

RELATIONSHIP BETWEEN VIOLENT VIDEO GAMES AND ADOLESCENT AGGRESSION

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Abstract

Background: The psychology of aggression focuses on an individual's reactivity and behavior to inconveniences of life. Aggression is type of behavior that means to intentionally harm to other individual. **Objective:** This research was focused to examine the effects of violent video games on the adolescent's aggression in Pakistani video game playing teens, how it amplifies already existing aggression in these children and to obtaining data from video game playing adolescents. **Methodology:** This study consists of 150 participants that were playing violent video games with age from 15 to 19 years old adults. For the measuring of aggression, we use the Buss-Perry Aggression Questionnaire (BPAQ), and for scoring a Likert scale consisting of seven items (extremely uncharacteristic of me to extremely characteristic of me). **Results:** Action games were the most popular among the 150 participants (50.7%), followed by sports (22.7%), puzzles (11.3%), and adventure (11.3%), and food games (4%). Action gamers had the most daily play time (3.82 ± 1.53 hours) and physical aggressiveness (35.1 ± 10.8), while sports gamers had a lower aggression level (29.2 ± 8.6). Significant correlations were found between play time and aggression: sports with physical aggression ($r = .483$, $p = .004$), anger ($r = .502$, $p = .002$), hostility ($r = .567$, $p < .001$); action with physical ($r = .317$, $p = .006$), verbal ($r = .344$, $p = .002$), hostility ($r = .389$, $p = .001$); and puzzles with physical aggression ($r = .703$, $p = .002$), anger ($r = .761$, $p = .001$), hostility ($r = .562$, $p = .019$). No significant connections were found between adventure and food games. **Conclusion:** This study reveals a substantial positive link between exposure to violent video games and aggression in Pakistani teenagers, indicating that greater playtime correlates with heightened physical, verbal, and hostile behaviors. The findings indicate that

violent video games may foster aggressive tendencies, but the restricted sample size limits generalizability. It is advisable to conduct extensive, multicenter studies with larger and more diverse populations to corroborate these findings and furnish more robust data for public health and parental guidance programs.

INTRODUCTION

Aggression among adolescents is a persistent concern in developmental psychology and public health due to its adverse consequences for interpersonal relationships, school environments, and broader social well-being. With the increasing accessibility of digital entertainment, violent video games have attracted particular attention as potential contributors to aggressive thoughts, emotions, and behaviors (1). The relationship between violent video game exposure and aggression, however, remains contested, with some meta-analyses reporting small to moderate effects and others emphasizing contextual moderators such as cultural norms, parental involvement, and individual susceptibility (2, 3).

In Western and East Asian contexts, empirical evidence indicates that repeated engagement with violent games can influence aggressive cognitions, desensitization, and normative beliefs, which, in turn, increase the likelihood of aggressive behavior (4). By contrast, little systematic research has examined this phenomenon in South Asian societies, where social structures, familial supervision, and cultural perceptions of media differ considerably. In Pakistan, the growing popularity of video games among adolescents underscores the need to investigate their psychosocial impact. A recent study in Rawalpindi reported that adolescents who played violent games for extended periods demonstrated higher levels of aggression and reduced empathy (5). Similarly, research with Pakistani children revealed positive correlations between violent game exposure and aggression, particularly for action and role-playing genres (6). These findings suggest a link but are limited by sample size, geographical scope, and age groups studied (7).

The General Aggression Model provides a useful framework for understanding these processes, proposing that repeated violent media exposure influences aggression through cognitive, affective, and arousal pathways, and by shaping normative beliefs about the acceptability of aggression (8). Normative beliefs are particularly salient, as they can mediate or

moderate the extent to which exposure translates into aggressive outcomes (9). Additionally, parental mediation strategies such as restrictive supervision, active discussion, and co-playing may buffer the negative impact of violent media (10). Yet, evidence on parental mediation remains sparse in South Asian contexts, where parenting styles and cultural practices differ from those in Western societies (11).

The present study addresses these gaps by examining the relationship between violent video game exposure and aggression among adolescents in Peshawar, Pakistan. Specifically, it investigates whether the type and duration of game play are associated with aggression across multiple domains (physical aggression, verbal aggression, anger, hostility) (9). It further explores the mediating role of normative beliefs about aggression and the moderating influence of parental mediation. The study hypothesizes that adolescents with higher exposure to violent games will exhibit greater aggression that these associations will be stronger for violent game genres compared to nonviolent ones, and that parental mediation will attenuate these effects (12).

By situating this inquiry within the Pakistani sociocultural context, the study contributes to a more nuanced understanding of the interplay between digital media use, parental influence, and adolescent aggression, thereby informing culturally sensitive interventions and policy responses.

METHODOLOGY

This study employed a cross-sectional design to examine the relationship between violent video game exposure and aggression among adolescents in Peshawar. A non-probability convenience sampling strategy was adopted to recruit participants who were accessible and met the eligibility criteria. The study population consisted of adolescents aged 15–19 years (approximately class ninth students), as this developmental stage is considered particularly susceptible to behavioral influences. A total of 150 participants were included. Eligibility criteria required

participants to have engaged in violent video games (e.g., shooting, warfare, or battle royale) for a minimum of six months. Adolescents with a history of psychiatric illness, behavioral disorders, or who declined consent were excluded.

Aggression was measured using the Buss-Perry Aggression Questionnaire (BPAQ), a validated 29-item instrument comprising four subscales: physical aggression, verbal aggression, anger, and hostility. Responses were rated on a five-point Likert scale ranging from “extremely uncharacteristic of me” to “extremely characteristic of me.” Scores were normalized between 0 and 1, with higher scores indicating greater aggression. The BPAQ demonstrates strong internal consistency (Cronbach’s $\alpha > 0.80$) and established construct validity, supporting its use in adolescent populations.

Prior to data collection, permission was obtained from school administrations, and teachers were briefed on study procedures. Participants were informed of the study’s objectives and assured of voluntary participation, confidentiality, and the right to withdraw at any stage. Questionnaires were administered in classroom settings under supervision, with an average completion time of 20 minutes.

Completed forms were collected by school authorities and returned to the researcher for analysis.

Data analysis was conducted using SPSS version 22. Descriptive statistics (means, standard deviations, and frequency distributions) were computed to summarize demographic characteristics and aggression scores. Pearson correlation analysis was applied to assess the relationship between violent video game exposure and aggression across the four BPAQ subscales. Statistical significance was set at $p < 0.05$.

Ethical approval for the study was granted by the institutional review board. Informed consent was obtained from school authorities, and assent was secured from all participants, ensuring adherence to ethical standards for research involving adolescents.

RESULTS:

A total of 150 participants were analyzed to explore the relationship between video game preferences, gaming duration, and aggression domains (physical, verbal, anger, hostility). Action games were the most preferred (50.7%), followed by sports (22.7%), puzzles (11.3%), and adventure (11.3%), and cooking games (4%).

Table 3.1: Descriptive Statistics by Game Type

Game Type	N	Avg. Hours/Day (M $\pm$ SD)	Physical Aggression (M $\pm$ SD)	Verbal Aggression (M $\pm$ SD)	Anger (M $\pm$ SD)	Hostility (M $\pm$ SD)
Sports	34	2.91 $\pm$ 1.44	29.15 $\pm$ 8.57	21.00 $\pm$ 5.38	25.53 $\pm$ 8.18	30.97 $\pm$ 9.44
Adventure	17	2.94 $\pm$ 1.29	34.00 $\pm$ 10.06	23.82 $\pm$ 16.74	29.00 $\pm$ 7.93	36.94 $\pm$ 7.03
Action	76	3.82 $\pm$ 1.53	35.12 $\pm$ 10.80	21.07 $\pm$ 5.78	28.08 $\pm$ 7.45	34.88 $\pm$ 8.15
Cooking	6	3.67 $\pm$ 1.21	33.20 $\pm$ 4.08	21.83 $\pm$ 4.31	29.83 $\pm$ 1.83	38.67 $\pm$ 5.89
Puzzles	17	2.76 $\pm$ 1.30	33.65 $\pm$ 8.51	21.00 $\pm$ 4.20	28.44 $\pm$ 7.37	30.88 $\pm$ 9.28

Action gamers reported the longest average daily playtime (3.82 h) and the highest physical aggression scores (35.12). Sports gamers showed lower aggression scores despite moderate playtime.

Adventure and cooking game players demonstrated comparatively higher hostility values.

Table 3.2: Correlations between Play Time and Aggression Dimensions

Game Type	Physical Aggression	Verbal Aggression	Anger	Hostility
Sports	$r = 0.483^{**}$, $p = 0.004$	ns	$r = 0.502^{**}$, $p = 0.002$	$r = 0.567^{**}$, $p < 0.001$
Adventure	Ns	ns	Ns	Ns
Action	$r = 0.317^{**}$, $p = 0.006$	$r = 0.344^{**}$, $p = 0.002$	Ns	$r = 0.389^{**}$, $p = 0.001$
Food	Ns	ns	Ns	Ns
Puzzles	$r = 0.703^{**}$, $p = 0.002$	$r = 0.515^{*}$, $p = 0.034$	$r = 0.761^{**}$, $p = 0.001$	$r = 0.562^{*}$, $p = 0.019$

Significant positive correlations were observed between playtime and aggression outcomes for sports, action, and puzzle games. Puzzle games showed the

strongest associations across physical aggression ($r = .703$), anger ($r = .761$), and hostility ($r = .562$). No significant associations were found for adventure and cooking games.

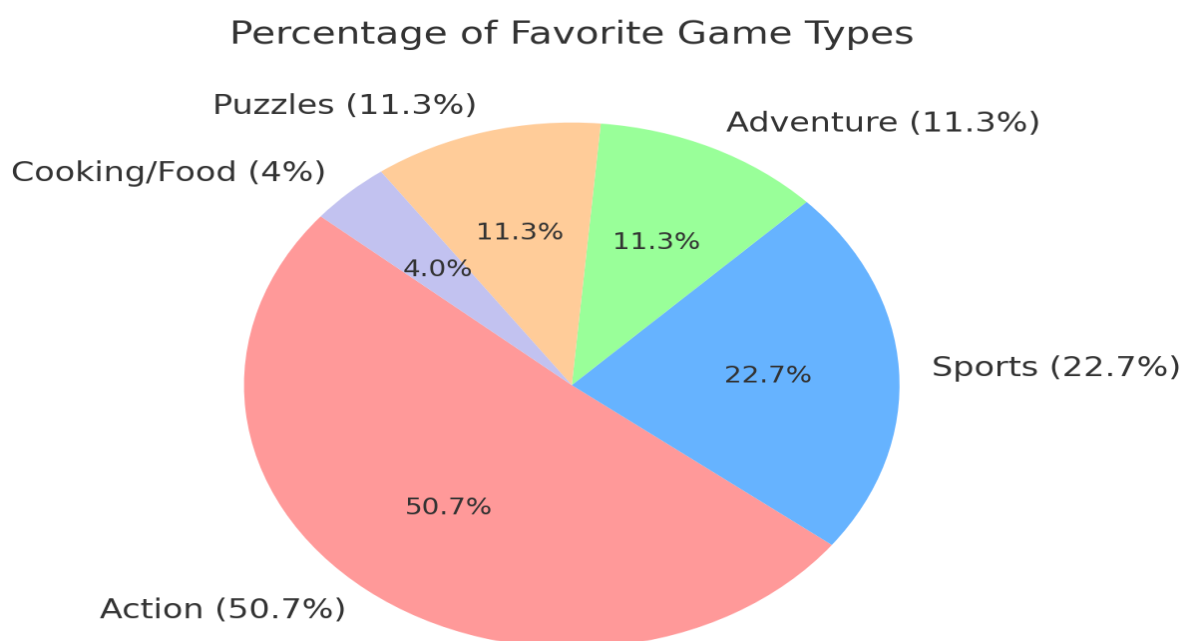


Figure 3.1: Distribution of Favorite Game Types

The pie chart representation of percentages: Action 50.7%, Sports 22.7%, Adventure 11.3%, Puzzles 11.3%, Food 4%)

The figure demonstrates that action games dominated participant preferences, followed by sports. Adventure

and puzzles had equal representation, while cooking games were least favored.

Overall, higher playtime was associated with increased aggression, particularly hostility and anger.

Action games exhibited the strongest link with physical and verbal aggression, while puzzle games—surprisingly—showed strong correlations across all aggression dimensions. Sports games also showed consistent associations, whereas adventure and cooking games had no significant effects.

DISCUSSION

This study aimed to examine the relationship between exposure to violent video games (both in terms of duration and game genre) and levels of aggression (physical aggression, verbal aggression, anger, hostility) among Pakistani adolescents, while also considering the role of parental mediation. The results generally support the notion that greater playtime of violent or intense games is associated with higher aggression scores, particularly in the domains of hostility and anger, with action games showing especially strong links. However, some surprising findings (e.g. the strong correlations for puzzle games, and the lack of significant relationships for adventure and cooking genres) underscore the complexity of this phenomenon .(13)

Violent Video Games and Aggression have consistent but Complex Associations. Our finding that more time spent playing certain game types is correlated with greater aggression is broadly consistent with meta-analytic and theoretical work emphasizing that exposure to violent video games can contribute to elevated aggression via processes such as script rehearsal, priming of aggressive cognitions, desensitization, and normative belief activation (2, 14). Similarly, longitudinal and cross-lagged studies have demonstrated that habitual violent gaming can predict increases in aggressive thoughts and behaviors over time.(15)

However, the reported effect sizes in meta-analyses tend to be small to moderate, suggesting that video game exposure is only one among many contributing factors, rather than a dominant causal force (16).

Our results showing that action games are associated most strongly with physical and verbal aggression align with theoretical expectations (i.e. more direct, violent content should have stronger priming or enabling effects). The surprising strong correlations between puzzle-game play and aggression (especially hostility and anger) warrant careful reflection. This may indicate that it is not only “violent” content but also

problematic usage patterns (e.g. addictive gaming, frustration when puzzles are difficult) or confounding third variables (e.g. personality predispositions) that drive the link. In this regard, your data resonate with recent work showing that “gaming addiction” per se is positively associated with aggression, and that parental availability (or supervision) can buffer this relationship in adolescent samples (17).

That adventure and cooking games did not show significant relationships with aggression suggests that not all game genres carry equal risk—those with less violent or emotionally activating content may not prime aggressive scripts or elicit arousal in the same way. This underscores that content matters. It is also consistent with meta-analytic caution that not all studies find effects depending on methods, sample, and context (18).

Our sample’s predominance of action gamers (50.7%) further suggests that such games might be especially appealing or accessible in this cultural context, which also may intensify the cumulative effect on aggression in the population studied.

Even though your analysis did not (in the presented excerpt) empirically test moderation or mediation by parental mediation, the theoretical inclusion of parental mediation is well justified. In the domain of digital media, recent studies have found that active mediation (discussions, explanations), restrictive mediation, and monitoring or supervision can attenuate the negative impacts of problematic media use on outcomes such as emotional coping or maladaptive online behavior (10).

In particular, Commodari et al. (2024) found that adolescents who report more parental mediation (especially active and supervisory strategies) are less prone to use videogames to avoid negative emotions, which may be a pathway into aggression (10).

Furthermore, in the Pakistani context, a recent empirical study in Islamabad documented that parents increasingly rely on filtering or restriction but also hold that children should be educated to critically evaluate media content suggesting a hybrid of restrictive and active mediation (19).

These points were to the practical relevance of including, parental mediation as a moderator or protective factor in your model. In more general media-use research, Lou et al. (2024) showed that different mediation strategies (active, restrictive,

supervision) are differentially associated with adolescents' digital literacy and outcomes; in family contexts with lower socioeconomic resources, effective mediation may be harder to maintain (20).

Thus, in your Pakistani adolescent sample, diverse parental capacities, digital literacy, or economic constraints may moderate the efficacy of mediation strategies.

Given your finding that increased gaming time is related to aggression, a plausible model for future testing is a moderated mediation in which parental mediation moderates the path from gaming exposure (or addiction) to aggression (or mediates via normative beliefs, cognitive desensitization, etc.). Empirical studies in other cultural contexts have begun to examine such models; incorporating them would strengthen the causal inference.

Our theoretical inclusion of normative beliefs about aggression is well grounded. Recent theoretical refinements of the General Aggression Model (21) suggest that repeated exposure to virtual violence can shape aggressive scripts, hostile attribution bias, and normative beliefs that aggression is acceptable or justifiable in certain circumstances (2).

In this way, normative beliefs serve as a cognitive mediator between exposure and aggressive behavior. You're finding that higher playtime relates more strongly to hostility and anger may reflect that prolonged gaming reinforces hostile internal states and may cultivate normative frameworks that minimize the cost or stigma of aggression. In your context, investigating whether normative beliefs mediate the link from exposure to behavioral aggression would be an important next step.

It is important to acknowledge that not all research supports a straightforward positive link between violent video games and aggression. For instance, some longitudinal or field studies have found null or weak associations, particularly when controlling for personality traits, family factors, or prior aggression (3).

Moreover, methodological critiques emphasize publication bias, small effect sizes, and the challenge of isolating causal directions (e.g. selection effects whereby more aggressive youths are drawn to violent games) (18).

Our data hint at the complexity: the lack of significance for some genres (adventure, cooking)

underscores that game content, motivational context, and individual differences moderate the effect. It is possible that in your Pakistani adolescent population, cultural norms around aggression, exposure to violence in real life, family dynamics, and peer norms strongly shape how gaming exposure translates (or fails to translate) into external aggression (22).

The cross-sectional design used in your study limits causal inference: directionality (whether aggression leads to more gaming, or gaming leads to aggression) cannot be firmly established. Future longitudinal or experimental designs would help disambiguate these. In addition, your sample was limited to adolescents in one city and to convenience sampling, potentially limiting generalizability.

Conclusion

This study's findings indicate a significant correlation between violent video game play and increased aggressiveness levels in adolescents in Peshawar. Action games were notably associated with physical and verbal aggressiveness, whereas puzzle games unexpectedly shown significant relationships across several aggression dimensions. These findings underscore the intricate connection between gaming practices and teenage aggression. Nevertheless, due to the limited sample size and cross-sectional design, one should take caution in interpreting these results. Subsequent research should encompass bigger, culturally heterogeneous groups and take into account supplementary psychosocial variables, including peer impact and familial context. Significantly, parental mediation is identified as a critical mitigating factor, highlighting the necessity for parents to actively supervise and control the duration and content of video game exposure in order to minimize any potential negative behavioral effects.

It was concluded that the result has a positive correlation between the variables. There is a significant level of correlation between adolescent aggression and violent video games. However, this result shows a positive correlation in a small sample and is non-applicable on a large population.

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