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Disorder and rehabilitation: The paradox of digital games and vulnerabilities

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Abstract:

BACKGROUND: The impact of digital gaming on human health, both mental and physical, can be both positive and negative. However, excessive gaming can lead to gaming disorders, which are a cause for concern. With the pandemic, online classes became more common, leading to an increase in gaming-related disorders and even suicides. While the combination of education and fun in online gaming can be beneficial, it can also be a risk for gaming disorders and suicide. This study aimed to explore this paradox and provide safety measures to prevent gaming disorders.

MATERIALS AND METHODS: A qualitative research methodology with exploratory and discourse analysis was used in the study. Several real-life incidents related to the research were gathered from newspaper research articles, media, and existing theses. The researchers used textual interpretation in secondary sources to identify the paradox of digital games and vulnerabilities.

RESULTS: This research article focuses on the various benefits and harmful effects of digital games on individuals' mental and physical health. The research findings were presented based on true events that occurred in and around India. The results of the current study specified that gaming disorders were pushing individuals toward mental disorders and suicide. It is crucial to implement preventive measures to address this issue.

CONCLUSION: According to the study, people who suffer from excessive gaming disorders may experience anxiety, depression, and even suicidal thoughts, which can have negative effects on society. To address this issue, it is helpful to monitor and control individuals' digital game usage and provide informative sessions on how to use digital games properly. While it may not be possible to completely ban the use of digital games, certain restrictions can be put in place. Educating individuals on both the benefits and drawbacks of digital gaming and the rapid technological advancements is essential. Through proper education, it is possible to reduce the number of suicides among gamers and individuals.

Keywords:

Digital games, disorder, mental health, physical health, suicides

Introduction

Digital games are interactive software programs that can be played on various devices, including computers, consoles, cell phones, and tablets. These devices use different input methods, such as controllers, touchscreens, keyboards, or motion sensors, to interact with virtual characters or settings. Digital games can

be classified into various genres: action, adventure, role-playing, strategy, puzzle, sports, simulation, and instructional.^[1] The advancement in technology, esthetics, and gameplay has made digital games more realistic and engaging. Additionally, the emergence of virtual reality (VR), augmented reality (AR), and cloud gaming has significantly expanded digital game accessibility. Playing digital games requires different skills, such as problem-solving, decision-making, strategy, and expertise

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in specific game genres.^[2] Some games are designed to educate the player on various subjects such as arithmetic, science, languages, and history. Online multiplayer games, esports, and gaming communities have significantly contributed to the growth of the digital gaming industry, with millions of people participating in these activities.^[3] However, excessive or improper usage of digital games can lead to addiction, social isolation, and mental and physical health issues. Therefore, exercising moderation, ethical gaming, and risk awareness is crucial to maintain a healthy relationship with digital games.^[4]

Evolution of digital games

Digital games have undergone a remarkable metamorphosis that has changed how people spend their leisure time and engage with technology. In the 1950s and 1960s, video games such as Tennis for Two and Spacewar emerged as early pioneers in what would become the current video game business.^[5] In the 1970s, arcade games such as Pong, Space Invaders, and Pac-Man became cultural phenomena with their simple yet addictive gameplay. The 1980s saw the rise of well-known gaming series such as Super Mario, The Legend of Zelda, and Tetris, which changed the industry and laid the foundation for new trends. In terms of graphics and playability, 8-bit and 16-bit home systems such as the Sega Genesis and Nintendo Entertainment System (NES) were used. 3D environments and cinematic narratives were introduced in the 1990s, thanks to 3D graphics and Compact Disc Read-Only Memory (CD-ROM) technology, and they captured people's attention in fresh and exciting ways. The development of personal computers and online multiplayer gaming has made it possible for a new era of interconnected gaming experiences. In the early 2000s, games such as Grand Theft Auto III, Halo: Combat Evolved, and The Sims pushed the limits of gameplay, narrative intricacy, and player freedom.^[5] In addition, online gaming hubs such as Xbox Live and Steam revolutionized how gamers interacted with each other. Recent years have seen significant changes due to the expansion of mobile gaming and the widespread use of smartphones.^[6] The incorporation of cutting-edge technology such as artificial intelligence, cloud gaming, VR, and AR has helped the market for digital games grow.^[7] The games now offer realistic graphics, challenging mechanics, and engaging stories. As a result of technological advances and creative ideas, digital games have evolved from simple interactive experiences to immersive, multidimensional worlds. Future digital games will continue to push boundaries and blend different genres.

During the coronavirus disease 2019 (COVID-19) epidemic, millions of people throughout the world turned to digital games for amusement, social connection,

and stress reduction.^[8] Many turned to digital games to pass the time and have fun because there were not many traditional kinds of entertainment available. Moreover, digital games have been instrumental in helping people stay connected with each other while practicing physical distancing. Multiplayer games have allowed friends and family members to gather virtually, play together, and create shared experiences. Online gaming communities and forums have also provided a platform for like-minded individuals to connect and support each other. Despite numerous obstacles, they have served as a valuable resource, providing a break from reality and promoting mental health. However, excessive gaming has had harmful effects on mental health in some cases, such as isolation, neglect of responsibilities, and the development of compulsive behaviors.^[9] As a result, it is critical to maintain a healthy balance and engage in appropriate gaming behaviors.

Pros of digital games

Digital platform games have become a hugely popular type of entertainment that offers a variety of advantages to players of all ages. It has been demonstrated that playing these games has several benefits that support well-being and personal growth, including social connection and cognitive development.^[10] Playing digital games can aid in cognitive development and critical thinking abilities. The need to solve problems, plan ahead, and make judgments forces players to use their analytical thinking and problem-solving skills.^[11] In addition, some games have educational components that can help build and reinforce knowledge, including arithmetic, science, and language.

Playing digital games can enhance your motor abilities and twitch reflexes. Dexterity and coordination may be improved by playing games that demand precise movements or quick responses. Action and sports games demand complicated motions and maneuvers from players, which can enhance fine motor skills and twitch reflexes.^[12] Also, by giving players the tools to construct and create virtual worlds, digital games can inspire creativity and imagination. Games that allow players to construct and create virtual worlds promote originality and creativity. Moreover, digital games provide an excellent platform for social interaction and community building. Multiplayer games allow players to connect and cooperate with people from all over the world, fostering communication, cooperation, and social skills.^[13] Internet gaming networks and forums offer a way for people with similar interests to connect, share stories, and build relationships. Finally, gaming can have significant emotional benefits. In-depth character development, intriguing stories, and immersive storytelling can all arouse feelings and forge deep bonds with the gaming universe. Games with relaxation mechanisms, such as

calming music or virtual settings, can also be used to alleviate stress and promote relaxation.^[14]

Moreover, digital games offer opportunities for historical and cultural education through virtual worlds that vividly bring the past to life. By learning about different civilizations, events, and perspectives with factual accuracy, cultural representation, and engaging narratives, players can gain a deeper understanding and appreciation of the world. Additionally, certain digital platform games, particularly those designed for physical exercise, can provide health benefits.^[15] Muscular movement controllers and simulation games allow users to exercise while having fun, leading to increased fitness, calorie burning, and motivation to lead an active lifestyle. Ultimately, playing digital games can improve mental growth, social connections, creativity, emotional engagement, and physical health.^[16] To enjoy these benefits without sacrificing other important aspects of life, it is important to maintain a balanced approach and practice ethical gaming habits.

Cons of digital games

Digital games have many benefits, but it is important to be aware of any potential risks or drawbacks that could result from excessive or reckless gaming. It is critical to keep a healthy balance in your gaming and to be aware of any potential harm it may do to your physical, mental, and social interactions.^[17] Inactive behavior and prolonged screen time, which can result in health issues such as muscular-skeletal disorders, cardiovascular problems, and obesity, are risks associated with excessive gaming.^[18] Additionally, it may result in eye strain, sleep problems, and a decline in physical fitness. Addiction to video games can seriously harm one's mental and physical health.

In addition, playing online video games too much can have a negative impact on cognitive functioning, which includes memory, the ability to focus, and problem-solving skills, as well as academic or professional performance.^[19] Addiction to the Internet has been characterized as a decline in one's capacity for self-control within the social-cognitive framework.^[20] Particularly among younger audiences, exposure to violent game content may also increase aggression, reduce empathy, and traumatize players to actual violence. Online safety and polite communication should be prioritized because gaming communities online can be vulnerable to negative behavior, verbal abuse, and cyberbullying.^[21] It is crucial to use caution and stay mindful of spending patterns because in-game purchases and loot boxes can have an impact on finances. Finding a balance between gaming and social life is crucial because playing video games can occasionally result in isolation, loneliness, and a lack of real-world social connections.^[19] Maintaining responsible gaming practices, setting healthy boundaries,

prioritizing real-world responsibilities, and being aware of potential effects on physical well-being, mental well-being, and social interactions are essential if one is to enjoy the advantages of digital games while reducing potential drawbacks.

The purpose of the study

The purpose of this research was to find out how digital games and disorders are related. It examined the paradoxical effects of digital games on vulnerability, rehabilitation methods involving digital games, ethical concerns regarding the use of rehabilitation techniques, and tactics for encouraging responsible gaming and reducing vulnerability. By focusing on these objectives, a comprehensive understanding of the paradoxical relationship between digital games, vulnerability, and rehabilitation has been achieved.

Materials and Methods

Study design

This study adopted a qualitative research methodology with exploratory and discourse analysis to investigate the effects of digital gaming during and after the pandemic. To collect data, researchers analyzed newspapers, media, and research articles from online databases such as PubMed, National Institute of Health, Google Scholar, JSTOR, Academia, Scopus, and Web of Science. This approach assisted in gaining a more comprehensive understanding of complex gaming disorders and fatalities by examining the in-depth textual data in the newspapers and journal articles. Real-life incidents related to the gaming disorder were gathered from news articles, the media, and journal articles. The researchers analyzed secondary sources using textual interpretation to study the potential risks and benefits of digital gaming, specifically in relation to the pandemic and post-pandemic periods.

Data collection tools and techniques

To gather information for this study, researchers searched and reviewed important articles related to the topic in newspapers from both national and local sources. Researchers chose newspapers based on when they were published and how relevant they were to the research topic. Researchers used different keywords to determine the newspapers and research articles, such as "gaming-related suicides in the world," "game addiction deaths in the pandemic," "psychological issues of overgaming," "game addiction and mental health disorders," "positive and negative effects of gaming," and "stats of gaming deaths before and after COVID-19." In this study, researchers reviewed 96 secondary sources and the most relevant sources were explored. The data from the secondary sources were collected and organized using a structured method to identify patterns and trends.

Result

Digital games were a common form of entertainment before the pandemic, but as people spend more time at home as a result of the pandemic, their popularity has significantly increased. To identify the negative factors of digital games, the researchers used thematic analysis and exploratory research methods in the study. Through these methods, researchers used newspapers, research articles, and media to examine the impacts of digital games. Findings revealed that digital games increase the number of mental and physical health issues. For example, Anand, a 15 years old from Bangalore, obtained his first personal smartphone. After 6 months, he was playing online games on his phone for more than 7 hours each day rather than using it for educational purposes. His parents took him to the SHUT clinic at the National

Institute of Mental Health and Neuro Sciences, where he was identified as having gaming addiction, a condition that is on the rise as a result of the pandemic's increased usage of Internet-connected gadgets.^[22] While playing digital games has become a common pastime during the epidemic, it is crucial to remember that excessive use might have a severe impact on one's health and well-being. Based on the research, there has been an increase in digital game-related suicides and deaths since the pandemic began compared with before.^[23] The following Table 1 shows the twelve cases took place during and after the outbreak.

Several educational institutions have switched to online courses as a result of the COVID-19 epidemic.^[36] Teachers are using instructional games to captivate students and keep them engaged in an online classroom environment.

Table 1: Suicides in the COVID-19 pandemic

Age	Place	Reason
14	Pedagantyada, Andhra Pradesh	Lohith took an extreme step and committed suicide by consuming poison. His family had repeatedly warned him about playing PUBG because he used to play it all the time. When his parents discovered his attempted suicide, they rushed him to the nearest hospital, where he died during treatment ^[24]
16	Andhra Pradesh	In Andhra Pradesh, a 16-year-old boy died because of a prolonged PUBG game, and he suffered from severe dehydration and diarrhea as a result of skipping meals and liquids. He underwent surgery after being taken to a private hospital in Eluru. Despite the operation, he passed away ^[25]
16	Lucknow	A 16-year-old boy from Lucknow killed his mother after she scolded him for playing online games. Then, for more than 2 days, he kept her body hidden in their house while threshing and isolating his sister, who is 10 years old, in a room to prevent her from telling anyone ^[26]
16	Madhya Pradesh	A 16-year-old boy died in Neemuch, Madhya Pradesh, after having a cardiac arrest while playing PUBG. After 6 h of nonstop gameplay, he passed away ^[27]
17	Bhagalpur, Bihar	After losing a game of PUBG, a 17-year-old boy hanged himself. When his parents attempted to call him, he did not answer, so they broke down the door and forced entry, where they discovered him hanging from the ceiling fan ^[28]
20	Panijhara Village, Odisha	Ganesh's maternal relative, Umesh Sahu, disciplined him for playing PUBG rather than finishing his job. Later, Ganesh left his uncle's residence and proceeded to his aunt's residence, where his aunt and her family scolded him for his irregular work schedule. He was taken to Basudevpur Hospital in critical condition, where doctors pronounced him deceased ^[29]
20	Saddar Bazar, Lahore	A boy committed suicide as a result of his PUBG addiction. He was a second-year undergraduate at Forman Christian College who was arguing with his father over how much time he spent gaming. His father scolded him and forbade him from playing the game, which increased his anger and led to his death by hanging from a fan in his bedroom ^[30]
14	Hindmata, Mumbai	A boy committed suicide in Mumbai's Hindmata neighborhood after becoming obsessed with computer gaming. Police in Bhoiwada are investigating his death to see whether any assignment or goal in the game drove the boy to take such harsh action. According to the police, the class 7 student was addicted to the online game Free Fire, a popular mobile game that was banned by the Indian government along with other mobile apps, largely from China. "A preliminary assessment found that the youngster was addicted to the Free Fire online game," the police stated. The boy's parents and school teacher, however, indicated that he exhibited no signs of gaming addiction and that he was an excellent student who liked cricket ^[31]
18	Jaipur	A class 12 PUBG addict from Jaipur committed suicide after his parents did not give him a phone for his birthday. When his parents saw him hanged from a fan using his mother's saree, they were horrified. They forced the door open and hurried the boy to the SMS hospital, where he was declared deceased. Following an autopsy, the deceased's body was returned to his family. Aaditya, according to his father Rajkumar, was a PUBG addict who attended online classes on his grandfather's smartphone while playing PUBG for hours ^[32]
15	Machilipatnam, Andhra Pradesh	A schoolboy from the Andhra Pradesh town of Machilipatnam reportedly committed suicide after being insulted for losing a PUBG mobile game. The boy was reportedly teased for losing a PUBG game while spending summer vacations with his father and other relatives. The authorities informed a national newspaper that the 15-year-old boy was playing PUBG with his relatives. After being taunted by his siblings, the teen's father forbade him from playing the action game, which allegedly made him angry. Later, he committed suicide ^[33]
15	Malkajgiri	Kallakuri Sambashiva is said to have killed himself by hanging himself at home after his parents yelled at him for playing the online game PUBG. His body was taken to Gandhi General Hospital, where an autopsy was performed ^[34]
26	Odisha	A 26-year-old man committed suicide in Bhuasuni Village. The report says that the young man, Debendra Parida, once worked as a driver as a part of the Anantapur outpost of Balikuda police station. Findings show that he lost Rs. 2 lakhs in PUBG ^[35]

For example, in universities, professors use a VR game to imitate a laboratory experiment, while in elementary schools, teachers use a math game app to help students practice addition and subtraction abilities. Educational games are an effective technique for improving student learning outcomes because they offer quick feedback and adjust to each student's learning needs.^[37] Despite worries about the detrimental effects of digital games, statistics suggest that they have increased the suicide rate.

Discussion

This investigation has shown that digital games have many benefits, but they can also be harmful. If someone spends too much time playing games, they may become inactive, have prolonged screen exposure, and experience various health problems such as muscle and skeletal disorders, heart issues, obesity, eye strain, and sleep problems. Using technology may also have negative effects on cognitive abilities and academic or job performance and may lead to increased aggression, decreased empathy, and susceptibility to cyberbullying. It is important to maintain a healthy balance in gaming habits and practice ethical gaming. The research also emphasizes the need to promote online safety, polite communication, and parental monitoring, particularly for younger age groups. Additionally, this research has revealed a concerning trend of suicides related to excessive gaming during and after the pandemic. It is essential for mental health professionals, parents, and educators to be aware of the signs of gaming addiction and provide appropriate resources and support. Further investigation and intervention methods are necessary to address the challenges of excessive gaming and protect individuals' well-being, especially in the context of the COVID-19 pandemic and its aftermath.

Limitation and recommendation

This research only focused on the real-life incidents reported in the newspapers, articles, and media that are associated with the influence digital games have had on human life. This research aims to analyze the impact of digital games on various aspects of human life, such as addiction, education, cognitive development, and recovery. Additionally, this approach allowed the examination of both positive and negative effects, providing a comprehensive understanding of the effects of digital games on human lives. This research paper relies solely on discourse analysis of secondary source material, as no case studies, interviews, or quantitative methods were utilized.

Digital gaming is paradoxical in every way, pre-, while, and post-pandemic. It has both positive and negative elements; similar to a challenge, both the good and terrible aspects get stronger. It is the responsibility of

gamers, parents, teachers, and game designers to prevent game disorders. Following regulations can result in less negative effects and more positive outcomes.

Suggestions for gamers

Following certain regulations can result in a lesser chance of game addiction, so it is important to remember to take breaks and maintain a healthy balance. This might mean setting limits on screen time, creating a schedule for oneself, finding other activities to do, practicing self-control, creating a supportive environment, and using parental controls and time management tools. With these guidelines, gamers, players, or students can ensure they stay healthy and happy while still enjoying the activities.

Suggestions for parents

Parents can play a vital role in helping their children avoid or manage gaming disorders. Here are some techniques that can help: Firstly, set clear rules and boundaries for a child's gaming habits; limit the amount of time they spend gaming every day; educate yourself about the different types of games, their content, and the risks associated with excessive gaming; communicate openly and honestly with children about gaming; lead by example and practice healthy tech habits; encourage the child to engage in other activities besides gaming; make time for physical activity, artistic pursuits, socializing, and intellectual endeavors; establish tech-free zones and times to promote face-to-face interactions and better sleep hygiene; use parental controls to set time restrictions and limit access to adult content; encourage the child to socialize with peers; be supportive and empathetic if the child is already struggling with excessive gaming; and keep the lines of communication open, set clear limits, and create a balanced and supportive environment.

Suggestions for teachers

Teachers can have a significant impact on preventing or managing gaming disorders among students by educating them about healthy gaming habits, promoting alternative activities, fostering an inclusive classroom environment, setting clear expectations, and incorporating gamification into learning. These strategies can help students build relationships with their peers, engage in collaborative projects, develop empathy, and create a focused learning environment. Teachers can also use gamification to make learning more interactive and interesting, which can enhance students' enthusiasm for educational activities. Additionally, positive behavior and academic achievement should be rewarded. To promote responsible gaming behavior, teachers should work with parents to establish consistent guidelines for gaming at home and school. They should also monitor students for signs of gaming disorder, such as declining academic performance, social isolation, or

unusual behavior. Teachers can provide students and their families with information and recommendations to assist them in coping with gaming addiction. By teaching healthy behaviors, creating a supportive school environment, and collaborating with parents, teachers can help prevent and treat gaming disorders among students.

Suggestions for game designers

To help prevent gaming addiction, game designers should use certain tactics and design principles. The game's mechanics and progression should be balanced, with clear goals and endpoints. There should be a wide range of content and support for multiplayer and social interaction. Players should be able to give and receive feedback, track their progress, and customize their experience. Monetization practices should be responsible, and the game should promote digital wellness. Additionally, players should be educated about responsible gaming. By prioritizing players' needs and considering the impact of their games, designers can help students strike a healthy balance between gaming and other activities, resulting in a more fulfilling gaming experience overall.

Conclusion

Based on the results and discussions elaborated in the previous explanation, it can be concluded that digital games are like two sides of the same coin: They have both negative and positive impacts on the present generation. It cannot be fully banned, but certain restrictions can be made. It is necessary to educate individuals about the benefits and drawbacks of digital games and the rapid advancements in technology. With the right education, mental and physical health issues can be reduced, and individuals can become more cautious, potentially decreasing the occurrence of suicide among individuals.

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There are no conflicts of interest.

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