Potential Risks Associated with eSportsmen Activities: an Empirical Study

Tatyana I. Bonkalo[1], Olga N. Stepanova[2,3], Elena N. Latushkina[2,4], Oleg A. Kozlyatnikov[5] and Elizaveta S. Kumancova[6]

[1]The State Budgetary Institution "Research Institute for Healthcare Organization and Medical Management of Moscow Healthcare Department", Moscow, Russia
[2]Russian State Social University, Moscow, Russia
[3]Moscow Pedagogical State University, Moscow, Russia
[4]Peoples' Friendship University of Russia (RUDN University), Moscow, Russia
[5]Astrakhan State Medical University, Astrakhan, Russia
[6]Moscow State Technical University of Civil Aviation, Moscow, Russia

Summary
The purpose of the study was to identify the level of development of gaming disorder among e-sportsmen as a potential risk of their activity. Three groups were formed for the study. The first group consisted of 102 e-sportsmen aged between 18 and 32; the second group consisted of boys of the same age who, according to preliminary questionnaires, played computer games fairly frequently - at least once a week (n = 102); the third group consisted of individuals of the same gender and age, but who did not share a passion for computer games (n = 102). The study was performed using semi-structured interview during which the respondents filled out the Computer gaming disorder questionnaire developed and tested by O.M. Vidova under our supervision. Our study showed that among 102 e-sportsmen, 82,3% did not have any computer gaming disorder, only some tendency thereto. While 17,6% of e-sportsmen were characterized by a pronounced gaming disorder. E-sportsmen who prefer strategies, less than all other e-sportsmen, tend to escape from reality and accept the game role, to express their emotions through the game, and in general have the lowest level of dependence on games. Additionally, strategic e-sportsmen are most likely to study the game thoroughly and to develop themselves with it. Many Starcraft e-sportsmen tend to explore the possibilities of the game in detail and, at the same time, protect themselves from escaping into virtual reality. The risk of computer gaming disorder among e-sportsmen is largely determined by their sports achievements, the type of sports activity (individual or team), and genre of the preferred computer game.

Keywords:
eSports, emotional background, computer games, business, science.

1. Introduction

Development of eSports or computer sports leads, in particular, to the modern society's digitalization, the popularity of which continues to grow from year to year.
We may see the computer games as a new art form that appeals to the archetypes of the collective unconscious and significantly changes the shape of contemporary culture [1-4].

There are many examples when a computer game goes beyond the computer itself and helps people to learn something, develop some skills in their everyday life, aids business and science.
M. Young found a positive effect of computer games on learning languages, history, and even physical skills training [5-7]. Research by F. Blumberg showed an increase in students' motivation to learn through mathematical games [2].
I. Granik and her colleagues showed that computer games increased children's learning motivation, improved their health and developed social and cognitive skills. Complex multiplayer strategies as well as simple games can be useful: for example, they believe that "Angry Birds" helps to relieve tension, increase emotional background developing the child's spatial thinking [8].
Computer games simulate various types of socio-cultural human activities. E.Yu. Zubarev believes that quests can have both indirect and direct effects when dealing with emotional disorders, correction of fears and aggression, and development of intelligence [9,10].
In addition, researchers note that through the game, people interact with each other, fill the need to communicate, relax, structure their free time, express and receive emotions, meet their essential needs, which, for some reason, cannot be met in a real environment. All of this contributes to maintaining a sense of personal stability [11].

The results of foreign research on identifying the connection between computer games and aggressive and violent behavior are equally contradictory as the results of domestic studies. U.S. government statistics indicate that video game sales are on the rise, while violence is on the decline [12]. A longitudinal study by Maria von Salisch found that there were no links between violent video games and aggression [13]. A study by Andrew Przybylski showed

Manuscript received August 5, 2022
Manuscript revised August 20, 2022
https://doi.org/10.22937/IJCSNS.2022.22.8.35

that aggression levels even decrease with video game exposure [14].

We can emphasize that e-Sport activities are characterized by potential risks associated with the specifics of computer games impact on the e-sportsman self-development.

Among the main risks for e-sportsmen, first it is necessary to distinguish the possibility of game addiction in them As the problem of computer game addiction is relevant to all people who play computer games and is specific to the e-sportsmen activities, we considered it in detail [15,16].

In May 2013, the Internet gaming disorder was included in Section III of the DSM-5, subject to further study [17]. For the first time IGD was officially recognized as a mental health disorder in psychiatric nomenclature, albeit conditionally [17-19]. However, nine criteria for IGD were identified: absorption in gaming; withdrawal symptoms, when taking a break from gaming; addiction, the need to spend more time on gaming; unsuccessful attempts to control one's participation in gaming; loss of interest in other hobbies and entertainment; continued excessive use of gaming despite being aware of psychological problems; deception of family, doctors, or others about the amount of time spent playing; using Internet gaming as a way to escape or alleviate negative moods; losing significant relationships, job, education or career opportunity because of participation in games.

M. Griffiths (2010) suggested six components of video gaming disorder: mood modification, salience, tolerance, withdrawal symptoms, conflict, and relapse.

It is important to note that B. Conrad clearly distinguishes between the concepts of "Internet addiction" and "computer gaming disorder" [20]. In his turn, P. Gray reasonably points out differences between computer gaming and gambling disorder.

Norwegian researcher G.S. Brunborg (2016) showed that there was a connection between computer gaming disorder and depression, academic decline and other problems. P. Miller (2013) draw similar conclusions. His study showed that games were a convenient way to escape from reality, which for one reason or another could be perceived as unpleasant, frightening, and even hostile. This was also confirmed by an analytical review, which allowed S.J. Ferguson and his colleagues to say that addiction arises from other psychological problems [12,21-24].

Among the psychological factors, Y.A. Bubeev cites loneliness, unemployment, financial problems, workload, sexual dissatisfaction, unrealized need for self-actualization, and psychological fixation in childhood [11].

$

Another important feature of computer games and e-Sports is the creation of a special interactive space called virtual reality. There is a contradiction in the term "virtual reality" itself, due to its inconsistency with "material" reality, on the one hand, and presence of some material basis, on the other hand, as well as its coming closer to "ideal" reality.

The virtual reality can create conditions for the development of gaming disorder in e-sportsmen.

In this regard, the aim of the empirical study was to identify the level of development of gaming disorder among e-sportsmen as a potential risk of their activity.

2. Materials and Methods

Three groups were formed for the study. The first group consisted of 102 e-sportsmen aged between 18 and 32; the second group consisted of boys of the same age who, according to preliminary questionnaires, played computer games fairly frequently - at least once a week (n = 102); the third group consisted of individuals of the same gender and age, but who did not share a passion for computer games (n = 102). The study was performed using semi-structured interview during which the respondents filled out the CGD (Computer gaming disorder) questionnaire developed and tested by O.M. Vidova under our supervision [25]. A comparative analysis of indicators of computer gaming disorder was conducted both in the designated groups and in the groups of e-sportsmen: individual and team players, differing from each other by the level of competition in which they participate and genre of preferred games.

Statistical methods included calculation of arithmetic mean, percentage and frequency distributions, as well as comparative analysis using the Kruskal-Wallis criterion.

3. Results

The unstructured interviews with e-sportsmen discussed the problem of computer gaming disorder, but most of the respondents did not associate their activities with the possibility of forming such an addiction and did not believe that they had such disorder.

Our study showed that among 102 e-sportsmen, 82,3% did not have any computer gaming disorder, only some tendency thereto. While 17,6% of e-sportsmen were characterized by a pronounced gaming disorder (Fig. 1).

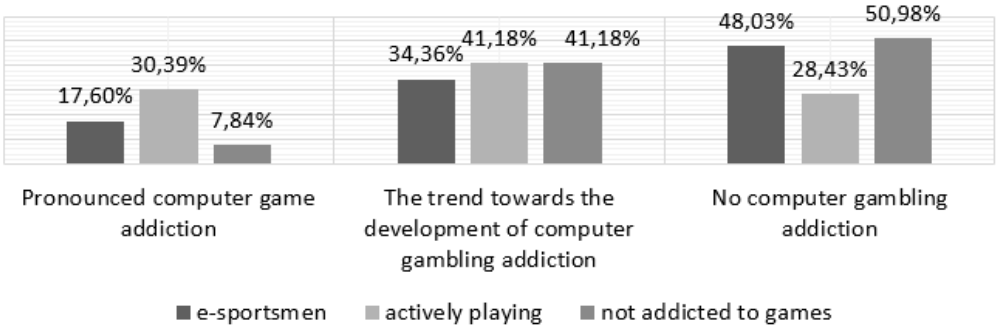

Fig. 1. Percentage distribution of respondents by the level of development of computer gaming addiction (%)$

$

E-sportsmen have signs of addictive behavior, but they are of medium intensity: the group average indicators are in the range of normal values. Young men who are active players have significantly higher indices. It is worth noting that in all groups there are those who demonstrate addictive behavior and those who do not show signs of addiction to computer games. However, the percentage distributions differ from each other at a relevant level of significance (p = 0,004).

In addition to determining the level of development of computer gaming disorder, the developed methodology allows us to identify what exactly attracts the player, which may be the cause of computer gaming disorder.

Based on the data obtained, we can conclude that e-sportsmen are eager to learn through game. Most of them use games as the main source to meet cognitive and cultural needs, the need for self-actualization, which was confirmed by the e-sportsmen themselves during our interviews (Table 1).

Table 1. Mean values of QIZ indicators in groups and the significance of differences according to the Kruskal-Wallis test

Questionnaire scales CGA	E-Sportsmen	Active players	Not playing	Significance level of differences
Escape from reality	12,49	16,86	10,64	0,000
Social maladjustment	5,58	7,70	4,69	0,001
Acting out emotions	11,12	14,82	18,41	0,000
Commitment to learning in play	16,29	14,51	11,87	0,000
Addiction to computer games	16,62	20,83	15,87	0,004
Total indicator	62,10	74,73	53,48	0,007

Despite the fact that many e-sportsmen in their interviews referred to computer games and sports as a source of positive emotions (60% of respondents), according to the data obtained, we can say that e-sportsmen are less inclined to play out their emotions in the game than other respondents do. E-sportsmen use games as an additional source of emotion, but not as the primary means of expressing it. For many of them, gaming is not a condition for the fulfillment of unsatisfied aspirations and desires.

At the same time, the results of qualitative analysis of empirical data suggest that some e-sportsmen use games to avoid their own problems by means of the virtual world; they have a tendency toward transcendental conditions, such as loss of a sense of time and reality of the physical world.

However, e-sportsmen do not feel difficulties in communication and do not seek to transfer their social needs to virtual reality, which makes the level of their social maladjustment rather low.

E-sportsmen exhibit some traits of addictive behavior, but most often, their behavior is within the psychological norm. An analysis of the differences between players competing as part of a team or in individual disciplines showed that individual players were more likely to be addicted to computer games than team players (Table 2).

Table 2. Significance of differences between individual and team esportsmen

Questionnaire scales CGA	Individual players	Team players	Significance level of differences
Escape from reality	12,7	9,98	0,012
Social maladjustment	6,74	5,53	0,005
Acting out emotions	13,4	10,32	0,013
Commitment to learning in play	15,98	16,07	0,017
Addiction to computer games	17,02	16,32	0,007
Total indicator	64,72	56,89	0,000

Individual players are more likely to escape from their own problems, immersing themselves in the virtual world, accepting the role, having difficulty in communication, transferring it to the virtual reality, using the game reality to freely express the accumulated emotions. At the same time, they are less inclined to explore the game, to get something new out of it than the team players do.

Statistically significant differences between e-sportsmen were obtained on the scales of "withdrawal from reality" and "social maladjustment", depending on which competitions they participate in, were obtained on the scales of "avoidance of reality" and "social maladjustment" (Table 3).

Table 3. Significant differences between esportsmen depending on the level of competition

	District/University	All-Russian	International	Significance level of differences
Escape from reality	13,42	11,02	10,96	0,000
Social maladaptation	5,96	5,64	5,02	0,009

E-sportsmen who compete at the highest level are less likely to feel the urge to "escape" into the game and distract themselves from any life's problems through the game, and they are more likely to establish social contacts. E-sportsmen who have not participated in high-level competitions are more susceptible to addictive behaviors. This pattern may indicate that players who are not prone to gaming disorder or who have managed to overcome it have a better chance of succeeding in e-Sports.

4. Discussion

The study revealed significant differences in the propensity to computer gaming disorder in the groups of e-sportsmen who prefer different game genres (Table 4).

Thus, e-sportsmen who prefer strategies, less than all other e-sportsmen, tend to escape from reality and accept the game role, to express their emotions through the game, and in general have the lowest level of dependence on games. Additionally, strategic e-sportsmen are most likely to study the game thoroughly and to develop themselves with it. Many Starcraft e-sportsmen tend to explore the possibilities of the game in detail and, at the same time, protect themselves from escaping into virtual reality.

It should be noted that e-sportsmen who prefer sports simulators, on the contrary, rarely use the game for self-development. However, they are the ones most prone to transcendence, immersion in the game, and the expression of aggression and various socially disapproved feelings through play.

Table 4. Significant differences between esports players depending on the genre of the game

Questionnaire scales CGA	Strategies	Sports simulators	Fighting games	MOBA	Action & Shooter	Significance level of differences
Escape from reality	7,65	12,05	11,62	10,12	10,61	0,007
Social maladjustment	5,71	6,84	7,41	5,55	5,33	0,004
Acting out emotions	9,74	14,12	13,35	11,11	10,71	0,042
Commitment to learning in play	18,4	13,71	14,25	17,52	15,98	0,022
Addiction to computer games	14,89	18,13	19,14	16,61	16,17	0,005
Total indicator	60,79	62,18	64,44	62,71	55,8	0,019

E-sportsmen who prefer fighting games are the most socially maladjusted and addicted to computer games compared to other groups of e-sportsmen. In addition, they tend to transfer their emotions into the game space, which confirms the earlier assumption that they transfer their aggression into the game.

Players who prefer MOBA have average scores on all scales. They tend to study the game, are well socially adapted and, although they show some signs of addictive behavior, they remain in a state of psychological normality and do not "sink" into the game

E-sportsmen who choose action or shooters have the lowest rates of social maladjustment, i.e., they are better adapted to social interaction than other e-sportsmen and have the ability to establish quality social connections.

5. Conclusion

The study suggests that participation in e-Sports has a lower risk of developing computer gaming disorder than using computer games as a hobby or free pastime. The risk of computer gaming disorder among e-sportsmen is largely determined by their sports achievements, the type of sports activity (individual or team), and genre of the preferred computer game. Given the possibility of actualizing the risk of computer gaming disorder development, e-Sports activities must be carried out in conjunction with its psychological support, focused on the prevention of social maladjustment, creating conditions for personal self-actualization of the e-sportsman, increasing his/her cognitive activity and development of his/her potentialities.

References

[1] Babaeva, Yu. D., Voiskunsky, A. E., Smyslova, O. V.: *Internet: Impact on personality*. In: Voiskunsky, A. E. (ed.) Humanitarian research on the Internet, pp. 11–39. Mozhaysk-Terra, Moscow (2000).

[2] Blumberg F.: *Learning by playing: Video gaming in education.* Oxford University Press, New York (2014).

[3] Gutman, I. E.: *Messianic archetypes in computer games*. Ethnosocium and International Culture 4, 4–9 (2009).

[4] Vermishev, G. A.: *Archetypal mythological content in the structure of computer games*. Actual Problems of the Humanities and Natural Sciences 11, 132–136 (2011).

[5] Penkova, I. V., Karpova, N. V., Shmeleva, S. V., Kartashev, V. P.: *Health disorders prevention in preschoolers by means of physical education: Historical aspect*. In: Ardashkin, I. B., Martyushev, N. V., Klyagin, S. V., Barkova, E. V., Massalimova, A. R., Syrov, V. N. (eds.) Research paradigms transformation in social sciences, vol. 35. The European proceedings of social & behavioural sciences, pp. 1042–1047. Future Academy (2018).

[6] Penkova, I. V., Karpova, N. V., Shmeleva, S. V.: *Features of physical education of children*. In: Kaverin, V. A., Kondratieva, N. L., Stepanova, O. N. (eds.) Innovations and traditions in modern physical education. Proceedings of the interuniversity scientific-practical conference, pp. 281–285. Moscow Pedagogical State University, Moscow (2017).

[7] Young, M. F., Slota, S., Cutter, A. B., Jalette, G., Mullin, G., Lai, B., Yukhymenko, M.: *Our princess is in another castle: A review of trends in serious gaming*. Review of Educational Research 82(1), 61–89 (2012).

[8] Granic, I., Lobel, A., Engels, R. C.: *The benefits of playing video games*. American Psychologist, 69(1), 66–78 (2014).

[9] Fomicheva Yu. V., Shmelev A. G., Burmistrov I. V.: *Psychological correlates of enthusiasm for computer games*. Bulletin of Moscow State University. Ser. 14 (Psychology) 3, 27–39 (1991).

[10] Zubarev, E. Yu.: *Adventure computer games in the work of a psychologist*. Cyberpsy (2017). https://cyberpsy.ru/articles/psychology_adventure_games/ (access date: March 8, 2021).

[11] Bubeev, Yu. A., Romanov, A. I., Kozlov, V. V.: *Gambling addiction: Mechanisms, diagnostics and rehabilitation*. Firm "Slovo", Moscow, 160 pp. (2008).

[12] Ferguson, C. J.: *Video games don't make kids violent*. Time (2011). https://ideas.time.com/2011/12/07/video-games-dont-make-kids-violent/ (access date: March 24, 2021).

[13] Von Salisch, M., Vogelgesang, J., Kristen, A., Oppl C.: *Preference for violent electronic games and aggressive behavior among children: The beginning of the downward spiral?* Media Psychology 14(3), 233–258 (2011).

[14] Przybylski, A., Weinstein, N., Ryan, R. M., Rigby, G. S.: *Having versus wanting to play: Background and consequences of harmonious versus obsessive engagement in video games*. CyberPsychology & Behavior 12(5), 485–492 (2009).

[15] Anderson, C. A., Shibuya, A., Ihori, N., Swing, E. L., Bushman, B. J., Sakamoto, A., Rothstein, H. R., Saleem M.: *Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review*. Psychological Bulletin 136(2), 151–173 (2010).

[16] *Playing video games offers learning across life span, say studies*. American Psychological Association (2008). https://apa.org/news/press/releases/2008/08/video-games.aspx

[17] American Psychiatric Association: *Conditions for further study*. In: Diagnostic and statistical manual of mental disorders, 5th ed., pp. 783–806. American Psychiatric Publishing, Washington; London (2013).

[18] King, D. L., Delfabbro, P. H.: *The cognitive psychology of Internet gaming disorder*. Clinical Psychology Review 34(4), 298–308 (2014).

[19] *APA resolution on violent video games*. American Psychological Association (2020). https://apa.org/about/policy/violent-video-games.aspx

[20] Conrad, B.: *Computer game addiction - Symptoms, treatment, & FAQs*. TechAddiction. http://www.techaddiction.ca/computer_game_addiction.html (access date: March 24, 2021).

[21] Ferguson, C. J., Coulson, M., Barnett Griffiths J.: *Video game addiction*. Journal of Psychiatric Research 45(12), 1573–1576 (2011).

[22] Happ, C., Melzer, A., Steffgen, G.: *Superman v. BAD man? The effects of empathy and game character in violent video games*. Cyberpsychology, Behavior, and Social Networking 16(10), 774–778 (2013).

[23] Konyaev, A.: *Gamification of the whole country: What tasks and why does the philosophy of video games solve (interview with Alexander Vetushinsky)*. Lenta.ru (2014). http://lenta.ru/articles/2014/01/03/gamification/ (access date: December 22, 2014).

[24] Strelkov, V. I., Zavarzina, O. O., Shmeleva, S. V., Kartashev, V. P., Savchenko, D. V.: *Psychological barriers in college teacheres "helping professions"*. Research Journal of Pharmaceutical, Biological and Chemical Sciences 7(1), 1938–1945 (2016).

[25] Vidova, O. M.: *Psychological dimension of computer gaming addiction*. Scientific Notes of the Russian State Social University 15(1), 58–66 (2016).