

THE IMPACT OF VIDEO GAMING ADDICTION AND PARENTAL AVAILABILITY ON AGGRESSION IN ADOLESCENTS

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ABSTRACT

This study examined the relationship between video gaming addiction, parental availability, and aggression among adolescents, with a focus on the mediating role of parental availability. Employing a correlational research design, the study utilised survey methods and purposive sampling to recruit a sample of 200 adolescents in 9th and 10th grades from government schools. Data were collected using the Game Addiction Scale for Adolescents to measure gaming addiction, the Family Time and Routine Index to assess parental availability, and the Buss-Perry Aggression Questionnaire to measure aggression. Hypotheses were tested using SPSS version 24. Statistical analyses included descriptive statistics (mean, standard deviations, frequencies, percentages, and Cronbach alpha coefficient), Pearson correlation, multiple regression, and mediation analysis via PROCESS macro model 4. Findings indicated a significant positive correlation between gaming addiction and aggression. Moreover, gaming addiction significantly predicted increased aggression levels. Conversely, parental availability, as measured by the family time and routine index, was found to have a significant negative impact on aggression. Mediation analysis further revealed that parental availability partially mediates the relationship between gaming addiction and aggression, highlighting its critical role in buffering the negative outcomes associated with excessive gaming. These results underscore the importance of parental involvement in mitigating the adverse behavioural effects of gaming addiction among adolescents.

Keywords: gaming addiction, parental availability, aggression, adolescents, violent video games.

INTRODUCTION

In recent years, internet accessibility has become ubiquitous, with most households possessing digital devices, providing adolescents easy access to video games. The widespread prevalence of gaming has become a defining aspect of modern teenage culture (Alanko, 2023). While video gaming can offer benefits for leisure and educational purposes, concerns have arisen regarding its potential negative consequences, particularly about addiction and aggression among youth.

Adolescents, due to their developmental vulnerabilities and susceptibility to peer influence, are especially at risk of developing gaming addiction, which can have significant adverse impacts on individuals and society (AlHazzaa et al., 2023).

Gaming disorder, sometimes called video game addiction, is a disorder characterised by persistent gaming, impaired control, and functional impairment associated with

excessive video gaming (King & Delfabbro, 2020). A recent study identified 82 factors that lead to internet and game addiction in young people. These 82 factors fall into 11 major categories, including (1) socio-demographic characteristics, (2) parental and family factors, (3) device ownership, internet access and location, social media, and the game itself, (4) personality/traits, psychopathology factors, self-efficacy, (5) education and school factors, (6) perceived enjoyment, (7) perceived benefits, (8) health-compromising behaviours, (9) peers/friends relationships and supports, (10) life dissatisfaction and stress, and (11) cyber-safety (Juthamane & Gunawan, 2021). Studies have linked pathological gaming to loneliness, aggression, anxiety, depression and alcohol use disorders (Krossbakken et al., 2018).

Parental involvement plays a crucial role in shaping adolescents' gaming attitudes. Evidence suggests that parental supervision, engagement, and encouragement serve as protective factors against the development of gaming addiction (DeCamp, 2019). However, research on the specific interactions between parental availability, gaming addiction, and adolescent aggression remains limited.

Aggression is any behaviour deliberately aimed at inflicting physical damage to persons or property (Tordjman, 2022). Aggression in adolescents may manifest as relational aggression (e.g., social exclusion, rumour-spreading), verbal aggression (e.g., insults, threats), and/or physical aggression (e.g., fighting, striking). Adolescent boys are

more prone towards verbal and physical aggression as compared to girls (Sidhu et al., 2019; Chiebuka et al., 2020). Studies have linked various types of aggression in adolescents to poor mental health outcomes in adulthood. For example, reactive aggression has been linked to negative emotionality, specifically anxiety, in adulthood. In contrast, proactive aggression has been associated with psychopathic features and antisocial behaviour in adulthood. Both reactive and proactive aggression are associated with substance use in adulthood, but the substances vary by subtype of aggression (Fite et al., 2009).

The primary objective of this study is to highlight the complex relationships between gaming addiction, parental availability, and adolescent aggression, with a particular focus on how parental availability acts as a mediator between the other two variables. The study aims to identify factors that contribute to gaming addiction and aggression in youth and to offer insights into the mitigating role of parental involvement.

Hypothesis

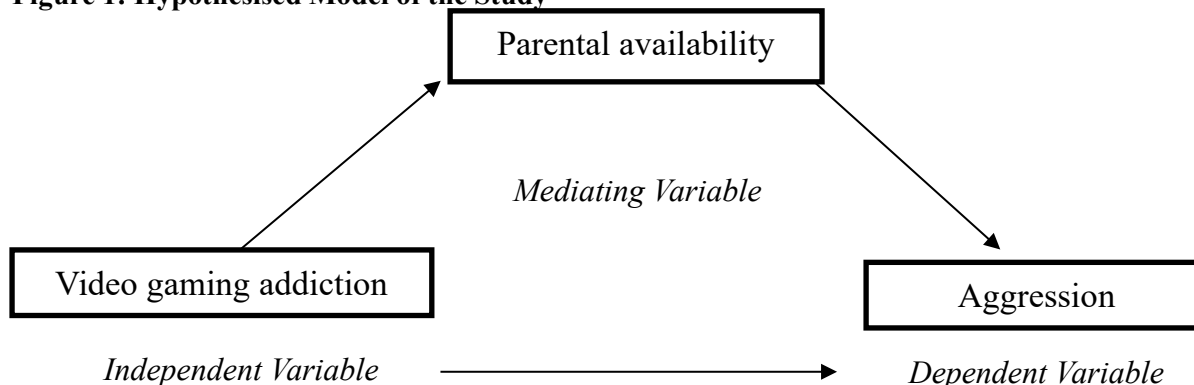
The literature review led to the formulation of the following hypotheses:

H1: There is a significant positive correlation between video gaming addiction and aggression among adolescents.

H2: Video gaming addiction and low parental availability are predictors of aggressive behaviours in adolescents.

H3: Parental availability mediates the relationship between video gaming addiction and aggression in adolescents.

Figure 1: Hypothesised Model of the Study



Note. The figure shows the variables as hypothesised in our study.

Methodology

Research Design

The present study used a correlation research design and a purposive sampling technique. Participants were surveyed about their gaming habits, parental availability, and aggression using a pre-developed questionnaire.

Sample

The sample consisted of 200 adolescents from Lahore, Pakistan. The participants were sampled according to pre-defined inclusion and exclusion criteria.

Inclusion Criteria. The study included young boys studying in 9th and 10th grades at government schools, with both parents alive. Participants were required not to be currently undergoing any treatment or intervention for gaming addiction.

Exclusion Criteria. The inclusion criteria excluded adolescents from broken families to ensure the impact of parental availability could be adequately assessed. Additionally, individuals with any mental or physical illness or those currently undergoing treatment or intervention for gaming addiction were also excluded.

Assessment Measures

Game Addiction Scale for Adolescents (GASA). Lemmens and his colleagues created the GASA, one of the most widely used questionnaires to assess unhealthy gaming habits in adolescents. The scale consists of seven items that apply to gaming behaviour in the past 6 months. Each item relates to a criterion and is answered on a five-point Likert scale (1 = never and 5 = often). Each behaviour is endorsed when rated 3 or higher (Lemmens et al., 2009).

Family Time and Routines Index (FTRI). The FTRI was developed by Hamilton McCubbin, Marilyn McCubbin, and Ann Thompson (1986). The scale assesses the types of activities and routines families do or maintain and the value placed on these practices. The scale consists of 32 items divided into eight subscales: Workday and leisure time routines, Parent routines, Family bedtime routines, Family meals, Extended family routines, Leaving and coming home, Family disciplinary routines,

and Family chores. The items are rated on a four-point Likert scale (0 = false and 3 = true) (McCubbin et al., 1996).

Buss and Perry Aggression Questionnaire (BPAQ). BPAQ is a 29-item self-report measure used to assess aggression in adults. The scale consists of four subscales: Physical aggression, Verbal aggression, Anger (affective), and Hostility (cognitive). Each item is rated on a five-point Likert scale (1 = extremely uncharacteristic and 5 = extremely characteristic). Raw scores are converted to percentiles corresponding to a particular description (Buss & Perry, 1992).

Procedure

This paper is based on N.N.'s MS thesis, Video Gaming Violence (Addiction), Parental Availability, and Aggression Among Adolescents, conducted at the Riphah Institute of Clinical and Professional Psychology, Riphah International University, Lahore, Pakistan. Ethical approval was obtained from the institutional review board. Permission to use the scales was obtained from their respective authors through email. Participants, 9th and 10th-grade students involved in gaming, were selected based on inclusion and exclusion criteria after obtaining their informed consent. Approval for data collection was obtained from the relevant authorities at government schools. Confidentiality was assured, and inquiries were addressed. Participants were informed about their right to withdraw or terminate participation at any time during the study. Data were analysed using SPSS for descriptive and inferential statistics.

Results

Descriptive analysis was conducted to determine frequencies, percentages, means, standard deviations, and Cronbach's alpha coefficients for the study variables. The demographic characteristics of the participants revealed that most adolescent boys were middle- or last-born and primarily came from middle-class socioeconomic backgrounds. Participants reported an average duration of daily video gaming of approximately six hours (see Table 1).

Table 1: Demographics Characteristics of the Sample (N= 200)

Variable	n	%
Age*	14.96*	1.03*
Grade		
9 th	101	50.5
10 th	99	49.5
Family structure		
Nuclear	102	51.0
Joint	98	49.0
Birth order		
Firstborn	44	22.0
Middle born	78	39.0
Last born	78	39.0
Socioeconomic status		
Upper-middle class	13	6.5
Middle class	153	76.5
Lower-middle class	32	16.0
Lower class	2	1.0
Duration of playing video games		
2 hours	3	1.5
3 hours	23	11.5
4 hours	43	21.5
5 hours	39	19.5
6 hours	50	25.0
7 hours	23	11.5
More than 7 hours	19	9.5

* The table shows frequencies (n) and percentages (%) for all other variables except age for which the mean (M) and standard deviation (SD) are given.

The psychometric properties of the study scales show that all the scales used in the study are highly reliable (Table 2).

Table 2: Psychometric Properties of the Study Scale (N = 200)

Scale	M	SD	Range	α
Gaming Addiction Scale	26.38	4.30	7-35	.85
Family Time and Routines Index Scale	27.69	12.30	0-78	.92
Buss-Perry Aggression Questionnaire	95.65	20.75	29-145	.97

Note. M = Mean; SD = Standard deviation; α = Cronbach alpha

Correlation analysis examined the relationships between the study variables (Table 3). The results revealed a significant positive correlation between gaming addiction and total aggression, as well as its subscales (physical aggression, verbal aggression, anger, and hostility). Among the subscales, anger, and hostility showed the

strongest correlations with gaming addiction. Additionally, the aggression subscales demonstrated strong intercorrelations, indicating high internal consistency of the Buss-Perry Aggression Questionnaire. These findings show that higher levels of gaming addiction are consistently associated with elevated aggression and its subcomponents among adolescents.

Table 3: Correlation Between Gaming Addiction and Aggression Among Adolescents

Variable	1	2	3	4	5	6
1. Gaming addiction	-					
2. Total aggression	.30***	-				
3. Physical aggression	.26***	.96***	-			
4. Verbal aggression	.27***	.97***	.91***	-		
5. Anger	.32***	.96***	.89***	.91***	-	
6. Hostility	.30***	.93***	.85***	.89***	.88***	-

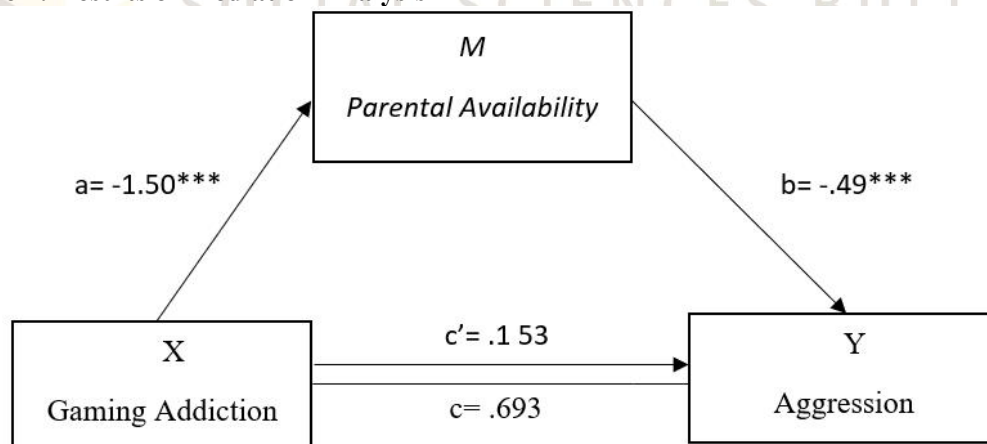
*** $p \leq .001$ (2-tailed)

A multiple regression analysis was conducted to examine the effects of gaming addiction and the family time and routines index on the dependent variable (aggression). The overall regression model was statistically significant, $F(2,197) = 30.98$, $p < .001$, accounting for 23.9% of the variance in the outcome variable ($R^2 = .24$). Gaming addiction was found to be a significant positive predictor of aggression, $\beta = 0.14$, $SE(B) = 0.32$, $t(2,197) = 2.15$, $p = .03$, 95% CI [0.06, 1.33], $N = 200$. In contrast, the family time and routine index was a significant negative predictor, $\beta = -0.42$, $SE(B) = 0.08$, $t(2,197) = -6.25$, $p < .001$, 95% CI [-0.65, -0.34]. These results suggest that higher levels of gaming addiction are associated with increased aggression, while

greater adherence to family time and routines is associated with decreased aggression. The effect of family time and routine index appears to be stronger and more statistically significant than that of gaming addiction.

A mediation analysis was conducted to examine the role of the Family Time and Routines Index (FTRI) as a mediator between gaming addiction (IV) and aggression (DV) among adolescents. Gaming addiction significantly predicted FTRI and FTRI significantly predicted aggression. The indirect effect ($\beta = 0.15$) and total effect ($\beta = 1.43$, $p < .001$) confirmed partial mediation, with the direct impact of gaming addiction remaining significant ($\beta = 0.693$, $p = .032$).

Figure 2: Results of Mediation Analysis



Discussion

Gaming addiction has emerged as a significant concern among contemporary youth, with profound implications for their psychological and behavioural well-being. Recent research indicates that 50.8% of university students in Pakistan are either experiencing gaming addiction or are at risk of developing this condition (Zaman et al., 2022). A growing body of literature has identified parallels between gaming addiction and substance addiction or

gambling, citing similar neurochemical changes in the brain that reinforce compulsive behaviours. Furthermore, gaming addiction has been associated with adverse outcomes, including depression, diminished self-esteem, sleep disturbances, academic underperformance, and a range of psychological and social challenges (Mohammad et al., 2023).

Building on the growing concerns regarding the prevalence and consequences of gaming addiction, the present study sought to

investigate the relationships between video gaming addiction, parental availability, and aggression in adolescents, with an emphasis on the mediating role of parental availability. Consistent with previous meta-analyses and systematic reviews (e.g., Anderson & Bushman, 2001; Anderson et al., 2010), our study found a significant association between violent video games and aggressive thoughts and behaviours. Studies have shown that repeated exposure to simulated violence diminishes emotional responsiveness and empathy, which are critical for prosocial behaviour. Consequently, individuals exposed to violent gaming content may become more likely to engage in or tolerate acts of aggression in real-world settings (Imran et al., 2022). Violent video gaming is primarily more common among adolescents and males (AlHazzaa et al., 2023). Adolescents, due to their developmental stage, are particularly attracted to the excitement and competitive elements of violent video games. Similarly, males are more likely to be attracted to such games, influenced by cultural and social factors that associate gaming with aggression and dominance.

Our study also found that video gaming addiction and parental unavailability significantly predict aggressive behaviour in adolescent boys. The current literature is limited in terms of explaining the combined effects of these factors, however, studies indicate that adolescents who engage in video gaming for extended periods without parental awareness are more prone to violent behaviour (Gentile et al., 2004).

Finally, our study found a partial role for parental availability in mediating the relationship between video game addiction and adolescent aggression. Similar to Donati et al., (2021), our results suggest that parents play a protective role against adolescents' gaming disorder. These findings contribute to the growing literature on video gaming addiction, parental availability, and aggression in adolescents, highlighting the importance of parental involvement in reducing the negative effects of excessive gaming and supporting the healthy development of youth.

Implication of the Study

The findings of our study have important implications for understanding and

addressing the psychological and behavioural impacts of gaming addiction, particularly in adolescents. By highlighting the role of parental availability in mediating the relationship between gaming addiction and aggression, the study emphasises the importance of fostering a supportive family environment to reduce negative outcomes. These insights may inform the development of targeted interventions and prevention strategies aimed at managing gaming addiction and its associated risks, such as aggression and impaired social functioning. Furthermore, the study emphasises that policymakers, educators, and mental health professionals should consider family dynamics when designing programs to promote healthy gaming behaviours and enhance adolescent well-being.

Limitations and Suggestions

This study was limited to 9th and 10th-grade students from government schools, excluding broader adolescent populations and those from broken families, which restricts the generalizability of the findings. Additionally, the correlational research design precludes causal inferences between variables. The results are also context-specific to Lahore, and cultural, regional, or technological differences may limit their applicability to other populations or settings. Future research should consider diverse populations, family dynamics, and locations to enhance the comprehensiveness and generalizability of findings.

Conclusion

The current study highlighted a significant correlation between video gaming addiction and aggression among adolescents with parental availability being a partial mediator in this relationship.

Conflict of Interest: The author has no conflict of interest/funding statement to disclose.

Authors Contribution

Nayyab Nasir: Provided initial research question and hypotheses; designed the overall study framework; outlined the theoretical framework and discussion sections; played a key role in data collection and analysis; drafted and revised the initial manuscript under supervision; and ensured

that the final version of the manuscript was approved.

Dr Mirrat Gul Butt: Supervised the research process, particularly hypotheses, theoretical framework, literature review, and data analysis and interpretation; reviewed changes to the manuscript; and drafted the final version of the submitted manuscript.

* All authors are agreed to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of their respective parts are appropriately investigated and resolved

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