one user whose number of correct responses in the MRT was below the chance level were excluded from the subsequent analyses. The measures of the search task were analyzed in a two-factor repeated measures ANOVA with rotation (viewpoint, cube) × attribute (country, period). Only for the correct response rate, the main effect of rotation was significant, and the correct response rate was higher for viewpoint rotation than for cube rotation ( $F(1,18)=5.82, p=.027$ , see Figure 2). Users were able to search more accurately when rotating the viewpoint than when rotating the cube.

Figure 2. Correct response rates between cube and viewpoint rotation in search task.



### 3.1. Effects of users' spatial ability on the search task

The correct response time and the correct response rate for each angle from 0° to 315° were calculated by replacing the average of 0° to 180° (the original values were used only for 0°). As the angle increased, the correct response time increased and the correct response rate decreased. These trends were confirmed by ANOVA in the correct response time. The main effect of rotation was significant ( $F(4,76)=29.4, p<.001$ ). Multiple comparisons showed that correct response time was significantly longer as the angle increased between all conditions ( $t(19)>4.00$ ) with the exception between 0° and 45°, and 90° and 135° ( $t(19)<0.36$ ). The main effect of rotation was also significant for the correct response rate ( $F(4,76)=2.58, p<.001$ ), but the results of multiple comparisons did not show significant differences between any of the angles ( $t(19)<0.01$ ).

To assess spatial ability, the mean correct response time, the mean correct response rate, and the slope of the change in mean correct response time per angle were determined for each user. In analyzing the effect of spatial ability on the search task, it was concerned that the effect of the order in which the rotation conditions were implemented in the search task might be confounded with the effect of spatial

ability. This is because the results of the search task showed a strong order effect, especially in correct response time, with all users answering the task correctly faster in the later rotation condition than in the earlier one. Therefore, the order of implementation of the two rotation conditions was counterbalanced in the high and low spatial ability groups, respectively. That is, of the users who performed the cube rotation condition first and those who performed the viewpoint rotation condition first, the top five MRT performers each, for a total of 10, were classified as the high spatial ability group, and the bottom five MRT performers each, for a total of 10, were classified as the low spatial ability group. This classification was done for the MRT's response time and correct response rate, correct response time slope, respectively. There was no difference in the degree of interest in art between the low and high spatial ability groups, as asked in the post-questionnaire.

The correct response time and the correct response rate in search task were analyzed in a three-factor mixed model ANOVA with rotation (viewpoint, cube) × attribute (country, period) × spatial ability (high, low). When spatial ability was classified based on MRT's correct response rate, the main effect of spatial ability was significant on the correct response rate of search task, showing that the high spatial ability group searched more accurately than the low spatial ability group ( $F(1,18)=6.26, p=.022$ , see Figure 3). Furthermore, when spatial ability was classified based on MRT's correct response time slope, attribute × spatial ability interaction was significant for correct response time ( $F(1,18)=9.84, p=.006$ ), and for country attribute search, the high spatial ability group was able to search for the correct answer in less time than the low spatial ability group ( $t(18)=3.23, p=.022$ ). In the period attribute search, however, there was no significant difference in the correct response time by spatial ability (see Figure 4).

Figure 3. Correct response rate between low and high spatial ability users in search task. Spatial ability was classified based on the correct response rate (CRR) in MRT.

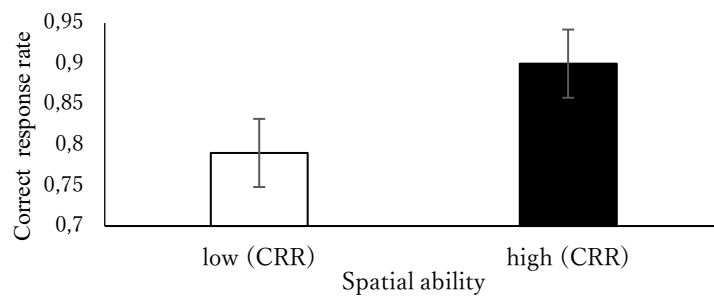
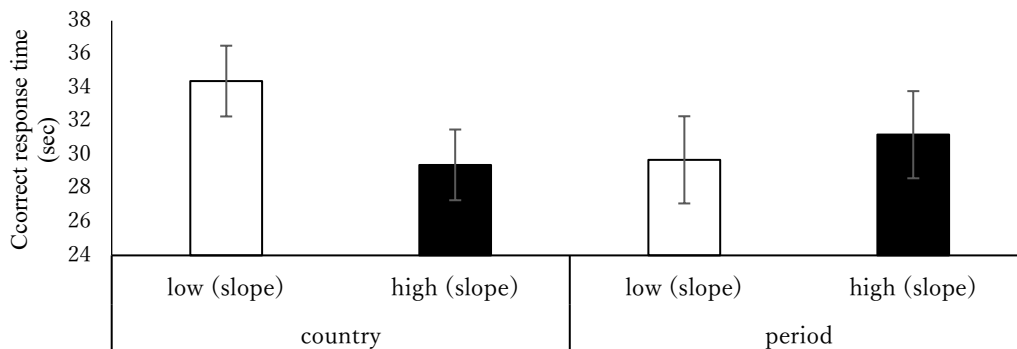


Figure 4. Correct response rate between low and high spatial ability users in search task. Spatial ability was classified based on the correct response time slope in MRT.



#### 4. Discussion

The purpose of this study was to compare two different ways of representing cube rotation and to test which one facilitates the search of information using the 3D visualization system. The result showed that the accuracy of the search task was higher in the "viewpoint rotation" condition, in which the user's viewpoint moved around the cube, than in the "cube rotation" condition, in which the cube itself rotated in front of the users (Figure 2). The cause of this difference can be interpreted from spatial reference frame theory as follows. Under both conditions, the relationship between the users and the cube changes while the cube is being manipulated. However, in the viewpoint rotation condition, the relationship between the cube and the background object is maintained. Therefore, in the viewpoint rotation condition, using the background environment as a stable directional cue, users were able to correctly identify the

placement of artworks in the cube without misunderstanding from which side they were viewing the artworks. On the other hand, in the cube rotation condition, the background room did not change when the cube was rotated, so the users could not use the visual change of the room to understand which side of the cube they were looking at. This has led to an increase in the number of cases where users misunderstood which side they were looking at the artworks from, and thus incorrectly grasped the placement of the artworks in the cube.

In this experiment, regardless of the user's spatial ability, information search was more accurate in the viewpoint rotation condition than in the cube rotation condition. This suggests that the presentation of an environmental reference frame using a viewpoint rotation representation can support information search and spatial thinking using cubes for users with low to high spatial ability. In spite of it, even when the 3D visualization system presented the environmental reference frame, there were still differences in the performance of information retrieval based on the user's spatial ability. However, from an educational point of view, while it is important for educational tools to bridge the ability gap among students, it is more desirable for them to be able to support the abilities within all students. Therefore, the introduction of visual representations with environmental reference frame in 3D visualization system is essential in aiming for educational tools that improve the abilities of all students.

The perspective of this study is a synthesis of two hypotheses about the impact of 3D visualization on learning that have been proposed in previous studies: the ability-as-compensator hypothesis and the ability-as-enhancer hypothesis (Höffler & Leutner, 2011; Huk, 2006). The ability-as-compensator hypothesis predicts that people with low spatial ability who have difficulty visualizing will benefit more from graphic representations. On the other hand, the ability-as-enhancer hypothesis predicts that people with higher spatial ability who have sufficient working memory capacity to handle 3D models will benefit more from 3D models. We believe that by reducing the spatial cognitive load of the visualization system, people with low spatial ability will be able to benefit from it without overloading their capacity, while people with high spatial ability will have more capacity, allowing for more accurate and deeper understanding.

The range of application of FOCUS IN CUBE 3D is wide, and it is expected to have creative effects, such as discovering new relationships between information that was overlooked by visualizing data. Therefore, it remains to be seen to what extent the suggestions obtained using relatively simple tasks such as information search can be applied to more complex tasks. However, given that human cognitive resources (working memory) are finite, we can expect that reducing the cognitive load on lower-order tasks will allow more time to focus attention and thought on higher-order creative tasks, thereby increasing productivity in higher-order tasks. Further verification of this is awaited.

## References

- Cooper, L. A. (1975). Mental rotation of random two-dimensional shapes. *Cognitive Psychology*, 7(1), 20-43. doi:[https://doi.org/10.1016/0010-0285\(75\)90003-1](https://doi.org/10.1016/0010-0285(75)90003-1)
- Höffler, T., & Leutner, D. (2011). The role of spatial ability in learning from instructional animations - Evidence for an ability-as-compensator hypothesis. *Computers in Human Behavior*, 27, 209-216. doi:10.1016/j.chb.2010.07.042
- Huk, T. (2006). Erratum: Who benefits from learning with 3D models? The case of spatial ability (Journal of Computer Assisted Learning (2006) 22 (392-404)). *J. Comp. Assisted Learning*, 22, 392-404. doi:10.1111/j.1365-2729.2006.00180.x
- Krüger, J., & Bodemer, D. (2021). *Space, a Central Frontier - The Role of Spatial Abilities When Learning the Structure of 3D AR Objects*.
- Kung, E., & Hamm, J. P. (2010). A model of rotated mirror/normal letter discriminations. *Mem Cognit*, 38(2), 206-220. doi:10.3758/mc.38.2.206
- Mou, W., & McNamara, T. P. (2002). Intrinsic frames of reference in spatial memory. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 28(1), 162.
- Rump, B., & McNamara, T. P. (2006, September). Updating in models of spatial memory. In *International Conference on Spatial Cognition* (pp. 249-269). Springer, Berlin, Heidelberg.
- Searle, J. A., & Hamm, J. P. (2017). Mental rotation: an examination of assumptions. *Wiley interdisciplinary reviews. Cognitive science*, 86.
- Shepard, R. N., & Metzler, J. (1971). Mental rotation of three-dimensional objects. *Science*, 171(3972), 701-703. doi:10.1126/science.171.3972.701
- Windhager, F., Salisu, S., Leite, R. A., Filipov, V. A., Miksch, S., Schreder, G., & Mayr, E. (2020). Many Views Are Not Enough: Designing for Synoptic Insights in Cultural Collections. *IEEE Computer Graphics and Applications*, 40(3), 58-71.

## ENACTMENT AND IMAGINATION ENCODING CREATE FALSE MEMORIES OF SCRIPTED ACTIONS

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### Abstract

The present study aims to extend our knowledge about the false memories from an adaptation of the DRM paradigm (Roediger & McDermott, 1995) in order to generate memory errors for everyday life action lists. In this perspective, the standard DRM task has been adapted, replacing the associated word lists with thematically related action lists. Each action list refers to a temporally connected action routine, i.e. a script. The sentences describing actions automatically involve visual and motor simulation of the scene. Therefore, the issue is to know whether the encoding conditions of enactment and motor imagery compared to verbal encoding (as control) impact false memories. Compared to the numerous studies on imagination effects on false memories, the enactment effect on the production of false memories of thematically related actions has not yet been tested. Therefore, we compared three experimental conditions: (1) a control condition, in which participants were asked to hear all lists attentively; (2) an imagery condition, where participants were instructed to visualize themselves performing each action, presented orally; (3) an enactment condition, participants had to mime each action heard as if they really were performing it. Then, without having been warned beforehand, all participants carried out a recognition test. The results confirmed the creation of false memories for associated action lists (scripted actions) and therefore valid this new version of the DRM task. However, false memories were of the same magnitude under all encoding conditions. These findings ask into question the classical models of memory, which assume that enactment and visual imagery should favour distinctive conceptual processing with the consequence of reducing false recognition. However, the field of embodied cognition might provide an alternative hypothesis that merit to be discussed and explored.

**Keywords:** *Actions, enactment, false memories, visual imagery, script.*

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### 1. Introduction

Usually when we remember events, we visualize individuals, objects, in a sequence of actions (like to see her/himself closing the door or turning off the oven before leaving, etc.). In these circumstances, false memories might result from the memory of an event which never enacted or which was imagined. Compared to the numerous studies on imagination effects in false memories paradigms, few studies have investigated the enactment effects on false memories. Therefore, the present study aims to extend our knowledge about the false memories from an adaptation of the DRM paradigm (Roediger & McDermott, 1995) in order to generate memory errors for everyday life action lists. Script sentences describing actions semantically associated may involve visual and motor simulation of the scene, which may lead of increasing or reducing false memories.

Imagination as the cause of distorted memories is known as *imagination inflation*. The inflation of the imagination occurs when an imagined event strengthens individuals' certainty or belief that the event actually happened. For example, participants claim to have performed an action or seen an object, when they simply imagined them. Goff and Roediger (1998; Lindner & Echterhoff, 2015) confirmed this phenomenon by highlighting the repeated effects of imaging encoding process on the increase of false memories. The hypothesis was that the more an event is imagined, the closer it is to the perception (i.e. to a real event) and the more the individual will make an error on the origin of this information by declaring that the event was perceived while it was imagined. In the Goff and Roediger study (1998; Lindner & Echterhoff, 2015) the more the participants imagined themselves performing an action (e.g. throwing a ball), the more they produced source errors. Participants mistakenly believed that they had actually performed the actions when they had only imagined them. Overall, findings have shown that

imagining actions makes them as vivid and real as their actual realization (Lyle & Johnson, 2006; Mitchell & Johnson, 2009). In contrast, few studies have shown a reduction of false memories for imagined action sentences (Maraver et al., 2021).

Whereas imagination effect has been widely examined with word lists or action lists in false memories paradigms, few studies have investigated the enactment effect. Nevertheless, Sauzéon et al. (2016) found an increase in correct recognition performance and a reduction in false recognition in a source memory task, where participants had to virtually move through a space. Thus, although the benefits of the motor activity (enactment effect) on memorization, compared to a condition of motor imagery or verbal encoding have been widely demonstrated (Horstein & Mulligan, 2004; Koriat et al., 2003), the enactment effect on the production of false memories of thematically related actions has not yet been tested. Therefore, it was interesting to compile evidence and explore the impact of enactment and motor-imagery on the false memories.

This study aimed to explore the effects of the visual-motor imagery and of the enactment on the false memories for actions thematically associated. It is well known that visual-motor imagery and the enactment encoding strategies increase correct memorization performances. However, in accordance with the distinctiveness heuristic hypothesis (Dodson & Schacter, 2001; Schacter et al., 1999), we hypothesized a reduction of false memories after the visual-motor imagery or the enactment as encoding strategies compared to a control condition (listen the action lists). Indeed, the distinctiveness heuristic hypothesis suggests that reductions in false recollection result from the monitoring decision based on a distinctive detail of the encoding context, which allows participants to decide whether the action has been previously experimented. When sufficient distinctive features have been encoded participants call upon a strict decision criterion, i.e. one that demands access to the distinctive features (Israel & Schacter, 1997; Schacter et al., 1999). Therefore, we expected that imagined or enacted actions provide more distinctive details increasing the memorization of studied actions and thus, precluding false memories. The impact of imagined or enacted actions on the creation of false memories was not investigated with the DRM task. Therefore, the Deese-Roediger-McDermott paradigm (DRM, Roediger & McDermott, 1995) considered, as the most robust in the false memories field, has been adapted. Moreover, the validation of this experimental device would make it possible to bring to the DRM an ecological dimension, which in a later version could be intended for the evaluation of false memories in a clinical context.

## 2. Method

### 2.1. Participants

Ninety undergraduates of Nantes University (excluding students in psychology) were randomly assigned to one of the following conditions: control; enactment; motor-imagery. Thus, three groups of 30 participants were established. They were between 18 and 41 years of age ( $M = 24.32$ ;  $SD = 5.48$ ; 42 women and 48 men) and all were native French speakers. The sample size was determined using G\*Power analysis (Faul et al. 2007) that yielded a total sample size equal to 54 for statistical analyses (for  $\alpha = .05$ , power = .95, number of groups = 3, a medium size effect = .25 for the Anova repeated measures within-between interaction). In compliance with the declaration of Helsinki, all participants gave their written informed consent, freely consented to participate and were able to withdraw whenever they wished. Exclusion criteria were significant neurological or psychiatric illness, and major motor, visual, or auditory difficulties.

### 2.2. Material

The action lists consisted of 8 lists, each corresponding to a script, comprising 12 sentences of associated actions converging on the most central action, the title of the script corresponding to the action lure. The scripts were: "to make a home-move", "to make a coffee", "to do the housework", "to do the garden", "to wash his/her hair", "withdraw cash to the ATM", "to change a flat tire" and "to write a letter". These action lists were selected from norms validated in French by Corson (1990). The selected actions were the more central and distinctive of each script. The recorded actions of each script were presented in a chronological order at the rate of one action per 5,000 ms (see Goff & Roediger, 1998).

The recognition task consisted of a list of 52 actions distributed randomly: 24 studied actions (the 1st, 5th and 11th action) selected in each script; 8 actions lures corresponding to the titles of the 8 scripts, which were never presented; 20 false alarms from 5 scripts not studied corresponding to the 5 script titles and 15 actions (the 1st, 5th and 11th action) selected in each script.

The recognition of each action sentence consisted in evaluating on a 4-point scale the certainty with which the participant estimated to have heard or not the action sentence: 1 point "I am sure not to have heard this action"; 2 points "I am almost sure that I haven't heard this action"; 3 points "I am almost sure that I heard that action"; 4 points "I'm sure I heard that action". We used the same scale as in our

previous studies with DRM wordlists (see Robin et al., 2015; 2021). Then, whatever their answer, participants had to indicate their level of consciousness in responding to the Remember/know test (Tulving, 1985). They checked “R” when they remembered details associated with the encoding situation (a conscious recollection) and “K” when they felt that the sentence sounded familiar, having simply the feeling of already it heard, without being able to give the slightest detail.

### 2.3. Procedure

The participants carried out the task individually. First, they completed a consent form, and then, in all three experimental conditions, participants were instructed to listen carefully the recorded 8 lists of 12 actions each. In the control condition, participants had to listen carefully the action lists. In the imagery condition, for each sentence heard, they had to imagine themselves performing the actions, as if they were actually performing them. An example was provided: “if you hear the sentence, driving a nail with a hammer, you must imagine yourself with a hammer in your hand and imagine the movements that one usually makes when driving a nail with a hammer, all by feeling the sensations (muscular and articular) associated with this movement. Imagine that you are actually driving a nail with a hammer.” In the enactment condition, the instruction explicitly invited participants to mime each action as if they were actually performing it. Here again an example was provided. For practical reasons, mime rather than real activity (i.e. with real objects) was proposed and because of the negligible impact of the presence of real objects on memorization compared to mime (see Engelkamp & Cohen, 1991). Then, participants filled out a demographic questionnaire for about 5 minutes. Then, without to be warned before, they completed the recognition test. At the end of this test, participants had to specify what they thought about the objectives of the study in order to discard all participants who expected a study on false memories.

## 3. Results

### 3.1. Confidence ratings on the 4-point scale

An ANOVA with repeated measures was carried out with Action type as a within-subject factor (studied actions, lures and false alarms) and Condition as a between-subject factor (control, imagery and enactment). Table 1 presents the mean rating confidence for each encoding condition and each action type. The effect of Condition was not significant,  $F(2, 87) = 1.15, p = .32, n_p^2 = .03$ . The analyses revealed a significant effect of Action type,  $F(2, 174) = 211.14, p < .001, n_p^2 = .71$ . The analyses also reported a significant Condition x Item interaction effect, with  $F(4, 174) = 3.41, p = .02, n_p^2 = .07$ . Post-hoc analyses (*Bonferroni*) indicated that mean rates of recognition for the studied actions were significantly higher than recognitions of lures and false alarms,  $p_s < .001$ . In contrast, recognitions rates for lures were so high than false alarms rates ( $p = .72$ ).

Table 1. Mean confidence ratings (standard deviation) on 4-point scale for each action type (studied; lures; false alarms) in each experimental condition (control, imagery, enactment).

|           | Studied actions | Lures       | False alarms |
|-----------|-----------------|-------------|--------------|
| Control   | 3.27 (0.30)     | 2.26 (0.70) | 2.33 (0.69)  |
| Imagery   | 3.62 (0.15)     | 2.38 (0.74) | 2.28 (0.28)  |
| Enactment | 3.65 (0.30)     | 2.32 (0.79) | 2.10 (0.09)  |

### 3.2. Comparisons of “old” responses

An ANOVA with repeated measures was carried out with the mean proportions of “old” responses (responses 3-4) associated to each Action type. The mean percentages of recognition are presented in Table 2.

Table 2. Mean percentage of old responses (responses 3 and 4) for each action type (studied; lures; false alarms) in each experimental condition (control, imagery, enactment).

|           | Studied actions | Lures         | False alarms |
|-----------|-----------------|---------------|--------------|
| Control   | 78.33 (11.29)   | 40.00 (28.12) | 8.28 (13.75) |
| Imagery   | 90.28 (5.40)    | 42.08 (27.36) | 3.33 (4.55)  |
| Enactment | 90.42 (9.49)    | 41.67 (29.05) | 2.89 (4.17)  |

Note. Standard deviation in parentheses.

The analyses revealed a significant effect of Action type,  $F(2, 174) = 554.86, p < .001, n_p^2 = .86$ , which supported the presence of false memories in the DRM paradigm. Indeed, post-hoc analyses (*Bonferroni*) indicated that rates of veridical recognition for the studied words were significantly higher

than false recognitions of action lures ( $p < .001$ ). False recognitions of lures were higher than false recognitions of false alarms ( $p < .001$ ). The effect of Condition was not significant,  $F(2, 87) = 0.62$ ,  $p = .54$ ,  $n_p^2 = .01$ . However, the analyses reported a significant Condition x Action interaction effect, with  $F(4, 174) = 2.76$ ,  $p < .03$ ,  $n_p^2 = .06$ .

Post-hoc analyses (*Bonferroni*) showed that correct recognitions rates of studied actions were higher in the enactment condition than in the control condition,  $p < .001$ . False recognitions rates of lures were also significantly higher in the imagery conditions imagery condition compared to the control ( $p < .001$ ). Nevertheless, correct recognitions rates were not significantly different between both, the enactment and imagery conditions. Surprisingly, the rates of false recognition of lures were high in the three conditions, all  $p_s = 1.000$ . Lastly, false recognitions of false alarms were the lowest rates and did not vary significantly among the encoding conditions, all  $p_s > .670$ .

### 3.3. Responses remember vs know

The mean responses R/K in each encoding condition for each action type are presented in Table 3.

Table 3. Mean number of responses Remember vs. Know for each action type (studied actions, lures and false alarms) in each encoding condition conditions (control, enactment, imagery).

| <b>REMEMBER</b>  | <i>Studied actions</i> | <i>Lures</i> | <i>False alarms</i> |
|------------------|------------------------|--------------|---------------------|
| <i>Control</i>   | 14.30 (4.99)           | 3.93 (2.39)  | 14.00 (5.75)        |
| <i>Imagery</i>   | 18.60 (4.31)           | 5.00 (2.07)  | 14.20 (5.53)        |
| <i>Enactment</i> | 20.50 (3.18)           | 5.53 (1.98)  | 18.10 (0.75)        |
| <b>KNOW</b>      | <i>Studied actions</i> | <i>Lures</i> | <i>False alarms</i> |
| <i>Control</i>   | 9.27 (4.82)            | 3.83 (2.34)  | 4.67(5.71)          |
| <i>Imagery</i>   | 5.43 (4.31)            | 3.00 (2.07)  | 4.83 (5.53)         |
| <i>Enactment</i> | 3.47 (3.18)            | 2.43 (1.94)  | 0.90 (0.75)         |

Note. Standard deviation in parentheses.

The analyses revealed a significant Condition x Action interaction effect,  $F(2, 87) = 16.4$ ,  $p < .001$ ,  $n_p^2 = .27$ . Post hoc comparisons (*Bonferroni*) revealed that correct recognitions of studied actions lead to a recollection (responses Remember) instead of feeling of familiarity (responses Know),  $p < .001$ . However, the mean number of responses Remember were higher in the enactment and imagery conditions than in the control condition ( $t(87) = 5.68$ ,  $p < .001$ ;  $t(87) = 3.88$ ,  $p = .003$ , respectively). Pearson's correlation revealed a strong and significant positive correlation between mean confidence ratings and mean Remember responses in all conditions,  $r = .521$ ,  $p < .001$ .

The analyses showed a significant Condition x Action interaction effect,  $F(2, 87) = 3.90$ ,  $p = .024$ ,  $n_p^2 = .08$ . Overall, post hoc comparisons (*Bonferroni*) revealed that false recognitions of actions lures were related to more responses Remember ( $p < .001$ ) compared to responses Know. Nevertheless, this effect was significant only in the action condition ( $t(87) = 4.03$ ,  $p = .002$ ). Pearson's correlation revealed a positive correlation between mean confidence ratings for lures and mean Know responses,  $r = .240$ ,  $p = .022$  and a negative correlation between mean confidence ratings for lures and mean Remember responses,  $r = -.228$ ,  $p = .031$ . However, these correlations were weak.

The analyses showed a significant Condition x Action interaction effect,  $F(2, 87) = 3.90$ ,  $p = .024$ ,  $n_p^2 = .08$ . Overall, post hoc comparisons (*Bonferroni*) revealed that false recognitions of false alarms lead to higher responses Remember in all conditions (all  $p_s < .001$ ) compared to responses Know. The mean number of responses Remember were higher in the enactment condition than in the control and imagery conditions ( $t(87) = 3.45$ ,  $p = .013$ ;  $t(87) = 3.29$ ,  $p = .022$ , respectively), there was no difference between the control and imagery conditions. In addition, responses Know were higher in the control and imagery conditions than in the enactment condition ( $t(87) = 3.16$ ,  $p = .032$ ;  $t(87) = 3.30$ ,  $p = .021$ , respectively), there was no difference between the control and imagery conditions. Overall, Pearson's correlation revealed a strong and positive correlation between mean confidence ratings for false alarms and mean Know responses,  $r = .506$ ,  $p < .001$  and a strong and negative correlation between mean confidence ratings for false alarms and mean Remember responses,  $r = -.488$ ,  $p < .001$ . These results indicated that correct rejection of false alarms as not being studied was correlated with a conscious recollection whereas false recognitions of false alarms were related to a feeling of familiarity.

## 4. Discussion

The present study aimed to evaluate the impact of the sensory-motor encoding on the false memories. The original DRM material (lists of words semantically associated with a thematic word) has been replaced by lists of actions semantically associated with a script. The results confirmed the validity

of the experimental task with regard to the creation of false memories within stereotyped actions such as scripts. However, the enactment and visual-motor imagery did not reduce false memories as it was expected. A likely explanation might be that relational processing of semantically associated actions lists relies on sensory-motor representations. Within the standard DRM paradigm, Danker and Anderson (2010) have noted that the reactivation of sensory areas was more intense during the retrieval of correct information, but that this did not prevent participants from retrieving false memories. These observations could then account for our results. Indeed, it is likely that the emergence of script activates sensory-motor knowledge related to the actions as well as the context. Therefore, the processing of actions automatically might trigger the conceptual, sensorimotor, and experiential traces associated with prior experiences. Hence, the participants automatically would simulate the situation evoked by each action (see Zwaan & Yaxley, 2004). This assumption might explain the low rates of false alarms and the high rates of false and veridical memories in the enactment and imagery conditions as well in the control condition. To conclude, it turns out that the emergence of knowledge such as scripts relied on simulation forming a global multimodal trace, which is not free from false memories. It seems then crucial to explore the issue of false memories in the context of embodied cognition, our assumptions deserving further investigation.

### References

- Corson, Y. (1990). The structure of scripts and their constituent elements. *Cahiers de Psychologie Cognitive*, 2, p. 157-183.
- Danker, J.F. & Anderson, J.R. (2010). The ghosts of brain states past: Remembering reactivates the brain regions engaged during encoding. *Psychologic Bulletin*, 136(1), 87-102.
- Dodson, C. S., & Schacter, D. L. (2001). "If I had said it I would have remembered it": Reducing false memories with a distinctiveness-heuristic. *Psychonomic Bulletin and Review*, 8, 155-161.
- Engelkamp, J., & Cohen, R. L. (1991). Current issues in memory of action events. *Psychological Research*, 53(3), 175-182.
- Goff, L. M., & Roediger, H. L. (1998). Imagination inflation for action events: repeated imaginings lead to illusory recollections. *Memory and Cognition*, 26, 20-33.
- Horstein, S.L. & Mulligan, N.W. (2004). Memory for actions: Enactment and source memory. *Psychonomic Bulletin & Review*, 11(2), 367-372.
- Israel, L., & Schacter, D. L. (1997). Pictorial encoding reduces false recognition of semantic associates. *Psychonomic Bulletin and Review*, 4, 577-581.
- Koriat, A., & Pearlman-Avni, S. (2003). Memory organization of action events and its relationship to memory performance. *Journal of Experimental Psychology: General*, 132(3), 435.
- Lindner, I., & Echterhoff, G. (2015). Imagination inflation in the mirror: Can imagining others' actions induce false memories of self-performance? *Acta psychologica*, 158, p. 51-60.
- Lyle, K. B., & Johnson, M. K. (2006). Importing perceived features into false memories. *Memory*, 14, 197-213.
- Maraver, M. J., Lapa, A., Garcia-Marques, L., Carneiro, P., & Raposo, A. (2021, on line). Imagination Reduces False Memories for Everyday Action Sentences: Evidence from Pragmatic Inferences. *Frontiers in Psychology*, 12, 668899, 1-10.
- Mitchell, K. J., & Johnson, M. K. (2009). Source monitoring 15 years later: what have we learned from fMRI about the neural mechanisms of source memory? *Psychological Bulletin*, 135(4), 638-677.
- Robin, F., & Mahé, A. (2015). Effects of image and verbal generation on false memory. *Imagination, Cognition and Personality*, 35(1), 26-46.
- Robin, F., Ménétrier, E., & Beffara-Bret, B. (2021, online). Effect of visual imagery on false memories in DRM and Misinformation paradigms. *Memory*.
- Roediger, H. L., & McDermott, K. B. (1995). Creating false memories: Remembering words not presented in lists. *Journal of Experimental Psychology: Learning, Memory and Cognition*, 21, 803-814.
- Sauz on, H., N'Kaoua, B., Pala, P.A., Taillade, M. & Guitton, P. (2016). Age and active navigation effects on episodic memory: A virtual reality study. *British Journal of psychology*, 107, 72-94. <https://doi.org/10.1111/jnp.12055>
- Schacter, D. L., Israel, L., & Racine, C. (1999). Suppressing false recognition in younger and older adults: The distinctiveness heuristic. *Journal of Memory and Language*, 40, 1-24.
- Tulving, E. (1985). Memory and Consciousness. Canadian Psychological Association, 26(1), 1-12.
- Zwaan, R. A. & Yaxley, R. H. (2004). Lateralization of object-shape information in semantic processing. *Cognition*, 94, 35-43.



## FROM STRUCTURALIST TO POSTSTRUCTURALIST PSYCHOANALYSIS

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### Abstract

In structuralist times, Levi-Strauss forwarded the notion of a structural (obviously) unconscious, functioning according to simple, formal laws of organisation and being akin to what Paul Ricoeur called a “Kantian unconscious”, to a “compartmentalised system without any reference to a thinking subject”. In the wake of structuralism, psychoanalysis seems to fall back, yet again, on the biological input which constituted, for that matter, its primordial inspiration (Freudism has often been indicted for biologizing excesses (Laplanche) or even dismissed as a (crypto)biologism (Sulloway). If the structuralist psychoanalyst Jacques Lacan shoved the unconscious into the abstract tiers of language, enouncing the principle according to which the unconscious is “structured as a language,” poststructuralist representatives of psychoanalysis, such as Didier Anzieu, for example, make a decisive swerve back to corporeality and, implicitly, to Freud. I argue that the instruments provided by the poststructuralist psychoanalysis allow for a more permissive analysis, which no longer remains steeped in the rigid confines of a “system” and does no longer have to pay its dues to structure, considered by structuralists to have been inherent in things.

**Keywords:** *Poststructuralist psychoanalysis, moi-peau, psychotic enclave, mechanism of defence, inner coherence.*

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### 1. Introduction

In structuralist times, Levi-Strauss forwarded the notion of a structural (obviously) unconscious, functioning according to simple, formal laws of organisation and being akin to what Paul Ricoeur called a “Kantian unconscious”, to a “compartmentalised system without any reference to a thinking subject”.

In the wake of structuralism, psychoanalysis seems to fall back, yet again, on the biological input which constituted, for that matter, its primordial inspiration (Freudism has often been indicted for biologising excesses (Laplanche in Juillerat 17) or even dismissed as a (crypto)biologism (Sulloway 17).

If the structuralist psychoanalyst Jacques Lacan shoved the unconscious into the abstract tiers of language, enouncing the principle according to which the unconscious is “structured as a language,” (Lacan 15) poststructuralist representatives of psychoanalysis, such as Didier Anzieu, for example, make a decisive swerve back to corporeality and, implicitly, to Freud.

Here’s how Anzieu himself states his approach:

I attach a great deal of importance to the body, to the biological root of psychic life, to the relations between the psychic *Moi* and the corporeal *Moi*, to their limits and to the latter’s fluctuations and to all the material of primary sensations which will be articulated, subsequently, to the drives, and will organise themselves into phantasms and conflicts. (Anzieu, *Une peau* 48 (translation mine))

### 2. Objectives

Yet this Freudian traditionalism is cautiously exercised and there is, apparently, as I set out to demonstrate, no decisive positioning into the consideration of body as the cause of knowledge and of psychical life. Rather, it is postulated as being only the material and natural condition of their activity:

Si le psychisme s’ancre dans le biologique, qui en est le support, il se situe néanmoins à un niveau d’organisation bien différent où s’effectue une mise en sens. (Assoun & Zafiroopoulos 34)

On their quest for “new metaphors”, certain psychoanalysts, borrowing concepts developed recently in physics and in biology, even talk of self-organisation, indeterminacy, discontinuity, arbitrariness, in genuine poststructuralist vein.

### 3. Discussion

Bearing this poststructuralist synopsis in mind, I should hopefully be able to forge the next link in my argumentative chain, namely that the unconscious, regardless of its definitional framework, is fundamental in cultural elaboration (and I shall identify illustrations of it in Clifford Geertz’s description of the Balinese cockfight). It appears, therefore, in close connection (and opposition) with the conscious. As announced by the anthropologist, the Balinese ritual is not merely a shallow, convulsive surge of animal hatred. It goes deeper than that: “Balinese see in fighting roosters – themselves, their social order, abstract hatred, masculinity, demonic power,” (Geertz 442) and secondarily, but not less importantly: “[T]hey also see the *archetype* of status virtue, the arrogant, resolute, honour-mad player with real fire.” (idem)

The uneasiness accompanies, therefore, the spectacle of a repressed reality which quits its recesses and steps to the foreground. The unnerving and unsettling quality of this “mock war of selves” translates, moreover, the unsettling quality of the unconscious itself, which is “played out”, by transfer, under the guise, and through the mediation of this cultural formation.

In acting as a mirror for the unknown within, the cockfight is both “symmetrical” to the reflected image (an invisible one, which is allowed visibility) and reversed, at the same time, as any mirror reflection, undergoing consequently a process of *lateralisation* – as Gerard Pommier calls it:

The lateralisation of the human being is imposed with necessity, because the relation between the image and the mirror is necessarily reversed, and because this image constitutes our “true” psychical body, firstly alienated in the Other. In the act we perform with a view to appropriating this body, we must submit to the constraints of this symmetry and as a result, we become ourselves lateralised. Our body will be, therefore, “psychically” divided by the repression, cleft in the aftermath of the spatial organisation involved in it. (Pommier 330-1)

In other words, the Balinese doesn’t *find* himself in this mirror, rather, he *discovers* himself: “In the cockfight, then, the Balinese forms and discovers his temperament and his society’s temper at the same time” (Geertz 451) – whereof the disquietful feeling which accompanies the playing-out of his “inside”, which inherently preserves the strange imprint of the repressed signification. The idea is implicit in the attributes Clifford Geertz ascribes to roosters engaged in the fight. They are “surrogates of their owners’ personalities”, “animal mirrors of psychic form”.

The repression follows a trajectory which ends, as I said, in reversal, in “lateralisation”: The “inside” can be successfully forced into the “outside” with the provision that the “inside” has a repressed status. Once the repressed reality is forced into resurfacing, the expectations that someone must make good on the promise of visibility and of translation, could be met with even in an oblique manner: by assigning it a warm, camouflaged “underneath” to the “outside”, away from immediate recognition:

The slaughter in the rooster ring is not a depiction of how things literally are among men, but what is almost worse, of how, from a particular angle, they imaginatively are. (Geertz 416)

Does the subject gain something from appropriating, in a Hegelian manner, what he rejects and represses? No. He gains nothing. But it is this nothing that will turn into the good awaiting at the end of this void operation, which, moreover, ensures his/her psychic survival.

Lacan thought that the aim of psychoanalysis was that of urging and guiding people in realising (read accomplish, fulfil) their repressed desires, thus decreeing that desire was the only important element, regardless of its nature. The post-Lacanian Didier Anzieu opposes his forerunner (and master, for that matter), arguing that the liberation of desire, savage by nature, is a dangerous act, to the point of jeopardizing the very life of the subject.

In our case, Anzieu’s reservations with regard to the liberation of the repressed desire may be said to have been confirmed – judging from a psychoanalytical point of view.

I dare say, at this point, that the cockfight gives vent in a vicarious and thus, harmless manner, to repressed desires which, if actualised, would result in a bloodbath. The cockfight is, consequently, a reflection of a pre-existing sensibility analogically represented, a sensibility which is transferentially played out, enacted and thus rendered harmful. Briefly, it annihilates a “psychotic enclave.” (Dolto 34) We witness how the environment assumes, surprisingly, a function of defence.

Hans Loewald, another representative of what today stands in for and “amends” the Lacanian psychoanalysis, namely the poststructuralist psychoanalysis, has some interesting remarks on this relation between the subject and the outward reality – remarks which might prove illuminating for the proceedings of my analysis. Meditating upon this relationship (with reference to primary narcissism) he says that there is a stage, in the subject’s organisational development, when there is no distinction between the “interior” and the “exterior”, and this happens when the “inside” and the “outside” do not exist yet. (Loewald 17) He forwards the idea of a “primary reality”, where the subject exists only through its relationship with the “environment”. This “primary reality”, which is set in clear-cut opposition to the “psychical” reality is, as Loewald defines it, “une organisation spécifique au service d’une importante fonction de défense.” (Loewald 29) By means of it, its theoretician is capable of sidestepping the structural dichotomy subject/object, which did not allow for an exchange of defensive roles, and lures the process onto more permissive (poststructurally permissive) grounds. (Bass 313)

We can, thereby, conceive the cockfight as one such “primary reality”, which abandons the status of a distant, impervious “object” (-reality) and takes upon itself a function of defence, warding off, through the oblique discharge of repressed desires, the perils accompanying their blunt enactment.

One can imagine the risks involved in such a transfer, and the brittleness of this “primary reality” which acts like a vaccine, activating the virus in order to annihilate it. (Chodorow 901) Yet they are worth taking. Geertz ascertains to the risk presumption:

Fighting roosters is like playing with fire only not getting burned. You activate village and kingroup rivalries and hostilities, but in “play” form, coming dangerously close to the expression of open and direct interpersonal and intergroup aggression (something which, again, almost never happens in the normal course of ordinary life), but not quite, because, after all, it is only a cockfight. (Geertz 440)

The psychical self is a wounded one, we might say. Moreover, as Juillerat proposes, it is both closed and open, that is, both autonomous – and capable of constituting an independent identity – and dependable, constituting itself in and through the relation with an other. (13) In other words, it is an autonomous “subject”, as well as an applicant to the service of an “object” – to draw on the previous Loewaldian concepts, which prove to come in handy.

One cannot help but notice, in Geertz’s cockfight, the close connection between Balinese men and their roosters, which become, thus, almost extensions of their owners’ personality. Moreover, as Geertz remarks, they often refer to the roosters in terms of “I fought So-and-So.” (Geertz 422)

The contact with the other – in our case, the rooster – (pertaining to that “object” “primary reality”, the cockfight) is not entirely established on abstract bases. Didier Anzieu, who equates the unconscious itself with the body, would perceive this engagement with the other at the level of *skin*<sup>1</sup>.

For Anzieu, the skin is the pivotal concept of his theoretical scaffolding:

La peau c’est *l’interface* (emphasis added) qui marque la limite avec le dehors et maintient celui-ci à l’extérieur, c’est la barrière qui protège de la pénétration par les avidités et les agressions en provenance des autres, êtres ou objets. La peau est un lieu et un moyen primaire de communication avec autrui, d’établissements des relations signifiants et de plus, une surface d’inscription des traces laissées par ceux-ci. (Anzieu *Le Moi-peau*, 45)

Anzieu goes so far as to coin a new psychoanalytic concept, which is meant to mobilise – and here I shall take over Valéry’s phrasing<sup>2</sup> – the profundity in us, which is our surface, namely the concept of *Moi-peau*.

This is the moment when the psychical *moi* differentiates itself from the corporeal *moi*, at the operational level, remaining identical with it, nevertheless, at the figurative level.

The risks of depersonalization are, as Anzieu remarks, pervasive in the image of a punctured envelope and equally, in the anxiety that all the vital substance leaks through the perpetrated breaches. Contextualizing Anzieu’s theorems to my analysis, I should say that the rooster – functioning, as I established, as a prosthesis of its owner’s imago – is transferentially assigned the role of saving the integrity of the *Moi-peau*, of the bodily envelope.

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<sup>1</sup>Didier Anzieu. *Une peau pour les pensées* : “je crois être profondément freudien, tout en étant modérément orthodoxe par rapport aux théories psychanalytiques régnautes, à la formule “l’inconscient est structuré comme un langage”, j’opposerai une formule implicite chez Freud : ‘l’inconscient c’est le corps’ le corps source des premières expériences sensori-motrices, des premières communications”, 89.

<sup>2</sup>Paul Valéry: *La Pléiade*, tome 2: “Ce qu’il y a de plus profond dans l’homme, c’est la peau”. “Et puis moelle, cerveau, tout ce qu’il faut pour sentir, pâtre, penser...être profond [...], ce sont des inventions de la *peau* ! Nous avons beau creuser, docteur, nous sommes...ectoderme”, 215-6.

The responsibility may prove, nevertheless, a little too difficult, since the fighting roosters have spurs attached to their legs, in order to “hack each other to pieces.” (Geertz 422) We can understand why the Balinese are so intent on preserving the bodily integrity of their roosters, preventing, as much as possible, the blood drainage.

The puncturing, the tearing of the bodily envelope gets unconsciously associated with an impossibility of “containing” the psychical processes, which henceforth are perceived as disseminated. Breaching the container involves, consequently, it’s inevitable malfunctioning and, implicitly, the impossibility of keeping up the barrier it raised against the outside (the skin could have been perceived as a physical mechanism of defence). The spur attached to the opponent’s leg becomes, in all likelihood, a marker of a potential aggressiveness on the part of the other, liable to rip apart one’s psychical envelope, which would jeopardise one’s inner coherence, the very continuity of one’s self.

Such an act of aggressiveness would be, in Geertz’s terms, an instantiation of the “powers of darkness”, or of that “lumber room” which, for Lacan, designated the unconscious: “In identifying with his rooster, the Balinese man is identifying with what he most fears, hates – ‘The Powers of Darkness.’” (Geertz 420).

#### 4. Conclusions

Retracing my steps, with self-reflexive and assessing intentness, I would conclude that the instruments provided by the poststructuralist psychoanalysis allow for a more permissive analysis, which no longer remains steeped in the rigid confines of a “system” and does no longer have to pay its dues to structure, considered by structuralists to have been inherent in things – rather, I would say, structure was in the mind.

Yet this analytic permissiveness works its wiles in ambivalent ways. Concepts such as indeterminacy, free play – glossed upon in previous chapters – contaminate the status of the analysis itself, which is downsized and downplayed to the status of mere interpretation which, according to Gadamer, the hermeneut, is “infinite”.

In fact, a psychoanalytic investigation cannot be other than tentative, conducted as it is on a reality which remains concealed, namely the reality of the *psyche*, with its array of representations and unconscious desires.

#### References

- Anzieu, Didier. (1985). *Le Moi-peau*. Paris: Bordas.
- Anzieu, Didier. (1986). *Une peau pour les pensées*. Paris: Editions Clancier-Guenaud.
- Assoun, Paul-Laurent and Zafiroopoulos, Markos. (2012). *L’Anthropologie psychanalytique*. Paris: Economica.
- Bass, Alan. (2005). *La psychanalyse depuis Loewald*. Paris: Aubier,
- Chodorow, Nancy. (2003) “The psychoanalytic vision of Hans Loewald” in *Int J Psychoanal*. Aug (2): 897-913.
- Loewald, Hans. (1960) “On the Therapeutic Action of Psychoanalysis” in *Int J Psychoanal*.41: 16-33.
- Dolto, Françoise (1984). *L’image inconsciente du corps*. Paris, FR: Éditions du Seuil.
- Dosse, François. (2001). *Barthes, Lacan, Foucault: l’auteur, la structure*. Paris, PUF.
- Geertz, Clifford. (2003). *Deep Play: Notes on the Balinese Cockfight*. New York: Basic Books,
- Juillerat, Bernard. (2001). *Penser l’imaginaire. Essai d’anthropologie psychanalytique*, Paris: Editions Payot Lausanne,
- Lacan, Jacques. (1999). *Ecrits*, (III), Paris: Gallimard.
- Ledoux, Michel. (2000). *Introduction a l’oeuvre de Françoise Dolto*. Paris: Editions Rivages.
- Pommier, Gerard. (2013). *Naissance et renaissance de l’écriture*. Paris, Presses Universitaires de France.
- Ricoeur, Paul. (1999). “The Metaphorical Process as Cognition, Imagination and Feeling” in S. Sachs (ed.), *On Metaphor*, Chicago: Chicago University Press: 141-57.
- Sulloway, F. J. (1979). *Freud, biologist of the mind: Beyond the psychoanalytic legend*. Harvard University Press.
- Valéry, Paul. (1990). *Morceaux choisis*, Paris: Gallimard.

# THE DYNAMICS OF SECONDARY TRAUMATISATION IN THERAPY WITH VICTIMS OF TORTURE

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## Abstract

The paper focuses on challenges and burdens of psychotherapists working with torture victims. Torture is used worldwide and even on the rise. It can be found in almost all countries, even in democratic ones. Torture is an international problem and leaves no one untouched. Psychotherapists who work with torture victims run the risk of being secondarily traumatized. Currently, there is a lack of research on secondary traumatization in the field of torture. Based on an individual case analysis the dynamics of secondary traumatization in therapy with victims of torture are highlighted. For this purpose, a narrative interview was conducted with a psychotherapist who worked with torture victims. The interview was analysed with the content analysis according to Mayring.

The paper begins by reviewing the theoretical background and addresses the understanding of torture and secondary traumatization. It continues with a presentation of the current state of research and the method used for the study. Next, selected points of the dynamics of secondary traumatization in therapeutic work with victims of torture are presented. Finally, aspects of support resulting from the interview are highlighted.

**Keywords:** *Secondary traumatization, traumatization, torture, psychotherapy, war.*

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## 1. Introduction

There is a common assumption in the Western world that torture no longer exists. But also nowadays, torture is widespread worldwide and even on the rise. Torture can be found in almost all countries, even in democratic ones. Amnesty International (2014) states, that in the period between 2009 and 2014, torture and other forms of ill-treatment were used in three-quarters of all countries. Consequently, it can be said that torture is an international problem. This paper is not intended to focus primarily on the group of torture victims, but on psychotherapists who work with them. Psychotherapists are confronted with stressful and challenging content in their work with victims of torture. This requires a high demand and so there is a danger of secondary traumatization. This paper focuses on the challenges and burdens of psychotherapists working with torture victims.

## 2. Torture

There is no general valid definition for the term torture. The definition referred to in most cases is the definition of the United Nations Convention Against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. This definition was formulated in 1984 as the first binding definition under international law. Torture is defined in article 1 as:

„any act by which severe pain or suffering, whether physical or mental, is intentionally inflicted on a person for such purposes as obtaining from him or a third person information or a confession, punishing him for an act he or a third person has committed or is suspected of having committed, or intimidating or coercing him or a third person, or for any reason based on discrimination of any kind, when such pain or suffering is inflicted by or at the instigation of or with the consent or acquiescence of a public official or other person acting in an official capacity. It does not include pain or suffering arising only from, inherent in or incidental to lawful sanctions” (CAT, 1984, Art 1).

Torture characteristically targets the innermost part of a person. It is intended to break the personality of the tortured individual through physical and psychological violence and to destroy the victim's ability to resist (Le Breton, 2007). Torture aims to break the human being to the core, as Patel

(2019) also shows: "Torture destroys the core of humanness - it ruptures the capacity to trust and to form relational bonds with other human beings, alienating survivors from others" (p. 1551). This shows that torture leads to a profound change in the tortured person themselves. The torture victims are denied human status and deprived of any rights and dignity. They have no control over the situation, lose their subject status and are objectified (Altenhain et al., 2013; Le Breton, 2007). The victims of torture find themselves in a situation where they are at the mercy of others, which creates feelings of powerlessness and helplessness.

Torture always has an inherent power structure. It is used to demonstrate absolute power over the torture victim. Anyone who questions power is to be humiliated, degraded, and intimidated. Torture serves to suppress oppositional opinions (Lipps, 1989; Wicker, 1993). It leads to absolute powerlessness on the part of the torture victim. At the same time, torture must always be viewed against the background of the socio-political context. Torture as a means of power is intended to intimidate entire societies and prevent them from raising their contrary opinion against the ruling group. Torture is therefore not an attack on the individual per se but it is always aimed at a larger collective (Altenhain et al., 2013; Frey, 2001; Reemtsma, 1991).

It is distinctive of torture that it usually takes place in secret and without the knowledge of the public. The issue of torture is heavily tabooed. Nevertheless, it must be made visible specifically to a certain group so that torture can unfold its full power potential (Nowak, 2011; Reemtsma, 1991).

### 3. Secondary traumatization

Torture affects every person with great vehemence and leaves no one untouched. The victim has no control over the torture situation and has no means of action. Fischer and Riedesser (2009) describe that being defenceless in the situation is central to trauma. Traumatization shatters the persons' understanding of themselves and the world. This is particularly pronounced in the case of violence that has been deliberately and intentionally caused by human beings, so-called man-made disasters.

As well as the torture victims themselves, torture does not leave those who work with torture victims untouched either. Helpers run the risk of being secondarily traumatized by the occupational confrontation with traumatic contents. However, it is not necessary to be a direct witness of the original traumatic situation to become secondarily traumatized (Lemke, 2017).

It is important to distinguish between indirect and secondary traumatization. Indirect traumatization is defined in the DSM-V (APA, 2013) as "Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental" (APA, 2013, pp. 271). In contrast, secondary traumatization is always to be understood as occupational traumatization: "Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child abuse)" (APA, 2013, pp. 271).

As with the concept of torture, there is no uniform, general valid understanding of secondary traumatization. There are a variety of concepts that attempt to define Secondary Traumatization. The most significant of these are the concepts of Vicarious Traumatization and Compassion Fatigue:

Compassion Fatigue means that individuals who work with traumatized people must pay a price for that work as a natural consequence. It can be described in one phrase: "There is a cost to caring" (Figley, 1995, p. 1). Figley initially referred to this cost as Secondary Traumatic Stress Disorder, but later exchanged this term for Compassion Fatigue. In more detail, Figley (1995) defines both terms synonymously as "natural consequent behaviours and emotions resulting from knowing about a traumatizing event experienced by a significant other - the stress resulting from helping or wanting to help a traumatized or suffering person" (p. 7). According to him, working with traumatized people leads to exhaustion. This exhaustion has a particularly strong effect on the empathy of the professional. In this concept, Figley is less concerned with describing the development of secondary traumatization, but rather focuses on the symptoms. His view is very pessimistic.

In contrast in Vicarious Traumatization, the genesis plays a more significant role than the consequences. Vicarious Traumatization refers to McCann's and Pearlman's (1990a) constructivist self-development theory, which states that humans form cognitive structures by which they interpret experiences. These cognitive structures are referred to as schemas. Schemas contain basic assumptions about the self and about the world and help people make sense of their experiences. The concept of Vicarious Traumatization states that working with trauma survivors can lead to a shattering in the psychotherapist's cognitive schemas. It is understood as a change in cognitive schemas due to exposure to traumatic content (Pearlman & Saakvitne, 1995).

#### **4. Current state of research**

The issue of torture has been studied only marginally in academia and is a marginal topic despite the frequency of its occurrence. Even as the scientific examination of trauma has increased, torture has remained little studied in the context of psychotraumatology. Beyond that, studies on secondary traumatization mostly refer to first-aid professions<sup>1</sup>. The complexity of secondary traumatization is not sufficiently addressed and not sufficiently discussed theoretically. Currently, there is a lack of research on secondary traumatization in the field of torture.

A scientific examination of this topic is considered to be very important. A healthy and appropriate approach to stress and burden in therapeutic work is important to be able to perform professional work. To achieve this, professionals have to be supported in the best possible way.

#### **5. Methods**

The empirical basis for the qualitative study is a single case analysis. A narrative interview was conducted with a psychotherapist who was on missions in many war and crisis zones and worked with victims of torture as part of this. The narrative interview was selected as the data collection method in order to achieve the greatest possible openness and depth in the conversation. The interview was analysed using the method of systematic content analysis according to Mayring.

#### **6. Dynamics of secondary traumatization in therapeutic work with torture victims**

Within the framework of the individual case analysis, specific aspects of the dynamics of secondary traumatization in therapeutic work with torture victims can be seen. Selected aspects are outlined in the following.

##### **6.1. Disruption in language**

The analysis of the individual case interview shows that professionals working with victims of torture often have a loss of ability to speak out about what they have experienced. This is originally characteristic of primary trauma. Primary traumatized individuals often cannot put into words what they have experienced. Pröbstl (2015) shows that just talking about torture is perceived as a danger. Language is often fragmented and is referred to as trauma language. Van der Merwe and Gobodo-Madikizela (2007) indicates that victims often exhibit changed language, such as aborted speech to speechlessness. Trauma is remembered in fragments and so the language is fragmented. This fragmented language is also evident within the interviewed psychotherapist, who sees it as an expression of his experience. He states that to this day he has not been able to put all the fragmentations together to a coherent whole.

The psychotherapist makes it clear that speaking is also perceived as very helpful in dealing with one's own experience. But this is only the case if the other person can bear and endure what they hear without agitation. If this prerequisite is not met, the interviewee prefers to withdraw and deal with the experience with himself. The difficulty of talking about the experience is also intensified by the taboo and speechlessness that are distinctive of the subject of torture.

##### **6.2. Shattering assumptions about the fundamental view of oneself and the world**

The individual case analysis shows that therapeutic work with torture victims leads to a long-lasting shattering in basic assumptions about the benevolence of people and the world. Original assumptions that the world is a just world and that all people are equal and treated equally are buried by constant confrontation with traumatic content. Likewise, one's basic assumptions about oneself are also shattered. The psychotherapist describes that he no longer felt connected to anything, which led to the experience of isolation. One's basic beliefs about being able to live in safety are also shattered. The shattering is perceived as stressful and leads to vulnerability.

This insight goes hand in hand with the concept of Shattered Assumption by Janoff-Bulman (1992). She states that everyone has basic assumptions about themselves and the world. Traumatic experiences can lead to a lasting disillusionment and shattering of these basic assumptions. Also, McCann and Pearlman (1990a) formulate this shattering in schemas in their concept of Vicarious Traumatization.

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<sup>1</sup>E.g. İlhan & Küpeli (2022), Kindermann et al. (2020), Greinacher et al. (2019)

### 6.3. Experience of fundamental isolation

The third point that is central to the work with victims of torture is the experience of fundamental isolation, because it is also central to the dynamics of torture. The interviewed psychotherapist speaks of an infinite isolation he feels when working with tortured victims. He indicates that it took him a while to realize that it is not his own, but that he shares the experience of isolation of the victims. Primary trauma victims often feel a great deal of isolation and disconnection. They are exposed to the torture situation and experience themselves as helpless and alone in the face of the threat (Becker, 2009). Psychotherapists working with torture victims are confronted with this feeling in therapy, and it does not leave them untouched either. Connections to themselves, as well as to the environment, feel cut off. The experience of isolation and disconnection of the sufferer becomes the experience of the therapist. The therapist then enables the affected person to symbolize what they have experienced.

## 7. Aspects of support

The interview partner also emphasized aspects which supported him in his work. Especially the last discussed point (6.3) showed that supervision or peer support is necessary as a level of reflection. The interviewed psychotherapist also describes an offer of supervision as indispensable. It helps to unload what has been experienced and not to have to carry it alone. He emphasized that supervision must be independent of the deployment organization so that anonymity and neutrality is guaranteed. The importance of supervision is in line with the results of previous studies (Canfield, 2005; Harrison & Westwood, 2009). Likewise, extensive self-awareness is also felt to be important to recognize countertransference reactions. This enables one to distinguish one's own emotions from those of the victim and to respond appropriately to those of the victim. Furthermore, the interview contact indicates that the knowledge that one is not alone with the burden is perceived as helpful. For this reason, peer support is recommended. Exposure to theoretical principles can also help the psychotherapist to not feel alone with the challenges and burdens. The interviewed psychotherapist also states that he knows through the theoretical background that secondary traumatization does not equate to incompetence and thus self-doubt can be avoided. Knowledge of secondary traumatization is seen as a protective factor. Another supportive factor in working with torture victims is to repeatedly take time off. This is especially important for missions abroad, where psychotherapists are constantly confronted with stress. The interview partner also sees self-care as an important basis for therapeutic work. A kind of counter-world is to be created. These are personal strategies, such as sports, listening to music or meditation, which can also help to express feelings.

## 8. Conclusion

The individual case analysis clearly shows that torture has a specific dynamic and consequently has a specific effect on secondary traumatization. In their work, psychotherapists are confronted with the traumatic experience of torture victims, which they are unable to process themselves. This results in great stress, which is also consequential after a mission. The interview partner points out that working with torture victims always leads to changes that cannot be avoided. Working with torture victims leads to a loss of trust in the world and the basic assumptions about oneself as well as about others are shattered for a long time. Constant work on one's own self and worldview is necessary. The experience of isolation and the difficulty in speaking about what has been experienced also remain. It is important to accept these changes to find an appropriate way of dealing with them.

The scientific discussion mostly focuses on primary traumatization. In contrast, the phenomenon of secondary traumatization is not sufficiently discussed theoretically. It would be desirable for the complexity of secondary traumatization to be more strongly incorporated into the theoretical discussion to provide profitable support for professionals, which in turn would have a positive impact on therapeutic work. Support such as supervision and peer support should be made available. Also, more attention should be paid to work with victims of torture to counteract the taboo surrounding the topic.

### References

- Altenhain, K., Bee, J., Brandmaier, M., Görling, R., Hagemeier, I., Hofmann, M., Kruse, J.; Lesch, H., Mühlleitner, E., Schmitz, H., & Willenberg, N. (2013). Interdisziplinäre Herleitung eines Folterbegriffs. In K. Altenhain, R. Görling, & J. Kruse (Eds.), *Die Wiederkehr der Folter? Interdisziplinäre Studien über eine extreme Form der Gewalt, ihre mediale Darstellung und ihre Ächtung* (11–58). Göttingen: V & R unipress.



- American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders. DSM-5* (5<sup>th</sup> ed.). Arlington: American Psychiatric Association
- Amnesty International. (2014). Folter 2014. 30 Jahre gebrochene Versprechen. March 28, 2022, from <https://www.amnesty.at/media/2022/bericht-folter-2014-30-jahre-gebrochene-versprechen.pdf>
- Becker, D. (2009). Die Schwierigkeit, massives Leid angemessen zu beschreiben und zu verstehen. Traumakonzeptionen, gesellschaftlicher Prozess und die neue Ideologie des Opfertums. In A. Karger (Ed.), *Trauma und Wissenschaft* (61-91). Göttingen: Vandenhoeck & Ruprecht.
- Canfield, J. (2005). Secondary Traumatization, Burnout, and Vicarious Traumatization. A Review of the Literature as It Relates to Therapists Who Treat Trauma. *Smith College Studies in Social Work*, 75 (2), 81-101.
- Figley, C. R. (1995). Compassion Fatigue as Secondary Traumatic Stress Disorder: An Overview. In C. R. Figley (Ed.), *Compassion fatigue. Coping with secondary traumatic stress disorder in those who treat the traumatized* (1-20). New York: Brunner/Mazel.
- Fischer, G., & Riedesser, P. (2009). *Lehrbuch der Psychotraumatologie* (4<sup>th</sup> ed.). München: Ernst Reinhardt.
- Frey, C. (2001). Die unheimliche Macht des Traumas. Interaktionelle Aspekte in der Betreuung von Folter- und Kriegsopfern. In M. Verwey (Ed.), *Trauma und Ressourcen* (109-124). Berlin: Verlag für Wissenschaft
- Greinacher, A., Derezza-Greeven, C., Herzog, W., & Nikendei, C. (2019). Secondary traumatization in first responders. A systematic review. *European Journal of Psychotraumatology*, 10(1), 1-21.
- Harrison, Richard L.; Westwood, Marvin J. (2009). Preventing vicarious traumatization of mental health therapists. Identifying protective practices. *Psychotherapy Theory, Research, Practice, Training*, 46 (2). 203-219.
- İlhan, B., & Küpeli, İ. (2022). Secondary traumatic stress, anxiety, and depression among emergency healthcare workers in the middle of the COVID-19 outbreak. A cross-sectional study. *The American Journal of Emergency Medicine*, 52, 99-104.
- Janoff-Bulman, R. (1992). *Shattered Assumptions. Towards a New Psychology of Trauma*. New York: The Free Press.
- Kindermann, D., Sanzenbacher, M., Nagy, E., Greinacher, A., Cranz, A., Nikendei, A., Friederich, H.-C., & Nikendei, C. (2020). Prevalence and risk factors of secondary traumatic stress in emergency call-takers and dispatchers. A cross-sectional study. *European Journal of Psychotraumatology*, 11(1), 1-13.
- Le Breton, D. (2007). Schmerz und Folter. Der Zusammenbruch des Selbst. In K. Harrasser, T. Macho, & B. Wolf (Eds.), *Folter. Politik und Technik des Schmerzes* (227-242). München: Wilhelm Fink.
- Lemke, J. (2017). *Sekundäre Traumatisierung. Klärung von Begriffen und Konzepten der Mittraumatisierung*. Kröning: Asanger Verlag.
- Lipps, E. (1989). Psychologie und Folter. In P. Schulz-Hageleit (Ed.), *Alltag-Macht-Folter. Elf Kapitel über die Verletzung der Menschenwürde* (46-60). Düsseldorf: Patmos.
- McCann, L., & Pearlman, L. A. (1990a). Vicarious Traumatization. A Framework for Understanding the Psychological Effects of Working with Victims. *Journal of Traumatic Stress*, 3(1), 131-149.
- Nowak, M. (2011). Das Amt des UN-Sonderberichterstatters über Folter. *Vereinte Nationen: German Review on the United Nations*, 59(5), 202-209.
- OHCHR. (1984). Convention against Torture and Other Cruel, Inhuman or Degrading Treatment or Punishment. March 28, 2022, from <https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-against-torture-and-other-cruel-inhuman-or-degrading>.
- Patel, N. (2019). Conceptualising rehabilitation as reparation for torture survivors. A clinical perspective. *The International Journal of Human Rights*, 23(9), 1546-1568.
- Pearlman, L. A., & Saakvitne, K. W. (1995). *Trauma and the therapist. Countertransference and vicarious traumatization in psychotherapy with incest survivors*. New York: W.W. Norton.
- Pröbstl, T. (2015). *Zerstörte Sprache - gebrochenes Schweigen*. Bielefeld: transcript Verlag.
- Reemtsma, J. P. (1991). »Wir sind alles für dich!«. An Stelle einer Einleitung. Skizze eines Forschungsprogramms. In J. P. Reemtsma (Ed.), *Folter. Zur Analyse eines Herrschaftsmittels* (7-23). Hamburg: Junius Verlag.
- Van der Merwe, C.; Gobodo-Madikizela, P. (2007). *Narrating our Healing. Perspectives on Working through Trauma*. Newcastle: Cambridge Scholars Publishing.
- Wicker, H.-R. (1993). Macht schafft Wahrheit. Ein Essay zur systematischen Folter. In T. Fillitz, A. Gingrich, & G. Rasuly-Paleczek (Eds.), *Kultur, Identität und Macht. Ethnologische Beiträge zu einem Dialog der Kulturen der Welt*. Frankfurt am Main: Verlag für Interkulturelle Kommunikation.

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