Clash of Clans Addiction and Aggression in Students: Mediating Role of Emotional Regulation

Muhammad Sajjad Shahid[1], Rabbia Ashraf [2], Muhammad Bilal Arif[3], Sana Nouman[4], Maryam Faryad[5] and Shanzey Nadeem[6]

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Abstract

In today's technological age, millions of students worldwide play Clash of Clans. This study aimed to examine the impact of Clash of Clans addiction on aggression, with a focus on the mediating role of emotional regulation. A sample of 250 Clash of Clans addicts, with an equal gender distribution (males = 125, females = 125), was selected for the study. The instruments used to assess the study variables were the Gaming Addiction Scale for Adolescents, the Buss and Perry Aggression Questionnaire, and the Emotional Regulation Questionnaire. Participants were aged between 18 and 25 years (M = 20.65, SD = 2.37). The findings revealed a significant positive mediating effect of expressive suppression between Clash of Clans addiction and aggression, while cognitive reappraisal negatively mediated the relationship. The study provided several implications for the well-being of young adults, including government action, awareness by mental health professionals, positive parental involvement with children, and promoting help-seeking behavior among young adults in Pakistan. The results were discussed in the context of existing literature, and recommendations for future research were provided.

Keywords: *Clash of Clans* Addiction, Emotional Regulation, Aggression, Youth.

Introduction

Online video games first emerged in the 1990s, quickly gaining popularity due to their widespread accessibility (Kalsoom et al., 2022; Islam, 2023; Erickson, 2023). In recent years, video game players have surged significantly as these games enable players to collaborate toward shared, complex goals. This feature is a key reason young adults often spend several hours playing these games (Zendle et al., 2023; Limone et al., 2023; Singh, 2019; Schmierbach et al., 2024; Lekshmi, 2024). However, online gaming has been linked to significant disruptions in individuals' daily routines (Park, 2025; Ng et al., 2024).

[1]*Student Counsellor, Tipu Shaheed School & College, Kabal, Swat, Pakistan.*
Email: sajjadkhansajjad565@gmail.com https://orcid.org/0000-0002-5137-7698
[2]*Clinical Psychologist, University of Child Health Sciences, The Children's Hospital, Lahore, Pakistan.*
Email: rabbiaashraf14@gmail.com https://orcid.org/0000-0002-6131-3495
[3]*PhD Scholar, Department of Psychology, University of Karachi, Pakistan. Email: mbilalarif8@gmail.com https://orcid.org/0000-0003-1472-028X*
[4]*Head of Psychology Department, Fazaia College of Education for Women Lahore in Affiliation with Air University Islamabad, Pakistan. Email: sanakhawar83@gmail.com*
[5]*MS Scholar, Riphah Institute of Clinical & Professional Psychology, Riphah International University Islamabad, Lahore Campus, Pakistan. Email: maryamrana6033@gmail.com*
[6]*MS Scholar, Institute of Professional Psychology, Bahria University Islamabad, Lahore Campus, Pakistan. Email: shanzeyna77@gmail.com*

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Clash of Clans, a free-to-play mobile strategy game developed by Supercell, was launched on iOS in August 2012 and Android in October 2013. In this fantasy-themed game, players take on the role of a village chief, using resources obtained through attacking other villages, rewards, medals, or production to build their own. Players can join clans, participate in Clan Wars, donate troops, and create a Clan Capital (Flanders, 2024; Saputri et al., 2024; Carlson, 2023; Tsang, 2015). Research has established a connection between video game addiction and increased aggression in young individuals (Anderson et al., 2010; Kausar et al., 2024; Bashir et al., 2024), although the specific factors behind this association remain unclear. Aggression is typically defined as behavior intended to harm someone who attempts to avoid it (Coyne et al., 2018; Evans et al., 2024; Siann, 2024; Jumabekovich, 2024). However, no studies have specifically examined the relationship between playing the violent game *Clash of Clans* and aggression, pointing to a gap in the existing literature that requires further exploration.

Emotional regulation refers to responding to environmental events tolerably and appropriately (Kobylińska & Kusev, 2019; Guerriero et al., 2024; Xu et al., 2024). It involves managing anger, anxiety, and agitation by rethinking situations and responding appropriately (Katana et al., 2019). Strong emotional regulation skills help adolescents cope with stress, frustration, and negative emotions, reducing the likelihood of aggressive reactions in difficult situations (Gratz & Roemer, 2004). On the other hand, poor emotional regulation may make adolescents more prone to aggressive impulses when dealing with gaming-related frustrations or conflicts (Did, 2024). There are two main types of emotional regulation: expressive suppression and cognitive reappraisal. Expressive suppression involves controlling overt emotions to act appropriately in specific contexts, while cognitive reappraisal refers to reinterpreting adverse events in a more positive or appropriate light (Young et al., 2019; Supple, 2024; Gökdağ et al., 2024).

Despite a significant amount of literature on the link between violent video games and aggression in young adults, limited research has explored the mediating role of emotional regulation. This study aims to investigate how emotional regulation mediates the relationship between *Clash of Clans* addiction (a violent game that has been seldom studied) and aggression in young adults. By exploring this mediating role, the study offers insights into the underlying processes that may contribute to the aggressive behaviors observed in *Clash of Clans* players.

Hypothesis

H1: Emotional regulation is likely to mediate between Clash of Clans addiction and aggression.

Methodology

Research Design

The Present study is based on a Correlational research design, to find the relation between Clash of Clans Addiction, Emotional Regulation, and Aggression.

Participants

The sample consists of 250 students from schools, colleges and universities were approached via purposive sampling from different private and government institutes in Pakistan. They were playing PUBG for more than one year. Both genders i.e., male and female participants were included equally. Participants in the age range of 18 to 25 are included. Participants who do not play PUBG for the last 6 months were excluded. Participants with half or less than half score on the Gaming addiction scale were excluded.

Assessment Measures

Gaming Addiction Scale for Adolescents (GASA): Developed by Lemmens et al. (2009), this 29-item Likert scale measures *Clash of Clans* addiction, with scores from 1 (never) to 5 (very often). A score above the midpoint indicates addiction, with a Cronbach's alpha of 0.92.

Emotional Regulation: Developed by Gross and John (2003), this 10-item scale measures emotional suppression (items 2, 4, 6, 9) and reappraisal (the other six items). It uses a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree), with a Cronbach's alpha of 0.75. Higher scores indicate greater emotional stability.
Buss-Perry Aggression Questionnaire (BPAQ): Developed by Buss and Perry (1992), this 29-item scale measures aggression, with reversed scoring for items 6 and 19. It has a Cronbach's alpha of 0.91, and higher scores indicate more aggression.

Ethical Considerations
The permission of the respective authors of the scales will be taken. Permission will be taken from the organization to collect the data. On the part of the researcher, no physical and psychological harm will be caused to the participant. The privacy of the participant will not be compromised. Permission will be taken from the participants to complete the questionnaires. No participant will be forced to become part of the research. The participant will be ensured that they can leave the research whenever they want. No fake reporting of data will be ensured.

Procedure
Firstly, permission was obtained from the respective authors to use the assessment measures. The Department of Psychology at Lahore Garrison University, Pakistan, provided an official letter to collect the data. Data collection commenced after receiving permission from both the authors and the respective universities. Participants were then asked to complete an informed consent form and a screening questionnaire. Instructions were provided, and the questionnaires were distributed. Participants were informed of their rights regarding withdrawal, anonymity, and confidentiality. They were given as much time as needed to complete the questionnaires. Afterward, the participants were thanked for their cooperation. Once data collection was completed, the data were entered into the Statistical Package for the Social Sciences (SPSS), and the results were subsequently analyzed.

Results

Table 1: Correlation among study variables(N=250)

Variables	1	2	3	4
1. Clash of Clans Addiction	-	.12*	.01	.23**
2. Cognitive Reappraisal		-	.54**	-.34**
3. Expressive Suppression			-	.22*
4. Aggression				-

*p<.05. **p<.01

The results in table 1 indicate that as *Clash of Clans* addiction increases, aggression also increases. Cognitive reappraisal is negatively correlated with aggression, whereas expressive suppression is positively correlated with aggression. The findings suggest that *Clash of Clans* addiction is associated with heightened aggression, and the way individuals regulate their emotions plays a significant role in this relationship. Specifically, individuals who are better at cognitive reappraisal and more open in expressing their emotions tend to exhibit lower levels of aggression. Conversely, those who rely on expressive suppression may be more prone to aggressive behaviors, particularly in the context of increased game addiction.

Table 2: Model fit indices for mediating role of emotional regulation between Clash of Clans addiction and aggression in college students (N = 200)

Model	CMIN/DF	*P*	*df*	CFI	TLI	RMSEA
Final model	3.166	.07	1	.98	.90	.09
Model fit indices	≤ 2.00	**≥ 0.05**	≤ 3 =acceptable fit ≤ 5 = reasonable fit	≥ 0.95<1	≥ 0.95<1	between 0.03-0.08

Note: CMIN/DF (Chi-square divided by Degree of Freedom), P-value (Likelihood Ratio), CFI (Comparative Fit Index), TLI (Tucker-Lewis Index), RMSEA (Root Mean Square Error of Approximation)

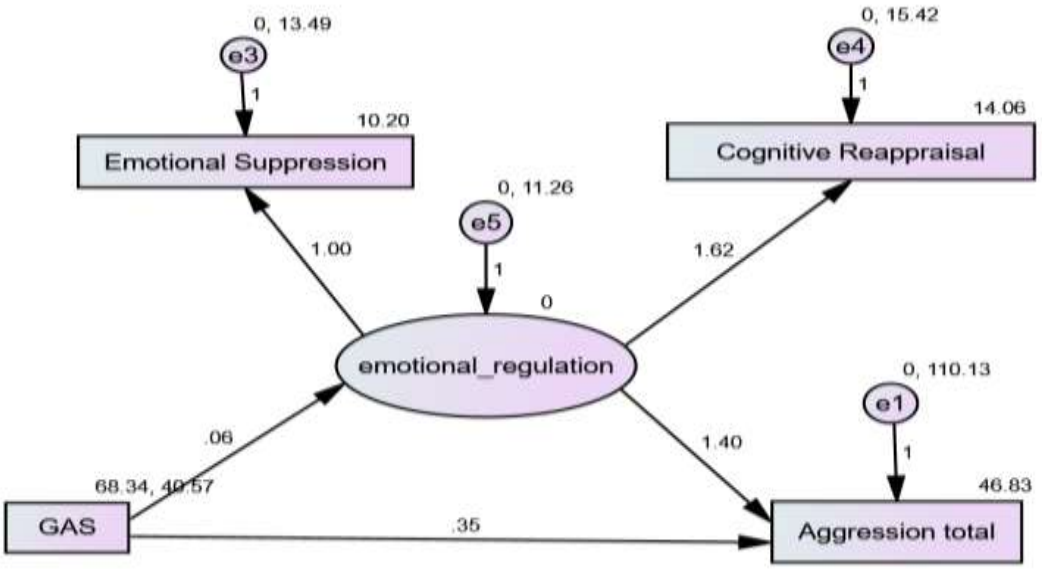
The model fit was assessed in one key step. Since the chi-square test of model fit is sensitive to sample size and the number of parameters, researchers often use various descriptive fit statistics to evaluate how well a model fits the data. According to Hu and Bentler (1999), a χ^2/df ratio between 1 and 3, RMSEA values of 0.08 or lower, and Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) values of 0.90 or higher are considered indicative of a good model fit. A value between 0.80 and 0.90 is sometimes considered permissible. The model fit indices for the present study showed excellent fit: the Root Mean Square Error of Approximation (RMSEA) was 0.09, the CFI was 0.98, and the TLI was 0.90, with chi T square/degrees of freedom ratio (CMIN/DF) of 3.16.

Table 3: Multiple Regression Weights: (Group number 1 - Default model)

Latent to latent	Variables	estimates	P	Results
Emotional regulation	<--- Clash of Clans addiction	.11	.13	Not significant
Aggression	<--- Clash of Clans addiction	.18	.001	Significant
Aggression	<--- emotional regulation	.40	***	Significant
EMOTION	<--- emotional regulation	.67	***	Significant
Cognitive	<--- emotional regulation	.81	***	Significant

Thus it can be assumed that Clash of Clans addiction can influence aggression indirectly, by through emotional regulation. The model also shows that there is a significant partial mediation as the direct effect of Clash of Clans addiction with aggression is significant. Whereas, the indirect path between these variables with emotional regulation remains statistically significant as well. Therefore, Hypothesis H1 is accepted:

Figure 1: Model of direct effects



Discussion

There is substantial literature on the relationship between problematic use of violent video games and aggressive behavior among young adults; however, the mediating role of emotional regulation has been overlooked. This study aims to explore the mediating role of emotional regulation between the predictor of violent video game use, specifically *Clash of Clans* (which has not been extensively studied), and the outcome variable of aggression in young adults.

The correlational analysis reveals a positive and significant relationship between *Clash of Clans* addiction and aggression, while *Clash of Clans* shows a negative and significant association with cognitive reappraisal, and a positive, though not significant, association with expressive suppression among young adults. Our study's results align with previous research, such as Kausar et al. (2024), which found that problematic use of PUBG is linked to aggressive behavior in young individuals. Similarly, Bashir et al. (2024) report a significant positive relationship between *Ludo* game addiction and aggressive behavior in young adults, which is consistent with our findings. Past studies have consistently shown a positive correlation between video game addiction and aggressive behavior in adolescents (Anderson et al., 2010). This link is likely due to various factors, including the desensitization to violence that can occur with excessive gaming, which may reduce empathy and increase aggressive tendencies (Anderson et al., 2010).

Regarding emotional regulation strategies, our study supports previous findings suggesting that cognitive reappraisal is associated with lower aggression levels. Several studies, including Webb et al. (2012), have demonstrated that individuals who use cognitive reappraisal tend to show fewer aggressive tendencies and better emotional well-being. Cognitive reappraisal allows individuals to reinterpret negative situations, reducing emotional arousal and promoting more adaptive responses to stress. Conversely, the positive correlation between expressive suppression and aggression in our study is consistent with prior research, such as John and Gross (2004), which found that suppressing emotions can lead to negative consequences, including increased physiological arousal, emotional distress, and interpersonal problems. Expressive suppression inhibits the outward expression of emotions but does not resolve the underlying emotional experience, leading to emotional dysregulation and a higher likelihood of aggressive responses.

The statistical model of aggression indicates a partial mediating effect of emotional regulation between *Clash of Clans* addiction and aggression. Emotional regulation plays a key role in the relationship between gaming addiction and aggression in adolescents. As individuals become more addicted to games like *Clash of Clans*, they may experience heightened emotional arousal and frustration, especially when encountering in-game challenges or failures. Effective emotional regulation strategies, such as cognitive reappraisal, can help adolescents reframe these negative emotions and reduce aggressive impulses. Adolescents with strong cognitive reappraisal skills are better equipped to manage gaming-related stressors, leading to lower aggression levels. In contrast, those who rely on expressive suppression, which inhibits emotional expression, may experience emotional dysregulation and a higher likelihood of exhibiting aggression.

In other words, emotional regulation mediates the relationship to some extent, but other factors may also contribute to the aggression observed in adolescents with *Clash of Clans* addiction. Our findings are consistent with the study by Hasan et al. (2013), which suggested that violent video games, compared to nonviolent ones, cause aggression due to negative emotional stress. Similarly, Estévez Gutiérrez et al. (2014) explored the mediating role of emotional regulation in the link between pathological gaming and aggression in adolescents. They found that individuals with poor emotional regulation skills were more likely to display aggressive behavior when engaged in excessive gaming, while those with stronger emotional regulation abilities exhibited lower levels of aggression, despite their gaming habits.

Conclusion

The study concluded that expressive suppression positively and significantly, while cognitive reappraisal negatively and significantly, mediates the relationship between the predictor (*Clash of Clans* addiction) and the outcome (aggression) among Pakistani students. Thus, the hallmark of the study is fulfilled, and implications can be provided. Further similar studies are encouraged.

Implications and Future Recommendations

This research is essential for raising awareness among young adults, particularly *Clash of Clans* players, about the importance of limiting their gaming time to prevent violent and aggressive behavior. Additionally, it emphasizes the need for players to reappraise their emotions. Mental health professionals should take proactive steps to promote awareness by organizing workshops, seminars, and webinars. The government also has a role to play in raising awareness and regulating excessive technological use among young adults. Effective policies need to be implemented to address the excessive use of such violent games, which contribute to emotional disturbances and aggressive behavior among students. Furthermore, parents should give proper attention to their children amidst their busy lives, as loneliness has been linked to increased engagement with violent video games. *Clash of Clans* addicts are encouraged to seek psychological support, consult professionals to address their issues, work toward a healthier state of personality, and develop more adaptive routines.

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