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Free Fire Addiction, Negative Emotions and Aggression: A Cross Sectional Study of Young Adults

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Abstract

In today's digital age, millions of students around the world are deeply engaged in online games, with Free Fire emerging as a particularly popular choice due to its transition from physical to online play. However, research suggests that excessive gaming, including Free Fire, may be linked to increased aggression, though the underlying factors remain unclear. This study investigates how addiction to Free Fire influences aggression through negative emotions among 222 students, aged 18-30, who have the game installed on their phones. The research utilizes a correlational design and purposive sampling method. To assess key variables, the study uses gaming addiction scale for adolescents, a revised version of the Profile of Mood States to measure negative emotions, and the Buss-Perry Aggression Questionnaire. The results show a significant positive correlation between Free Fire addiction, negative emotions, and aggression. Mediation analysis reveals that Free Fire addiction significantly impacts both negative emotions and aggression, with negative emotions partially mediating the relationship between addiction and aggression. Based on these findings, the study suggests strategies to mitigate the mental health effects of gaming addiction, such as reintegrating structured routines, seeking social support, increasing parental involvement, and managing screen time.

Keywords: Free Fire addiction, profile of mood state, aggression, negative emotions.

Gaming addiction refers to the compulsive use of games, causing clinical distress (Ballou & Zendle, 2022). Research shows gaming addicts struggle to control their urge, reflecting a behavioral addiction (Griffiths et al., 2012). This addiction disrupts key life areas (Alavi et al., 2012) and is associated with social, emotional, and psychological issues like disengagement, reduced interest in activities, and isolation (Young, 2009).

Free Fire is a free-to-play battle royale game developed by Garena for Android and iOS, launched on December 8, 2017 (Debnath, 2023). It became the most downloaded mobile game worldwide in 2019 and surpassed 1 billion downloads on the Google Play Store. By the first quarter of 2021, it was the highest-grossing mobile game in the US and exceeded \$1 billion in lifetime revenue by November 2019. In 2021, it had more than 150 million daily active users, and as of February 2024, it retains 100 million active users (Alha, 2020). In September 2021, Garena introduced Free Fire Max, a version with enhanced graphics. However, addiction to the game has been linked to increased aggression, disrupted routines, greater frustration, and cyber aggression as the gameplay intensifies (Agnihotri, 2020; Kamal & Wok, 2020; Febriady et al., 2022).

Negative emotions involve feelings of distress, sadness, or dissatisfaction related to specific events or situations. Anxiety, for example, is marked by tense emotions, negative thoughts, and physical symptoms like palpitations (Muir-Cochrane et al., 2017). These emotions can diminish self-worth, self-esteem, and overall life satisfaction, leading to feelings of self-hatred and resentment toward others. Emotions such as anger, jealousy, hate, and sadness are examples of negative feelings (Kayi-Aydar, 2022).

Aggression is behavior intended to harm another who seeks to avoid harm (Davis et al., 2018; Bushman & Huesmann, 2010), encompassing physical aggression, which means physically hurting someone or damaging property or animals (Card et al., 2008), verbal aggression, meaning the use of words, tone, or manner to intentionally harm someone, even if no harm occurs, anger, which refers to a strong feeling of annoyance or displeasure (Berkowitz & Harmon-Jones, 2004), and hostility, which involves an unfriendly attitude towards others and mediates other forms of aggression (Buss & Perry, 1992; Barefoot, 1992).

According to the general aggression model (Anderson & Bushman, 2002), exposure to violent video games elevates aggression as gaming situations increase negative emotions such as frustration, anger, and irritation that influence aggression (Irmak & Erdogan, 2016; Zhao et al., 2021), which further leads to aggression. Studies have shown that addiction to games is related to negative emotions that could be due to poor performance, frequently losing, or not achieving the target. These negative emotions lead to aggression, either while gaming or towards their surrounding people in the physical world (Bhagat et al., 2020; Eker & Tas, 2022; Allen & Anderson, 2018). Studies have shown that negative emotions due to online violent games often lead to aggressive behavior (Bopp et al., 2016; Elson & Ferguson, 2014). Free Fire relationship effects on young adults via negative emotions has not been studied yet, suggesting the gap in the previous literature that has to be filled.

There is an increasing concern regarding the addiction to online games and its potential association with aggression. A substantial body of literature highlights this connection, with statistical evidence supporting that addiction to online violent games, is linked to higher levels of aggression (Zhang et al., 2022). Specifically, it has been found that a significant negative relationship exists between playing Free Fire and psychological well-being (Mellyan et al., 2022), suggesting that excessive engagement with this game may be harmful to mental health. While several recent studies have explored the relationship between gaming addiction and aggression (Kim et al., 2008; Hauge & Gentile, 2003; Shabbir et al., 2020), the mediating role of negative emotions in this relationship remains underexplored, particularly among young adults specifically students (free fire compulsive players) in Pakistan.

This study aims to explore the role of negative emotions in mediating the relationship between Free Fire gaming and aggression among students in Pakistan. While much research links online gaming to aggression, the role of negative emotions has been overlooked, especially in the context of popular games like Free Fire among students. By addressing this gap, the study seeks to provide insights to inform strategies that could mitigate the negative impacts of gaming-related aggression. Given Free Fire's popularity and emerging aggression patterns, understanding this mediation is crucial for both academic literature and practical interventions to students.

Hypotheses

H1. Free Fire addiction is likely to relate positively and significantly with negative emotions and aggression among students.

H2. Negative emotions are likely to mediate between Free Fire addiction and aggression among students.

H3. There will likely be a gender difference between study variables Free Fire addiction, negative emotions, and aggression among students.

Method

Research Design

Co-relational research design was used in the study to find the relationship between study variables.

Sampling Strategy

Non-probability purposive sampling was used for data collection of 222 participants in this study.

Inclusion Criteria

School, college and university students (both gender) between the age range of 18 to 30 who have a smartphone and have been playing Free Fire addiction for the last six months were included in the study.

Measures

Gaming Addiction Scale for Adolescents (GASA)

GASA is a 29-item Likert scale with scores ranging from never (1) to very often (5). The Cronbach's reliability for this scale was 0.94 (Lemmens et al., 2009).

Abbreviated Profile of Mood State (PMOS-Revised Version)

POMS revised version is a 40-item questionnaire. It measures fatigue, anger, vigor, tension, esteem, confusion, and depression. It is a Likert scale, with items ranging from "not at all" (1) to extremely (4). The Cronbach's reliability for this scale was 0.80 (Grove & Prapavessis, 1992).

Buss Perry Aggression Questionnaire (BPAQ)

Buss Perry Aggression Questionnaire was developed by Buss and Perry in 1992. The scale consists of a total of 29 items, each Likert item ranging from extremely uncharacteristic (1) to extremely characteristic (5). The Cronbach's reliability for the scale was 0.91.

Procedure

This study aimed to explore the role of negative emotions as a mediator between Free Fire addiction and aggression among 222 school, college, and university students (ages 18-30) who had played Free Fire for at least six months. Using a correlational design and purposive sampling, the study measured addiction, negative emotions, and aggression through three tools: the Gaming Addiction Scale for Adolescents, the Abbreviated Profile of Mood States (Revised Version), and the Buss and Perry Aggression Questionnaire. Participants were from schools, colleges, and universities in Lahore and Karachi and completed the questionnaires online. The process took about 10-15 minutes per participant. Approval was obtained from the psychology department, and the survey was in English to accommodate the educated cohort.

Results

Table 1

Demographic Characteristics of the Participants (N=222).

Characteristics	<i>f</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Age			21.31	3.06
Gender				
Men	154	69		
Women	68	31		
Qualification				
Matric	13	6		
Intermediate	104	47		
Bachelor	74	33		
Master	31	14		

Note. *f*= frequency, *%*= Percentage, *M*= Mean, *SD*= Standard Deviation

The table above shows that 154 men (69%) and 68 women (31%) participated in the study, with a mean age of 21.31 and a standard deviation of 3.06. Regarding the participants' qualifications, 13 (6%) are matriculates, 104 (47%) have an intermediate qualification, 74 (33%) hold a bachelor's degree, and 31 (14%) have a master's degree.

Table 2

Pearson Moment Correlation among study variables (N=222).

Variables	1	2	3
1. Free Fire Addiction	-	.14*	.91**
2. Negative Emotions		-	.10
3. Aggression			-

Note. * $p < .05$. ** $p < .01$

The table shows relationship between study variables, Free Fire addiction is significantly as well as positively related to negative emotions and aggression, however, relationship between negative emotions and aggression is positive but not significant.

Table 3

Meditational Analysis Showing the Mediating Role of Negative Emotions in the Relationship of Free FireAddiction and Aggression (N=222)

Antecedent	Consequents												
	NE (M)			Aggression (Y)			Aggression (Y)						
							Bootstrap 95% CI						
	β	SE	P	B	SE	P	B	SE	LL	UL			
FFA (X)	<i>a</i>	.19	.09	.03	<i>c</i>	1.01	.03	.000	a.b	-.003	.004	-.01	.004
NE(M)	-	-	-	-	<i>b</i>	-.02	.02	.36					
Constant	<i>I</i>	113.95	7.43	.000	<i>I</i>	26.31	3.46	.000					
		$R^2 = .02$				$R^2 = .83$				$R^2 = .83$			
		$F=4.53$				$F=548.22$				$F=1096.51$			

Note. * $p < .05$ ** $p < .01$, *** $p < .001$. FFA= Free Fire Addiction, NE= Negative Emotions

According to the table above direct effect of Free Fire addiction on negative emotion is positively significant ($\beta = .19^*$, $p < .05$), moreover the direct effect on Free Fire addiction on aggression is also positive and significant ($\beta = 1.01^{***}$, $p < .001$). However, direct effect of negative emotions on aggression is not significant ($\beta = -.02$, $p > .05$). Indirect effects depict that the total indirect effect of Free Fire addiction on aggression via negative emotions is statistically insignificant since there is sign difference between lower and upper level bootstrap.

Discussion

Online gaming, particularly platforms like Free Fire, has become increasingly popular among young people. However, addiction to such games often results in aggression, a phenomenon observed in numerous studies. This study aimed to explore how negative emotions mediate the relationship between Free Fire addiction and aggression, focusing on Free Fire for its popularity and limited research.

Hypothesis 1 investigated the link between Free Fire addiction, negative emotions, and aggression in young adults. The results revealed a significant positive association between Free Fire addiction and negative emotions, consistent with previous studies (Savci & Aysan, 2017), which shows smartphone addiction is related to aggressive behavior. Further, Free Fire addiction was strongly related to aggression, in line with research showing that online game addiction correlates with aggression among adolescents (Jeon et al., 2021). Studies on mobile games like PUBG also support the association between addiction and aggression (Nazir, 2021). Although the correlation between negative emotions and aggression was positive, it was not statistically significant, which aligns with findings suggesting that social connections in gaming may drive

aggression (Dishion & Tipsord, 2011). Additionally, emotions like anger were identified as key drivers of aggression in gaming contexts (Lin et al., 2017).

Hypothesis 2 proposed that negative emotions mediate the link between Free Fire addiction and aggression. The direct effect of Free Fire addiction on aggression was significant, and the total effect through negative emotions was also significant, despite an insignificant path for negative emotions in the model. These findings align with the general aggression model, which posits that negative emotions such as frustration and anger increase aggression during gameplay (Irmak & Erdogan, 2016; Zhao et al., 2021). Previous studies also suggest that negative emotions, triggered by poor performance or failure to meet gaming goals, often result in aggression (Bhagat et al., 2020; Eker, 2022). The reason behind partial result of negative emotions in relationship of Free Fire addiction and aggression could be lesser threshold of negative emotions due to personality factors of responded, defence mechanism while filling the data, or reappraisal of negative emotions while playing the game.

Limitations and Recommendations

This study's generalizability is limited as data was collected only from students. Future research should include both employed and unemployed individuals for broader applicability. The length of the scales may have caused participant fatigue, so shorter scales are recommended to improve engagement. Additionally, the sample had an imbalance in education levels, with most participants having intermediate education; future studies should address this imbalance. Factors like sample size, emotional reappraisal strategies, and personality traits, which were not controlled for, may also have influenced the results and should be explored in future studies for a more comprehensive understanding.

Implications

This study highlights the importance of intervention strategies to mitigate the effects of gaming addiction, focusing on emotion regulation to reduce aggression. Approaches such as reintegrating pre-addiction routines, seeking psychological support, and increasing parental involvement can help prevent addiction. Structured gaming schedules and relaxation techniques like deep breathing may also assist in managing aggression. Furthermore, raising parental awareness and educating youth about the negative effects of Free Fire can help promote mental well-being. Future studies should also aim to ensure gender balance in participant categories, as gender differences in gaming behaviors may impact the results and conclusions.

References

- Agnihotri, V. (2020). STRATEGIES BEHIND THE SUCCESS OF E-SPORTS (GARENA FREEFIRE). *International Journal of Management (IJM)*, 11(11).
- Alavi, S. S., Ferdosi, M., Jannatifard, F., Eslami, M., Alaghemandan, H., & Setare, M. (2012). Behavioral addiction versus substance addiction: Correspondence of psychiatric and psychological views. *International Journal of Preventive Medicine*, 3(4), 290-294. <https://pmc.ncbi.nlm.nih.gov/articles/PMC3354400/>
- Alha, K. (2020). The rise of free-to-play: How the revenue model changed games and playing.

- Allen, J. J., & Anderson, C. A. (2018). Satisfaction and frustration of basic psychological needs in the real world and in video games predict internet gaming disorder scores and well-being. *Computers in Human Behavior, 84*, 220-229. <http://www.craiganderson.org/wp-content/uploads/caa/abstracts/2015-2019/18AA.pdf>
- Anderson, C. A., & Bushman, B. J. (2002). Human aggression. *Annual Review of Psychology, 53*(1), 27-51. <https://www2.psych.ubc.ca/~schaller/Psyc591Readings/AndersonBushman2002.pdf>
- Ballou, N., & Zendle, D. (2022). Clinically significant distress in Internet Gaming Disorder: An individual participant meta-analysis. *Computers in Human Behavior, 129*, 107140.
- Barefoot, J. C. (1992). Developments in the measurement of hostility. In H. S. Friedman (Ed.), *Hostility, coping, & health* (pp. 13–31). American Psychological Association.
- Berkowitz, L., & Harmon-Jones, E. (2004). Toward an understanding of the determinants of anger. *Emotion, 4*(2), 107-130.
- Berkowitz, L., & Harmon-Jones, E. (2004). Toward an understanding of the determinants of anger. *Emotion, 4*(2), 107.
- Bhagat, S., Jeong, E. J., & Kim, D. J. (2020). The role of individuals' need for online social interactions and interpersonal incompetence in digital game addiction. *International Journal of Human-Computer Interaction, 36*(5), 449-463.
- Bopp, J. A., Mekler, E. D., & Opwis, K. (2016, May). Negative emotion, positive experience? Emotionally moving moments in digital games. In *Proceedings of the 2016 CHI conference on human factors in computing systems* (pp. 2996-3006).
- Bushman, B. J., & Huesmann, L. R. (2010). Aggression. In S. T. Fiske, D. T. Gilbert, & L. Gardner (Eds.), *Handbook of social psychology* (5th ed., pp. 833-863). John Wiley & Sons.
- Buss, A. H., & Perry, M. (1992). The aggression questionnaire. *Journal of Personality and Social Psychology, 63*(3), 452-459.
- Card, N. A., Stucky, B. D., Sawalani, G. M., & Little, T. D. (2008). Direct and indirect aggression during childhood and adolescence: A meta-analytic review of gender differences, intercorrelations, and relations to maladjustment. *Child Development, 79*(5), 1185–1229.
- D Griffiths, M., J Kuss, D., & L King, D. (2012). Video game addiction: Past, present and future. *Current Psychiatry Reviews, 8*(4), 308-318.
- Davis, M. H., Mitchell, K. V., Hall, J. A., & Lothert, J. (2018). *Handbook of emotion elicitation and assessment*. Oxford University Press.
- Debnath, A. (2023). A Psychoanalysis of Player Unknown's Battlegrounds (PUBG) in the Context of India 2020–2021. *CyberOrient, 17*(2), 57-79.
- Dishion, T. J., & Tipsord, J. M. (2011). Peer contagion in child and adolescent social and emotional development. *Annual Review of Psychology, 62*, 189-214.

- Eker, H., & Tas, I. (2022). The relationship between game addiction, emotional autonomy, and emotion regulation in adolescents: A multiple mediation model. *International Journal of Technology in Education & Science*, 6(4), 569-584.
- Elson, M., & Ferguson, C. J. (2014). Twenty-five years of research on violence in digital games and aggression. *European Psychologist*, 19(1).
- Febriady, D., Pebriana, P. H., Alim, M. L., & Ananda, R. (2022). The Impact of Free Fire Online Games on Students' Social Behavior at Elementary School. *JIP Jurnal Ilmiah PGMI*, 8(2), 140-150.
- Hauge, M. R., & Gentile, D. A. (2003, April). Video game addiction among adolescents: Associations with academic performance and aggression. In *Society for Research in Child Development Conference*.
- Jeon, H. G., Lee, S. J., Kim, J. A., Kim, G. M., & Jeong, E. J. (2021). Exploring the influence of parenting style on adolescents' maladaptive game use through aggression and self-control. *Sustainability*, 13(8), 4589.
- Kamal, N. S. Z., & Wok, S. (2020). The impact of online gaming addiction on mental health among iium students. *International Journal of Heritage, Art and Multimedia*, 3(11), 01-20.
- Kayi-Aydar, H. (2022). 51 Negative emotions. *Language and Emotion. Volume 2*, 1078.
- Kim, E. J., Namkoong, K., Ku, T., & Kim, S. J. (2008). The relationship between online game addiction and aggression, self-control and narcissistic personality traits. *European psychiatry*, 23(3), 212-218.
- Lin, H. W., Luarn, P., & Lin, Y. L. (2017). Hierarchical relationship of negative emotion perception from violent video games. *Science, Technology and Society*, 22(2), 236-258.
- Mellyan, M., Hamsa, A., Junaidi, J., & Nurlaila, N. (2022). A REVIEW OF FIQH MUAMALAH ON THE FREE FIRE ONLINE GAME AND ITS IMPACT ON TEENAGERS. In *PROCEEDINGS: Dirundeng International Conference on Islamic Studies* (pp. 265-277).
- Muir-Cochrane, E., O'Kane, D., & Harrison, K. (2017). The person who experiences anxiety. In *Psychiatric and Mental Health Nursing* (pp. 215-224). Routledge.
- Nazir, R. (2021). NEGATIVE EFFECTS OF PUBG PLAYING ON VERBAL AGGRESSION OF YOUTH AMID COVID-19. *Pakistan Journal of Social Research*, 3(4), 689-697.
- Savci, M., & Aysan, F. (2017). The relationship between smartphone addiction, anxiety, and depression in university students. *International Journal of Research in Education & Science (IJRES)*, 3(2), 438-451.
- Shabbir, S., Saleem, M., Mahmood, S., & Perveen, S. (2020). Gaming addiction and aggression in Pakistani young adults: Through the lens of excitation transfer theory. *Journal of Professional & Applied Psychology*, 1(1), 10-21.

Young, K. (2009). Understanding online gaming addiction and treatment issues for adolescents. *The American journal of family therapy*, 37(5), 355-372.

Zhang, Y., Hou, Z., Wu, S., Li, X., Hao, M., & Wu, X. (2022). The relationship between internet addiction and aggressive behavior among adolescents during the COVID-19 pandemic: Anxiety as a mediator. *Acta psychologica*, 227, 103612.