



Violent Video Game Exposure and its impact on Aggression and Mental Well Being of Adolescents (14-19 Years)

¹**Ishita Malik**, *Student, Amity Institute of Psychology and Allied Sciences, Amity University, Uttar Pradesh*

ishitamalik1705@gmail.com

²**Dr. Mohammad Imran**, *Assistant Professor, Amity Institute of Psychology and Allied Sciences, Amity University, Uttar Pradesh*

mimran@amity.edu

Abstract: This study examined the relationship between violent video game exposure, aggression, and psychological well-being among adolescents aged 14–19 years. With the increasing prevalence of digital gaming, concerns have emerged regarding its potential psychological impact. The present study aimed to investigate both behavioural (aggression) and emotional (well-being) outcomes within a single empirical framework. A cross-sectional quantitative design was employed with a sample of 243 adolescents. Violent video game exposure was assessed using the Video Game Questionnaire, aggression using the Buss–Perry Aggression Questionnaire, and psychological well-being using the WHO-5 Well-Being Index. Data were analysed using Pearson’s correlation, independent samples t-tests, and simple linear regression. Results indicated that violent video game exposure was significantly positively associated with aggression and significantly negatively associated with psychological well-being. Aggression was also negatively associated with psychological well-being. Adolescents with higher exposure reported significantly higher aggression and lower well-being compared to those with lower exposure. Regression analyses showed that violent video game exposure significantly predicted both aggression and psychological well-being, with a stronger effect observed for aggression.

Overall, the findings suggest that violent video game exposure is associated with measurable psychological outcomes in adolescence, although the effects are modest.

Keywords: *Violent Video Game Exposure, Aggression, Psychological Well-Being, Adolescents, Media Effects*

1. Introduction

Over the past two decades, digital gaming has evolved from a leisure activity into one of the most dominant forms of global entertainment. Advances in technology, widespread internet accessibility, and the proliferation of smartphones and gaming consoles have significantly increased the accessibility of video games across diverse age groups and socio-cultural contexts. For adolescents in particular, gaming functions not only as a recreational activity but also as a social platform, competitive environment, and space for identity exploration and peer interaction. As gaming becomes increasingly embedded in adolescent daily life, concerns regarding its psychological effects have also intensified, particularly in relation to violent video game content (Anderson & Bushman, 2018).

Violent video games constitute a substantial portion of commercially successful games and often involve combat-oriented narratives, weapon use, competitive elimination, and reward systems that reinforce aggressive achievement. Unlike passive media such as films or television, video games are interactive and require players to actively participate in decision-making processes that influence outcomes and rewards. This interactive nature has led to ongoing academic and public debate regarding the potential psychological effects of repeated exposure to violent gaming environments (Gentile et al., 2017).

Research examining the relationship between violent video game exposure and aggression has produced mixed and often contested findings. Some longitudinal and experimental studies report small but statistically significant associations between violent gameplay and aggressive thoughts or behaviors (Anderson et al., 2008). Cross-lagged panel studies suggest that the relationship may be reciprocal, indicating that aggressive individuals may also be more likely to select violent games (Dou & Zhang, 2025). Other studies have identified cognitive mechanisms such as moral disengagement and normative beliefs about aggression as mediating factors in the relationship between violent gameplay and aggressive outcomes (Teng et al., 2019; Eneizat et al., 2024).

However, several methodologically rigorous studies report minimal or no significant effects. Longitudinal intervention studies have found no significant increases in aggression, impulsivity, or mental health problems following extended violent gameplay (Kühn et al., 2019). Meta-analytic reviews have also reported very small overall effect sizes between violent video game exposure and aggression, particularly when controlling for methodological rigor and publication bias (Drummond et al., 2020). Similarly, longitudinal studies conducted among adolescents in Singapore found no significant predictive relationship between violent gameplay and later aggression (Ferguson & Wang, 2019). These findings suggest that violent video game exposure may function as one contributory factor among many social, cognitive, and developmental influences rather than as a direct causal determinant of aggressive behavior.

The relationship between violent video game exposure and aggression is commonly explained through several theoretical frameworks. The General Aggression Model proposes that exposure to violent media acts as a situational input that interacts with personal characteristics to influence cognition, affect, and physiological arousal, potentially increasing aggressive behavior over time through the development of aggressive scripts and desensitization (Anderson & Bushman, 2018). Social Cognitive Theory similarly suggests that individuals learn behaviors through observation, imitation, and reinforcement, and violent video games may reinforce aggressive behavior when such actions are rewarded within gameplay (Bandura, 2001). Desensitization theory proposes that repeated exposure to violent stimuli may reduce emotional responsiveness to violence, although empirical support for long-term desensitization effects remains mixed (Lengersdorff et al., 2023).

While much of the literature has focused on aggression as an outcome, increasing attention has been directed toward psychological well-being and mental health outcomes associated with gaming. Research indicates that negative mental health outcomes such as depression, anxiety, stress, and social withdrawal are more strongly associated with problematic or excessive gaming patterns rather than violent content alone (Krossbakken et al., 2018). Some studies report higher psychological distress among violent video game players (Koza & Ganguly, 2025), whereas controlled intervention studies have found no significant long-term mental health changes following sustained violent gameplay (Kühn et al., 2019). These findings suggest that gaming patterns, individual vulnerabilities, and environmental factors may play a more important role in psychological well-being than violent content alone.

Research has also highlighted the socialization versus selection hypothesis. The socialization perspective suggests that violent game exposure increases aggressive tendencies over time, whereas the selection hypothesis proposes that individuals with higher baseline aggression are more likely to choose violent games. Longitudinal research often finds stronger support for the selection hypothesis, indicating that personality traits and pre-existing behavioral tendencies may influence game preferences rather than exposure directly causing aggression (Breuer et al., 2015; Coyne & Stockdale, 2021).

Within the Indian context, empirical research on violent video games remains comparatively limited despite rapidly increasing digital access and gaming prevalence among adolescents. Existing studies in India have reported associations between violent gameplay and aggression, psychological distress, and problematic gaming behaviors; however, many studies rely on cross-sectional designs and lack standardized measurement tools or integrative analytical models (Das, 2021; Surya et al., 2024; Koza & Ganguly, 2025). Consequently, there remains a need for contextually relevant and methodologically rigorous research examining violent video game exposure within Indian adolescent populations.

A significant limitation of existing research is that many studies examine aggression and psychological well-being separately, rather than examining both externalizing and internalizing outcomes within a single analytical framework. Understanding violent video game exposure requires an integrated perspective that considers both behavioral outcomes such as aggression and emotional outcomes such as psychological well-being. Examining these variables together provides a more comprehensive understanding of adolescent psychological functioning in relation to digital gaming environments.

Therefore, the present study aims to examine the relationship between violent video game exposure, aggression, and psychological well-being among adolescents using standardized psychological measures. By investigating both externalizing outcomes (aggression) and internalizing outcomes (psychological well-being) within a unified analytical framework in the Indian context, the study seeks to contribute to the ongoing debate regarding the psychological effects of violent video game exposure and to provide contextually relevant empirical evidence in a field characterized by theoretical and methodological variability.

Specifically, the study examines the associations among violent video game exposure, aggression, and psychological well-being, explores group differences between adolescents with

high and low exposure, and assesses whether violent video game exposure predicts these psychological outcomes.

1.2 Hypothesis

H1: Violent video game exposure will be significantly positively associated with aggression among adolescents.

H2: Violent video game exposure will be significantly negatively associated with psychological well-being among adolescents.

H3: Aggression will be significantly negatively associated with psychological well-being among adolescents.

H4: Adolescents with high and low violent video game exposure will differ significantly in levels of aggression and psychological well-being.

H5: Violent video game exposure will significantly predict aggression and psychological well-being among adolescents.

2. Method

2.1 Participants

The study included 243 adolescents aged between 14 and 19 years who were recruited using convenience sampling through online platforms, including social media and student networks. Participants who were able to understand English and provided informed consent were included in the study. Incomplete or inconsistent responses were excluded prior to analysis. Participation was voluntary and anonymous.

2.2 Research Design and Variables

The study employed a quantitative cross-sectional correlational research design to examine the relationships among violent video game exposure, aggression, and psychological well-being. Violent video game exposure was treated as the independent variable, while aggression and psychological well-being were treated as dependent variables.

2.3 Measures

Violent Video Game Exposure: Violent video game exposure was assessed using the Video Game Questionnaire (VGQ; Anderson & Dill, 2000), in which participants reported the video games they played most frequently and rated frequency of play and level of violence. A

composite exposure score was calculated, with higher scores indicating greater exposure to violent video games.

Aggression: Aggression was measured using the Buss–Perry Aggression Questionnaire (BPAQ; Buss & Perry, 1992), a 29-item scale measuring physical aggression, verbal aggression, anger, and hostility. Higher scores indicated higher aggression. In the present study, the scale demonstrated excellent internal consistency (Cronbach's $\alpha = .908$).

Psychological Well-Being: Psychological well-being was measured using the WHO-5 Well-Being Index (World Health Organization, 1998), a five-item scale assessing positive emotional well-being. Higher scores indicated greater psychological well-being. The scale demonstrated good internal consistency in the present study (Cronbach's $\alpha = .801$).

2.4 Procedure

Data were collected using an online questionnaire administered through Google Forms. After providing informed consent, participants completed demographic information followed by the Video Game Questionnaire, Buss–Perry Aggression Questionnaire, and WHO-5 Well-Being Index. The questionnaire took approximately 10–15 minutes to complete. Participation was voluntary and anonymous, and no identifying information was collected.

2.5 Statistical Analysis

Data were analyzed using Jamovi statistical software. Descriptive statistics were computed, followed by Pearson's product–moment correlation, independent samples t-test, and simple linear regression analysis to examine relationships, group differences, and predictive effects among the study variables. Statistical significance was set at $p < .05$.

3. Results

Prior to analysis, the data were screened for missing values, outliers, and assumptions of parametric tests. No missing data were identified, and all 243 cases were retained for analysis. Visual inspection of distributions and residual plots indicated approximate normality and no extreme outliers. Assumptions for parametric analyses were considered satisfied.

3.1 Reliability Analysis

Internal consistency reliability was assessed using Cronbach's alpha. The Buss–Perry Aggression Questionnaire showed excellent reliability ($\alpha = .908$), and the WHO-5 Well-Being Index showed good reliability ($\alpha = .801$). The Video Game Questionnaire was used as a composite

exposure index; therefore, internal consistency was not calculated. Overall, the instruments demonstrated satisfactory reliability.

3.2 Demographic Characteristics

The sample consisted of 243 adolescents aged between 14 and 19 years ($M = 17.5$, $SD = 1.34$). The sample included 126 males (51.9%) and 117 females (48.1%), indicating a relatively balanced gender distribution.

3.3 Descriptive Statistics

Descriptive statistics for violent video game exposure, aggression, and psychological well-being are presented in Table 1. The variables showed adequate variability. Although some Shapiro–Wilk tests were significant, skewness and kurtosis values were within acceptable limits, supporting the use of parametric analyses.

Table 1: Descriptive Statistics and Tests of Normality for Study Variables ($N = 243$)

Variable	M	Median	SD	Min	Max	Skewness	SE (Skew)	Kurtosis	SE (Kurt)	W	p
VVGE Score	97.90	112	59.19	0	196	-0.36	0.16	-1.20	0.31	0.915	< .001
Aggression Score	90.30	90	20.01	38	145	0.09	0.16	-0.16	0.31	0.995	.632
Well-Being Score	14.10	15	5.21	0	25	-0.17	0.16	-0.43	0.31	0.988	.033

Note. VVGE = Violent Video Game Exposure. W = Shapiro–Wilk statistic.

3.4 Correlation Analysis

Pearson's product–moment correlation analyses were conducted to examine the relationships among violent video game exposure, aggression, and psychological well-being. The correlation matrix is presented in Table 2.

Table 2: Pearson Correlation Matrix for Study Variables ($N = 243$)

Variable	1	2	3
1. VVGE Score	—		
2. Aggression Score	.290***	—	
3. Well-Being Score	-.138*	-.419***	—

Note. Values represent Pearson's r coefficients.

$p < .05$. *** $p < .001$; VVGE = Violent Video Game Exposure.

Pearson correlation analysis showed that violent video game exposure was significantly positively correlated with aggression and significantly negatively correlated with psychological well-being. Aggression was also significantly negatively correlated with psychological well-being.

The association between violent video game exposure and aggression was small to moderate, whereas the relationship between aggression and psychological well-being was moderate.

3.4 Group Differences Based on Violent Video Game Exposure

Participants were divided into high exposure ($n = 119$) and low exposure ($n = 124$) groups based on violent video game exposure scores. Independent samples t-tests were conducted to compare aggression and psychological well-being between the two groups. Group descriptive statistics are presented in Table 3, and t-test results will be presented in the next table (Table 4 later).

Table 3: *Group Descriptive Statistics by Level of Violent Video Game Exposure*

Variable	Group	n	M	SD
Aggression	Low Exposure	124	85.00	17.02
	High Exposure	119	95.90	21.41
Well-Being	Low Exposure	124	14.80	5.14
	High Exposure	119	13.40	5.20

Independent Samples t-Test Results

Independent samples t-tests were conducted to compare aggression and psychological well-being between adolescents with high and low violent video game exposure. The results are presented in Table 4.

Table 4: *Independent Samples t-Test Comparing Low and High Exposure Groups*

Variable	Test	t	df	p	Mean Difference	95% CI	Cohen's d
Aggression	Welch's t	-4.36	225	< .001	-10.84	[-15.74, -5.94]	0.56
Well-Being	Student's t	2.08	241	.039	1.38	[0.07, 2.69]	0.27

Note. Welch's t was used for aggression due to violation of homogeneity of variance. Positive mean difference for well-being reflects higher scores in the Low Exposure group.

Independent samples t-tests indicated that adolescents in the high exposure group reported significantly higher aggression than those in the low exposure group, with a moderate effect size. Adolescents in the low exposure group reported significantly higher psychological well-being than those in the high exposure group, although the effect size was small.

3.5 Regression Analysis

Linear Regression Analysis

Two simple linear regression analyses were conducted to examine whether violent video game exposure predicted aggression and psychological well-being. The results are presented in Tables 5 and 6.

Table 5: Simple Linear Regression Predicting Aggression from Violent Video Game Exposure ($N = 243$)

Model Summary

R	R ²	Adjusted R ²	RMSE	F	df	p
.290	.084	.080	19.10	22.10	1, 241	< .001

Regression Coefficients

Predictor	B	SE B	β	t	p	95% CI for B
Intercept	80.76	2.38	—	33.90	< .001	[76.07, 85.45]
VVGE	0.098	0.021	.290	4.70	< .001	[0.057, 0.139]

The regression model predicting aggression was statistically significant, explaining 8.4% of the variance in aggression scores. Violent video game exposure emerged as a significant positive predictor of aggression, indicating that higher exposure was associated with higher aggression levels.

Table 6: Simple Linear Regression Predicting Psychological Well-Being from Violent Video Game Exposure ($N = 243$)

Model Summary

R	R ²	Adjusted R ²	RMSE	F	df	p
.138	.019	.015	5.15	4.70	1, 241	.031

Regression Coefficients

Predictor	B	SE B	β	t	p	95% CI for B
Intercept	15.28	0.64	—	23.82	< .001	[14.02, 16.54]
VVGE	-0.012	0.006	-.138	-2.17	.031	[-0.023, -0.001]

The regression model predicting psychological well-being was statistically significant but explained a small proportion of variance (1.9%). Violent video game exposure was a significant

negative predictor of psychological well-being, indicating that higher exposure was associated with lower well-being scores.

3.6 Summary of Findings

Overall, the results indicated that violent video game exposure was positively associated with aggression and negatively associated with psychological well-being. Aggression was also negatively associated with psychological well-being. Group comparisons showed that adolescents with higher violent video game exposure reported higher aggression and lower psychological well-being. Regression analyses indicated that violent video game exposure significantly predicted both aggression and psychological well-being, with a stronger predictive effect for aggression.

4. Discussion

The current study examined the connections between teenage exposure to violent video games, aggressiveness, and psychological health in an Indian setting. The results showed that playing vicious game titles more often was linked to higher levels of hostility and marginally worse psychological health. Furthermore, exposure to violent video games was not as strongly associated with psychological wellness as impulsiveness was. Adolescents with higher exposure reported substantially higher levels of aggressiveness and poorer levels of well-being compared to those with lower exposure, according to group comparisons. Although the amount of variation explained was very small, especially for mental wellness, regression analysis indicated that exposure to violent video games strongly predicted both aggressiveness and psychological well-being.

The positive association between violent video game exposure and aggression can be interpreted using cognitive-behavioral perspectives such as the General Aggression Model, which proposes that repeated exposure to violent media may increase aggressive thoughts, emotional responses, and physiological arousal, which over time may contribute to aggressive behavior patterns (Anderson et al., 2010; Allen et al., 2018). Repeated exposure may also contribute to desensitization to violence and the development of aggressive scripts. However, the relatively small variance explained in the present study suggests that violent video game exposure should be considered one contributing factor among many rather than a primary cause of aggression, as aggressive behavior is influenced by multiple social, environmental, and individual factors (Ferguson, 2015).

The negative relationship between violent video game exposure and psychological well-being was statistically significant but small in magnitude, suggesting that violent video game exposure may have a limited influence on emotional functioning. One possible explanation is that excessive gaming may reduce time spent in activities such as social interaction, academic engagement, and physical activity, which are important for psychological well-being (Gentile et al., 2011). Another possibility is that repeated exposure to violent content may reduce emotional sensitivity over time (Carnagey, Anderson, & Bushman, 2007). However, the small effect size indicates that violent video game exposure alone is not a strong predictor of psychological well-being.

An important finding of the study was that aggression showed a stronger relationship with psychological well-being than violent video game exposure. This suggests that aggression may be more directly related to emotional functioning. Adolescents with higher aggression may experience more interpersonal conflict, peer difficulties, and emotional regulation problems, which may negatively affect their psychological well-being. This finding highlights the close relationship between behavioral adjustment and emotional well-being during adolescence.

The findings of the present study are generally consistent with previous research that has reported a relationship between violent video game exposure and aggression, although the magnitude of the relationship is typically small to moderate (Anderson et al., 2010; Gentile et al., 2014). At the same time, the results also support research suggesting that the effects of violent video games should not be overstated, as aggression is influenced by multiple social and environmental factors (Ferguson & Kilburn, 2010). By examining both aggression and psychological well-being together, the present study extends previous research that has often focused primarily on aggression while giving less attention to psychological well-being.

The findings also have practical implications. The results do not suggest that violent video games should be completely restricted; however, they highlight the importance of balanced media use, parental monitoring, and encouraging adolescents to engage in a variety of activities such as physical activity, social interaction, and academic engagement. Programs focusing on emotional regulation and conflict resolution may also help reduce aggression and improve psychological well-being among adolescents.

Despite its contributions, the study has several limitations. The cross-sectional design does not allow conclusions about causality, and the use of self-report measures may introduce response

bias. In addition, several variables that may influence aggression and psychological well-being were not examined. Future research should use longitudinal designs, include multiple sources of data, and examine mediating and moderating variables such as emotional regulation, personality traits, and family environment.

In conclusion, the present study found that violent video game exposure was associated with higher aggression and lower psychological well-being among adolescents, although the effect sizes were small. Overall, violent video game exposure appears to function as a contributing risk factor rather than a primary cause of aggression or reduced psychological well-being, and adolescent psychological outcomes should be understood within a broader psychosocial context.

5. Conclusion

The present study examined the relationships between violent video game exposure, aggression, and psychological well-being among adolescents. The findings indicated that violent video game exposure was positively associated with aggression and negatively associated with psychological well-being. Adolescents with higher exposure to violent video games reported significantly higher aggression and lower psychological well-being compared to those with lower exposure. Regression analyses further indicated that violent video game exposure significantly predicted both aggression and psychological well-being, although the magnitude of prediction differed across outcomes.

The findings suggest that violent video game exposure functions as a contributing factor rather than a primary cause of aggression or reduced psychological well-being. While exposure explained a modest proportion of variance in aggression and a relatively small proportion of variance in psychological well-being, the relationships were statistically significant and consistent across correlational, group comparison, and regression analyses. These results support the view that media exposure should be considered within a broader psychosocial framework in which aggression and well-being are influenced by multiple interacting environmental, social, and individual factors.

The study also highlights that aggression demonstrated a stronger relationship with psychological well-being than violent video game exposure, suggesting that behavioral factors may be more directly related to emotional functioning in adolescence. This finding emphasizes the

importance of addressing emotional regulation, interpersonal functioning, and behavioral adjustment when considering adolescent psychological well-being.

Despite its contributions, the study has several limitations. The cross-sectional design does not allow causal conclusions, and the use of self-report measures may introduce response bias. Additionally, other variables that may influence aggression and psychological well-being were not examined. Future research should use longitudinal designs, include multiple sources of data, and examine mediating and moderating variables such as emotional regulation, personality traits, and family environment.

Overall, the study contributes to the growing body of research on violent video game exposure and adolescent psychological functioning by examining both behavioral and emotional outcomes within an Indian adolescent sample. The findings support a balanced interpretation in which violent video game exposure is neither ignored nor overstated, but understood as one factor among many that may influence adolescent aggression and psychological well-being.

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