

GAMING ADDICTION AND ITS IMPACT ON PAKISTANI ADOLESCENTS: A QUALITATIVE STUDY ON PUBG ADDICTION

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Abstract

This study examined the psychosocial consequences of PUBG addiction on adolescents using the Interpretative Phenomenological Framework (IPA) analysis. Eight participants aged 16-19 were interviewed using a semi-structured questionnaire. The study identified two superordinate themes: factors leading to PUBG addiction and negative impacts of PUBG addiction.

The attractive features of the game and psychologically motivating factors were identified as factors leading to PUBG addiction. The negative impact of PUBG addiction on adolescents' mental and physical health, academics, and social behavior were identified as the negative impacts of PUBG addiction. The study recommends that parents and teachers should be aware of the signs and symptoms of PUBG addiction and intervene if necessary, limiting adolescents' time playing PUBG and engaging them in activities that promote physical and mental well-being. Appropriate intervention, support, and guidance should be provided to adolescents experiencing mental health issues related to PUBG addiction. In conclusion, this

study highlights the serious issue of PUBG addiction among adolescents and emphasizes the need for preventive measures and support for those affected.

Keywords: Gaming Addiction, Mental Health, Player Unknown's Battleground (PUBG), Academic Performance, Social Interactions.

Introduction

As technology advances in today's modern era, the amount of time spent using smartphones, engaging in social media activity, and playing online games has increased significantly (Mérelle et al., 2017). While most people find these activities beneficial, a small proportion may develop problems related to gaming habits. Problematic gaming behavior has been identified as an emerging public health issue, particularly among adolescents (Kwon et al., 2011). A growing body of literature on the topic has emerged over the past decade (Kircaburun et al., 2020). As such, healthcare providers must be aware of the potential issues related to problematic gaming in order to provide adequate care.

The American Psychiatric Association has now listed internet gaming disorder (IGD) as a "tentative disorder," thus emphasizing the need for further research in this field (American Psychiatric Association, 2013). Studies have indicated that gaming can cause dopamine release in some brain regions, leading to addiction in some cases. This can lead to individuals neglecting their real life and prioritizing progress in the game. This behavior can be associated with several mental health issues, including psychosocial problems, sleep disturbances, relationship issues, difficulty focusing on minor tasks, stress, mood modification, and poor academic performance (Putri et al., 2020; Salahuddin & Muazzam, 2019; Wong et al., 2020).

Theoretical Framework

Problematic internet use, including online gaming, can be viewed as Pathological Internet Use (PIU). Cognitive, emotional, and behavioral symptoms characterize this multidimensional syndrome. The Brown (1997) component model of addiction has been used in many studies on problematic gaming and postulates that for an addiction to be present, six core features must be present for a prolonged period: salience, mood modification, tolerance, withdrawal, conflict, and relapse. The core features include (a) when playing video games becomes the primary focus of someone's life, it can lead to **salience**, which is characterized by preoccupation with the activity, cognitive distortions, cravings, and a decline in their usual behaviors, (b) **Mood modification** refers to alterations in one's emotional state resulting from playing video games, such as a heightened sense of excitement or a calming sense of relaxation, (c) The concept of **tolerance** applies to video game playing, where players need to play for increasing amounts of time to achieve the same mood-altering effects. As a result, they are compelled to spend more time gaming. (d) The discontinuation or reduction of video game play can lead to psychological withdrawal symptoms such as frustration, irritability, and a decrease in emotional expression. Physical effects of **withdrawal** can also occur. (e) Relapse refers to the tendency for the player to revert to their previous habits of playing video games. (f) Harm refers to the negative consequences of excessive video game play. Harm includes conflicts between the addicted video game player and other people (family members and friends), other activities (job, school, social life, hobbies, and interests), and from within the person with an addiction themselves (psychological distress).

The battle Royale game PlayerUnknown's Battlegrounds (PUBG) has become a global phenomenon since its release in 2017. This game has attracted millions of players, with adolescents being the primary demographic. With the surge in popularity of this game, concerns have been raised around its potentially addictive properties, especially amongst young people. This literature review seeks to explore the concept of PUBG addiction among adolescents. PUBG has been

described as a "massively popular, highly immersive, and highly addictive game" (Turel et al., 2019). It is a multiplayer shooting game where players must battle each other to be the last one standing. Players are immersed in the game with its realistic graphics and sound effects, which can lead to increased engagement and investment in the game. This increased engagement can, in turn, lead to an increased risk of addiction, as research suggests that "games with intense graphics and strong sound effects tend to be more addictive" (Turel et al., 2019, p. 4).

Research by Turel et al. (2019) suggests various factors can contribute to adolescent PUBG addiction. These include an individual's need for achievement, sense of competition, and need for social interaction. Additionally, it was found that those with a higher level of impulsiveness were more likely to become addicted to the game. It is also important to note that the availability of mobile gaming devices can exacerbate PUBG addiction, as this increases accessibility to the game. In a study of adolescents aged 13-17, Lee et al. (2020) found that PUBG addiction was associated with poorer academic performance and increased risk-taking behavior. It was also found that the game was associated with increased stress, anxiety, and depression, as well as decreased physical activity. These findings suggest that PUBG addiction can significantly impact adolescents' physical, mental, and emotional well-being.

This study analyzes the relationship between gaming addiction and its impact on Pakistani adolescents addicted to the popular online multiplayer game PlayerUnknown's Battlegrounds (PUBG). This study is critical because gaming addiction has been linked to adverse mental health outcomes such as depression, anxiety, and suicide in adolescents. By exploring the experiences of adolescents addicted to PUBG, this study will better understand the mental health implications of gaming addiction and the factors that contribute to it, specifically concerning Pakistani culture. This knowledge can then be used to develop strategies to prevent and manage adolescent gaming addiction. Additionally, this study will provide a much-needed insight into the lived experiences of adolescents addicted to PUBG and can serve as a platform for further research in this area. The two primary goals of the study were: (a) to investigate the factors that foster PUBG Addiction in Adolescents of Lahore, Pakistan, and (b) to explore the psychological impact of PUBG Addiction on Adolescents in Lahore, Pakistan. The following research questions were posed to address the existing knowledge gaps.

1. What are the factors leading to PUBG addiction?
2. What is the negative impact of PUBG Addiction on the lives of Adolescents?

Methodology

Research Design

The phenomenological research design was used to explore the impact of gaming addiction on adolescents' mental health. The research design was employed to explore the impact of the Pakistani context/culture and to understand the process in question. An interpretive phenomenological approach (IPA) was used. This approach focused on how PUBG affected each participant's mental health differently.

Sample Recruitment and Participant Characteristics

Participants were selected using a purposive sampling technique suitable for the phenomenological study of the psychological impact of gaming addiction on the adolescents of Pakistan. Those adolescents were selected for participation in the study: (i) those who were addicted to PUBG, (ii) those whose social and academic functioning was impaired due to the addiction, and (iii) those who had their PC, laptop, or mobile. A homogeneous sample of participants was recruited to gain a deeper understanding of the overall perception of lived experiences among participants using an IPA approach. According to Creswell (2012), the sample

size in phenomenological research can range from 2 to 25 participants. The sample consisted of eight adolescents aged 16-19 years from Punjab, Pakistan, with an uneven gender distribution.

Table 1. Demographic Characteristics of the participants.

No.	Participants	Gender	Age	Birth order	Marital Status	Education	Number of Hours Playing PUBG
1	AS	Male	18	First	Single	Intermediate	8
2	AA	Male	19	First	Single	Intermediate	10
3	UB	Male	18	Middle	Single	Matriculation	5
4	BA	Male	19	Last	Single	Matriculation	6
5	AM	Male	18	Middle	Single	Matriculation	8
6	TS	Male	18	Middle	Single	Matriculation	7
7	AA	Female	19	First	Single	Intermediate	8
8	SM	Female	16	Last	Single	Middle	8

Data Collection Tools

Demographic Information Form

It included basic information about the participants, such as their name (optional), age, gender, birth order, number of siblings, religion, family system, father's and mother's occupations, number of hours spent playing PUBG, socioeconomic status, and residential area.

Semi-Structured Interview Questionnaire

A Semi-Structured Interview was developed to conduct an in-depth face-to-face interview with the participant. The questionnaire consisted of open-ended questions about the impact of the online video game PUBG on the participants' psychological health. During the interview, the participant was asked, "What are the factors that promote PUBG addiction among adolescents?", "What is the psychological impact of PUBG addiction on adolescents?", "What is the impact of PUBG addiction on the academic performance of adolescents?", "What is the motivation behind PUBG addiction?" and "What is the impact of PUBG addiction on relations/bonds with friends and family of the adolescents?".

Procedure

First, approval was taken from the Ethical Review Board of the Department of Humanities of COMSATS University. After that, the eight participants who were suitable for the study, selected through purposive sampling, were given informed consent, i.e., they were informed about the purpose of the study and the time required to complete the interview. Their confidentiality was ensured. After giving the Demographic and informed consent form, they were asked to respond to the semi-structured questionnaire. An in-depth interview was conducted regarding the impact of PUBG addiction on adolescents' psychological health. The interviews were conducted at a different location to ensure that no one could interrupt, and the participant's confidentiality was maintained. The interviews lasted almost one and a half hours, and detailed information was collected. The participants, including AA, UB, AS, AB, BA, AM, AU, and TS, were assigned random names to maintain their confidentiality. The transcripts were further analyzed through the Interpretive Phenomenological Approach to form emerging themes.

Data Analysis

The interviews were transcribed verbatim, and the analysis was conducted using the Interpretive Phenomenological Analysis (IPA) framework. At the initial stage, the transcripts were read multiple times, and the researchers then noted their significant observations, highlighting distinctive phrases and emotions. In the second stage, researchers worked on their detailed and comprehensive notes taken from the transcripts, which were converted into codes for participants. These codes were then transformed into emerging themes, referred to as subordinate themes. In the third stage, researchers identified relationships between the emerging themes analyzed through the codes, grouped them based on conceptual similarities, and named each cluster accordingly. Finally, a list comprised of subordinate and superordinate themes was formed.

Ethical Considerations

The Ethical Review Board initially approved a synopsis of this study of the Department of Humanities, COMSATS University, Lahore Campus. Informed consent was provided to each participant, including a detailed description and purpose of the study, the time to complete the interview, and the potential benefits of their participation. Participants were assured of confidentiality throughout the research process, including when reporting their discussions and disseminating the results. The interviewer monitored how taking preventive measures against emotional harm affected the participants throughout the interview. Participation in the study was optional, and participants had the right to withdraw at any time.

Results

Table 2.

Qualitative analysis of PUBG Addiction and its impact on Adolescents (N=8)

Verbatim	Initial Codes
Its graphics are designed to seem like a real-life competition, so the player forgets how many games they have played (AS). The advertisements for its promotions and update videos are so appealing that I cannot help but notice them. Its graphics are so good, and we can choose our teammates (AB). The motivation behind playing this game is its unique graphics, which differ from those of other games. We are playing in real life instead of players (BA). In my opinion, the factors that promote PUBG addiction are its graphics and features (AM). The motivation behind it is that I play it for fun only. I take it as a game; I play it for free and have plenty of time. However, when I continually play PUBG, I find it challenging to take a break from it. I find it hard to quit. Again, the graphics (AU) are the main reason behind it.	Graphics of the Game
The main factor is that time passes amazingly (AB). There are no expenditures involved in playing a game from home; one only needs an Internet package, and time passes very well (BA). The main factor is that it helps me pass my time very well. It keeps everyone engaged. Unlike other hobbies, there is no expenditure if anyone adopts it as a hobby. It requires a good phone/TV and an Internet connection (usually present everywhere) (AM). The main factor that led me to play this game continuously was that I was often ignored at home because my parents were busy with their jobs, and I did not have siblings. I am the only child of my parents, so I do not have anyone to listen to. This is the only activity that keeps me busy the whole day (AS). Time passes well, and I also enjoy it(TS). Time passes well when we talk to friends far away; it feels like quality time. All these things motivate me not to leave PUBG (AU).	Spending Quality Time

Due to the game's popularity, my friends also started playing it. Then we had our squad start playing it together, and to this day, we are aware of all the updates (AA) . What motivates me the most to play PUBG is that I stay connected to my friends through it. We communicate every detail of our daily routine while also playing the game simultaneously. Moreover, I have made many new friends, and I like talking to them; this is also why I like playing this game (UB) . The fascinating thing is that you can talk to your friends while playing this game, which makes it even more enjoyable (AS) . The primary motivation for PUBG players is that they play the game due to a fear of being rejected by society. Due to this, their habits get spoiled, and they become addicted (AB) .	Sense of Belongingness
Another motivation behind playing this game is that everyone wants a chicken dinner, so the competition has increased significantly. I do not feel like enjoying the game until I have had a chicken dinner. That is why I always try my best to win (AA) . It involves competition, and I like challenges (UB) . I should move to the next level because there is more competition at the higher level. New guns, clothes, and missions are unlocked through competition, so I want to play another game to win (AS) . Moreover, when I win that game, I want to play another game, and the cycle repeats (AB) . One main factor that promotes PUBG addiction is the use of weapons to progress in the game and enhance rank. The higher the games one wins, the higher the number of chicken dinners, and the higher the rank will be in the online ranking. Everyone competes because they want high ratings on their profile and to be a pro player (BA) . Our competition is with other players (AM) .	Competition and Challenge
I have enjoyed playing with guns (toys) since childhood, and this game also involves the use of guns; that is why I like playing PUBG (UB) . PUBG has also ranked like gold, silver, platinum, etc. To increase the rank, one has to increase the number of kills. The more the (number of) kills, the higher the rank. All these things motivate me to play PUBG all the time (AS) . I do not need to convince anyone to play with me, as I can invite/choose random players across the world to play with me. No need to go anywhere, and one is safe (AB) . By winning the game, you also earn a chicken dinner. The more you win, the more there will be chicken dinners. As a result, there is a competition to get many chicken dinners. As a result, the ranking increases, i.e., gold, silver, platinum, and so on (BA) .	Incentives
I felt a lot of psychological impacts as I started having sleep deprivation (AA) .	Sleep Deprivation
My eating patterns have also been disturbed. My eyesight has also weakened, and I must keep my mind active (UB) .	Appetite Disturbance
Due to a lack of physical activity, I have also gained weight (AS) .	Weight Gain
Moreover, it is difficult for me to concentrate on my studies (AS) . I struggle to concentrate on anything and often break things as well. I also give wrong answers due to PUBG addiction (AB) . I am usually absent-minded when sitting around people. If someone talks to me, I must think about what they have asked/told me (BA) . One of its significant psychological impacts is that it divides our attention between the game and other routine work. My entire concentration is on the game, and I also try to find shortcuts within it (AM) .	Lack of Concentration and Attention

I feel annoyed when my mum asks me to do anything (AA) . The significant psychological impact is that playing PUBG annoys me a lot when someone asks me to do anything; when someone talks, I feel aggressive (UB) . This game's severe psychological impact is aggression, the most extreme element (AS) . Aggression comes if anyone disturbs me or has connectivity issues (AB) . I also do not want to get disturbed while playing the game, and if someone disturbs me, I get annoyed (BA) . One of its psychological impacts is that when I play this game, it feels so real; therefore, when anybody disturbs me, I get annoyed and scold them because I feel so much pressure and fear of failure (AM) . My friends and I started fighting. If all of these are psychological impacts, I faced these impacts (AU) .	Aggression
I do not feel comfortable sitting around people who disturb my game (AA) . Due to this, anger, frustration, and irritation have increased (AS) . The irritable mood is also due to not playing the game properly, which can be caused by disturbances in the surroundings or an unstable Internet connection (BA) . Even when I lose the game, I feel aggressive and irritated (AU) .	Irritable Mood
The psychological impact of this phenomenon reveals that gamers continue to think about the game, its shortcuts for winning, and the rewards that may take the form of an imagination/idea in the minds of PUBG gamers. These things keep gamers stressed out and mentally challenged (AA) . After the lockdown, it has become difficult for me to balance my gaming hours with college hours, and as a result, I am stressed and have become rude to everyone (UB) .	Stress
The reason for frustration is curiosity about what will happen next in the game (AS) . Frustration was also a problem when my parents scolded me to stop playing the game. Also, my friends and family blame me for being rude due to this game (AB) . I am constantly frustrated about getting out of there and playing a game when I am at a gathering. My whole attention is on PUBG, so I am not interested in other things (BA) .	Frustration
It has influenced my studies, so I do not want to study. I always think that I will study after playing one game, and as a result, the whole day passes (in the morning) . PUBG has significantly impacted academics. Most of my time is spent gaming; if I have to take a gap from the game, I watch related videos on YouTube. The next activity is to think about all the possible ways and hacks in the game that help me win. As a result, I am not interested in other activities (AU) . I have been playing this game since it was introduced in Pakistan. Moreover, I am such a fan of this game that I still feel compelled to play one more game after finishing it. That is why I do not want to study (TS) .	Lack of Interest in Studies
Before, I used to play it secretly, as my mum took the phone away from me. However, since the online classes started, I began playing it in the name of studying, so I also missed my lectures (AA) . My academic performance has been affected, so I spend my study time playing PUBG. The reason is that online education allows for leniency in attendance and testing, which makes it easier to manage (UB) . I sometimes deceive my parents by saying that I do not have any tests this week, the class has been canceled, or the teacher was absent today. They both remain busy in their jobs, so they do not enquire much about my studies (AS) . I used to skip online classes and play games with my friends during class (AB) .	Absenteeism
I was unaware of my assignments and class tasks. I passed the exams only because they were conducted online. I did not score good grades, but got promoted to the next	Poor Academic

<p>semester (AA). Before the online system, I was an average student, and in online mode, I also passed (as the government has announced a promotion without exams). However, my performance in class is still subpar, and my teachers have also complained about it to my parents (UB). My academics were not as good from the beginning as my parents had always wanted; I have never been a topper in my class, but I was included in the list of average students, which has now been changed. My grades and participation in in-class activities and discussions (in which I usually took an interest) have decreased so much that it can be considered negligible (AS).</p>	Performance
<p>I have a few friends whom I seldom meet. Otherwise, we talk while playing games. This is the plus point of this game (AA). Friends and family are equally unhappy with my attitude and behavior nowadays, as I have stopped socializing as much as I used to. The same complaint is observed from the entire circle of friends: I do not give them enough time and try to avoid them (UB). The plus point is that we, who had no interaction with our cousins, have become good friends now through PUBG. We usually play together. Otherwise, we talk daily while playing PUBG. I have also made many new friends with whom I have good relationships; as a result, positivity and new energy have entered my life. My school friends used to say we would go on trips and meet outside, but I did not get permission from home. That is why we are not in much contact now (AS). I meet with my friends because they also play PUBG. We usually play PUBG at our friend's house. I do not get to meet other friends and cousins; they say Let us eat together, but I think it wastes time (AB).</p>	Lack of interaction with Friends and family
<p>My relationship with my family has also had a significant impact on me. The time I spend with my family, particularly my mother, has significantly decreased. It has reduced to almost none. A communication gap has developed between my family and me. I felt it because whenever I sit with my sisters, I do not know what to talk about, and if I mention PUBG, they are not interested in it (it feels like I do not belong in this house). My younger sister tells me about whatever happens in the house later (UB). I do not go out with my family for outings, but I do sit with them sometimes so that my father does not feel bad. Still, I think about PUBG, its missions, and weapons while sitting with my family. My attachment has reduced; I think I am wasting my time; I could play 1 or 2 games instead (AS). My family considers that my friends keep me indulged in gaming, so they scold them each time they see me play PUBG. This way, no one is happy with friends and family (AS). My relationships at home have had a significant impact on me. They become angry that I am always into gaming, do not give them time, and do not talk to them. However, I also get annoyed because they are always busy with their work, and when they want to, they call me to talk (AB).</p>	Negative attitude

Table 3

Initial codes, subordinate themes, and superordinate themes for PUBG Addiction and its impact on Adolescents (N=8)

Initial Codes	Sub-ordinate Theme	Superordinate Theme
Graphics of the Game Spending Quality Time	Attractive Features of the Game	Factors leading to PUBG Addiction
Sense of Belongingness Competition and Challenge Incentives	Psychologically Motivating Factors	

Sleep Deprivation Appetite Disturbance Weight Gain Lack of Concentration and Attention Aggression Irritable Mood Stress Frustration	Impact on mental and physical health	The negative impact of PUBG Addiction on the lives of Adolescents
Lack of Interest in Studies Absenteeism Poor Academic Performance	Impact on Academics	
Lack of Interaction with Family and Friends Negative Attitude	Impact on Social Behaviour	

Theme 1: Factors leading to PUBG Addiction

PUBG offers a unique combination of excitement and challenge, which can be highly addictive. Players may become addicted to the game due to its rewarding gameplay, sense of accomplishment, and camaraderie. The game's competitive nature and the ability to customize characters and weapons can also lead to addictive behavior. The central theme identified in this analysis is Factors leading to PUBG Addiction. This theme comprises two subordinate themes: Attractive Features of the Game and Psychologically Motivating Factors.

Attractive Features of the Game

The game offers a variety of attractive features that make it particularly appealing to players. These include the ability to customize characters, a vast variety of weapons, vehicles, and maps, as well as engaging in exciting, team-based gameplay. These features draw players in and keep them engaged for hours.

- (a) **Graphics of the Game** play a crucial role in its success. Players have come to expect realistic visuals, detailed textures, and immersive environments that make the game feel more like a real-life experience. This helps maintain the players' engagement and immersion in the game, resulting in increased enjoyment and satisfaction.
- (b) **Spending Quality Time** on PUBG is a great way to bond with friends and family. Players can join forces to tackle challenges, strategize, and collaborate to achieve victory. This type of shared gaming experience can create a sense of belonging and camaraderie among players, allowing them to spend quality time with the people they care about while enjoying the game.

Psychologically motivating factors

Additionally, the game offers incentives, such as rewards and achievements, which can be psychologically motivating.

- (a) **Sense of Belongingness** suggests that people who play PUBG seek a sense of community where they can connect and interact with other players. This can be observed in the in-game chat, as well as in the social media groups created for PUBG players.
- (b) **Competition and challenge** refer to the challenge of outplaying other players and striving for the highest score. This is one of the main appeals of PUBG, as players are constantly trying to outwit and outplay their opponents.

Theme 2. The negative impact of PUBG addiction on the lives of adolescents

The second central theme is the negative impact of PUBG addiction on the lives of adolescents. The three subordinate themes are the psychological impact of PUBG addiction, the impact of PUBG addiction on academics, and the impact of PUBG addiction on Social Behavior.

The Psychological impact of PUBG addiction

Thematic analysis of the negative impact of PUBG addiction on the lives of adolescents reveals the subordinate theme of the psychological impact of playing PUBG. This includes multiple codes such as sleep deprivation, appetite disturbance, weight gain, lack of concentration and attention, aggression, irritable mood, stress, and frustration. Sleep deprivation is the most commonly reported psychological effect of PUBG addiction, followed by appetite disturbance and weight gain, lack of concentration and attention, aggression, irritable mood, stress, and frustration. All of these psychological effects of PUBG addiction have a negative impact on the lives of adolescents, leading to various physical and mental health problems.

Impact of PUBG addiction on Academics

- (a) **Poor Academic Performance:** Many students who spend much time playing PUBG have reported poorer academic performance, reflected in their grades. For example, some students may focus more on the game than on their studies, leading to lower test and assignment marks. Additionally, playing PUBG can lead to students staying up late, resulting in fatigue and a decline in concentration, which further impacts their academic performance.
- (b) **Lack of Interest in Studies:** Playing PUBG can also make students less interested in their studies. For instance, when students spend more time playing the game than studying, they may become less motivated to do well in school. Moreover, the game can provide an escape from academic pressures, leading to a decreased interest in school-related activities.
- (c) **Absenteeism:** Finally, PUBG can also lead to students being absent from school. This is because some students may become so engrossed in the game that they miss school to play. Additionally, playing for extended periods can lead to sleep deprivation, resulting in students missing classes.

The impact of PUBG addiction on social behavior

- (a) **Lack of Interaction with Family and Friends:** This code refers to the decreased quality of time spent with family members and friends due to playing PUBG. Players may not have time to engage in other activities, such as family meals or conversations, due to the time spent playing the game. Some players may also feel isolated from family and friends due to their focus on playing PUBG.
- (b) **Negative Attitude:** This code refers to the negative attitude some players may develop due to playing PUBG. This could include being more irritable, anxious, or depressed. It could also include being more aggressive or less patient with others. Such negative attitudes can be damaging to relationships with family and friends.

Discussion

Gaming has gained popularity among adolescents in Pakistan due to its easy accessibility and social appeal. While gaming is enjoyed by many, it can become an addiction that can have a negative impact on mental health. Recent studies have shown a high prevalence of gaming addiction in Pakistani adolescents (Khan et al., 2020). According to these studies, gaming

addiction has been linked to various adverse mental health outcomes, such as depression, anxiety, and stress. Additionally, gaming addiction has been associated with several other adverse outcomes, such as social isolation, decreased academic performance, and sleep disturbances (Khan et al., 2020). These adverse outcomes can further adversely affect mental health, as adolescents with gaming addiction are more likely to suffer from psychological distress (Khan et al., 2020). Moreover, it has been suggested that gaming addiction's social effects can further exacerbate adolescents' mental health issues (Khan et al., 2020). Gaming addiction is a growing problem among Pakistani adolescents linked to various mental health issues. Gaming addiction can lead to social isolation, decreased academic performance, and sleep disturbances, all of which can further exacerbate the mental health issues of adolescents. Therefore, it is essential for parents and educators to be aware of the potential risks associated with gaming addiction and to take steps to address it.

Cognitive Behavioral Therapy (CBT) is a well-established and evidence-based treatment model for various disorders, including gaming addiction (Dezfuli et al., 2017). CBT is based on the idea that thoughts, feelings, and behaviors are interconnected and that changing one aspect can lead to changes in others. It focuses on identifying and modifying unhelpful thought patterns and beliefs contributing to the addiction, teaching healthier coping strategies, and setting realistic goals.

The CBT model for gaming addiction treatment typically involves five stages. The first stage is assessment and education, in which the therapist assesses the client's gaming habits and provides education on the potential risks and consequences of excessive gaming. The second stage is cognitive restructuring, in which the therapist helps the client identify and modify any unhelpful thoughts and beliefs contributing to the addiction. The third stage is behavior management, which involves teaching the client healthier coping strategies, such as relaxation techniques, to replace compulsive gaming behaviors. The fourth stage is goal-setting, in which the client sets realistic goals to reduce gaming habits. Finally, the fifth stage is relapse prevention, in which the client learns strategies to prevent a relapse into gaming addiction. Overall, CBT is an effective and evidence-based treatment model for gaming addiction. It helps the client identify and modify any underlying thought patterns and beliefs contributing to the addiction, teaches healthier coping strategies, and sets realistic goals. However, it is essential to note that CBT is not a "cure" for gaming addiction but rather a way to manage it.

The study focused on late adolescents aged 13 to 19 years in Pakistan. However, this limited age range excludes a significant portion of the population. Also, the findings cannot be generalized to adolescents from other cultural contexts due to variations in cultural and developmental conditions. The data collection process was also complex due to COVID-19 restrictions, which made it challenging to approach and interview participants who were preparing for exams physically. In the future, conducting a study with a larger and more diverse sample size can provide better insights into gaming addiction and its consequences among adolescents. As a future endeavor, mixed methods studies should be carried out using this study as a baseline and develop a culturally appropriate scale to measure PUBG addiction and its consequences on mental health in Pakistani adolescents. Such studies could help shed more light on this disorder and contribute to the development of effective interventions to prevent and treat it.

Conclusion

The study concludes that PUBG addiction is a serious issue that needs to be addressed. Parents and teachers should be aware of the signs and symptoms of PUBG addiction and intervene if necessary, limiting adolescents' time playing PUBG and engaging in activities that promote

physical and mental well-being. Furthermore, providing appropriate intervention, support, and guidance to adolescents experiencing mental health issues related to PUBG addiction is essential.

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Data Availability Statement

Interviews for this qualitative study have already been transcribed and are presented in the tables.

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