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Adolescents in the Gaming Zone: A Study on Depression, Anxiety, Loneliness

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A B S T R A C T

This study explores the effects of playing video games online addiction on adolescents' mental health in the Kathmandu Valley. With the advent of accessible gaming platforms, there is increasing concern about their potential negative effects. Using a cross-sectional, descriptive, and causal-comparative research design, data were collected from 207 students across four colleges through structured questionnaires. The study aimed to assess adolescents' perceptions of online gaming, investigate the connection between addiction to gaming and mental health, as well as how it affects loneliness, anxiety, and depression. The findings reveal a significant correlation between online gaming addiction and adverse mental health outcomes among adolescents. Increased gaming addiction is linked to increased degrees of loneliness, anxiety, and depression. The study highlights the detrimental effects of excessive gaming on social relationships, academic performance, and overall well-being. This research addresses a critical gap by focusing on the Kathmandu Valley, providing new insights into the localized effects of gaming addiction and underscoring the need for targeted interventions and preventive measures to support adolescent mental health.

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INTRODUCTION

These days, more and more people are using the Internet. Numerous people's lives have become more focused on the Internet since it provides them with a wealth of knowledge (Zul & Wok, 2020). There has been a rise in the number of internet users. Indeed, online gaming is currently one of the most addicting Internet hobbies (Wan & Chiou, 2006).

Adults with college or graduate degrees make up 95% of Internet users, according to Azim, Zam, and Rahman (2015). Online gaming has grown in popularity on a global scale, particularly among younger people, which has resulted in an increase in online game addiction. Online games are becoming the most popular kind of entertainment in the world; they are not limited to homes or arcades anymore, but are available practically everywhere. There isn't just one element that draws teenagers to online gaming, but there is something about it that keeps them interested (Prakash, 2018).

According to New Zoo (2020), over two billion individuals play online games as a way to pass the time during their free time. This is due to the fact that the gamers are given amusement and enjoyment, which could result in addiction. The players are given certain tasks to find and complete. To advance to the next level, they must play till they win; if they lose, they can try again to win. Physical and emotional health issues could arise from this situation.

The popularity of online Gaming is experiencing a significant rise across Asia. People are aware of Asia's passion for video gaming. Although the favorite activities of each nation vary, everyone agrees that gaming is a lot of fun (Larry, 2024). In the context of Nepal too, online gaming has been gaining much popularity over the last few years. It offers a convenient and accessible form of entertainment and social interaction and people of all ages and background enjoys it these days (Giri, 2024).

Although online gaming meets the various needs of individuals, when the behaviour turns into an addiction, it leads to adverse effects on individuals, especially adolescents, where it can impair their mental health (Batmaz, Türk, & Doğrusever, 2021). Among adolescents, online gaming addiction has been reported to disrupt mental health, increase depression, anxiety, and loneliness, disrupt family relationships, lower quality of life, increase social phobia, lower school performance, and improve sleep deprivation (Chamarro, 2020).

Due to the potential for addiction, online games have recently gained attention as a popular technology, particularly among young people. According to Zul and Wok (2020), this technological addiction typically involves a maladaptive psychological component that may entice a player to disregard their important life commitments, even though its adaptability depends on the types of online games that offer different obsessive-compulsive patterns.

Due to the potential for addiction, online games have recently gained attention as a popular technology, particularly among young people. This technological addiction typically comprises a maladaptive psychological component that may entice a player to disregard their important life tasks, even though its adaptability depends on the types of online games that offer different obsessive-compulsive patterns (Zul & Wok, 2020).

Adolescents' perceptions of online gaming are complex and influenced by a multitude of factors. While many view gaming positively for its entertainment value, social opportunities, and skill-building potential, others and society at large remain cautious due to concerns about addiction, socialization, and health. Understanding these varied perspectives is crucial for fostering healthy attitudes towards gaming and supporting adolescents in making informed choices about their gaming habits though there has negative perceptions of online gaming among adolescents towards mental health like depression, anxiety and loneliness.

Continuously playing online games is not enough to qualify as a condition. Instead, when people play online games for extended periods of time to the point that it interferes with their everyday lives, mental illness always results. As a result, an addiction to online gaming causes people to prioritize gaming over all other hobbies and actions, which encourages them to keep playing despite the potential drawbacks. Disabilities in social life, schooling, and family connections are a few examples of these outcomes (Rettner, 2019).

Because online gaming addiction affects so many facets of adolescents' lives, it is essential to comprehend how it affects their mental health. Adolescents are particularly vulnerable to the allure of online gaming, which can lead to addiction and subsequent detrimental effects on their psychological well-being i.e. suffering from depression, anxiety and loneliness.

As gaming platforms and technologies have advanced, the immersive and interactive nature of these games can captivate young minds, potentially leading to excessive gaming habits. This addiction can manifest in various mental health issues such as depression, anxiety, and stress, as gaming becomes a primary coping mechanism or escape from real-life challenges. Recognizing these multifaceted impacts is essential for developing effective strategies for prevention, intervention, and treatment. By addressing these issues holistically, we can mitigate the adverse effects of online gaming addiction on adolescents' mental health, thereby promoting their overall well-being and development. For performing this research, the below mentioned questions and objectives are prepared to recognize and understand the multifaceted impacts of online gaming addiction on adolescent's mental health more clearly.

Research Objectives

- To access the perception of adolescent's regarding online gaming and mental health.
- To examine the relationship between online gaming and mental health.
- To analyse the impact of online gaming addiction on adolescent's mental health.

Research Hypothesis

- H01: Online gaming and depression do not significantly affect adolescents' mental health.
- H02: The mental health of adolescents is not significantly impacted by anxiety or online gaming.
- H03: Online gaming and loneliness have no discernible effects on adolescents' mental health.

Conceptual Framework

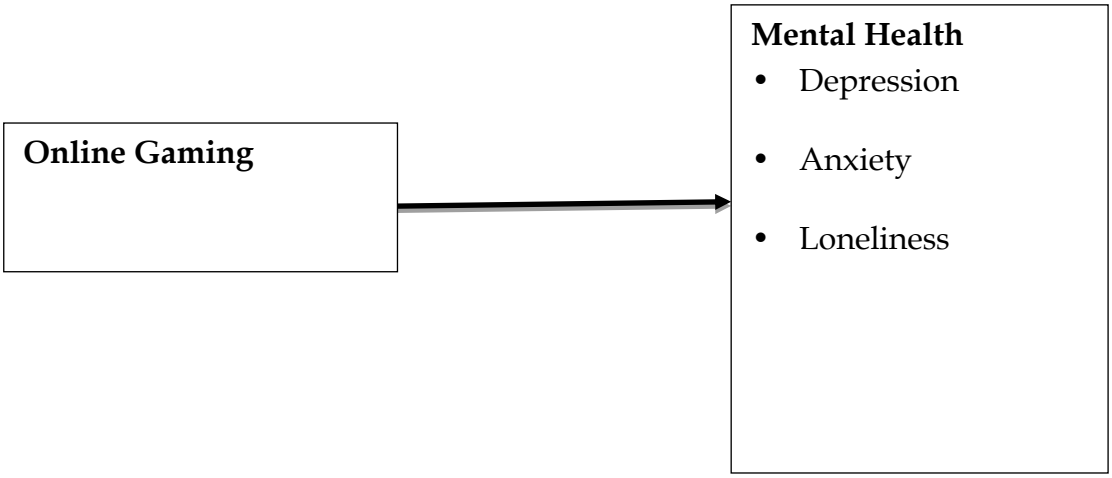

Figure 1. Conceptual Framework

The figure shows the relationship between Online Gaming (independent variable) and Mental Health (dependent variable), focusing on three aspects: Depression, Anxiety, and Loneliness. It implies that online gaming potentially impacts mental health by contributing to these psychological conditions, highlighting a possible link between gaming behaviour and emotional well-being.

LITERATURE REVIEW

The five points will be discussed in Literature Review in like online gaming addiction, mental health, depression, social anxiety and loneliness. The impact of online gaming addiction on adolescent's mental health has generally three factors like depression, anxiety and loneliness. Adolescents look at online gaming as a very popular trend from an electronic entertainment point of view. In addition, Block (2008) echoed that since there are no official determinants for identifying an individual as an addict, several studies in this area look at online game addiction as a continuous concept where its addiction levels range from low to high.

The study "Anxiety, Depression, and Stress are Associated with Internet Gaming Disorder" examined the relationship between online gaming disorder and mental health issues such stress, anxiety, and depression. This study, which involved 324 middle school children, looked at the mediating function of fear of missing out on stress, anxiety, or depression and Internet gaming problem. It was based on the I-PACE model and employed the Internet Gaming Addiction Scale, the Fear of Missing Out Scale, and the Depression, Anxiety, Stress Scale (DASS-21). The results showed a strong correlation between internet gaming issues and stress and depression, which act as partial mediators of FOMO. Although anxiety is not substantially linked to internet gaming disorder through full mediation of FOMO, Yang Wang (2022) asserts that stress and anxiety have a larger predictive influence on the illness through FOMO.

A descriptive and quantitative analysis was conducted in the Malaysian study "The Impact of Online Gaming Addiction on Mental Health among IIum Students" by Zul & Wok (2020). A total of 210 respondents participated in this study, comprising both undergraduate and postgraduate students. This study was designed to examine the impact of online gaming addiction on mental health among International Islamic University Malaysia (IIUM) students. The findings showed that the most popular type of online game is Player Unknown's Battlegrounds (PUBG), followed by Mobile Legend (ML), Call of Duty (COD), Défense of the Ancients (DOTA), and Free Fire. The levels of online gaming addiction and mental health among IIUM students were found to be significantly low. The relationships between online gaming addiction and mental health components, namely depression, anxiety, and loneliness, were found to be significant and positive. Based on the social cognitive theory tested, all the developed hypotheses were accepted.

Addiction to online gaming is considered a global issue at the moment, and it may have an effect on mental health. In this study, the prevalence of internet gaming disorder (IGD) among young adults in Italy was examined, as was the relationship between IGD and psychopathological symptoms. There were 566 young people in our sample (324 men and 242 women; ages 22.74 ± 4.83 years). The Internet Gaming Disorder Scale Short Form (IGD9-SF), the APA symptom checklist based on DSM-5 diagnostic criteria for IGD, the Symptom Checklist-90 Revised (SCL-90 R), and the Social Adaptation Self Evaluation Scale (SASS) were among the questionnaires that participants were asked to complete in addition to stating their favourite games. Ninety-five percent of the sample reported using video games.

Thirty individuals, or 5.3% of the sample, met the requirements for an IGD clinical diagnosis. Higher levels of online gaming were positively correlated with lower levels of family and extra-family relationships ($r = -0.383$), anxiety ($r = 0.361$), and psychoticism ($r = 0.431$), as well as depression ($r = 0.501$). The diagnosis of IGD was predicted by somatization ($p = 0.002$), depression ($p = 0.001$), and sleep problems ($p = 0.003$) at linear regression analysis. Mental health distress was substantially correlated with IGD. According to Concetta De Pasquale's paper "Relationship of Internet Gaming Disorder with Psychopathology and Social Adaptation in Italian Young Adults" (2020), healthcare practitioners should be aware of the negative effects of online gaming.

Internet gaming disorders were added to the list of mental health conditions. Overuse of the internet by teenagers has become a habit and is associated with mental, social, and physical health problems. Lately, the IGD has become more widespread globally. Using the Preferred Reporting Items for Systematic Reviews methodology, a systematic review and meta-analysis of the literature titled "The Impact of Online Game Addiction on Adolescent Mental Health" investigates the consequences of teen addiction to online gaming. The PubMed, Sage, Science Direct, and Scopus databases were thoroughly searched. We used "youth," "mental health," and "online game addiction" as search conditions.

This review study shows a considerable unfavourable link between a number of subjective health outcomes and problematic online gaming habit. The following criteria were used to determine which literature was included in this study: According to Eni Purwaningsih (2021), the literature required to be derived from journal papers that were published between 2011 and 2021, written in English, and accessible in full text.

Research Gap

While numerous studies have investigated the impact of online gaming addiction on adolescent's mental health globally, but there is apparent lack of research examining the impact of online gaming on adolescent's mental health in Kathmandu valley? Addressing this gap would involve conducting research to better understand the impact on gaming addiction on adolescent's mental health inside Kathmandu valley.

METHODOLOGY

This study is to learn how adolescents perceive online gaming as well as investigate and analyse the effects of online gaming addiction on adolescents' mental health. Using a cross-sectional temporal horizon, this study employs both descriptive and causal-comparative research designs. While the descriptive component tries to depict how teenagers view online gaming, the causal-comparative component looks for and examines any cause-and-effect links between teenage mental health and online gaming addiction. Quantitative research methodologies have been selected for the study because the cross-sectional methodology allows the research to collect data at a single point in time, giving a snapshot of the current state of affairs among adolescents. Four colleges in the Kathmandu Valley-Universal College, Sahid Shukra Secondary School, Global College of Management, and College of Business Management-make up the study's population. A sample of 207 pupils has been chosen from this demographic.

In order to ensure that the results may be applied to a wider context, this sample attempts to be representative of the general population. A structured questionnaire was used in the survey method of data collecting. The SPSS program was utilized for data analysis. Both descriptive and inferential statistical approaches were used in the investigation. Throughout the study, ethical considerations were of utmost importance. Because participation was completely voluntary, there was no coercion. Participants' identities and answers were kept anonymous to preserve their privacy, and confidentiality was rigorously upheld. Before the research started, the relevant colleges granted the necessary authority, and all participants gave their informed consent after being fully informed of the study's goals and methods.

RESULT AND DISCUSSION

This section includes demographic data, the general influence of online gaming on mental health, the perception of online gaming on mental health, and the association between online gaming and mental health.

Demographic Information

Table 1. Demographic Information

		Frequency	Percent
Valid	Male	129	62.31
	Female	78	37.68
	Total	207	100
Class	11.00	60	28.98
	12.00	148	71.49
	Total	207	100
Faculty	Management	148	71.49
	Science	46	22.22
	3.00	13	6.28
	Total	207	100

	N	Minimum	Maximum	Mean	Std. Deviation
Age	207	14.00	20.00	17.0725	1.06560

Source: Field survey, 2024

In the above tables, the study shows demographic breakdown of a sample of 207 individuals across several categories: gender, class, faculty and age. The gender distribution shows 62.31% male and 37.68% female participants. In terms of class, 28.98% are in class 11, while 71.49% are in class 12. The faculty distribution reveals that 71.49% belong to the Management, 22.22% to the Science, and 6.28% are from A levels. Additionally, the age distribution of the participants ranges from 14 to 20 years, with an average age of 17.07 and a standard deviation of 1.07, indicating the sample's age variability.

Descriptive Statistics

Descriptive statistics reveal students' perceptions of online gaming, depression, anxiety, and loneliness.

Online Games

The eight questions in this table, numbered AP1 through AP8, are on adolescents' use of online gaming and are scored on a scale of 1 to 5. The data for each variable contains the mean, standard deviation, minimum and maximum values, and the number of valid observations (N=207).

AP 1 stated, "I will make sure that the internet connection is always good so that I can play online games." The mean score of 3.4396 and the standard deviation of 1.20072 suggest that maintaining a strong internet connection for gaming is a rather high priority.

Table 2. Descriptive Statistics Related to Playing Online Games

	N	Minimum	Maximum	Mean	Std. Deviation
AP1	207	1.00	5.00	3.4396	1.20072
AP2	207	1.00	5.00	2.7005	1.16049
AP3	207	1.00	5.00	1.9227	1.07659
AP4	207	1.00	5.00	2.0000	1.12345
AP5	207	1.00	5.00	2.3092	1.24287
AP6	207	1.00	5.00	1.8357	.99126
AP7	207	1.00	5.00	2.0242	1.13821
AP8	207	1.00	5.00	1.6377	.90796

Source: Field visit 2024

AP2: " I always manage to play games online." The mean score is 2.7005 with a standard deviation of 1.16049, suggesting a moderate level of effort to find ways to play online games.

AP3: "I spend my whole night by playing online games." This question has a mean of 1.9227 and a standard deviation of 1.07659, indicating a lower frequency of spending entire nights gaming.

AP4: " I spend more time playing video games online than talking to my family." The mean score is 2.0000 with a standard deviation of 1.12345, suggesting a balanced approach between gaming and family communication, with a slight lean towards not prioritizing gaming over family.

AP5: " I'll just play online games with my friends." This has a mean score of 2.3092 and a standard deviation of 1.24287, indicating a moderate agreement with socializing mainly for gaming purposes.

AP6: " I'm constantly considering playing online games." The mean score is 1.8357 with a standard deviation of 0.99126, reflecting a generally low tendency to constantly think about gaming.

AP7: " In order to play online games, I regularly missed crucial tasks (including class, studying, and assignments)." This has a mean score of 2.0242 and a standard deviation of 1.13821, indicating a low frequency of neglecting important activities for gaming.

AP8: " Because I want to play online games, I always skip meals.." The mean score is 1.6377 with a standard deviation of 0.90796, showing a strong disagreement with skipping meals for gaming.

Overall, the data reveals that while some participant exhibit behaviours indicative of gaming, such as prioritizing internet connectivity for gaming and occasionally socializing primarily for gaming, other behaviours such as spending entire nights gaming or neglecting important activities are less prevalent. This indicates a varied level of gaming among the participants.

Depression

This table represents seven questions (MHD1 to MHD7) concerning the emotional and behavioural impacts of playing online games among 207 participants resulting depression.

Table 3. Descriptive Statistics Related to Depression

	N	Minimum	Maximum	Mean	Std. Deviation
MHD1	207	1.00	5.00	2.7633	1.34273
MHD2	207	1.00	5.00	3.0097	1.25021
MHD3	207	1.00	5.00	2.3478	1.30152
MHD4	207	1.00	5.00	2.4348	1.29012
MHD5	207	1.00	5.00	2.1256	1.16739
MHD6	207	1.00	5.00	1.9855	1.09933
MHD7	207	1.00	7.00	2.2367	1.32453

Source: Field visit 2024

MHD 1: "I will get angry if people call me during the time when I play online games." The average score for this is 2.7633, with a standard deviation of 1.34273., indicating a moderately negative emotional response to interruptions during gaming.

MHD2: " Every time I am unable to access the internet to play online games, I get agitated. With a standard deviation of 1.25021 and a mean score of 3.0097, the results indicate a neutral to slightly negative reaction to problems with internet access affecting gaming.

MHD3: " If I lose at an online game, I'll curse other people." With a mean of 2.3478 and a standard deviation of 1.30152, this question suggests that people generally have a low propensity to curse other people when they lose games.

MHD4: "I always get angry and tend to insult other players who make mistakes." The mean score is 2.4348 with a standard deviation of 1.29012, suggesting a similar low tendency to insult other players for mistakes.

MHD5: "I always had arguments with others (e.g., family, friends) over my time spent on online games." The mean score is 2.1256 with a standard deviation of 1.16739, indicating infrequent arguments over gaming time.

MHD6: " If I can't get on the Internet to play online games, I don't communicate to my family very much." With a mean of 1.9855 and a standard deviation of 1.09933, this question indicates that the majority of respondents do not usually refrain from speaking with their relatives because of internet problems.

MHD7: " If I can't connect to the Internet to play online games, I feel like my life is worthless." This shows a relatively modest sense of dependence on internet access for gaming, with a mean score of 2.2367 and a standard deviation of 1.32453.

Overall, the data indicates that while some respondents exhibit emotional responses to interruptions and connectivity issues, there is a lower tendency towards aggressive behaviours and arguments related to online gaming. The

responses suggest varied levels of emotional impact, with more intense reactions being less common resulting depression.

Anxiety

This table represents six questions (MHA1 to MHA6) concerning the impacts of playing online games among 207 participants resulting Anxiety.

Table 4. Descriptive Statistics Related to Anxiety

	N	Minimum	Maximum	Mean	Std. Deviation
MHA1	207	1.00	5.00	3.1014	1.18418
MHA2	207	1.00	5.00	2.8792	1.19461
MHA3	207	1.00	5.00	2.3527	1.25655
MHA4	207	1.00	5.00	2.0242	1.09916
MHA5	207	1.00	5.00	1.9275	1.06103
MHA6	207	1.00	5.00	1.9855	1.10374

Source: Field visit 2024

MHA1: " When it comes to playing online games, I always think that other individuals are more skilled. This indicates a moderate degree of self-perceived deficiency in gaming skills, with a mean score of 3.1014 and a standard deviation of 1.18418.

MHA2: "I have changes in mood that I cannot explain while playing online games." The mean score is 2.8792 with a standard deviation of 1.19461, showing a tendency towards mood changes during gaming.

MHA3: " Without internet games, I fear, life would be dull, meaningless, and devoid of happiness. The mean of 2.3527 and the standard deviation of 1.25655 for this question indicate a moderate level of anxiety regarding life without gaming.

MHA4: "I get anxious if I cannot play online games." The mean score is 2.0242 with a standard deviation of 1.09916, indicating a lower level of anxiety about not being able to play online games.

MHA5: "I feel worried and nervous if I cannot play online games." This has a mean score of 1.9275 and a standard deviation of 1.06103, showing a generally low level of worry and nervousness related to not playing games.

MHA6: "I am not able to stop or control worrying if I cannot play online games." The mean score is 1.9855 with a standard deviation of 1.10374, indicating that most respondents do not experience uncontrollable worrying about not being able to play online games.

Overall, the data reveals varying degrees of anxiety related to online gaming. The highest mean score is associated with feeling inferior to others in gaming skills, while the lowest scores indicate relatively low anxiety and worry about not being able to play games. This suggests that while some aspects of gaming may trigger anxiety, the overall impact is moderate.

Loneliness

This table represents six questions (MHL1 to MHL6) concerning the impacts of playing online games among 207 participants resulting loneliness.

MHL1: "I play online games because I feel bored with almost everything else in life." Having a mean score of 3.1884 and a standard deviation of 1.24177, this suggests that people who are bored with other parts of life agree somewhat with playing online games.

Table 5. Descriptive Statistics Related to Loneliness

	N	Minimum	Maximum	Mean	Std. Deviation
MHL1	207	1.00	5.00	3.1884	1.24177
MHL2	207	1.00	5.00	3.0918	1.25268
MHL3	207	1.00	5.00	2.1546	1.18045
MHL4	207	1.00	5.00	2.4348	1.30136
MHL5	207	1.00	5.00	2.1401	1.23646
MHL6	207	1.00	5.00	1.7923	1.11492

Source: Field visit 2024

MHL2: "I play online games because I feel unhappy doing so many things alone." The mean score is 3.0918 with a standard deviation of 1.25268, suggesting a moderate level of unhappiness with solitude leading to playing online games.

MHL3: "I play online games because I feel I do not have much to be proud of in my real life." This question has a mean of 2.1546 and a standard deviation of 1.18045, indicating a lower level of agreement with playing games due to a lack of pride in real life.

MHL4: "I play online games because nobody really understands me in real life." The mean score is 2.4348 with a standard deviation of 1.30136, suggesting a moderate level of feeling misunderstood in real life, leading to gaming.

MHL5: "I play online games because nobody cares about me." This has a mean score of 2.1401 and a standard deviation of 1.23646, indicating a lower level of agreement with playing games due to feeling uncared for.

MHL6: "I play online games because my family did not give me enough attention." The mean score is 1.7923 with a standard deviation of 1.11492, reflecting a low level of agreement with playing games due to lack of family attention.

Overall, the data suggests that while some participants turn to online gaming due to feelings of boredom and unhappiness with solitude, other factors such as feeling misunderstood and uncared for have a lower influence. This indicates that loneliness does play a role in online gaming behavior, but the degree of impact varies among different aspects of loneliness.

Correlation

This table shows the Pearson correlation coefficients among four variables: online gaming (OG) addiction, depression, anxiety, and loneliness. The table includes significance levels and sample sizes for each pairwise correlation.

Online Gaming (OG) Addiction is positively correlated with all three psychological factors studied. There is a strong correlation with depression (r =

0.639, $p < 0.01$), indicating that individuals who are more addicted to online gaming tend to experience higher levels of depression.

Table 6. Correlations

		OG	Depression	Anxiety	Loneliness
OG Addiction	Pearson Correlation	1	.639**	.593**	.466**
	Sig. (2-tailed)		.000	.000	.000
	N		207	207	207
Depression	Pearson Correlation		1	.652**	.530**
	Sig. (2-tailed)			.000	.000
	N			207	207
Anxiety	Pearson Correlation			1	.568**
	Sig. (2-tailed)				.000
	N				207
Loneliness	Pearson Correlation				1
	Sig. (2-tailed)				
	N				
**. Correlation is significant at the 0.01 level (2-tailed).					

Source: Field visit 2024

Similarly, the correlation with anxiety ($r = 0.593$, $p < 0.01$) suggests that those with higher gaming addiction levels also experience greater anxiety. The relationship with loneliness ($r = 0.466$, $p < 0.01$) is somewhat weaker but still significant, indicating that higher addiction to online gaming is associated with increased feelings of loneliness.

Depression shows a strong positive correlation with anxiety ($r = 0.652$, $p < 0.01$), suggesting that individuals who experience higher levels of depression also tend to experience higher levels of anxiety. Depression is also significantly correlated with loneliness ($r = 0.530$, $p < 0.01$), indicating that those who are more depressed are likely to feel lonelier.

Anxiety has a significant positive correlation with loneliness ($r = 0.568$, $p < 0.01$), suggesting that higher levels of anxiety are associated with greater feelings of loneliness.

Overall, the data indicates that online gaming addiction, depression, anxiety, and loneliness are interrelated. Higher addiction to online gaming is linked with increased depression, anxiety, and loneliness, and these psychological factors are also strongly interrelated among themselves. This pattern highlights the complex interplay between online gaming addiction and various aspects of mental health.

Impact of Online Gaming on Mental Health

The regression analysis was conducted to evaluate how adolescents' perceptions of online gaming relate to their mental health.

Table 7. Model Summary

Model	R	R	Adjusted	Std.	Change Statistics	Durbin-Watson

		Square	R Square	Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	
1	.674[a]	.454	.451	.52447	.454	170.379	1	205	.000	1.946
a. Predictors: (Constant), OG										
b. Dependent Variable: Mental health										

Source: Field visit 2024

The model, with an R-value of 0.674, indicates a strong positive correlation between online gaming addiction and mental health outcomes. Specifically, the R-squared value of 0.454 shows that 45.4% of the variability in mental health among adolescents can be attributed to their level of online gaming addiction. This suggests that adolescents' perceptions of gaming as an influential factor in their mental health are significant, though not exhaustive of all factors affecting mental well-being.

The statistical significance of the model is reinforced by the R-squared change of 0.454 and an F Change value of 170.379 ($p < 0.01$), demonstrating that online gaming addiction significantly contributes to understanding variations in mental health. The Durbin-Watson statistic of 1.946 supports that the model's residuals are independent, meeting key assumptions of regression analysis. Overall, the model highlights the substantial role of online gaming in shaping adolescents' mental health.

Table 8. Anova

Model		Sum of Squares	f	Mean Square	F	Sig.
1	Regression	46.866	1	46.866	170.379	.000[b]
	Residual	56.389	205	.275		
	Total	103.255	206			
a. Dependent Variable: Mental health						
b. Predictors: (Constant), OG Addiction						

Source: Field visit 2024

This table assesses the relationship between online gaming addiction and mental health, as per the objective of exploring this connection. The regression model explains a significant portion of the variance in mental health, with the F-statistic of 170.379 ($p < 0.01$) indicating that the model is highly significant. The Sum of Squares for Regression is 46.866, reflecting the variability in mental health explained by online gaming addiction, while the Residual Sum of Squares is 56.389, representing the unexplained variance. This significant F-value confirms that online gaming addiction is a strong predictor of mental health outcomes, validating the objective of understanding how online gaming impacts mental health.

Table 9. Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co-linearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.901	.122		7.383	.000		
	OG Addiction	.680	.052	.674	13.053	.000	1.000	1.000
a. Dependent Variable: Mental Health								

Source: Field visit 2024

The coefficients table provides detailed insights into the impact of online gaming addiction on adolescents' mental health, aligning with the objective of this analysis. The unstandardized coefficient for online gaming addiction (B = 0.680) indicates that for each unit increase in online gaming addiction, mental health scores increase by 0.680 units. The standardized coefficient (Beta = 0.674) reflects the strength and direction of this relationship, showing a substantial positive effect. This suggests that higher levels of online gaming addiction are significantly associated with poorer mental health among adolescents.

The t-value of 13.053 ($p < 0.01$) further confirms the statistical significance of the online gaming addiction predictor, indicating a robust and reliable impact on mental health. The constant term (B = 0.901) provides the baseline level of mental health when online gaming addiction is zero. The co-linearity statistics, including a tolerance of 1.000 and a variance inflation factor (VIF) of 1.000, suggest no issues with multi-co-linearity in the model. Overall, the analysis clearly shows that online gaming addiction has a significant and impactful relationship with adolescents' mental health.

CONCLUSIONS AND RECOMMEDATIONS

This study concludes that online gaming significantly impacts on adolescents' mental health, particularly in the areas of depression, anxiety, and loneliness. As the accessibility of gaming platforms continues to grow, so does the potential for these negative outcomes. The findings clearly indicate that excessive gaming can lead to a deterioration in social relationships, academic performance, and overall well-being among adolescents. This research highlights the need for greater awareness and targeted interventions to mitigate these adverse effects. Educators, parents, and mental health professionals must work together to address the challenges posed by online gaming addiction, fostering healthier gaming habits and supporting adolescents in balancing their digital and real-world lives. The focus on the Kathmandu Valley offers valuable insights into the localized impact of this global issue, providing a foundation for future research and intervention strategies aimed at promoting adolescent mental health in similar contexts.

FURTHER RESEARCH

This research still has limitations so further research is still needed on this topic.

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