

Development of gaming addiction among orphaned students in the university setting

Erbota Kasymov¹, Baglan Zhaparova^{2*}, Zinakul Utebergenova³, Janat Shnaider⁴, Natalya Kolyeva⁵, Fatima Shnaider⁶, Aliya Mambetalina⁷, Gulsum Ayapbergenova², Aigul Akhmuldinova⁸

¹Third-year PhD Student, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan. ²Higher School of Pedagogy, Margulan University, Pavlodar, Kazakhstan. ³Department of Theoretical and Practical Psychology, Kazakh National Women's Teacher Training University, Almaty, Kazakhstan. ⁴Committee for Control in the Sphere of Education and Science, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan. ⁵Department of Information Technology and Statistics, Ural State University of Economics, Yekaterinburg, Russian Federation. ⁶Hamburg University of Technology, Hamburg, Germany. ⁷Department of Psychology, L.N. Gumilyov Eurasian National University, Astana, Kazakhstan. ⁸Educational Program «Pedagogy and Methods of Primary Education», Margulan University, Pavlodar, Kazakhstan

Correspondence: Baglan Zhaparova, Higher School of Pedagogy, Margulan University, Pavlodar, Kazakhstan. baglan.zhaparova@mymail.academy

Received: 14 November 2025; **Revised:** 19 March 2026; **Accepted:** 27 March 2026

ABSTRACT

To examine the development of gaming addiction among orphaned students and evaluate the effectiveness of the educational process in reducing gaming disorder. The study involved first- to third-year students, including 952 males and 523 females. Assessments took place in first-year groups at the start of the academic year (October) and among first- to third-year students at the end of the year (May). Male students showed a higher prevalence of excessive gaming and spent more time playing than female students. The educational process alone proved insufficient to reduce this habit among males. For females, gaming generally posed no risk. Across all years, the intensity of this habit decreased over time, regardless of gender. To improve the effectiveness of educational programs and promote healthier lifestyles among orphaned students, universities should identify and address individual characteristics of male students and implement preventive measures using modern wellness approaches.

Keywords: Computer games, Wellness, University, Orphaned students, Addiction, Gambling

Introduction

Integration into the global educational space requires new standards that develop universal learning skills (communication, personal, regulatory, and cognitive), while actively incorporating information and communication technologies into education. Research still lacks a clear understanding of how computer gaming affects individuals and how personal traits relate to gaming activity and genre preferences. As a result, there

are no well-developed psychological support programs for school and university students who play computer games [1, 2]. Modern universities continue to expand their digital resources. Orphaned students use these systems to complete additional coursework. However, these same systems also encourage prolonged computer use. In practice, students spend far more time at the computer than their academic tasks require. Some studies suggest that the role of digital learning resources in developing internet or gaming addiction may be minimal, as modern students are generally inclined to spending time online [3, 4]. A key area of research on human interaction with information technology focuses on computer addiction, defined as a pathological dependence on computer use, including excessive engagement in computer games.

At the same time, the informatization and computerization of modern society continue to expand on a global scale. Research on video game addiction has been examined from the perspectives of various psychological approaches and schools [5-

Access this article online

Website: www.japer.in

E-ISSN: 2249-3379

How to cite this article: Kasymov E, Zhaparova B, Utebergenova Z, Shnaider J, Kolyeva N, Shnaider F, et al. Development of gaming addiction among orphaned students in the university setting. *J Adv Pharm Educ Res.* 2026;16(2):10-6. <https://doi.org/10.51847/SutBFmfCLW>

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Non Commercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

8]. Recent studies [9-12] examining the impact of university education on the prevalence and intensity of computer addiction among orphaned students show that gaming addiction poses a clear risk and distracts students from their academic preparation. Orphaned students represent a particularly vulnerable group, exposed to strong negative social influences, as well as facing social and psychological challenges and a lack of sufficient life experience [13-16]. Entertainment websites and computer games require substantial time to complete all stages of gameplay. This creates risks of declining educational outcomes and reduced focus on key life priorities. Students tend to use computers primarily for entertainment and relaxation through gaming. As a result, orphaned students often find it difficult to resist playing computer games before beginning their academic work using the internet. This contributes to both the increased prevalence and intensity of gaming disorder among orphaned students. After long, immersive gaming sessions that drain most of their physical energy, students often have neither the time nor the energy left for studying with electronic resources. In some games, students experiment and develop their imagination, which can support creative skills relevant to their future professional activities. However, in most cases, the majority of their time is spent on entertainment and computer games without clear benefits for study or work. D. Kaidalova, A. Kuznetsova and E. Nikitina (2024) [17, 18] identified the following psychological symptoms of internet addiction and video game addiction: a sense of well-being or euphoria while using a computer; inability to stop; increasing time spent at the computer; neglect of friends; feelings of emptiness or irritability during activities not related to computer use; and academic difficulties. One of the main indicators of established internet addiction is total preoccupation with the internet, which leads to a growing need to spend more and more time online [19, 20]. University learning that involves electronic resources, when kept within reasonable limits, can be considered a normal use of the internet. According to R. Kardashian (2024) [21, 22], healthy internet users have clear goals and spend a reasonable and limited amount of time achieving them. They do not experience psychological or cognitive discomfort, and the internet serves only as a useful tool. At the same time, prolonged engagement with the internet has led to gaming activity being widely recognized as an important aspect of youth development. Z.M. Toporetska, C.V. Aymedov, T.V. Synitska and O.P. Oliinyk (2024) [23-25] note that communication impairments associated with internet addiction manifest as disruptions in the emotional component, reduced ability to perceive a partner's emotional state, and diminished capacity to interpret non-verbal cues. Modern education is no longer conceivable without advanced multimedia and interactive computer technologies, including electronic resources. The internet offers both educational and entertainment content. As a result, scholars highlight the problem of internet addiction and gaming disorder among students [26-30]. It can also be noted that interest in online games tends to decline with age, as priorities shift: school students are more engaged in online gaming (15%) than university students (5%). Electronic courses have a minimal impact on the

development of internet addiction among students, as learning requires focused attention and the assimilation of information. Technological progress, however, contributes to the emergence of habits among orphaned students (one of the most vulnerable groups due to their limited social experience and lack of family support) that can be harmful to both physical and mental health and may quickly develop into addictions. These habits can become a form of "technological drugs", drawing individuals into a virtual reality that differs significantly from real life. Many people spend a large portion of their time in front of screens. Prolonged viewing of television and excessive use of computer-based entertainment can impair vision, contribute to physical inactivity, reduce productivity, and negatively affect memory, attention, and emotional stability. In more severe cases, this may lead to dependence on computers or television. Internet addiction refers to a pathological dependence on internet use [31, 32]. Monitor-based habits pose especially serious risks for young people who lack the self-discipline to resist them and avoid negative consequences. Modern university education relies heavily on the use of computer and information technologies, and students must engage with these technologies to succeed academically. However, many students lack knowledge of safety practices that help protect their health while using computers. If a student also spends free time in front of a screen for recreation, they risk compromising their health and diminishing their ability to study effectively and achieve professional success [33-35]. Given this, it is crucial to study the prevalence of such harmful habits and to develop appropriate educational technologies. These technologies should prevent the formation and escalation of harmful habits into full-fledged addictions. The integration of information and computer technologies in universities should aim to optimize the learning process, promote independent study, and prepare well-rounded, competent graduates. In practice, society faces a growing problem: the number of people dependent on programmable electronic devices increases every day. For students, computers are both a necessary tool for successful academic work and a means of communication and leisure. As a result, researchers emphasize the problem of internet addiction [3, 33, 36, 37]. "Internet addiction" is a broad term encompassing a range of behavioral and impulse-control problems. One form of this behavior is online gambling, while "computer addiction" also includes compulsive engagement in computer games. Criteria for these addictions have been developed, and different types of internet-addicted personalities have been identified [28, 38-41]. However, the psychological characteristics of internet-addicted students and the most effective strategies for preventing internet addiction remain insufficiently studied. Research on preventive measures using health-promoting activities is especially scarce. The younger generation increasingly perceives the internet as a primary tool for education and personal communication.

The rising rates of internet addiction in modern society make it essential to identify affected individuals, examine their psychological traits, and develop effective preventive measures, including additional health-promoting activities. Researchers have identified the main triggers and stages in the development

of this type of addiction, proposed diagnostic criteria, described its physical and psychological symptoms, and examined how internet addiction can emerge from other forms of addictive behavior [16, 33, 42]. However, the psychological characteristics of internet-addicted orphaned students and the most effective prevention strategies remain insufficiently studied. For several reasons, students make up the largest share of internet users and face the highest risk of addiction. Their constant need for information, strong cognitive motivation, high social activity, and limited free time make them the primary users of online resources. The study has revealed a key contradiction: although 48% of internet users are aged 18 to 24, there is little research identifying internet addiction or harmful behaviors, such as video game addiction, within this group. There is also a gap between the growing number of internet-addicted students and the lack of preventive measures based on health-promoting sports. Students often view excessive gaming as a threat to personal development. As they become deeply absorbed in gaming, they neglect the time needed for studying or physical activity. Players tend to identify with their in-game characters, and this identification can have negative effects, especially when the characters are aggressive. A major attraction of computer games is the opportunity to immerse oneself in a virtual world. This can lead to a harmful habit (computer addiction) often accompanied by insomnia and irritability.

Research objective: To assess the effectiveness of the university educational process in addressing students' excessive computer gaming. Research task: To analyze changes in the prevalence and intensity of computer gaming among students during their university studies and to develop practical recommendations to help replace this habit with sports activities.

Materials and Methods

Participants. The study involved first- to third-year students, with a total of 952 males and 523 females participating. Study design. The research was conducted using a survey. First-year students were surveyed at the beginning of the academic year, while first- to third-year students were surveyed at the end of the year. Students were asked to indicate the number of hours they spent per day on computer games and to rate the strength of this habit both before entering the university and at the time of the survey using a 10-point scale. The survey method we used is subjective and cannot provide fully objective data on the problem under study. Its results depend on several factors: students' ability to accurately assess the time spent on the activity, their motivation to engage in it, and the difficulty they experience in refraining from it (which we refer to as the "strength of the habit"). Not all students have well-developed self-awareness, and not all are sufficiently motivated to participate conscientiously in the survey. During data processing, we excluded questionnaires that showed clear contradictions in responses to different questions. We also disregarded evaluations where students used only 2-3 points (e.g., 0, 1, or 10) to rate the strength of different habits, indicating a lack of effort to provide a precise answer. This may reflect poor self-knowledge or unwillingness to engage with

the survey. Thus, our data primarily represent the segment of students with high responsibility and well-developed self-awareness. It is likely that students who play computer games the most and are most dependent on this habit did not participate. Therefore, the time spent and habit strength data at specific points in the academic year (beginning of the first year or end of first–third years) should be interpreted with caution. Nevertheless, the survey provides reasonably reliable information on the gaming habit strength and allows for informed conclusions about the effectiveness of the educational process in addressing this harmful habit. Moreover, students with high self-awareness and responsibility are more likely to succeed in university, become highly qualified specialists, and eventually assume leadership roles in various fields. So, it is important to study the personality development of this group during their university education. Statistical analysis. The survey results were processed as follows: 1) calculation of the percentage of students with the habit; 2) calculation of the percentage of students with the habit whose habit strength was high (7-10 points) or low (1-3 points), indicating low risk of addiction; 3) calculation of the average change in habit strength over the course of university studies for students who had the habit; 4) calculation of the percentage of students whose habit weakened or strengthened, as well as those who developed or eliminated the habit during their studies; 5) assessment of the significance of differences using the Student's t-test ($p < 0.05$). All data were processed using the statistical functions of Microsoft Excel.

Results and Discussion

The main results of the student survey are presented in **Tables 1-3**. The survey of first- to third-year students has shown that male students spend significantly more time on computer games than female students (**Table 1**). Among males, the prevalence of this harmful habit is also significantly higher than among females (**Tables 1 and 2**).

Table 1. Distribution of students by time spent (hours/day) on computer games

Year, gender	N*	Average (hours/day)	No, %	<1, %	1-2, %	2-4, %	>4, %
M _{start}	217	1.8 ± 0.1	20	24	23	23	11
F _{start}	185	0.5 ± 0.1	69	16	8	5	3
M1*	465	1.3 ± 0.1	30	30	22	10	9
M2	122	1.7 ± 0.2	20	30	25	12	13
M3	146	1.3 ± 0.1	18	36	25	14	5
F1	198	0.6 ± 0.1	55	31	6	5	4
F2	114	0.4 ± 0.1	58	32	4	2	2
F3	106	0.4 ± 0.1	52	36	8	4	0

Note: N – total sample size; M_{start}, F_{start} – male and female students surveyed at the beginning of the first year; M1, M2, M3, F1, F2, F3 – male and female students surveyed at the end of the 1st, 2nd, and 3rd years, respectively.

Table 2. Prevalence and intensity of the habit of playing computer games among students

Characteristics	M _{start}	F _{start}	M1	M2	M3	F1	F2	F3
-----------------	--------------------	--------------------	----	----	----	----	----	----

Total, %	80	31	70	80	82	45	42	48
7-10 points, %	19	14	30	40	19	21	24	13
1-3 points, %	45	64	38	28	45	68	60	75
N1*	174	58	327	98	119	89	48	51

Note: N1 – sample sizes of students who have the habit of playing computer games.

Table 3. Intensity of the habit of playing computer games among students during university studies (sample sizes N1, Table 2)

Indicators	M1	M2	M3	F1	F2	F3
Increase in habit intensity, 0-10 points	-1.4 ± 0.2	-1.7 ± 0.3	-1.9 ± 0.3	-1.4 ± 0.4	-1.6 ± 0.5	-1.7 ± 0.3
Habit weakened, %	52	55	63	56	65	69
Habit strengthened, %	12	7	10	17	11	4
Habit eliminated, %	16	11	21	29	32	53
Habit emerged, %	1	1	2	3	3	0

By the end of the first year, the prevalence of the habit of playing computer games among male students is significantly lower than at the start of university. However, in the second year, it rises back to its initial level. At the end of the first to third years, 20-25% of male students spend more than two hours per day on this habit, which poses risks to their physical and mental health. The educational process fails to reduce this harmful habit among second- and third-year male students, as well as to mitigate the risk of developing video game addiction among first- and second-year male students. Among female students, the prevalence of this habit at the end of the first year is significantly higher than at the start of university and remains stable in subsequent years. At the beginning of their studies, one in three female students played computer games, while by the end of the academic year, this number increased to one in two. However, most female students spend less than one hour per day on computer games, indicating that, overall, this habit is not dangerous for them. This is further supported by the finding that fewer than 25% of female students who engage in computer gaming rated the strength of their habit at 7-10 points on a 10-point scale at the end of the academic year (**Table 2**), which could be considered indicative of dependency. The majority of female students rated their habit as weak (1-3 points on the 10-point scale), (**Table 2**). During university studies, the strength of the habit decreases among students of all years, regardless of gender. Among male students, the reduction is more pronounced by the third year compared to first-year students, and the difference is statistically significant. For most students, the habit weakened over time, and the proportion of students showing this reduction increases with the duration of study for both genders. Among third-year female students, more than half have completely abandoned the habit of playing computer games, a proportion significantly higher than among first- and second-year female students.

The analysis of the study results and the relevant literature revealed a clear tendency for students to become inadvertently drawn into internet addiction and computer gaming. This appears to result from specific aspects of the modern student learning system that relies on electronic resources, confirming

our concerns and initial hypotheses about this problem. Based on the study findings, preventive recommendations have been developed for instructors to help redirect students from this habit toward more beneficial activities, particularly sports. These recommendations include the following directions: 1. Conduct an annual review of approaches to preventing addictive behaviors related to computer gaming. This serves as a form of psychological prevention to curb the further spread of this harmful habit. As a result, students become better informed about the mechanisms of gaming disorder, its causes, development processes, self-assessment methods, and the serious consequences of prolonged gaming. 2. Develop and promote guidelines for proper behavior when using computers for academic work. 3. Support the development of personal strategies to counteract the negative consequences of excessive engagement in computer games. 4. Foster motivation for a healthy lifestyle. 5. Promote awareness of alternative, more beneficial activities for students. 6. Communicate preventive measures against internet addiction and computer gaming to students who excessively use the internet or play computer games, while also promoting their social and moral well-being. Conditions should be created to cultivate in this group a need for a healthy lifestyle and participation in sports. 7. Teach students to understand and recognize the effects of video game addiction on a person. 8. Provide support for students who spend extended periods playing such games. If dangerous patterns emerge, offer necessary assistance to help them overcome feelings of anxiety or depression. 9. Socially adapt students to resist the negative influence of video game addiction and develop essential life skills for decision-making and adopting a healthy lifestyle. 10. Ensure a positive emotional atmosphere during university lessons. Our approach is based on the premise that gaming disorder can develop in students as a result of prolonged engagement with games combined with certain personal characteristics. For example, when a student's perception of their gaming level becomes linked to their personal life status, or to the sense of achievement gained from completing all levels of a game, immersion in the virtual world can limit engagement in real-life activities such as reading. Computerized environments with headsets, glasses, keyboards, and joysticks capture the attention of young minds. In a virtual world with two-way or multi-way interactions, young people independently construct their own virtual reality. Team-based gaming becomes a unique way of life and a means of escaping an uncontrollable real world. Within this virtual reality, each young person feels like a winner, which poses the main risk of developing gaming disorder. Psycho-emotional factors strongly influence the formation of such addiction. The virtual world is inescapable and becomes a reality in itself. Students need to be taught and prepared to navigate this modern reality. New educational opportunities are inherently tied to the use of computers, electronic resources, and the internet. Fatigue during university studies is often offset by retreating under a personal, imagined virtual "pillow", allowing students to shield themselves and escape the difficulties of studying, work, and life in general. In computer games, a student's sense of self can reach extraordinary heights, boosting their self-esteem and perceived

abilities. Occasionally, this is reinforced by material rewards, such as monetary prizes for in-game victories. This can result in the full development of this harmful habit, i.e. video game addiction. The task of university instructors is to prevent mass immersion into the virtual world of computer games during lessons conducted via the internet. A widespread shift into the multimedia world is not yet possible, making it crucial to avoid pushing the computerization of higher education to absurd extremes. Computers must be used sensibly, without fostering harmful habits, internet addiction, gaming addiction, or audiovisual dependency. According to D. Kaydalova and A. Kuznetsova (2024), “the lifestyle of youth is a system of stable, typical forms and patterns of activity characteristic of this socio-demographic group.” It represents a kind of portrait of how young people live within their socio-historical reality. Students who engage in regular physical activity report significantly higher levels of satisfaction with their health, which in turn strengthens resistance to computer gaming. It can be concluded that there remains a persistent lack of information regarding harmful habits among youth and university students, including video game addiction. This is due to the lack of comprehensive medical statistics tracking such behaviors. The situation is further influenced by the fact that student lifestyles are objectively shaped by their often-contradictory position in society. In professional teaching practice, it is essential to maintain a balance in the time allocated to completing electronic assignments and to prevent students from being distracted by entertainment websites and computer games. It is crucial to use the achievements of the computer age without harming physical or mental health and to redirect attention away from harmful computer habits through physical education. From general principles of morality emerge unique virtual ethical norms within the computer world. During lessons that use electronic resources, instructors can guide students toward certain ethical values and cultivate an understanding of “good and evil.” The social virtual world defines the virtual values students develop. Therefore, it is important to integrate the promotion of a healthy lifestyle into computer games and to demonstrate the importance of physical exercise and sports. It is necessary to identify games that can direct students toward sports clubs and real-world physical activities. Efforts should be made to help a young person transform from a strong, successful player in the virtual world into a physically strong individual in the real world. In this way, computer games can have a positive social effect, i.e. motivating youth toward an active lifestyle. Paradoxically, computer games should contribute to increasing students’ physical activity. Our moral framework is not fully adapted to virtual worlds. Unlike Nelson, Sewante (2025) [33, 43, 44] and Stevens, Courtney, Cherkerzian, Sara, Chen, Justin & Liu, Cindy (2020) [27, 45, 46], our original research emphasizes a critical point: modern university education must harness both computers and young people’s interest in computer games in a positive sense. Their tendency to spend extended periods in front of a computer should be channeled toward socially constructive purposes. Thus, the content of health-oriented physical education should include a set of knowledge, skills, and competences that students

need to acquire, with a focus on health promotion, overall development, and sport-recreational tasks, as well as on independently overcoming video game addiction. Priority should be given to developing physical, mental, and socio-moral health, while applying a student-centered approach in selecting physical activity methods to combat gaming disorder. It is essential to structure physical education so that students with varying degrees of gaming addiction can apply the knowledge and methods of health-promoting activities effectively.

Conclusion

1. To improve the effectiveness of university education in promoting healthy lifestyles, institutions should identify and consider the personal traits of male students, as these traits can increase the risk of gaming addiction.
2. The work of faculties of physical culture and sports aimed at promoting a healthy lifestyle among students leads to some reduction in the likelihood of video game addiction during university studies.
3. Physical education departments should introduce additional measures to promote healthy lifestyles and reduce the prevalence of gaming addiction. Both structured and independent physical exercise and training can support this effort.
4. University instructors must make every effort to change students’ attitudes toward their own health and lifestyle. It is also essential to foster a positive attitude in students toward reading, art, and sports. This helps eliminate harmful habits, including video game addiction.
5. Educators should design learning activities that use digital resources in a way that does not encourage the development of gaming addiction.

Acknowledgments: The authors thank the editors and reviewers for their assistance in preparing the article for publication.

Conflict of interest: None

Financial support: This research is funded by the Science Committee of the Ministry of Science and Higher Education of the Republic of Kazakhstan (Grant No. AP23488962).

Ethics statement: None

References

1. Öz R, Kayalar M, Koç A. Identifying factors encouraging university students to play computer games. *PJDOL*. 2023;9. doi:10.30971/pjdol.v9i2.1897
2. Grant O, Wallace E. The influence of diversity-focused leadership on employee advocacy in selected Indian Fortune companies: the mediating roles of symmetrical internal communication and work engagement. *Ann Organ Cult*

- Leadersh Extern Engagem J. 2024;5:159-73. doi:10.51847/X2YHdX2Qz7
3. Kunie K, Kawakami N, Shimazu A, Yonekura Y, Miyamoto Y. Examining the impact of managerial communication on the link between nurses' job performance and psychological empowerment. *Ann Organ Cult Leadersh Extern Engagem J.* 2025;6:1-7. doi:10.51847/SF5ZX3J4OT
 4. Stelmakh SA, Kerimova Ya. Computer-gaming addiction among students. *Extreme Psychol Personal Saf.* 2024;1:34-49. doi:10.17759/epps.2024010203
 5. Sagatkarim E. Computer gaming addiction of Kazakhstan's urban youth. *Bull Toraihyrov Univ Hum Ser.* 2025:185-98. doi:10.48081/MPSB1292
 6. Kurt A, Dogan E, Erdogmus Y, Emiroğlu B. Examining computer gaming addiction in terms of different variables. *World J Educ Technol Curr Issues.* 2018;10:29. doi:10.18844/wjet.v10i1.2779
 7. Kaydalova D, Kuznetsova A. Development of an experimental oculographic test battery as part of a software and hardware complex for diagnosing the tendency to computer gaming addiction. *Proc Southwest State Univ Linguist Pedagogy.* 2024;14:154-65. doi:10.21869/2223-151X-2024-14-3-154-165
 8. Osluf ASH, Shoukeer M, Almarzoog NA. Case report on persistent fetal vasculature accompanied by congenital hydrocephalus. *Asian J Curr Res Clin Cancer.* 2024;4(1):25-30. doi:10.51847/0gjOEudJNr
 9. Albayrak V, Gacar A, Nacar E, Tutar Ö. Examining addiction levels of tablet, phone, and computer gaming according to the parents' opinions of students participating summer sports schools. *Pak J Med Health Sci.* 2021;15:2916-9. doi:10.53350/pjmhs211592916
 10. Baer S, Saran K, Green D. Computer/gaming station use in youth: correlations among use, addiction and functional impairment. *Paediatr Child Health.* 2012;17:427-31. doi:10.1093/pch/17.8.427
 11. Mikicin M, Pawiński G, Ostrowska A, Mróz A. Experiencing deep immersion in computer games is associated with autotelic engagement and leads to addiction. *Acta Kinesiologica.* 2025;19:31-7. doi:10.51371/issn.1840-2976.2025.19.S1.2
 12. Morgan AL, Foster DK, Collins IJ. Disparities in HER2-targeted therapy adoption and survival impact in metastatic HR-/HER2+ breast cancer: NCDB cohort study. *Asian J Curr Res Clin Cancer.* 2025;5(2):1-11. doi:10.51847/AZI4JURGIQ
 13. Oslon V, Odintsova M, Semya GV, Kolesnikova UV. Psychological resources and personal deficits of graduates of organizations for orphans. *Soc Sci Child.* 2023;3:69-89. doi:10.17759/ssc.2022030205
 14. Nikolaeva A, Savchenko I, Stepanova O. Actual problems of social inclusion of students in institutions of higher professional education, the graduates of orphanages. *Perspect Sci Educ.* 2023;64:361-78. doi:10.32744/pse.2023.4.22
 15. Sufwan S, Gupta C. Comparative study emotional and behavioral problems in orphans and non-orphans: A comparative study. *Int J Indian Psychol.* 2024;11:2349-3429. doi:10.25215/1102.111
 16. Schneider TL, Krüger BE. Breast cancer-specific mortality in stage IV patients with small tumors: insights from a population-based cohort. *Arch Int J Cancer Allied Sci.* 2025;5(2):1-12. doi:10.51847/b9vFcweAVg
 17. Kaidalova D, Kuznetsova A, Nikitina E. Peculiarities of eye motor reactions during the perception of static images in boys and girls with a tendency to computer gaming dependence. *Proc Southwest State Univ Linguist Pedagogy.* 2024;13:164-75. doi:10.21869/2223-151X-2023-13-4-164-175
 18. Csep AN, Voiță-Mekereș F, Tudoran C, Manole F. Understanding and managing polypharmacy in the aging population. *Ann Pharm Pract Pharmacother.* 2024;4:17-23. doi:10.51847/VdKr0egSlN
 19. Shirshov I, Razumnikova O. Influence of computer gaming technologies on university students' academic performance. *Russ J Educ Psychol.* 2023;14:163-78. doi:10.12731/2658-4034-2023-14-4-163-178
 20. Anunziata OA, Cussa J. Development and assessment of cyclophosphamide-loaded microspheres for enhanced topical drug delivery. *Pharm Sci Drug Des.* 2024;4:35-42. doi:10.51847/mrkjejeAVc
 21. Kardashian R. Primary prevention of computer game addiction in students of educational institutions. *Zh Nevrol Psikhiatr Im S S Korsakova.* 2024;124:97-103. doi:10.17116/jnevro202412403197
 22. Clark A, Foster H. Network pharmacology integration and experimental verification to elucidate the molecular mechanisms of triptolide in treating membranous nephropathy. *Pharm Sci Drug Des.* 2025;5:33-47. doi:10.51847/X9UVMVSJ4E
 23. Ganea M, Horvath T, Nagy C, Morna AA, Pasc P, Szilagyí A, et al. Rapid method for microencapsulation of Magnolia officinalis oil and its medical applications. *Spec J Pharmacogn Phytochem Biotechnol.* 2024;4:29-38. doi:10.51847/UllqQHbfeC
 24. Raza S, Khan A, Mehmood F, Farooq U. Nationwide implementation of essential pharmacogenomic testing in the Netherlands: A decision-analytic model of lives saved and cost-effectiveness. *Spec J Pharmacogn Phytochem Biotechnol.* 2025;5:39-49. doi:10.51847/PUWEymkYkk
 25. Toporetska ZM, Aymedov CV, Synitska TV, Oliinyk OP. A socio-psychological portrait of a pathological gambler as a prerequisite for preventing gambling addiction. *Med Perspekt.* 2024;29:143-50. doi:10.26641/2307-0404.2024.1.301141
 26. Petrakova A. Computer gambling addiction and identity crisis: A socio-philosophical perspective. *Alma Mater Vestn Vyshey Shkoly.* 2023:25-30. doi:10.20339/AM.11-23.025
 27. Stevens C, Cherkerzian S, Chen J, Liu C. Problematic internet use/computer gaming among US college students:

- prevalence and correlates with mental health symptoms. *Depress Anxiety*. 2020;37. doi:10.1002/da.23094
28. Nagy N, Elhabiby M. Relationship of internet and gaming addiction with adult attention deficit hyperactivity disorder among male university students. *QJM*. 2021;114. doi:10.1093/qjmed/hcab102.011
 29. Ming S, Lei Z, Jie W. Peripheral neuropathy in diabetes patients at Jimma University Medical Center: magnitude and contributing factors. *Interdiscip Res Med Sci Spec*. 2025;5(2):1-9. doi:10.51847/2aT3p1KejS
 30. Ribeiro A, Martins S, Fonseca T. Progress and gaps in national medicines policy implementation in SADC member states: A comprehensive desktop review. *Interdiscip Res Med Sci Spec*. 2024;4(1):42-56. doi:10.51847/0eVBxAI8y0
 31. Cuenca-Martínez F, Herranz-Gómez A, Madroñero-Miguel B, Reina-Varona Á, Touche RL, Angulo-Díaz-Parreño S, et al. A systematic review of the literature on the connection between cervical spine abnormalities and internal disorders of the temporomandibular joint. *J Curr Res Oral Surg*. 2025;5:1-10. doi:10.51847/e4CoCM6iSZ
 32. Mickevičius I, Astramskaitė E, Janužis G. A systematic review of the implant success rate following immediate implant placement in infected sockets. *J Curr Res Oral Surg*. 2024;4:20-31. doi:10.51847/PcPJL1v1XF
 33. Nelson S. Gambling addiction among university students. 2025. doi:10.5772/intechopen.1008726
 34. Jabin A, Guthrie A. Understanding treatment gaps in type 2 diabetes: A qualitative study on why patients stop and restart care. *Int J Soc Psychol Asp Healthc*. 2025;5:24-34. doi:10.51847/K4r85uzgEQ
 35. Hsiao FH, Chen PL, Ho CC, Ho RTH, Lai YM, Wu JL. Exploring the impact of cognitive-behavioral therapy on anxiety disorders in children and adolescents. *Int J Soc Psychol Asp Healthc*. 2024;4:26-31. doi:10.51847/jcgvRffQPM
 36. Wong Y, Lin S, Cheng H, Hsieh T, Hsiue T, Chung H, et al. Understanding the impact of medical humanities on internship training and performance. *Ann Pharm Educ Saf Public Health Advocacy*. 2025;5:12-21. doi:10.51847/Z1fogzPksy
 37. Alhossan A, Al Aloola N, Basoodan M, Alkathiri M, Alshahrani R, Mansy W, et al. Assessment of community pharmacy services and preparedness in Saudi Arabia during the COVID-19 pandemic: A cross-sectional study. *Ann Pharm Educ Saf Public Health Advocacy*. 2024;4:43-9. doi:10.51847/C52qAb0bZW
 38. Novak TJ, Dvorak PM. A spatiotemporal neural network framework for EEG-based emotion recognition in depression assessment. *J Med Sci Interdiscip Res*. 2025;5(2):24-38. doi:10.51847/A2pBOYHJW1
 39. Solmell O, Sterner PD, Berg S. MRI of chronic low back pain: correlation between pain, disability, and disc herniation. *J Med Sci Interdiscip Res*. 2024;4(1):22-7. doi:10.51847/hTOnIU7PdK
 40. Shen F, Bao L. Studying the effects of music on the time to gain independent oral feeding in premature infants. *J Integr Nurs Palliat Care*. 2025;6:1-6. doi:10.51847/xBTC4CiH10
 41. Uneno Y, Morita T, Watanabe Y, Okamoto S, Kawashima N, Muto M. Supportive care requirements of elderly patients with cancer referred to Seirei Mikatahara General Hospital in 2023. *J Integr Nurs Palliat Care*. 2024;5:42-7. doi:10.51847/lmadKZ2u1J
 42. Miciak M, Jurkiewicz K. Recent advances in the diagnostics and management of medullary thyroid carcinoma: emphasis on biomarkers and thyroidectomy in neuroendocrine neoplasms. *Arch Int J Cancer Allied Sci*. 2024;4(1):17-23. doi:10.51847/ar1y1TQfNa
 43. Rani N, Gehrke P. Promoting intercultural competence in German medical students via innovative medical ethics education focused on Muslim patients: A pilot study. *Asian J Ethics Health Med*. 2025;5:1-12. doi:10.51847/0foncaeXr1
 44. Iriti A, Lupo M, Khazaal E. Perspectives and apprehensions of healthy individuals toward post-mortem brain donation: A qualitative study across Italy. *Asian J Ethics Health Med*. 2024;4:68-80. doi:10.51847/p7nqk1jS4l
 45. Alnabulsi M, Ali EAA, Alsharif MH, Filfilan NF, Fadda SH. Medical students' perceptions, self-confidence, and willingness to handle in-flight medical emergencies: A cross-sectional study. *Bull Pioneer Res Med Clin Sci*. 2025;5(2):63-74. doi:10.51847/EQuNo67MNf
 46. Jaafar NH, Rahman IA, Ter KZ, Ahmad B. The impact of non-classroom teaching on musculoskeletal pain in university students amid the COVID-19 pandemic. *Bull Pioneer Res Med Clin Sci*. 2024;4(1):50-7. doi:10.51847/UZ9DyvWUrn