

Developing a health and well-being program for college students: An online intervention

Resti Tito H. Villarino^{a*}, Cebu Technological University, Moalboal, Cebu, Philippines / National Research Council of the Philippines, Manila, Philippines <https://orcid.org/0000-0002-5752-1742>

Maureen Lorence F. Villarino^b, University of San Agustin, Iloilo City, Philippines <https://orcid.org/0000-0002-4021-8317>

Maria Concepcion L. Temblor^c, Cebu Technological University, Moalboal, Cebu, Philippines / National Research Council of the Philippines, Manila, Philippines <https://orcid.org/0000-0002-7840-2849>

Prosper Bernard^d, Université du Québec à Montréal, Montréal, QC, Canada <https://orcid.org/0000-0002-3803-9432>

Michel Plaisent^e Université du Québec à Montréal, Montréal, QC, Canada <https://orcid.org/0000-0002-6757-4725>

Suggested Citation:

Villarino, R. T. H., Villarino, M. L. F., Temblor, M. C. L., Bernard, P. & Plaisent, M., (2022). Developing a health and well-being program for college students: An online intervention. *World Journal on Educational Technology*. 14(1), 65-78. <https://doi.org/10.18844/wjet.v14i1.6638>

Received from November 05, 2021; revised from December 09, 2021; accepted from January 14, 2022.

Selection and peer review under responsibility of Prof. Dr. Servet Bayram, Yeditepe University, Turkey.

©2022 Birlesik Dunya Yenilik Arastırma ve Yayıncılık Merkezi. All rights reserved

Abstract

Managing health and well-being issues can be challenging for college students. Alternative supports, such as online programs, have been identified as cost-effective and efficient methods of providing inclusive support to college students, removing numerous barriers to health and well-being promotion. The article summarized a novel, evidence-based approach to developing an online health and well-being program. The program is based on Cognitive Behavioral Therapy (CBT), the positive emotion, engagement, relationships, meaning, and accomplishments (PERMA) construct, and the analysis, design, development, implementation, and evaluation (ADDIE) model. It discusses future directions in the evaluation, assessment, and documentation of the fitness-for-purpose process.

Keywords: well-being, online health, physical health, college students, PERMA, CBT, ADDIE

1 Introduction

* ADDRESS OF CORRESPONDENCE: Resti Tito H. Villarino, Cebu Technological University, Moalboal, Cebu, Philippines / 2National Research Council of the Philippines, Manila, Philippines
email address: restitito.villarino@ctu.edu.ph

College is an exhilarating yet difficult period in one's life. Students must manage many transitions, including creating new acquaintances, living away from friends and family, obtaining new skills, and establishing themselves as self-sufficient individuals (Bohn & Hogue, 2021).

Numerous studies have revealed increased anxiety and depression levels among college students compared to pre-university levels. (Barrable et al., 2018; Bewick et al., 2010). Apart from serious mental health disorders, more prevalent mild to moderate psychological challenges can have a significant detrimental influence on students' life and frequently go unrecognized and neglected (Pop et al., 2021).

Distress levels grow throughout the first year of studies and gradually decline throughout the students' time at the institution (Barrable et al., 2018). Furthermore, a substantial decrease in well-being (GP-CORE scores) has been reported during a three-year period (Barrable et al., 2018).

These negative emotions can be triggered by various factors, including course deadlines, exam stress, balancing studies, and academic performance (Carragher & McGaughey, 2016). These difficulties with mental health and study skills can be significant. Stress has been linked to adverse outcomes such as deteriorated relationships and reduced levels of engagement (Salameh et al., 2020).

The criteria listed above were associated with decreased graduation rates. Additionally, if mild to moderate issues are not addressed, they might result in poor results and chronicity. (Morgan & Simmons, 2021). On the other hand, well-being positively affects educational achievement and flourishing (Seligman & Ungar, 2016).

Additionally, colleges and universities bear a colossal cost. Schools owe a duty of care to their students. They have grown into a consumer-driven market where student satisfaction is crucial in all areas, including housing and social circumstances, increasing the demand for institutions to deliver a full experience (Aristovnik et al., 2020).

Online intervention programs have been highlighted as one possible approach to engaging students who require support for their health and well-being but are unlikely to seek formal treatment (Morgan & Simmons, 2021). The Royal College of Psychiatrists recommends that students utilize web-based interactive cognitive behavioral therapy (CBT) programs (RCPSYCH, 2011).

Purpose

An online support system geared exclusively for college students was established to address this increased demand for support for students facing mild to moderate issues. This article will discuss its development and rationale and its benefits to students and higher education institutions. Additionally, the innovative nature of this online health and wellness program will be highlighted. To the extent that the online health and well-being program described here is innovative, it is primarily due to the combination of the features detailed in Tables 1 and 2.

1.1 Conceptual Framework

Physical Health

Physical health is defined as an organism's normal function at all levels, the standard path of biological processes required for individual survival and reproduction, the dynamic equilibrium of an organism and its processes with the external milieu, involvement in socially beneficial work, the performance of essential social functions, the absence of illnesses, painful situations, and the body's capacity to adapt to the constantly changing environment (Koipysheva, 2018).

Well-being

The term "well-being" refers to a significant positive outcome for individuals and different population sectors because it indicates that their lives are going well (CDC, 2020). In general, well-being encompasses judgments of global life satisfaction and emotions ranging from depression to joy (CDC, 2018).

Physical health and psychological well-being are inextricably linked (Australian Department of Health, 2021). Physical health has been scientifically proven to improve well-being and vice versa. If one suffers a setback, the other may be impacted as well. A balanced diet, adequate sleep, and a reduction in unhealthy habits such as smoking, alcohol, and drug use contribute to physical health and well-being (CDC, 2018). Stress, excessive work, and inactivity are all factors that can impair mental well-being.

Numerous studies demonstrate that a holistic approach to health – integrating physical, social, emotional, and mental health – is critical for overall well-being (CDC, 2018). Additionally, this approach is beneficial for managing and recovering from mental illness (Australian Department of Health, 2021).

Increased physical activity benefits everyone, regardless of age, gender, race, or ethnic origin (Atoui et al., 2021; Bernard et al., 2016). Although the detailed recommendations for the type, amount, and frequency of physical activity remain elusive, physical activity can improve health and wellness benefits. Recent attention has expanded the scope of analysis of dietary patterns (Lai et al., 2020). There is mounting evidence that unhealthy eating habits are associated with poor mental health (e.g., anxiety). Healthy eating habits are related to improved mental health at all stages of life (Dodge et al., 2012).

Along with nutrition and exercise, sleep is necessary for mental and physical development and overall health and well-being. Proper sleep is linked to various beneficial health and emotional outcomes in children and adolescents, including improved focus, learning, educational achievement, memory, cognition, attitudes, emotional control, increased self-esteem, self-acceptance, positivity, and general quality of life (Hasan & Bao, 2020).

This study will heavily rely on the modified PERMA profiler questionnaire because exercise, a balanced diet, and adequate sleep are all associated with increased well-being across the lifespan. Seligman, a pioneer of positive psychology, devised five components for mental health and wellness facilities. (Seligman & Ungar, 2016).

According to Seligman (Iasiello et al., 2017), five elements contribute to well-being. These components are self-contained. The acronym PERMA: positive feelings, engagement, relationships, meaning, and accomplishment, which they strive for individually to improve their well-being and thriving. Furthermore, Seligman concurs that these five elements can assist individuals in achieving a genuine presence of fulfillment and significance. This model could develop programs that help individuals discover and utilize new intellectual and enthusiastic tools (Conway, 2012; Seligman & Ungar, 2016).

2 Method

Development and Evaluation

The online program for health and well-being is based on Cognitive Behavioral Therapy (CBT), positive emotion, engagement, relationships, meaning, and accomplishments (PERMA) construct, and the analysis, design, development, implementation, and evaluation (ADDIE) paradigm. It is intended to fulfill the requirements of students who have mild to moderate health and well-being concerns.

Cognitive Behavioral Therapy (CBT) is based on the mental model of emotional response, according to the National Association of Cognitive Behavioral Therapists (2021). This model teaches us that our emotions and behaviors result from our thoughts, not external stimuli (Riopel, 2019). Unlike its psychoanalytic forerunners, CBT is a goal-oriented and problem-focused therapy.

As a result, CBT places a greater emphasis on the present than on a comprehensive examination of the individual's history. Therapists and psychologists use CBT to treat specific mental disorders. While the optimal number of CBT sessions for each client varies, treatments typically last between five and twenty sessions. (Brown & Bussell, 2011).

While CBT is unsuccessful for individuals with severe mental illnesses or learning disabilities, it is an excellent method for individuals to accept and understand that they can alter their circumstances by altering their beliefs. (Bernard et al., 2018). This is a significant benefit because it teaches people to benefit from changing their thought processes. This is a marked departure from more conventional forms of treatment, which typically focus on changing or reevaluating past behaviors or fears.

CBT is attributed as one of the most effective and widely applicable therapeutic approaches globally (Riopel, 2019). According to the findings, CBT appears to be a highly effective psychotherapeutic treatment option for all of these conditions. The most compelling evidence for CBT's use in treating anxiety, somatoform disorders, bulimia, anger management, and general stress was discovered (Hofmann et al., 2012; Riopel, 2019).

In seven reviewed studies, patients undergoing CBT demonstrated more significant improvements than those experiencing comparison conditions (Rector & Beck, 2012). Due to its apparent success in reducing symptoms associated with various disorders, CBT is commonly regarded as the current gold standard of psychotherapy (Bernard et al., 2018; Hofmann et al., 2012).

Numerous measurement instruments have been developed, with the PERMA Profiler being the most recent. Martin Seligman defined well-being as the absence of harmful influences and the presence of Positive Emotions, Engagement, Relationships, Meaning, and Accomplishment in his new Theory of Well-Being (PERMA)(Butler & Kern, 2016).

The PERMA model's first aspect is positive emotion, which encompasses feelings of joy, hope, fulfillment, rapture, happiness, and contentment. In daily life, become absorbed, absorbed, or concentrated. The third component is supportive relationships, which refers to feeling cared for, genuine, and at ease in one's relationships. (Haapasalo et al., 2018). The fourth component is meaning, which refers to a sense of purpose derived from a more significant event in life (Ryan et al., 2019).

The fifth and final component is an accomplishment, which refers to a relentless pursuit of personal goals and a sense of fulfillment in one's life. Positive emotions, commitment, friendships, significance, and success are more strongly associated with postsecondary students' academic performance, including improved transition, success, and overall college life satisfaction (Butler & Kern, 2016). Additional studies have validated the PERMA Profiler's suitability for use in various populations, including those in South Australia, Italy, Malaysia, and Turkey (Ryan et al., 2019).

While these studies have established that the five PERMA factors have favorable psychometric properties in general, some gaps exist, including inconsistent findings regarding the reliability with which the five PERMA factors are loaded with response data. One study (Iasiello et al., 2017) but not another (Haapasalo et al., 2018) replicated the five-factor structure hypothesized using confirmatory factor analysis.

No studies have been conducted to ascertain the PERMA Profiler's convergent validity concerning objective parameters like physical activity and sleep. However, it is believed that a positive correlation exists between well-being and physical activity and sleep duration (Butler & Kern, 2016). Additional research into the PERMA Profiler's psychometric features is required. As a result, our study adds to the expanding collection of independent validation studies, particularly those that examine the PERMA Profiler structure in greater detail.

The Analysis, Design, Development, Implementation, and Evaluation (ADDIE) model

The ADDIE model is a framework for instructional systems design (ISD) used by many instructional designers and trainers when developing courses. (Kurt, 2017). The analysis phase defines instructional problems and objectives, the learning environment, and the learner's prior knowledge and skills.

The analysis phase addresses the following issues: 1. Who are the learners and what characteristics do they possess? 2. What is the desired new behavior? 3. What are the different types of constraints on learning? 4. What modes of delivery are available? (Cheung, 2016). The design process entails the creation of learning objectives, assessment tools, activities, and material, as well as subject analysis, preparation of lessons, and selection of media.

The design should be systematic and focused. The phrase "systematic" refers to a logical, ordered method for defining, developing, and assessing a collection of deliberate tactics for achieving project objectives. Specific means that the instructional design team must approach each component of the instructional design plan with extreme caution. The design phase may entail drafting a proposal for a design and an idea and structural note to assist with final development (Fernandes et al., 2020).

Instructional designers produce and organize content elements outlined in the design phase during the development phase. Programmers are in charge of building or integrating technology in e-learning. Designers create storyboards. Debugging materials and techniques is the duty of the testing staff. The team conducts a review and revision of the project in response to input.

Following the development of the course materials, the designers should work an urgent pilot test with critical stakeholders and rehearse the material (Kurt, 2017). The implementation phase establishes processes for facilitator and learner training. The trainer is responsible for the curriculum, learning objectives, delivery method, and testing processes for the course. Learners are prepared through training and the registration of new tools (software or hardware). The implementation process begins with reviewing the design (Cheung, 2016).

The evaluation process is separated into two phases: formative and summative. Each stage of the ADDIE process is evaluated formatively, while the completed instructional programs or products are evaluated summatively (Fernandes et al., 2020).

Validation of the Health And Well-Being Program

Three specialists reviewed the program in health and well-being (a university professor, a psychiatrist, and a psychiatric nurse). The online health and well-being program's outline was initially provided to a university professor for review and possible revision based on the topic's interest to college students, the content's relevancy, and the information's ability to contribute to current knowledge.

Minor changes for improvement were complied with. The improved write-up was then submitted to the psychiatrist and psychiatric nurse for more improvements. A series of online meetings took place to discuss the concerns they raised, followed by the compliance of their suggestions.

The discussions of three experts and researchers focus on the content to be presented as inputs to the participants and the questions asked in the questionnaire. After implementing the recommendations, these three experts approved the online health and well-being experts for implementation.

Health and Well-being Program

The health and well-being program topics included: 1. Introduction to Health and Well-being Program; 2. Health, Fitness, and Wellness; 3. The Mental Health Continuum; 4. Understanding Mental Health and

Mental Illness; 5. Mental Health Promotion; 6. Seligman's PERMA model of subjective well-being; and 7. Cognitive Behavioral Therapy (CBT) for Health and Wellness.

The health and well-being program's objectives were to provide students with an online community and opportunities for interaction, introduce students to fundamental concepts of health and well-being, including mental health promotion, and provide students with tools to aid in their health and well-being development. These aims align with the PERMA framework to create a pleasant and meaningful life and develop a health education approach by integrating well-being skills and academic studies (Seligman & Ungar, 2016).

The seven-sessions of health and well-being education (Phase II) are based on Cognitive Behavioral Therapy (Rector & Beck, 2012; Villarino et al., 2021) and the analysis, design, development, implementation and evaluation (ADDIE) model (Cheung, 2016; Kurt, 2017) anchored on the PERMA (positive emotions, engagement, relationships, meaning, and accomplishments) construct (Seligman & Ungar, 2016). Duration is between 45 - 60 minutes—one session per week. The schedule was arranged based on the agreed-upon date and time of the participants.

Physical exercise, nutrition, stress, and coping instruction (Phase III) entailed requiring students to engage in self-paced physical activities, self-administered nutritional adjustments, and self-administered stress and coping measures at home. Students are taught basic aerobic or anaerobic exercises, dietary, stress, and coping management ideas through online activities, video presentations, exhibitions, messages, and other displays put to the study's social media group (Amoma Project).

During educational sessions, teaching methods such as focus group discussions and dialogue sessions were done through Zoom®, PDF pamphlets, and Powerpoint® Slides, designed based on the CBT (Cognitive Behavioral Therapy) and ADDIE model are provided.

Table 1 The online health and well-being program's features, evidence-based content, and benefits

Feature	Theory/evidence	Benefit for students	Benefit for HEI
Online access	Effectiveness of online therapies (Barrable et al., 2018; Morgan & Simmons, 2021)	Accessibility is simple and adaptable	Asserting diversity in the many services for student assistance
Use of multimedia (videos, etc.)		Anonymity (removal of stigma)	
Instrument (positive emotion, engagement, relationships, meaning, and accomplishments) PERMA Questionnaire (a validated instrument)	Proof of concept study— participants feedback (Goozée et al., 2018; Touloumakos et al., 2016)	Inclusive	Untrained staff (e.g., faculty) can use the PERMA Questionnaire
Evidence-based techniques used (e.g., promoting physical health and well-being,	Positive emotion, Engagement, Relationships, Meaning, and Accomplishments) PERMA Questionnaire (Butler & Kern, 2016; Iasiello et al., 2017; Madeson, 2017)	The program is "purpose-built" and highly usable	Fit-for purpose Opportunity to be labeled as the

and problem-solving strategies)	Cognitive Behavioral Therapy (Bernard et al., 2018; Hofmann et al., 2012; Riopel, 2019)	Appropriate identification of needs.	"caring" university
Statistical analysis is readily available.	Analysis, Design, Development, Implement, and Evaluation (ADDIE) model (<i>ADDIE Model: Instructional Design - Educational Technology</i> , 2018; Cheung, 2016; Kurt, 2017)	Best fit intervention	High effectiveness in enhancing general physical health and well-being.

Table 2 **ADDIE (Analysis, Design, Development, Implementation, and Evaluation) Model**

Analysis	<ol style="list-style-type: none"> 1. The participants are college students enrolled at Higher Education Institutions. 2. After the program, the students answered the post-evaluation instrument for both the control and experimental groups. 3. The method used is pretest-posttest design and utilized a validated instrument: modified PERMA questionnaire.
Design	<ol style="list-style-type: none"> 1. The types of media used are; Zoom video conferencing, Powerpoint, PDF files, and social media: (Amoma Project). 2. The types of activities included are collaborative, interactive and based on participants' needs. 3. The program was implemented using the Cognitive Behavioral Therapy and ADDIE model anchored on the PERMA construct. 4. Timeframe for each activity is 45 to 60 minutes. The schedule of the health education program is based on the agreed-upon date and time of the respondents.
Development	<ol style="list-style-type: none"> 1. The time frame was adherent concerning what has been accomplished in terms of material per schedule. 2. The participants contributed as per their capital capacity. 3. The materials were produced up to the task on what they were intended.
Implementation	The P-PIE (Problem-Plan, Intervention, Evaluation) Self Assessment Form will be used to confirm that students are performing/applying CBT (Cognitive Behavioral Therapy), PERMA, and ADDIE model-based interventions. The P-PIE (Problem-Plan, Intervention, Evaluation) Self Assessment Form is a comprehensive reflection tool designed to aid students in applying classroom principles to their own setting. They utilized this document to keep track of their observations from class activities, self-

assessments, and reflection questions throughout the study. They discovered that the P-PIE (Problem-Plan, Intervention, Evaluation) Self Assessment Form provided a lasting record of their knowledge and suggestions for improving their physical health and well-being following the study.

Evaluation To assess the program's effectiveness, participants completed a post-study instrument and an evaluation instrument based on the following parameters: The responders are interested in the issue; the content is relevant and the information is added to current knowledge. Additionally, students were interviewed online about their experiences with the program.

Fitness for Purpose

The content of the health and well-being program is available for students to access at their leisure. The validated instrument utilized is the modified PERMA (positive emotion, engagement, relationships, meaning, and accomplishment) Profiler Questionnaire by Martin Seligman (Seligman & Ungar, 2016) to determine the well-being of the participants. The modified PERMA profiler questionnaire was designed using a rating scale. Answers were based on an 11-point scale (completely/always = 10 and not at all/never = 0).

The statements were based on the following constructs: positive emotion, engagement, relationships, meaning, and accomplishment. The brief reports on current health, physical activity, nutrition, and sleep were adapted from the Canadian Community Health Survey - Annual Component (CCHS) – 2021 (Government of Canada, 2020).

A pilot study was conducted on 30 students not included in the survey to ensure the questionnaires' clarity, using coherence and consistency tests. The instrument was translated forward and backward. A language specialist translated the scales' English version into Cebuano (a local dialect in the Philippines) and then into English by another expert. A psychiatric nurse, a language specialist, and two university professors reviewed and finalized the translated items.

The questionnaire has been revised in light of student comments. The updated PERMA profiler questionnaire showed high concept validity, factorial and convergent validity, and adequate reliability, as well as the first evidence of measurement invariance, gender, and nationality (Wammerl et al., 2019). Finally, the questionnaire's reliability was assessed using Cronbach's alpha values ranging from .60 to .95 for the major PERMA factors. (Pezirkianidis et al., 2019).

Pearson r-values for confirmatory factor analysis ranged from .53 to .90 in test-retest analyses. The model's fit indices revealed that it was well fitted. The factor loadings spanned from .36 to .93, and correlations between factors and other constructs were in the predicted direction, showing that the model possessed adequate convergent and divergent validity (Umucu et al., 2020).

Target group and filtering processes

The online health and well-being program was created with college students in mind. The program addresses the critical need for physical health and well-being support for the most significant proportion of students who have been largely ignored: those with subclinical signs of depression and anxiety who would "crash" under typical support treatments.

The program is geared toward most students who will have mild to moderate challenges at some point during their studies and was created with this group in mind. However, students who do not exhibit symptoms but wish to improve their physical health and well-being may be drawn to the program due to

its design that stresses solutions and avoids stigma. The program is welcoming and accessible to those interested in pursuing such goals.

Numerous filtering methods have been implemented to guarantee that students who require more assistance are delivered to the appropriate resources. Students may contact researchers via our social media group (Amoma Project) or phone when they need quick assistance. Regular monitoring is critical to the program's success. It ensured that students experiencing serious challenges were referred to more appropriate sources of help. Finally, students are recommended to seek alternative support programs that suit their current needs. This approach serves as another filter for identifying students who require more appropriate interventions.

3 Discussion

Advantages for students

Removing barriers to help-seeking students

The program was built in a context-sensitive and sensitive to individual issues manner that normalizes students' experiences. It removes numerous impediments to young adults seeking assistance (Barrable et al., 2018; Gulliver et al., 2010), thus increasing access to assistance wherever it is required. It can invite students from various social backgrounds and be accessible to students who dislike reading lengthy texts.

It is also appealing to students who do not exhibit symptoms and wish to use it for information and personal development. This inclusivity eliminates potential stigma, which frequently obstructs help-seeking. (De Luna & Kawabata, 2020). It also brands the system as a source of learning and improving self-efficacy.

Promoting physical health and well-being

The majority of research and public policy focus on mental health conditions and other pathologies, frequently overlooking the benefits of physical health and well-being. On the other hand, physical health and well-being are both desirable outcomes in and of themselves. In essence, optimal physical health and well-being are intrinsically linked to active flourishing in all spheres of life (Atoui et al., 2021; Chevance et al., 2017).

Promoting physical health and well-being is central to the program's objectives. It enables a normalizing reason for the appearance of symptoms among students. Additionally, it promotes well-being by advocating for healthier habits connected with physical well-being, such as adequate sleep, exercise, and proper nutrition, as well as activities associated with increased cognitive and subjective well-being. Gratitude, social interaction, and helping others have been shown to improve well-being in non-clinical populations (Fiordelli et al., 2020; Fredrickson, 2004) and have been included in the program.

Advantages of online interventions in general

Apart from the benefits mentioned previously, which are unique to this program, the majority of online programs share several benefits, including 24/7 availability, anonymity, accessibility via various devices like smartphones, computers, laptops, and the comfort of the user's personal space and chosen location (Papadatou-Pastou et al., 2019).

Having online access to self-assessment and intervention solutions eliminates several barriers to young adults seeking help (Almeda et al., 2021; Andersson & Titov, 2014). For example, young adults seeking mental health support are concerned about confidentiality, trust and stigma (Noble & McGrath, 2012; Salameh et al., 2020).

Given the program's anonymity and the absence of face-to-face interaction, it may assuage young people's concerns about stigma. Additionally, the online health and well-being program avoids a one-size-fits-all approach by allowing students to access it on their own schedule and offering access to the most appropriate interventions for their particular needs as they arise. This boosts their self-efficacy, confidence, and willingness to change, all of which benefit their physical health and well-being.

Advantages for Higher Education Institution

Regarding HEI benefits, the program indirectly conserves face-to-face services for students who have a greater demand for them. Additionally, it can be considered a supplement to the Student Affairs Office (SAO), as students can use it while they wait to be referred to over-subscribed services.

Additionally, it could be utilized as a backup support system after SAO has resolved acute problems, allowing those who need self-monitoring to do so. Additionally, an untrained person can use the PERMA Questionnaire (i.e., faculty). As a result, the strategy can aid Higher Education Institutions in more effectively performing their responsibilities to students and establishing themselves as "the caring university."

Lastly, Higher Education Institutions can benefit from statistical analysis of data gathered through the online health and well-being initiative. These data can provide insight into monitoring, gaining access to data on students' health and well-being, enhancing demand management, simplifying referral, and suggesting ways in which existing services might be further resourced and maximized. Additionally, such analytics can increase stakeholder accountability for budgeting and resource allocation. Similar online interventions for mental health are cost-effective (Barrable et al., 2018; McCrone et al., 2004); consequently, these data can potentially result in a more efficient allocation of resources within Higher Education Institutions.

Innovative Features

Historically, innovation in health and well-being services, particularly concerning the use of technologies, has been urged (Umucu et al., 2020; Vilela Chaves & Moro, 2009). Utilizing evidence-based online programs to supplement face-to-face services has been hailed as an innovation in providing health and well-being support (RCPSYCH, 2011).

It has become a focus for present mental healthcare research (Almeda et al., 2021; Brooks et al., 2011). Innovation within health and well-being services should meet the students' needs by providing solutions that are not "more of the same" (Barrable et al., 2018; Brooks et al., 2011). Few researches addressed the impact of health and well-being issues among college students. Additionally, these studies lacked evidence-based practice in creating a health and well-being program.

The program is distinct from other available programs in that it is delivered through multimedia. By contrast, the content of the other programs is heavily reliant on text. As mentioned previously, the program is based on Cognitive Behavioral Therapy. (Bernard et al., 2018; Riopel, 2019), positive emotion, engagement, relationships, meaning, accomplishments (PERMA) construct (Seligman & Ungar, 2016; Umucu et al., 2020), and analysis, design, development, implementation, evaluation (ADDIE) model (Cheung, 2016; Kurt, 2017), and targeted to deliver a more effective learning process for college students.

Additionally, student feedback has influenced the program directly. Most crucially, whereas other applications give all users the same pre-designed packages or modules for various disorders, the program tailors a solution to each student's needs by targeting symptoms rather than identified conditions and connecting them to specific CBT approaches.

4 Conclusion

The purpose of this article is to explain an online health and well-being program based on Cognitive Behavioral Therapy (CBT), positive emotion, engagement, relationships, meaning, and accomplishments (PERMA) construct, and the analysis, design, development, implementation, and evaluation (ADDIE) paradigm. The program is groundbreaking in numerous respects.

It addresses previously unmet needs by emphasizing subclinical issues in addition to overall health and well-being. The former is frequently an unrecognized concern. Simultaneously, the latter two have been disregarded by the traditional Student Affairs Office (SAO), which is focused on acute and chronic mental health illnesses and prioritizes treatment based on the "severity of the emotional handicap" (RCPSYCH, 2011).

Additionally, it prevents a one-size-fits-all approach and provides highly personalized therapies through a range of CBT approaches. In this regard, the program fits several of the aforementioned objectives by providing accessible, stigma-free psychoeducation and assistance. Its role is supplementary to more traditional support services, as it focuses on the needs of students who typically "slip between the cracks."

It has been demonstrated that the program's conception and development are based on the best available evidence. Further empirical investigations should eventually help develop a solid evidence base for the program's usage in promoting students' health and well-being, resulting in the program's widespread adoption throughout Higher Education institutions.

A recently completed pilot study was conducted at the Cebu Technology University to assess if a significant improvement in physical health and well-being can be observed among college students after the online health and well-being program. For future work, a longitudinal study utilizing other interventions with other Higher Education Institutions and establish its relative effectiveness.

Acknowledgment

RTV would like to thank Canada ASEAN-SEED (Scholarships and Educational Exchanges for Development) research scholarship, Dr. Paquito Bernard of the University of Quebec in Montreal, and Dr. Zosimo Villarino Sr.

Declaration of Funding Source

The DOST and NRCP - NRCP Science and Technology Expert's Pool (NSTEP) funded this research project.

Declaration of Conflict of Interest

The authors declare no conflict of interest.

Declaration of Ethical Clearance

The data collection procedures, informed consent forms, and data collection instruments were given ethical approval by the University Research Ethics Committee (UREC) of the Cebu Technological University with UREC Protocol Number: 001-2021.

5 References

ADDIE Model: Instructional Design—Educational Technology. (2018). https://educationaltechnology.net/the-addie-model-instructional-design/?fbclid=IwAR1BU4d8URlxM6vJWZ_wDbw5VTK-75TesCLes75hjp9INxkXjDxoUrirpvA

- Villarino, R. T. H., Villarino, M. L. F., Temblor, M. C. L., Bernard, P., & Plaisent, M., (2022). Developing a health and well-being program for college students: An online intervention. *World Journal on Educational Technology*, 14(1), 65-78. <https://doi.org/10.18844/wjet.v14i1.6638>
- Almeda, N., García-Alonso, C., & Salvador-Carulla, L. (2021). Mental health planning at a very early stage of the COVID-19 crisis: A systematic review of online international strategies and recommendations. *BMC Psychiatry*, 21(1), 43. <https://doi.org/10.1186/s12888-020-03015-y>
- Andersson, G., & Titov, N. (2014). Advantages and limitations of Internet-based interventions for common mental disorders. *World Psychiatry*, 13(1), 4–11. <https://doi.org/10.1002/wps.20083>
- Aristovnik, A., Keržič, D., Ravšelj, D., Tomažević, N., & Umek, L. (2020). *Impacts of the COVID-19 Pandemic on Life of Higher Education Students: A Global Perspective* [Preprint]. SOCIAL SCIENCES. <https://doi.org/10.20944/preprints202008.0246.v2>
- Atoui, S., Chevance, G., Romain, A.-J., Kingsbury, C., Lachance, J.-P., & Bernard, P. (2021). Daily associations between sleep and physical activity: A systematic review and meta-analysis. *Sleep Medicine Reviews*, 57, 101426. <https://doi.org/10.1016/j.smr.2021.101426>
- Australian Department of Health. (2021). *Meaningful life—Physical health*. <https://www.headtohealth.gov.au/meaningful-life/physical-health/physical-health>
- Barrable, A., Papadatou-Pastou, M., & Tzotzoli, P. (2018). Supporting mental health, wellbeing and study skills in Higher Education: An online intervention system. *International Journal of Mental Health Systems*, 12(1), 54. <https://doi.org/10.1186/s13033-018-0233-z>
- Bernard, P., Ivers, H., Savard, M.-H., & Savard, J. (2016). Temporal relationships between sleep and physical activity among breast cancer patients with insomnia. *Health Psychology*, 35(12), 1307–1315. <https://doi.org/10.1037/hea0000408>
- Bernard, P., Romain, A.-J., Caudroit, J., Chevance, G., Carayol, M., Gourlan, M., Needham Dancause, K., & Moullec, G. (2018). Cognitive behavior therapy combined with exercise for adults with chronic diseases: Systematic review and meta-analysis. *Health Psychology*, 37(5), 433–450. <https://doi.org/10.1037/hea0000578>
- Bewick, B., Koutsopoulou, G., Miles, J., Slaa, E., & Barkham, M. (2010). Changes in undergraduate students' psychological well-being as they progress through university. *Studies in Higher Education*, 35(6), 633–645. <https://doi.org/10.1080/03075070903216643>
- Bohn, J., & Hogue, S. (2021). Changing the Game: College Dance Training for Well-Being and Resilience Amidst the COVID-19 Crisis. *Health Promotion Practice*, 22(2), 163–166. <https://doi.org/10.1177/1524839920963703>
- Brooks, H., Pilgrim, D., & Rogers, A. (2011). Innovation in mental health services: What are the key components of success? *Implementation Science*, 6(1), 120. <https://doi.org/10.1186/1748-5908-6-120>
- Brown, M. T., & Bussell, J. K. (2011). Medication Adherence: WHO Cares? *Mayo Clinic Proceedings*, 86(4), 304–314. <https://doi.org/10.4065/mcp.2010.0575>
- Butler, J., & Kern, M. L. (2016). The PERMA-Profilier: A brief multidimensional measure of flourishing. *International Journal of Wellbeing*, 6(3), Article 3. <https://doi.org/10.5502/ijw.v6i3.526>
- Carragher, J., & McGaughey, J. (2016). The effectiveness of peer mentoring in promoting a positive transition to higher education for first-year undergraduate students: A mixed methods systematic review protocol. *Systematic Reviews*, 5(1), 68. <https://doi.org/10.1186/s13643-016-0245-1>
- CDC. (2018, November 5). *Well-Being Concepts | HRQOL | CDC*. <https://www.cdc.gov/hrqol/wellbeing.htm>
- CDC. (2020, February 11). *COVID-19 and Your Health*. Centers for Disease Control and Prevention. <https://www.cdc.gov/coronavirus/2019-ncov/your-health/about-covid-19/basics-covid-19.html>
- Cheung, L. (2016). Using the ADDIE Model of Instructional Design to Teach Chest Radiograph Interpretation. *Journal of Biomedical Education*, 2016, e9502572. <https://doi.org/10.1155/2016/9502572>
- Chevance, G., Caudroit, J., Romain, A. J., & Boiché, J. (2017). The adoption of physical activity and eating behaviors among persons with obesity and in the general population: The role of implicit attitudes within the Theory

Villarino, R. T. H., Villarino, M. L. F., Temblor, M. C. L., Bernard, P. & Plaisent, M., (2022). Developing a health and well-being program for college students: An online intervention. *World Journal on Educational Technology*, 14(1), 65-78. <https://doi.org/10.18844/wjet.v14i1.6638>

of Planned Behavior. *Psychology, Health & Medicine*, 22(3), 319–324. <https://doi.org/10.1080/13548506.2016.1159705>

Conway, R. (2012). Flourish: A new understanding of happiness and well-being – and how to achieve them, by Martin E.P. Seligman. *The Journal of Positive Psychology*, 7(2), 159–161. <https://doi.org/10.1080/17439760.2011.614831>

De Luna, M. J. F., & Kawabata, Y. (2020). The role of enculturation on the help-seeking attitudes among Filipino Americans in Guam. *International Perspectives in Psychology: Research, Practice, Consultation*, 9(2), 84–95. <https://doi.org/10.1037/ipp0000127>

Dodge, R., Daly, A., Huyton, J., & Sanders, L. (2012). The challenge of defining wellbeing. *International Journal of Wellbeing*, 2(3), 222–235. <https://doi.org/10.5502/ijw.v2i3.4>

Fernandes, R. A. M. L., de Oliveira Lima, J. T., da Silva, B. H., Sales, M. J. T., & de Orange, F. A. (2020). Development, implementation and evaluation of a management specialization course in oncology using blended learning. *BMC Medical Education*, 20(1), 37. <https://doi.org/10.1186/s12909-020-1957-4>

Fiordelli, M., Sak, G., Guggiari, B., Schulz, P. J., & Petrocchi, S. (2020). Differentiating objective and subjective dimensions of social isolation and appraising their relations with physical and mental health in Italian older adults. *BMC Geriatrics*, 20(1), 472. <https://doi.org/10.1186/s12877-020-01864-6>

Fredrickson, B. L. (2004). Gratitude, Like Other Positive Emotions, Broadens and Builds. In R. A. Emmons & M. E. McCullough (Eds.), *The Psychology of Gratitude* (pp. 144–166). Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780195150100.003.0008>

Goozée, R., Papadatou-Pastou, M., Barley, E., Haddad, M., & Tzotzoli, P. (2018). Survey to Inform the Development of an Online Support System for Higher Education Students &—Higher Education and Online Support. *Health*, 10(03), 351–364. <https://doi.org/10.4236/health.2018.103028>

Government of Canada, S. C. (2020, November 26). *Canadian Community Health Survey—Annual component(CCHS)—2021*. https://www23.statcan.gc.ca/imdb/p3Instr.pl?Function=assembleInstr&lang=en&Item_Id=1293153#qb1293693

Gulliver, A., Griffiths, K. M., & Christensen, H. (2010). Perceived barriers and facilitators to mental health help-seeking in young people: A systematic review. *BMC Psychiatry*, 10(1), 113. <https://doi.org/10.1186/1471-244X-10-113>

Haapasalo, V., Vries, H. de, Vandelanotte, C., Rosenkranz, R. R., & Duncan, M. J. (2018). Cross-sectional associations between multiple lifestyle behaviours and excellent well-being in Australian adults. *Preventive Medicine*, 116, 119–125. <https://doi.org/10.1016/j.ypmed.2018.09.003>

Hasan, N., & Bao, Y. (2020). Impact of “e-Learning crack-up” perception on psychological distress among college students during COVID-19 pandemic: A mediating role of “fear of academic year loss.” *Children and Youth Services Review*, 118, 105355. <https://doi.org/10.1016/j.childyouth.2020.105355>

Hofmann, S. G., Asnaani, A., Vonk, I. J. J., Sawyer, A. T., & Fang, A. (2012). The Efficacy of Cognitive Behavioral Therapy: A Review of Meta-analyses. *Cognitive Therapy and Research*, 36(5), 427–440. <https://doi.org/10.1007/s10608-012-9476-1>

Iasiello, M., Bartholomaeus, J., Jarden, A., & Kelly, G. (2017). Measuring PERMA+ in South Australia, the State of Wellbeing: A comparison with national and international norms. *Journal of Positive School Psychology*, 1(2), | 53-72 |.

Koipysheva, E. A. (2018). *Physical Health (Definition, Semantic Content, Study Prospects*. 601–605. <https://doi.org/10.15405/epsbs.2018.12.73>

Kurt, S. (2017, August 29). ADDIE Model: Instructional Design. *Educational Technology*. <https://educationaltechnology.net/the-addie-model-instructional-design/>

- Villarino, R. T. H., Villarino, M. L. F., Temblor, M. C. L., Bernard, P. & Plaisent, M., (2022). Developing a health and well-being program for college students: An online intervention. *World Journal on Educational Technology*. 14(1), 65-78. <https://doi.org/10.18844/wjet.v14i1.6638>
- Madeson. (2017, February 24). *The PERMA Model: Your Scientific Theory of Happiness*. PositivePsychology.Com. <https://positivepsychology.com/perma-model/>
- Morgan, B., & Simmons, L. (2021). A 'PERMA' Response to the Pandemic: An Online Positive Education Programme to Promote Wellbeing in University Students. *Frontiers in Education*, 6, 642632. <https://doi.org/10.3389/feduc.2021.642632>
- Noble, T., & McGrath, H. (2012). Wellbeing and Resilience in Young People and the Role of Positive Relationships. In S. Roffey (Ed.), *Positive Relationships* (pp. 17–33). Springer Netherlands. https://doi.org/10.1007/978-94-007-2147-0_2
- Papadatou-Pastou, M., Campbell-Thompson, L., Barley, E., Haddad, M., Lafarge, C., McKeown, E., Simeonov, L., & Tzotzoli, P. (2019). Exploring the feasibility and acceptability of the contents, design, and functionalities of an online intervention promoting mental health, wellbeing, and study skills in Higher Education students. *International Journal of Mental Health Systems*, 13(1), 51. <https://doi.org/10.1186/s13033-019-0308-5>
- Pezirkianidis, C., Stalikas, A., Lakioti, A., & Yotsidi, V. (2019). Validating a multidimensional measure of wellbeing in Greece: Translation, factor structure, and measurement invariance of the PERMA Profiler. *Current Psychology*. <https://doi.org/10.1007/s12144-019-00236-7>
- Pop, L.-M., Iorga, M., Muraru, I.-D., & Petrariu, F.-D. (2021). Assessment of Dietary Habits, Physical Activity and Lifestyle in Medical University Students. *Sustainability*, 13(6), 3572. <https://doi.org/10.3390/su13063572>
- RCPSYCH. (2011). *2011-2013 College Reports | Royal College of Psychiatrists*. RC PSYCH ROYAL COLLEGE OF PSYCHIATRISTS. <https://www.rcpsych.ac.uk/improving-care/campaigning-for-better-mental-health-policy/college-reports/2011-2013-college-reports>
- Rector, N. A., & Beck, A. T. (2012). Cognitive Behavioral Therapy for Schizophrenia: An Empirical Review Neil A. Rector, PhD and Aaron T. Beck, MD (2001). Reprinted from the *J Nerv Ment Dis* 189;278–287. *Journal of Nervous & Mental Disease*, 200(10), 832–839. <https://doi.org/10.1097/NMD.0b013e31826dd9af>
- Riopel. (2019, June 15). *8 Benefits of Cognitive Behavioral Therapy (CBT) According to Science*. PositivePsychology.Com. <https://positivepsychology.com/benefits-of-cbt/>
- Ryan, J., Curtis, R., Olds, T., Edney, S., Vandelanotte, C., Plotnikoff, R., & Maher, C. (2019). Psychometric properties of the PERMA Profiler for measuring wellbeing in Australian adults. *PLOS ONE*, 14, e0225932. <https://doi.org/10.1371/journal.pone.0225932>
- Salameh, P., HAJJ, A., BADRO, D. A., ABOU SELWAN, C., AOUN, R., & SACRE, H. (2020). Mental Health Outcomes of the COVID-19 Pandemic and a Collapsing Economy: Perspectives from a Developing Country. *Psychiatry Research*, 294, 113520. <https://doi.org/10.1016/j.psychres.2020.113520>
- Seligman, M. E. P., & Ungar, L. H. (2016). PREDICTING INDIVIDUAL WELL-BEING THROUGH THE LANGUAGE OF SOCIAL MEDIA. *Biocomputing 2016*, 516–527. https://doi.org/10.1142/9789814749411_0047
- Touloumakos, A. K., Goozée, R., Papadatou-Pastou, M., Barley, E., Haddad, M., & Tzotzoli, P. (2016). Online support system for students in higher education: Proof-of-concept study. *DIGITAL HEALTH*, 2, 205520761665501. <https://doi.org/10.1177/2055207616655012>
- Umucu, E., Wu, J.-R., Sanchez, J., Brooks, J. M., Chiu, C.-Y., Tu, W.-M., & Chan, F. (2020). Psychometric validation of the PERMA-profiler as a well-being measure for student veterans. *Journal of American College Health*, 68(3), 271–277. <https://doi.org/10.1080/07448481.2018.1546182>
- Vilela Chaves, C., & Moro, S. (2009). Mental health system development profiles and indicators of scientific and technology innovation. *The Journal of Mental Health Policy and Economics*, 12(2), 67–78.
- Villarino, R. T., Arcay, C. A., Temblor, M. C., Villarino, M. L., Bagsit, R., Ocampo, L., & Bernard, P. (2021). The Effects of Lifestyle Intervention Using the Modified Beliefs, Attitude, Subjective Norms, Enabling Factors Model in Hypertension Management: Quasi-Experimental Study. *JMIR Cardio*, 5(2), e20297. <https://doi.org/10.2196/20297>

- Villarino, R. T. H., Villarino, M. L. F., Temblor, M. C. L., Bernard, P. & Plaisent, M., (2022). Developing a health and well-being program for college students: An online intervention. *World Journal on Educational Technology*. 14(1), 65-78. <https://doi.org/10.18844/wjet.v14i1.6638>
- Wammerl, M., Jaunig, J., Mairunteregger, T., & Streit, P. (2019). The German Version of the PERMA-Profil: Evidence for Construct and Convergent Validity of the PERMA Theory of Well-Being in German Speaking Countries. *Journal of Well-Being Assessment*, 3(2), 75–96. <https://doi.org/10.1007/s41543-019-00021-0>
- WHO. (2020). *WHO/Europe | Coronavirus disease (COVID-19) outbreak—WHO announces COVID-19 outbreak a pandemic.* <https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-covid-19/news/news/2020/3/who-announces-covid-19-outbreak-a-pandemic>