Effect of Online Gaming Addiction on the Mental Health and Social Competence Among the Adolescents

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Abstract

The research used a cross-sectional approach to explore the effects of online gaming addiction on the mental health and social skills of adolescents. A random sample of 600 adolescents from private and government schools and colleges in Lala Musa and Gujrat, Pakistan was selected using a random sampling method. Data was gathered using the Internet Gaming Disorder Scale, DASS-21, and Perceived Social Competence Scale II. Both descriptive and inferential statistics were used to analyze the data. The results revealed that online gaming addiction is negatively correlated with social competence and positively correlated with mental health issues. The study also found that boys were more likely to be addicted to gaming compared to girls. Additionally, it showed that online gaming addiction significantly predicted mental health issues among adolescents. The study's findings are expected to provide valuable insights into how online gaming addiction impacts the mental and social well-being of adolescents, potentially helping to address mental health and social challenges in this age group.

Keywords: *Online Gaming Addiction, Mental Health, Social Competence, Adolescents, Pakistan*

1. Introduction

Online games are a significant component of modern technology and have become an integral part of many people's lives (Tear & Nielsen, 2014). They serve as a popular source of amusement, comfort, and leisure activity among people of all ages, particularly children and adolescents worldwide (Alqurashi et al., 2016). The appeal of online games lies in their ability to provide fun,

relaxation, social contact, stress reduction, and mental escape from real life (Shi et al., 2019). Research indicates that a large percentage of teenagers, ranging from 59 to 73%, engage in online gaming (Donati et al., 2021). However, the excessive use of online games can lead to addiction, which has been associated with several negative outcomes (Kardefelt-Winther et al., 2017). Online game addiction may result in anxiety, depression, and various mental and neural issues, including alterations in brain areas responsible for decision-making and impulse control. Consequently, individuals addicted to online games often exhibit poor mental health, diminished social skills, impaired self-control, and increased aggressive behavior (Saquib et al., 2017). Additionally, online game addiction disrupts sleep cycles, further impacting academic performance and achievement (Hysing et al., 2015) The term "online gaming addiction" describes the habit of using the internet for gaming repeatedly and persistently, frequently in groups with other users, to the point of severe impairment or discomfort (APA, 2013). According to the World Health Organisation (2013), "mental health" refers to a state of well-being in which people can identify their strengths, manage stress in their everyday lives, work effectively, and give back to their communities. The degree to which teenagers participate in constructive activities that enable them to establish and sustain positive social relationships with others is referred to as their "social competence. "Junge and colleagues, 2020). Numerous studies have explored the impact of online gaming addiction on adolescents' mental health and social competence across different regions. In Taif City, Saudi Arabia, a study with 267 participants found that online gaming addiction adversely affected students' academic performance and social behavior, with significant correlations to age, parental education, and living arrangements (Almalki & Aldajaniin, 2020). In Spain, a study involving 2734 participants revealed a significant negative correlation between game addiction and psychological functioning, particularly among action game players (Heiden et al., 2020).

Further evidence from Istanbul, involving 499 high school students, indicated higher levels of internet game addiction, stress, anxiety, depression, and poorer academic performance among frequent gamers (Yeşilyurt, 2020). A substantial positive link was observed between psychological discomfort and internet gaming among 315 university students, while a negative correlation was discovered between academic achievement and emotional intelligence (Zahra et al., 2020). Furthermore, a study involving 101 players found a strong inverse relationship between social isolation, narcissistic personality traits, and game addiction. A study conducted in Lebanon with 1,103 teenagers revealed a strong positive association between impulsivity, despair, fear, and social anxiety and internet addiction (Obeid et al., 2019). This extensive body of research highlights the intricate link between online gaming addiction and various aspects of adolescents' mental health and social skills. This necessitates further exploration in these vital areas.

Therefore the current study aims to

    a) To study the relationship between online gaming addiction, mental health and social competence among the adolescents

    b) To determine differences in the levels of online gaming addiction, mental health and social competence among adolescents related to demographic variables.

2. Hypothesis

    a) Online gaming addiction would be a predictor of poor mental health among the adolescent

3. Research Methodology

The study examined how online gaming addiction impacts the mental health and social skills of adolescents aged 13 to 18 in Lala Musa and Gujrat, Pakistan. The research was conducted in both government and private schools and colleges. A cross-sectional survey design was used, with a

sample of 600 adolescents selected through simple random sampling. Both male and female students were included, while those with physical disabilities, mental illness, or terminal illnesses were excluded from the study. The study instrument consisted of five parts: the consent form, which provided information about the research and ensured participants' anonymity and right to withdraw; the demographic form, which collected data on various factors such as gender, age, grade, birth order, institution type, residential area, family system, parents' education, monthly income, gadget ownership, internet access, and game playing duration; the Internet Gaming Disorder Scale–Short-Form by Pontes and Griffiths (2015), a 9-item scale measuring online gaming addiction; the Depression Anxiety Stress Scales (DASS-21) by Henry and Crawford (2005), a 21-item scale assessing symptoms of depression, anxiety, and stress; and the Perceived Social Competence Scale II by Anderson-Butcher et al. (2014), a 5-item scale measuring social competence.

4. Procedure

First of all, approval was obtained from the higher authorities of schools and colleges. Participants were approached in classes and informed about the research project. Participants informed consent was taken and only willing participants were included. The participants were guaranteed that the information they provide will only be utilized for research purposes. The participants received concise instructions on filling out the questionnaires and were asked if they had any queries. Following that, the questionnaires were administered to the participants. They were requested to thoroughly read the instructions of each scale and respond to the statements honestly. On average 15-20 minutes were taken by the participants to complete the questionnaires. In the end, the respondents were appreciated for their participation and cooperation. Statistical analyses were used for the generation of results.

5. Ethical Consideration

The study upheld ethical standards regarding participant confidentiality and privacy. Participants were informed about the research and its objectives and were assured that they might leave the study at any time. The fact that their data would only be utilized for study was made very clear. Scales were used after obtaining approval from the developer. Participants were not required to reveal their identities; they were assigned identification numbers.

6. Statistical analysis

To satisfy the study objectives and assess the research hypotheses, data were entered into 21 versions of statistical software for social sciences. Descriptive statistics was used to analyze the frequencies and percentages of demographic characteristics among participants. Inferential statistics was employed to satisfy the study's objectives and evaluate the hypotheses

7. RESULTS

Table 1:

Distribution of Demographic Characteristics of Adolescents (n=600)

Characteristics	F	%
Gender		
Male	300	50.0
Female	300	50.0
Age		
13-14	229	38.2

15-16	236	39.3
17 -18	135	22.5
Type of Institute		
Govt.	300	50.0
Private	300	50.0
Class		
9th	150	25.0
10th	150	25.0
11th	150	25.0
12th	150	25.0
Family System		
Nuclear	330	55.0
Joint	270	45.0
Game playing Duration		
1-2hrs	150	25.0
3-4hrs	98	16.3
5-6hrs	164	27.3

7hrs or more	188	31.3
Type of social media use		
TikTok	155	25.8
Snapchat	130	21.7
YouTube	120	20.0
Instagram	80	13.3
Facebook	66	11.0
WhatsApp	49	8.2

The table presents an even distribution of participants based on gender, institution type, and class. The age distribution leans towards younger ages, with a higher percentage of 13-16-year-olds. The majority of adolescents belong to nuclear families. The duration of game playing varies, with a significant percentage playing for extended periods (5 hours or more). Among these adolescents, TikTok and WhatsApp are the most popular social media platforms, while Facebook is the least used.

Table 2

Correlation among Online gaming addiction, mental health and social competence among adolescents (n=600)

Variable	N	M	SD	1	2	3
IGA	600	25.0264	11.3044	1		
DASS-21	600	39.3333	10.4524	.84**	1	
PSCS	600	19.2333	8.6902	-.67*	-.61**	1

Note: *p<.05, **p<.01, IGA: Internet gaming addiction scale, DASS-21 depression, anxiety, stress scale, PSCS: Perceived social competence scale

Table 2 shows that online gaming addiction has a strong positive correlation with mental health issues (depression, anxiety and stress) (r =.84**, p<.01) and a significant negative correlation with social competence (r = -.67*, p<.05). Similarly, mental health issues (depression, anxiety and stress) have a significant negative correlation with social competence (r =-.61**, p<.01).

Table 3

Mean comparison of males and female on online gaming addiction, mental health and social competence (n=600)

Variables	Male		Female		t (598)	P	CI 95%		Cohen's d
	M	*SD*	*M*	*SD*			*LL*	*UL*	
IGA	27.09	9.72	23.0	12.36	4.50	.00	*5.87*	*2.3*	0.36
DASS	42.59	10.4	36.0	9.39	8.04	.00	*8.12*	*4.93*	0.65
PSCS	12.4	2.90	13.97	2.22	7.03	.00	*1.90*	*1.07*	0.5

Note: M=Mean, SD=Standard Deviation, LL=Lower Limit, UL=Upper Limit

Table 3 indicates that there is a significant difference in the scores of boys and girls on online gaming addiction, mental health and social competence. Results indicated that boys had elevated levels of online gaming addiction and poor mental health (depression, stress & anxiety) as compared to girls. Whereas, girls had a higher level of social competence than boys.

Table 4

One-Way Analysis of Variance of Online Gaming Addiction, mental health and social competence about hours spend on Playing Online Gaming (n=600)

Variable	1-2hrs		3-4hrs		5-6hrs		7 or more		F	P	η^2
	M	SD	M	SD	M	SD	M	SD			
IGA	24.9	11.97	22.8	11.4	25.3	11.4	29.0	8.2	6.68***	.000	.69
DASS	39.8	9.4	37.0	7.1	36.2	11.4	46.4	10.11	22.6***	.000	.60
PSCS	19.8	4.6	19.1	5.7	18.7	6.1	18.3	5.7	1.79	.147	.49

Table 4 presents the mean, standard deviation, and F-value for online gaming addiction, mental health, and social competence to the hours spent playing games. The results indicated a significant mean difference across the four groups based on the duration of playing games for online gaming addiction [$F_{(2,597)} = 6.68$, $p \leq .001$] and mental health [$F_{(2,597)} = 22.6$, $p \leq .001$] while showing a non-significant difference in social competence [$F_{(2,597)} = 1.79$, $p \leq .14$]. The findings revealed that adolescents who spend 7 or more hours playing games exhibited higher levels of online gaming addiction and mental health issues compared to other adolescents.

Table 5

Simple linear regression for online gaming addiction as the predictor of mental health (N=600)

Variable	*B*	B	*SE*
Constant	22.7***		.724
Mental health issues	.663***	.717	.026
R^2	.79		

***p <.001

In Table 5, the impact of online gaming addiction on the mental health of adolescents is described. The R2 value of .79 indicates that the predictor variable explains 79% of the variance in the outcome variable F(1, 598) = 632.0, p < .001). The findings show that online gaming addiction significantly predicts mental health issues among adolescents (β = -.79, p < .001).

8. Discussion

The present study aims to investigate the impact of online gaming addiction on the mental health and social competence of adolescents. A sample of 600 adolescents was selected using a random sampling technique. The analysis of the data was conducted using the Statistical Package for the Social Sciences 21. Descriptive statistics, including frequencies and percentages, were computed. Pearson correlation was used to examine the relationship between online gaming addiction, mental health, and social competence among adolescents. Regression analysis was employed to determine the predictive role of online gaming addiction. Independent t-tests were conducted to identify the differences in mean scores for online gaming addiction, mental health, and social competence based on the demographics of the adolescents.

The primary aim of this study was to analyze the relationship between online gaming addiction, mental health, and social competence in adolescents. Table 2 indicated a significant positive relationship between online gaming addiction and mental health issues. Whereas a significant negative correlation was found between online gaming addiction and social competence. Findings are supported by Kamal and Wok's (2020) study which reported a significant positive relationship between online gaming addiction with depression, anxiety and loneliness indicating a negative relationship between mental health and social competence.

The second objective of the present study was to compare the level of online gaming addiction, mental health and social competence. Table 3 indicated significant differences in online gaming

addiction, mental health and social competence among boys and girls. Particularly results suggested that boys are more addicted to online gaming and have more mental health issues than girls. Findings also reveal that girls have good social competence and mental health as compared to boys. Similarly, Wang, Sheng and Wang (2019) also stated that boys had higher levels of internet addiction and social anxiety as compared to girls. Rohilla's (2018) study also supported our findings that boys had higher levels of online gaming addiction whereas girls had higher levels of social competence and mental health.

Table 4 indicated that significant difference in scores of online gaming addiction, mental health and social competence among adolescents based on game-playing duration. Results revealed adolescents who spend 7 or more hours playing games are more addicted to online gaming and have poor mental health. Whereas no significant difference in social competence was found social competence. The findings are supported by Saquib et al. (2017) research stated that adolescents who spend 6 or more hours on phones are more addicted to games and have poor mental health as compared to those who spend 1 to 2 hours on smartphones.

The study hypothesized that online gaming addiction would be a significant predictor of mental health issues. According to Table 5, online gaming addiction is a significant predictor of mental health issues among adolescents. These findings align with Wang, Sheng, and Wang's study in 2019, which found that mobile games are predictive of anxiety, depression, and loneliness.

9. Limitation and Strength

The current study has limitations as data were only collected from two cities in Pakistan due to time constraints, which reduces cultural diversity and limits the generalizability of the results. Additionally, the study excludes teenagers who are not enrolled in any public or private schools or colleges. However, the research is significant as it is the first of its kind on the effects of online

gaming addiction on mental health and social competence among adolescents in Lalamusa and Gujrat, Punjab, Pakistan. It also provides insight into online gaming addiction within the context of Pakistani culture.

10. Conclusion

In conclusion, this study highlights the need for interventions to address the associated mental health and social challenges in adolescents. The insights gained from this study could inform strategies and policies aimed at mitigating the adverse effects of online gaming addiction among adolescents.

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