

Psychological trauma as a reason for computer game addiction among adolescents

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ABSTRACT

This study explores psychological trauma as a reason for computer game addiction among adolescents. The findings of this study show that there is a connection between psychological trauma and computer game addiction. Some psychologists note that the main cause of any type of addiction derives from psychological trauma, and that finding such underlying causes can help understand the particular need to gamble. The strong connection between computer game addiction and psychological trauma shown in this study can have a significant impact on adolescents' personal growth.

KEYWORDS

Computer game addiction, psychological trauma

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Introduction

It is impossible to represent and describe human life and existence without referring to the phenomenon of activity. The successful individual and intellectual development of a child depends upon their active participation in various forms of activity: improving their mental processes, developing various forms of knowledge, and assimilating and adopting the social mores into which they are born. Research studies conducted by such psychologists as A.N. Leontiev, S.L. Rubinstein, A. Smirnov, B.M. Teplov, M.M. Mukanov, S.M. Dzhakupov and others reveal the that formation and development of various psychological processes and the growth of personality mainly depend on the content of activity, its motives, objectives and means of implementation (Dzhakupov, 2002).

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With technological progress, new tools emerge – tools of activity that bring significant changes to activity itself. The pace of development has been so rapid that psychology is lagging behind in studying an impact of new information and computer technologies upon personality, having barely begun to explore this relatively new problem.

The present research study is devoted to the phenomenon computer game addiction among adolescents and its interrelation with psychological trauma.

Computers are widely used in our everyday life. An ever-increasing number of work-related and social activities require or are mediated by computers. One aspect of the ever-increasing involvement of computers in our life is the widespread rise of computer games. Many people, especially adolescents and children, spend an enormous quantity of their time playing computer games. As a group, the most enthusiastic and devoted players are young children and adolescents. Nowadays, most children in the developed world will encounter computer games from the moment they begin walking, or even earlier from observing games played by their relatives. Parents or other responsible adults may attempt to restrict such gaming activity, but as they grow older children have more control over their spare time and often choose to spend additional hours on computer games.

In observing the phenomenon of computer gaming through the prism of psychology, we can distinguish three areas of personality formation that are connected with gaming: the game as a special kind of activity; the game as a kind of communication model; and the game as a way of developing knowledge and awareness of one's own capabilities.

Of course, any computer game is, first and foremost, a game, and thus considered a special kind of activity. In studies conducted by A.N. Leontiev, S.L. Rubinstein, D.B. Elkonin and S.M. Dzhakupov, the value of activity in the formation of personality was substantiated and proved (Makhmutov and Duysenbekov, 2006, 2010). As shown by Bratus (1988), "Personality manifests and forms itself through activity it does not in fact have any other ways of forming and self-realization."

Initially it is necessary to determine the reasons that push gamers to dive into the virtual world. Among these are problems such as dissatisfaction with personal life, working conditions, school surroundings, family relations or household obligations, various financial difficulties, psychological trauma, etc. If children and adolescents experience difficult situations, it can be easier for them to "substitute" those situations with a virtual picture that is convenient and offers the prospect of being able to solve any problematic situation. The mentality of children and adolescents is more susceptible to irreversible changes caused by aggression and violence. Sharp criticism and threats to deprive the young person of their computer or gaming console will only cause a negative attitude on the part of the addict (Tolegenova, Oskenbay, 2015).

Childhood trauma caused by abuse and neglect is a factor of great importance in determining the origin of addiction. It is not uncommon to find social problems in modern families, but in the most extreme cases, failures of socialization within the family can lead to early drug use and crime by young people. Addictive behavior is illustrated by certain factors such as the neuropsychiatric instability of character accentuation (hyperthymic, unstable, conformal, hysteric, epileptic types) and adolescents' behavioral reactions

(grouping, emancipation, wasting hobby time and the emergence of sexual desire) (Lichko, 1986; Zhmurov, 1994; Shabanov, Stackelberg, 2000; Ovcharov, 2000 et al.).

M.S. Ivanov states two main psychological formation mechanisms involved in computer game addiction: a need to escape from reality and the acceptance of the role of the other (Ivanov, 2005).

V.L. Malygin and N.S. Homeriki note certain characteristic personality features among adolescents that seem to increase the risk of their forming computer dependence. These include a tendency to search for new experiences, aggression and anxiety, antisocial coping strategies, emotional alienation and low communicative competence (Malign, 2011).

Methods

- 1) Integrating The level of game addiction among the participants was measured by means of Thomas A. Taker's technique.
- 2) L.N. Yuryieva and T.U. Bolbot's diagnostic screening tool, based on M.H. Orzack's criterion for computer game addiction was used.
- 3) The IES-R (Impact of Event Scale) was used to clarify the impact of psychological trauma.

Results

1) Based on Thomas A. Taker's method for measuring the level of game addiction, 66% of participants showed a high level of computer game addiction, 7% were not addicts and 27% of the respondents were average addicts. Details are given in Table 1 and Figure 1.

Table 1. Results based on Taker's method to determine non-addicts, those at risk of addiction, and addicts

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation
Non addict	51	0.00	2.00	1.2745	0.80196
Average	62	3.00	7.00	4.7581	1.31430
Addict	67	8.00	21.00	11.7164	3.96884
Valid N	51				

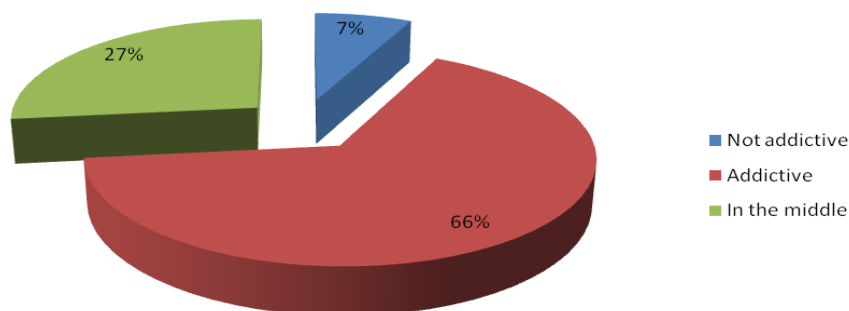


Figure 1. Levels of computer game addiction among participants



As seen in Figure 1, most of the participants revealed a higher level of computer game addiction that represents a serious problem affecting adolescents in affluent communities across the world.

Seven percent of participants bore no risk of computer addiction. They did not find it necessary to waste time in front of the computer to put them in a good mood, and found no need to lie about the amount of time they spent at the computer. Respondents in this group had no problem regulating the amount of time they spent in front of a computer screen. Answers to additional questions regarding how respondents use computers revealed that those belonging to this group used computers primarily for educational purposes, to search for information in preparation for lessons. They also used computers for watching movies and connecting with friends via social networks. All respondents in this group preferred browser-based games (e.g., *Zombie-farm*, *Slammer*), puzzle, card and logic games and quizzes. All students in this group had other hobbies and many achieved good results in class. In other words, to students engaging in this level of computer use, computers are simply a working tool rather than a leisure activity; they showed no warning signs of addiction.

Twenty-seven percent of participants surveyed were considered to be at risk of computer addiction. They were characterized by a strong emotional response to virtual reality, increased time spent at the computer and problems with regulating the amount of time they using computers. Some students admitted lying about the amount of time they spent at the computer and noted the emergence of problems with their studies due to excessive enthusiasm for using computers. Responses to additional questions showed that only four students in this category engaged in other extracurricular activities. These students preferred to spend time using social networks and playing computer games. The types of games preferred were predominantly shooters, various types of online games, role-playing games, browser-based games and others. Teens with serious computer addiction comprised 66% of the sample.

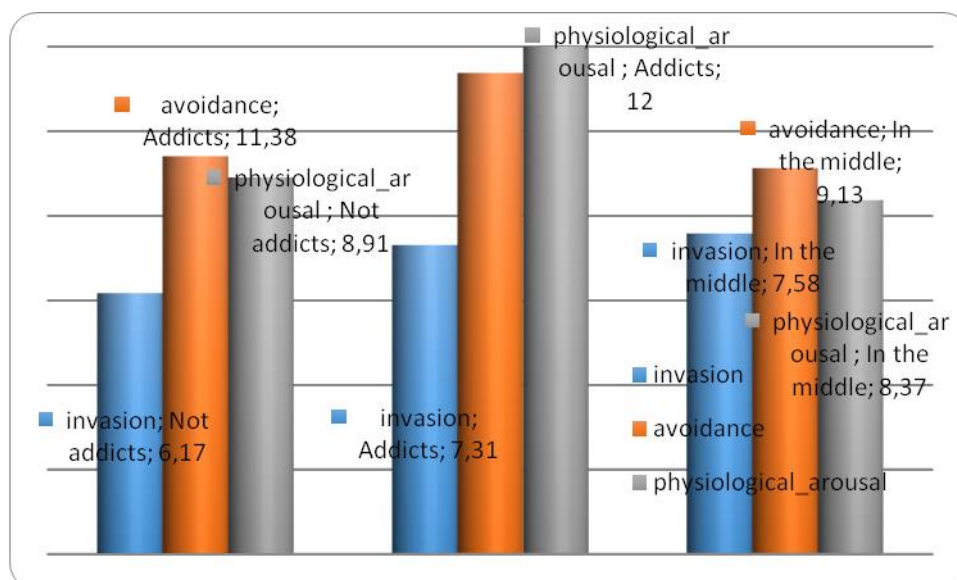
Out of 180 teens surveyed, 7% showed no risk of computer addiction. The 27% at risk of developing of computer addiction require comprehensive measures aimed preventing their addiction developing further, and a much higher degree of active involvement in school life. For the 66% of surveyed students with a full-blown addiction, the computer is a significant obstacle in their socialization; their dependence negatively affects their learning outcomes and undermines their social life due to the resultant passive lifestyle.

2) This study aimed to reveal the impact of psychological trauma on computer addiction among adolescents. This was determined using the IES-R – Impact of Event Scale.

In case of Post Traumatic Stress Disorder (PTSD), adolescents respond to traumatic events with symptoms such as re-experiencing the trauma, emotional numbing, behavioral avoidance and increased physiological activity. Because of age-related changes, stress reaction among adolescents may lead to a deterioration of function and worsening of existing conditions. Responses to a disaster can include an increased sense of insecurity and vulnerability, a loss of sense of control and predictability; a need to reaffirm familiar relationships, attachments and routines; and attempts to remain independent (Table 2).

Table 2. The descriptive analysis of IES-R among non-addicts, addicts and average addicts

Descriptive Statistics	N	Minimum	Maximum	Mean	Std. Deviation
No invasion	51	2.00	19.00	6.1765	3.41588
No avoidance	51	2.00	19.00	7.3137	3.84443
No phys. arousal	51	2.00	20.00	7.5882	3.36557
Invasion	67	2.00	19.00	9.4179	4.24317
Avoidance	67	2.00	24.00	11.3881	6.11990
physiological arousal	67	2.00	20.00	9.1343	3.52005
Mid invasion	62	2.00	19.00	8.9194	4.10237
Mid avoidance	62	2.00	24.00	12.0000	6.56369
Mid phys. arousal	62	2.00	15.00	8.3710	3.00401
Valid N (listwise)	51				
Screen	180	2.00	38.00	18.3111	8.08564
Valid N	180				


Figure 2. IES-R among non-addicts, addicts and those at risk of addiction

As shown in Figure 2, the computer addicts in our survey tended to display more avoidance and physiological arousal, whereas invasion was almost the same among addicts and those at risk of addiction.

3) To identify adolescents with addiction to computers we chose the diagnostic screening tool developed by L.N. Yuryeva and T.J. Bolbot, based on the criteria proposed by Dr Moressy Orzack.

Indirectly, the results of testing also allow identification of an “at risk group” whose members show signs of computer addiction.

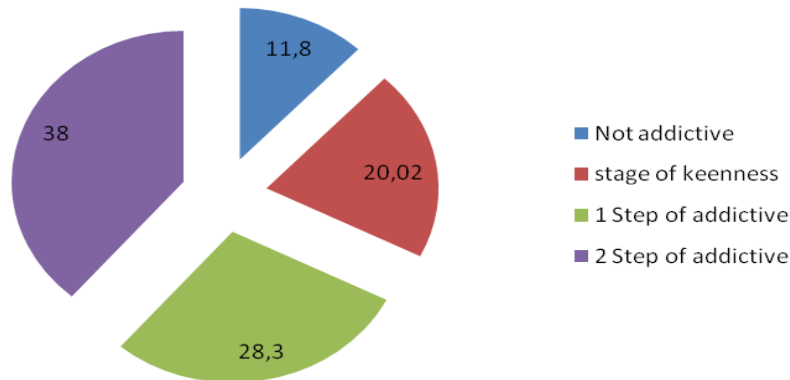


Figure 3. The diagnostic screening results, showing non-addicts, those at the stage of keenness, and stage 1 and 2 addicts

As seen in Figure 3, most of the participants manifested a rather high level of computer game addiction. As a result, an “at risk group” was identified.

There was no risk of computer addiction among 11.8% of participants. In addition, 20.0% of participants were registered at the stage of keenness on computer games, which represents the majority of the sample. For this stage, higher interest in the use of computer resources is characteristic. Those found to demonstrate keenness on computer games were defined by the emergence of an emotional response when using computers and some problems over self-control. Respondents noted that their mood improved when they used computers, causing them to spend a lot of time on computer games. Nobody in this group noted the existence of nervousness when not in the virtual space, nor did they suffer from sleep disorders, problems studying or physiological problems. Many pupils in this category had hobbies; they visited various places and took part in sports activities. Most used computers to watch movies, look for information and play games. Most preferred browser games, but their main difference from those in the previous level was that they also enjoyed shooters, racing simulators and strategy and role-playing games.

The group risk of the emergence of computer dependence was 28.3 in this group, whereas for teenagers who revealed existing computer dependence this was 38.

4) To reveal the impact of psychological trauma on adolescents’ computer game addiction, the Pearson correlation technique was applied. The results revealed are as follows:

Table 3. The Pearson correlation between computer game addiction and psychological trauma scales

Correlations	Taker	Screening	invasion	Avoidance	Phys. arousal
Pearson Correlation	1	0.600(**)	0.293(**)	0.219(**)	0.264(**)
Sig. (2-tailed)		0.000	0.000	0.003	0.000
N	180	180	180	180	180
Pearson Correlation	0.600(**)	1	0.139	0.091	0.128
Sig. (2-tailed)	0.000		0.064	0.226	0.087
N	180	180	180	180	180

** Correlation is significant at the 0.01 level (2-tailed).

As shown in the Table 3, a positive Pearson correlation was found between Taker's addiction method and the IES-R scales: invasion (0.293), avoidance (0.219), physiological arousal (0.264) in the $p < 0.01$ level, whereas the scale of Taker method was significantly connected with the diagnostic screening tool, which shows the significance of the revealed addiction level.

Heinz Kohut believes that all addictive disorders are based in disorders of emotional development. In other words, childhood trauma is considered the main factor in a predisposition to addiction.

Many people have painful past experiences. Untreated psychological wounds may prevent the normal development of the human personality, as the affected person may create a false image of the world and their place in it. The feelings that accompany trauma and its consequences can be very varied: a sense of victimization ("it's not fair, the world is against me"); anxiety and fear (which can manifest later as feelings of insecurity, inadequacy and inferiority); unconstructive shame and guilt; isolation; bewilderment; or a sense of meaninglessness in life and the world as a whole.

Awareness of psychological injury is a necessary but very painful experience towards which a sufferer must be drawn carefully. Often what the subject sees as their own character traits are a manifestation of mechanisms used to protect themselves from painful experiences. This awareness requires a review and reassessment of a great deal in the victim's life.

Living organisms would be unable to survive very long without the ability to heal their wounds and diseases. When it comes to fear, we consciously and unconsciously lock it away. We are not able to get rid of fear through a deliberate and intentional act of will alone. All we can do is to suppress it so that we do not fear the fear itself. However, such behavior has the consequence of suppressing many vital activities of the body, including the processes of natural and spontaneous healing.

Discussion

Computer game addiction is studied by scientists in various countries, and despite the contradiction implied by revealing the main reason behind this type of addiction as a leading activity in preschool years and one which retains a prominent place right through to adolescence, games are important in the development of the child. Humans have a functional need for games, a need which is not limited to the period of childhood. It is clear that the game is a special phenomenon. It is welcome and voluntary activity. While playing games, humans feel freedom: they need not be afraid to take risks. They experience excitement and joy. The objective of the game is not to transform the world, but to enjoy it. Given this natural demand for games, recent years have seen the expansion of gaming methodology to different fields of human activity. That is where one of the urgent issues of the modern world emerges – people cognize the world while playing, learn to live in this world through games, but the game should not replace the world and life itself.

The existence of psychological dependence on computer games is still doubted by many specialists, as well as people who are themselves fond of computer games. However, the indisputable fact is that the number of people interested in staying in virtual reality today is sufficiently large to warrant attention. In fact, from the point of view of studying the effect of computer games on the



personality, we are interested to a greater extent in subjects' long-term and regular presence in the virtual world of computer games, rather than psychological dependence on them. Usually these things are closely related and do not exist without each other: if one is a computer game addict then often he/she spends lots of time in the virtual reality, and if a person spends much time playing computer games and plays regularly, it is likely that he/she is an addict. Most gaming addicts often experience bad moods. Moreover, their mood does not improve after playing computer games, and sometimes worsens. This fact requires an explanation, because any addiction causes distress and activates a particular mood, but in the case of computer game addiction. We will try to consider possible causes of these phenomena further.

Game addicts experience a steady desire for the game, but at the same time cannot satisfy this desire; that is, they are in a constant state of frustration, even though they are able to meet the need by playing. The key to understanding this paradox may be the division of addicts' psychic reality into the virtual world and the real world. During the game, their mood is significantly improved, and observations show that in the process of playing a person expresses positive emotions. Positive emotions accompanied by a rise in mood, according to addicts, also manifests in a feeling of "anticipation" of playing computer games. After leaving the virtual world, the addict's mood deteriorates again, quickly returning to its original level and remaining there until the next "entry" into the virtual world (Foreman and Wilson, 1996). A depressed mood at the end of the game can be explained by the need for more gaming – an escape from reality and acceptance of the role. For game addicts, the real world is boring, uninteresting and full of dangers, as most such addicts are poor at adapting to the society. As a consequence of this, the addict is trying to live in a different world – a virtual one – where everything is free and where he/she sets the rules of the game. It is logical to assume that the road out of virtual reality is painful for an addict – he/she once again faces the hated reality, and that causes a decrease in mood and activity, as well as deteriorating health. Thus, one of the possible reasons for the decline of mood in addicts is the continued need for a computer game, accompanied with a failure to meet this requirement (*ibid.*).

Another possible reason for deviations in the emotional sphere of addicts is their subjective experience on a conscious level of the practical uselessness of computer games and, as a consequence, an awareness of their own futility, combined with their inability to cease this hobby due to their psychological dependence on it. Alongside the flight from reality, they are driven by the need to take on a role; this is key to understanding another major cause of discomfort and reduction in the mood among addicts. The fact is, the need to take the role of a hero is actually a form of cognitive need common to all people (Shapkin, 1999).

Thus, we can identify three possible main reasons for depressed emotional states in computer game addicts:

The continued need for a computer game, and at the same time, a failure to satisfy this need.

The subjective experience of addicts on a conscious level of the practical uselessness of computer games and, as a consequence, their own futility, along with the inability to cease playing due to psychological dependence.

An inadequate attitude toward themselves as an outcome of incongruence between the “real self” and the “virtual self.

Observations have shown that gaming addicts adapt abnormally to society. In fact, the problem of high levels of anxiety among addicts can be explained from two points of view: anxiety as a cause of dependence and anxiety resulting from this dependence. It is most likely that both are true: anxiety forms one of the causes of addiction, and is further intensified by the influence of the addict’s extensive and regular presence in virtual reality (Shapkin, 1999).

Modern computerized video games are an optimal environment for psychological activity. As a consequence, people involved in gaming, as a result of extended gaming sessions involving virtual violence, cruelty and murder, the perception of the socio-legal situation inadequately changes in legal terms of the virtual construction. For example, in his review of foreign studies on the effects of gaming addiction, E.G. Zhilin describes two main positions held on the relationship between media-based violence and aggressiveness in adolescents. The first of these, known as the theory of catharsis, suggests that watching movies and games with violent content contributes to leveling out negative emotional stress and, consequently, reduces the level of aggression. Another cognitive-behavioral theory, based on the proposition that aggression arises from cognitive structures formed as consequence of social learning, suggests that viewing scenes of violence and, especially, the virtual involvement in them through game scenarios directly stimulates aggression. In addition, according to the findings of various psychologists, it is possible to establish correlations between a propensity towards violent video games on the one hand, and aggressive behavior or non-aggressive rebellious behavior on the other (Zhilin, 2002).

Zhilin’s analysis suggests that in terms of stimulating aggressiveness, violent video games are more dangerous than scenes of violence on TV and in the movies. This due to the fact that a video game player, having selected the character he will play in the game, identifies himself with it empathically, enhancing the impact of the game. In actively playing game scenarios, the player selects a type of aggression and acts aggressively, leading to actual aggressive behavior. In gaming, virtual reinforcement and punishment leads players to form a “dependence” on video games and thus form behavioral patterns that can be “imposed” on reality. In other words, “there is an in-game tutorial in aggression, along with simultaneous modeling, reinforcement and fixing behavior” (Zhilin, 2002).

Conclusion

The use of modern computer technology in virtually all spheres of human activity is already an accomplished fact. There is a growing number of users of the internet, of various software packages and of computer games. Along with the undoubted positive value of computerization, the existence of negative consequences of this process affecting the social and psychological health of children and adolescents – in particular, the occurrence of computer addiction – should be noted. The younger generation have very quickly formed a computer subculture, with its own slang and style of life. The task of experts and, above all, psychologists is to identify users with an increased risk of developing



computer addiction and to use preventive measures, as well as implement corrective programs, to eliminate computer addiction.

Enthrallment by computers can dislodge from a child's life easy communication with peers, passions and hobbies. It may worsen their school performance: children have no idea how fast time goes while playing computer games, they become tired and homework does not get done before it is time to sleep. In this regard, the present study into computer game addiction among adolescents has shown a significant connection between computer addiction and psychological trauma. Moreover, the majority of the sample showed a high level of computer game addiction, which confirms our assumptions about the need for these kinds of studies.

We assume that one of the main symptoms of addiction, including addiction to computer games and the internet, is the presence of **un-addressed trauma**. People are open to various influences from the environment. In our lives, there are many sources of mental trauma. Often, traumatic life events coincide with stress, the deterioration of mental health, and the subsequent emergence of various mental disorders and diseases. Such problems lead people to experience profoundly negative feelings. We believe that the recognition and validation of the reality of a patient's past and present trauma have a great therapeutic effect. We plan to continue our research by developing an interventional tool the prevention of addiction and to try to help addicts to escape their compulsions in the future.

Disclosure statement

No potential conflict of interest was reported by the authors.

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