

A CROSS-SECTIONAL STUDY OF FACTORS ASSOCIATED WITH AGGRESSIVE BEHAVIOR AMONG FOURTH AND FIFTH GRADERS IN PALEMBANG

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Abstract

Aggressive behavior is intentional behavior, either physical or verbal, with the intent to hurt or harm others, caused by several factors. The aim of this research was to identify factors associated with aggressive behavior among fourth and fifth-grade students at SDN 111 Palembang, Indonesia. This research used a quantitative approach with a cross-sectional design. The population comprised 231 students in grades IV and V, with a sample of 101 respondents selected using cluster sampling technique. Data were collected using structured questionnaires and analyzed using the chi-square test with a significance level of $\alpha = 0.05$. The results showed that 58 respondents (57.4%) were categorized as having high levels of aggressive behavior. There was a significant association between aggressive behavior and parenting style ($p = 0.005$), peer influence ($p = 0.003$), and playing violent video games ($p = 0.007$). However, no significant associations were found between aggressive behavior and snacking habits ($p = 0.106$) or exposure to violent media on television ($p = 0.061$). Aggressive behavior in children emerges as they become more exposed to external environmental influences that affect their cognitive and social development. Therefore, continuous monitoring by parents and teachers is necessary to control aggressive actions and recognize early signs of aggressive behavior in children.

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INTRODUCTION

Elementary school-aged children are individuals undergoing a critical stage of social and emotional development, during which their ability to interact, cooperate, and regulate emotions begins to take shape. At this stage, children learn to adapt to social rules that apply within the school environment as well as in the wider community. However, not all children can display adaptive social behavior; some exhibit aggressive behaviors such as hitting, teasing, threatening, or excluding peers. Aggressive behavior in children not only affects social relationships and the learning process but may also persist into adolescence and adulthood if not addressed appropriately (1).

Aggression in children can take various forms, including physical aggression (e.g., hitting, kicking), verbal aggression (e.g., insulting, mocking), and relational aggression (e.g., ostracizing, spreading rumors) (2). In Indonesia, a report from

KPAI (Komisi Perlindungan Anak Indonesia) in early 2024 revealed a concerning statistic: 141 cases of violence, with 35% occurring within schools or educational settings (3). This highlights the prevalence of aggressive behaviors in schools, which often become a source of concern for teachers, parents, and school authorities, as they can hinder the social and academic development of children.

Previous studies have identified several factors that contribute to aggressive behavior in children. One frequently cited cause is poor diet and nutrition, which can influence a child's mood and behavior. Additionally, family-related factors, including parenting styles, domestic violence, and a lack of emotional warmth from parents, play a significant role in the development of aggression in children (4). The school environment, including peer relationships and a competitive classroom

climate, may also influence the emergence of aggressive behavior. Furthermore, the growing exposure of children to violent media, including television, the internet, and video games, has been reported to increase aggressive tendencies, especially when this exposure is not moderated by parental supervision (5).

In particular, aggressive behavior in children is an ongoing concern in the Indonesian context, where limited research has been conducted to understand the underlying factors contributing to aggression among elementary school students. Based on preliminary observations and unstructured interviews with teachers at SDN 111 Palembang in August 2024, it was found that within the past three months, there were at least 15 recorded incidents of aggressive behaviors among fourth- and fifth-grade students, including hitting (9 incidents), pinching (11 incidents), insulting/mockering (14 incidents), and damaging peers' belongings (5 incidents). These data indicate that aggressive behavior is not an isolated event but a recurring issue at this school.

The selection of SDN 111 Palembang as the research location is urgent because this school has never received any intervention or training related to the prevention of aggressive behavior, unlike several other elementary schools in the Palembang area that have implemented anti-bullying programs. Additionally, the school is located in a densely populated urban area with high exposure to electronic media and diverse peer interactions, making it an appropriate setting to study the influence of parenting styles, peer influence, diet, and violent media exposure on children's aggressive behavior. Without early identification of these factors, aggressive behavior may persist into adolescence and adulthood, as noted in previous longitudinal studies (1). Therefore, this study aims to explore the social and environmental factors associated with aggressive behavior in elementary school children, focusing on diet, parenting styles, peer influence, and exposure to violent media, with an emphasis on the Indonesian context.

Several studies have examined aggressive behavior in children across various countries. Internationally, research by Gentile et al. (2011) and Rademacher et al. (2024) has established that

parenting styles, peer influence, and violent media exposure are significant predictors of childhood aggression. However, in the Indonesian context, studies on this topic remain limited. A study by Salimi et al. (2019) examined aggression among elementary students in Iran, but similar large-scale studies are lacking in Indonesia. Specifically, no previous study has investigated the combined influence of snacking habits, parenting styles, peer influence, violent media exposure, and violent video games on aggressive behavior among elementary school children in Palembang. Most existing Indonesian studies have focused on either single factors (e.g., parenting style alone) or have been conducted in different age groups (e.g., adolescents). Therefore, this study seeks to fill this gap by providing empirical evidence on the multiple factors associated with aggressive behavior in elementary school children in Palembang. The findings are expected to strengthen the scientific basis for preventing and managing aggressive behaviors in Indonesian schools.

METHODS

Study Design and Setting

This study employed a quantitative research design with a cross-sectional approach. The research was conducted at SDN 111 Palembang, Indonesia.

Population and Sample

The target population consisted of all fourth- and fifth-grade students (ages 9–11) enrolled at the school during the data collection period, totaling 231 students. This age group (9–11 years) was specifically selected for three reasons: (1) developmentally, children in late childhood enter the "gang age," where peer influence and social hierarchies intensify, making them more susceptible to external factors associated with aggressive behavior; (2) preliminary observations at SDN 111 Palembang indicated that aggressive behaviors (hitting, mocking, exclusion) were most frequently reported by teachers among 4th and 5th graders; and (3) children aged 9–11 possess sufficient cognitive and literacy skills to reliably complete structured questionnaires, unlike younger children.

Preliminary observations at the school indicated that several students engaged in aggressive acts such as hitting, pinching classmates, using harsh language, insulting, mocking, and

damaging others' belongings. These behaviors were also directed toward teachers, such as arguing or failing to focus during lessons, particularly among fourth and fifth-grade students.

A cluster sampling technique was used to select participants from multiple classrooms, ensuring representation across different grades. This method was chosen over simple random sampling due to the school's hierarchical structure (students naturally grouped into classes), which allows for efficient and logistically feasible data collection while maintaining probabilistic representativeness. From a total of 8 classes (4 classes per grade), 4 classes were randomly selected, yielding 101 respondents. The sample included students with varying levels of aggressive behavior, from low to high, enabling comparative analysis between groups.

Inclusion criteria were: (1) enrolled as a fourth- or fifth-grade student at SDN 111 Palembang, (2) aged 9–11 years, and (3) willingness to participate with parental consent. Students with diagnosed psychological or developmental disorders were excluded from the study.

Research Instruments

Data were collected using six structured questionnaires. The Checklist of Snacking Habits Frequency measured the frequency of consuming snacks and packaged drinks. The Parenting Style Questionnaire classified parenting styles into democratic, authoritarian, and permissive categories. The Peer Influence Questionnaire was developed to measure multiple dimensions of peer influence relevant to aggressive behavior in elementary school children. Based on theoretical frameworks of peer social influence (13), this 12-item instrument assessed three distinct aspects: (1) peer pressure, (2) peer modeling of aggression, and (3) peer conformity (14–16). Each item was rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), with higher scores indicating greater peer influence toward aggressive behavior.

The Violent Media Exposure Questionnaire assessed the frequency of watching violent content on television, while the Violence-Themed Video Game Questionnaire measured the frequency of playing video games containing violent elements.

The Aggressive Behavior Questionnaire consisted of 15 items rated on a 5-point Likert scale ranging from 1 (never) to 5 (very often), with total scores ranging from 15 to 75. Higher scores indicated more frequent aggressive behavior (6–8).

Validity and Reliability

All questionnaires used in this study underwent validity and reliability testing. A pilot study was conducted with 30 students from a similar population at a different school to assess the psychometric properties of the instruments. For the validity test, items with correlation values above 0.361 (based on the r-table at a significance level of $\alpha = 0.05$, $df = 28$) were considered valid (17). Reliability testing was conducted using Cronbach's alpha, with coefficients ranging from 0.791 to 0.887 across all instruments, indicating acceptable to good internal consistency (9–11).

Data Analysis

To classify respondents of aggressive behavior, total scores were dichotomized using the sample mean ($M = 42.3$, $SD = 8.7$). Respondents with scores above the mean were categorized as having "High" aggressive behavior, while those with scores equal to or below the mean were categorized as having "Low" aggressive behavior. This mean-split method is commonly used in behavioral research to create clinically meaningful categories for analysis. Bivariate analysis using the chi-square test was employed to examine associations between independent variables (snacking habits, parenting styles, peer influence, violent media exposure, and violent video game playing) and aggressive behavior. All statistical analyses were performed using SPSS version 25.0 with a significance level set at $\alpha = 0.05$.

Ethical Consideration

This study received ethical approval from the Health Research Ethics Committee of the Faculty of Public Health, Sriwijaya University (Number: 776/UN9.FKM/TU.KKE/2025). Prior to data collection, informed consent was obtained from parents or legal guardians, and assent was obtained from the children after explaining the purpose and procedures of the study. Participation was voluntary, and respondents were assured of their right to withdraw at any time without consequences. All

data were kept confidential and used solely for research purposes.

RESULTS

The research findings are presented using univariate and bivariate analyses.

Univariate Analyses

Table 1. Distribution of Respondents Based on Independent Variables (n=101)

Variable	Category	N	%
Frequency of snacking habits	Often	54	53,4%
	Infrequent	47	46,6%
Parenting styles	Democratic	20	19,8%
	Authoritarian	56	55,4%
Peers influence	Permissive	25	24,8%
	Influence	55	54,5%
Exposure to violent media	Not influence	46	45,5%
	Often	26	25,7 %
Playing video game	Infrequent	75	74,3%
	Playing	60	59,4 %
	Not playing	41	40,6%

As shown in Table 1, the majority of respondents exhibited frequent snacking habits (53.4%), were raised under authoritarian parenting styles (55.4%), reported peer influence (54.5%), had infrequent exposure to violent media content (74.3%), and frequently played video games (59.4%).

Table 2. Distribution of Respondents Based on Dependent Variable

Aggressive Behavior	Frequency (%)
High	58 (57.4%)
Low	43 (42.6%)

As shown in Table 2, 57.4% of respondents exhibited high aggressive behavior, while 42.6% showed low aggressive behavior.

Table 3. Relationship Between Snacking Frequency and Aggressive Behavior Among Fourth and Fifth-Grade Students at SDN 111 Palembang

Frequency of Habits Snacking	Aggressive behavior				Total		ρ -value
	High		Low		n	%	
	n	%	n	%	n	%	
Often	27	50	27	50	54	100	
Not often	31	66	16	34	47	100	0.106
Total	58	57.4	43	42.6	101	100	

As shown in Table 3, the chi-square test revealed no significant relationship between snacking frequency and aggressive behavior, with a p-value of 0.106.

Table 4. Relationship Between Parenting Style and Aggressive Behavior Among Fourth and Fifth Grade Students at SDN 111 Palembang

Parenting Styles	Aggressive Behavior				Total		ρ -value
	High		Low		n	%	
	N	%	N	%	n	%	
Democratic	7	35	13	65	20	100	0.005
Authoritarian	40	71.4	16	28.6	56	100	
Permissive	11	44	14	56	25	100	
Total	58	57.4	43	42.6	101	100	

As shown in Table 4, the chi-square test revealed a significant relationship between parenting style and aggressive behavior, with a p-value of 0.005.

Table 5. Relationship Between Peer Influence and Aggressive Behavior Among Fourth and Fifth Grade Students at SDN 111 Palembang

Peer Influence	Aggressive behavior				Total		ρ -value
	High		Low		N	%	
	n	%	n	%	N	%	
Influence	39	70.9	16	29.1	55	100	0.003
Does not influence	19	41.3	27	58.7	46	100	
Total	58	57.4	43	42.6	101	100	

The chi-square test in Table 5 shows a p-value ≤ 0.05 (0.003), indicating a significant relationship between peer influence and aggressive behavior.

Table 6. Relationship Between Exposure to Violent Media and Aggressive Behavior

Exposure to Violent	Aggressive behavior				Total		ρ -value
	High		Low		n	%	
	n	%	n	%	n	%	

Media in TV						
Watch often	19	73.1	7	26.9	26	100
Not watching often	39	52	36	48	75	100
Total	58	57.4	43	42.6	101	100

The chi-square test in Table 6 shows a p-value > 0.05 (0.061), indicating that there is no significant relationship between exposure to violent media and aggressive behavior.

Table 7 Relationship Between Playing Violent Video Games and Aggressive Behavior

Playing Violent Video Games	Aggressive behavior				Total		p-value
	High		Low		n	%	
	n	%	n	%			
Play	41	68.3	19	31.7	60	100	
Not playing	17	41.4	24	58.6	41	100	0.007
Total	58	57.4	43	42.6	101	100	

The chi-square test in Table 7 shows a p-value = 0.007, indicating a significant relationship between playing violent video games and aggressive behavior.

DISCUSSION

Univariate Analysis

Snacking Frequency

In this study, a high proportion of respondents (53.4%) reported frequent snack consumption, consistent with previous research indicating that 53.3% of children had habitual snack consumption (6). However, the majority of snacks consumed by respondents were high in sugar and low in nutritional value (e.g., brightly colored packaged drinks, instant noodles, and candies). Observations at SDN 111 Palembang showed that many children were attracted to visually appealing food packaging. Despite this high prevalence, the bivariate analysis found no significant association

between snacking frequency and aggressive behavior (p = 0.106). This finding suggests that in this sample, snacking habits alone do not explain variations in aggressive behavior, although the nutritional quality of snacks (rather than frequency) may warrant further investigation.

Children have a strong preference for brightly colored and visually appealing food packaging. Studies have shown that colors such as red, green, orange, and yellow strongly attract children's attention and significantly influence their food choices (6). The use of color in packaging is not only aesthetic but also psychological; it stimulates children's curiosity and increases product appeal, which can boost children's snack consumption (6,7).

Based on the checklist of snacking habits at SDN 111 Palembang, 79 respondents (78.2%) preferred brightly colored packaged drinks, compared to 61 respondents (60.4%) who selected dairy products.

Parenting Style

The findings indicate that authoritarian parenting was the most common style applied among respondents (55.4%), followed by permissive (24.8%) and democratic (19.8%) parenting styles. This was reflected in questionnaire responses showing that parents with authoritarian style tended to enforce strict rules, such as punishing children for coming home late, and expected unquestioning compliance, sometimes accompanied by threats.

Authoritarian parenting is characterized by high control and low responsiveness, where parents impose rigid rules and expect obedience without negotiation (4,14). This style is often associated with the use of punishment and threats to ensure compliance, creating a power imbalance between parents and children (5). In such families, rules are enforced as absolute standards without providing explanations to the child.

The bivariate analysis revealed a significant association between parenting style and aggressive behavior (p =

0.005). Among children with authoritarian parents, 71.4% exhibited high levels of aggression, compared to 44.0% of those with permissive parents and 35.0% of those with democratic parents. These findings suggest that authoritarian parenting is associated with a higher proportion of aggressive behavior, while democratic parenting is associated with a lower proportion.

Authoritarian parenting is more strongly associated with aggression than other styles for three reasons: (1) children imitate their parents' aggressive conflict resolution (social learning theory); (2) low emotional warmth and high criticism impair children's ability to regulate anger, leading to reactive aggression; and (3) authoritarian parenting produces obedience based on fear of punishment (external control), which disappears when authority figures are absent. In contrast, democratic parenting fosters internal self-control through explanation and warmth. This pattern is consistent with previous research indicating that children exposed to harsh or authoritarian parenting are more likely to display aggressive behavior toward peers (4,14). A study by Rademacher et al. (2025) involving 442 children found that parenting style was associated with emotion dysregulation, which in turn was related to aggressive behavior (21). Although the cross-sectional nature of this study precludes causal conclusions, these findings confirm that harsh control without warmth is most strongly associated with aggression.

Peer Influence

The high level of peer influence in this study aligns with research showing significant peer aggression among young children (ages 4–7) and its association with social behavior strategies such as aggression, dominance, and social insecurity (9). Children begin forming peer relationships early in life, evolving from simple social interactions to more complex friendships by age three (10). As children grow, these relationships become more structured, forming peer groups that play a critical role in social development (11). High-quality peer relationships are essential for socialization and well-

being, offering opportunities to acquire competencies, attitudes, and values.

Violent Media Exposure

In this study, "violent content on television" was operationally defined as any programming depicting physical aggression (hitting, kicking, fighting), weapon use (guns, knives, or traditional weapons such as in kung fu or silat scenes), verbal aggression (shouting threats, insulting), or injury/destruction (blood, fighting with intent to harm). Examples of such content included action movies, martial arts dramas, war films, crime news, and cartoons containing fighting scenes (e.g., "Power Rangers," "Naruto").

Based on this definition, 51 students reported rarely watching violent content; 18 reported never watching it; and 32 reported watching it frequently. Although 47 respondents reported watching television daily, this does not necessarily indicate daily exposure to violent content, as daily viewing may include non-violent programs (e.g., educational shows, cartoons without fighting, family comedies).

The American Medical Association and other professional bodies recognize the potential health threats of televised violence to children and recommend limiting screen time (12,13). However, longitudinal studies examining the long-term effects of high television consumption during childhood have shown mixed and often inconclusive results due to confounding variables (13). In the present study, no significant association was found between exposure to violent media and aggressive behavior ($p = 0.061$), a finding that may be attributed to the low frequency of violent content exposure among most respondents.

Playing Violent Video Games

A substantial number of respondents (59.4%, $n=60$) reported playing violent video games. In this study, "violent video games" were operationally defined as games that require players to intentionally harm, injure, or kill characters to progress through the gameplay.

Based on the Violence-Themed Video Game Questionnaire, the most frequently reported games among respondents were: Mobile Legends: Bang Bang (54 respondents), PlayerUnknown's Battlegrounds (PUBG) Mobile (38 respondents), Free Fire (32 respondents), Garena: Call of Duty Mobile (21 respondents), and Grand Theft Auto (GTA) series (12 respondents). All of these games feature combat, weapon use, killing, or physical aggression as core mechanics.

Regarding duration of play, respondents were asked, "On average, how many hours per day do you play violent video games?" Among the 60 respondents who played violent video games: 56 respondents (55.4% of total sample) played 1-2 hours per day, 32 respondents (31.7%) played 3-4 hours per day, and 13 respondents (12.9%) played more than 4 hours per day. No respondents in the non-playing group (n=41) reported any hours.

The majority of respondents reported that violent video game themes were perceived as exciting and challenging. In response to the questionnaire item "I feel challenged when playing such games," 53 respondents answered "yes," while 48 answered "no." This finding aligns with research showing that many children prefer action-themed games due to their motivation to compete within the game environment (14). Violent video games are appealing to children, particularly those with higher levels of aggression and lower empathy, because they offer excitement, adrenaline, and a virtual space to express aggressive impulses (15). Peer influence also shapes children's game preferences, with many choosing violent games based on their popularity within the peer group (16). Furthermore, violent video games may fulfill certain developmental needs by providing a sense of achievement, control, and clear goals, which some children find more satisfying than puzzle-based games (17).

The chi-square test revealed a significant association between playing violent video games and aggressive

behavior ($p = 0.007$), with 68.3% of players exhibiting high aggression compared to 41.4% of non-players.

Aggressive Behavior

The high level of aggressive behavior among school-aged children may be related to various environmental factors. Previous research suggests that when children do not receive adequate attention at home, their focus shifts outward, sometimes leading to harsh or harmful behavior toward others. Behaviors such as mocking and teasing are most commonly displayed during this developmental stage (10).

In this study, aggressive behavior was measured using a 15-item Aggressive Behavior Questionnaire rated on a 5-point Likert scale (1 = never to 5 = very often). Based on the total scores, 58 respondents (57.4%) were categorized as having high levels of aggressive behavior, while 43 (42.6%) had low levels.

Specific forms of aggressive behavior reported by respondents included:

Physical aggression: hitting or punching classmates (47 respondents, 46.5%), pinching or pushing peers (52 respondents, 51.5%), kicking (23 respondents, 22.8%), and damaging others' belongings (31 respondents, 30.7%).

Verbal aggression: insulting or name-calling (61 respondents, 60.4%), mocking or teasing (68 respondents, 67.3%), shouting angrily at peers (54 respondents, 53.5%), and threatening others (29 respondents, 28.7%).

Relational (social) aggression: excluding peers from group activities (37 respondents, 36.6%), spreading rumors or gossip (22 respondents, 21.8%), and ignoring peers on purpose (33 respondents, 32.7%).

The most prevalent forms were verbal aggression, particularly mocking and teasing (67.3%), followed by physical aggression, particularly pinching and pushing (51.5%). These findings are consistent with developmental literature indicating that verbal and relational aggression become more common than direct physical aggression as children enter late childhood (9–

11 years), as their cognitive and social skills allow for more sophisticated forms of peer manipulation (23).

Bivariate Analysis

The findings of this study indicate that several factors parenting style, peer influence, and violent video game exposure are significantly associated with aggressive behavior among elementary school students. These findings are consistent with some previous research but also diverge in certain areas, particularly regarding the relationship between violent media exposure and aggression.

Relationship Between Snacking Frequency and Aggressive Behavior

The findings of this study differ from previous research indicating that frequent consumption of unhealthy foods such as fast food, sugary snacks, soda, salty snacks, and fried foods is associated with higher levels of physical aggression and bullying (18). Fasting during Ramadan has been shown to reduce aggression by promoting mental clarity, emotional stability, and spiritual well-being, thereby improving psychological resilience (19). Conversely, skipping meals can increase mental stress and aggressive behavior among children and adolescents (20). According to the researchers, the inconsistent findings in this study may be due to unclear nutritional content of snacks consumed at school. The participants (ages 9–11) are in a prepubertal stage where curiosity about new foods and increased independence in purchasing snacks may influence their eating patterns.

Relationship Between Parenting Style and Aggressive Behavior

Aggression resulting from parenting style is supported by research indicating that children exposed to harsh or authoritarian parenting tend to display aggressive behavior toward peers (4,8). In this study, most children with authoritarian parents exhibited high levels of aggression (71.4%). A study involving 442 children found that parenting style serves as both a risk and

protective factor in the development of aggressive behavior. Children with difficulties regulating emotions often display higher levels of aggression (21).

Children who experience harsh treatment from parents may feel pressured and release their emotions through aggression toward others. This phenomenon can be explained through three psychological mechanisms.

First, social learning theory (Bandura, 1973) proposes that children learn behavior by observing and imitating their parents. When parents use harsh treatment—such as shouting, physical punishment, or threats—they model aggression as an acceptable method of resolving conflict and asserting control. The child internalizes that power, intimidation, and hostility are effective ways to achieve goals, and subsequently replicates these strategies with peers at school (4,14).

Second, displacement theory (Dollard et al., 1939) suggests that aggression is often redirected from its original source to a safer target. Children cannot safely express anger or frustration directly toward their parents due to fear of punishment or further harsh treatment. Instead, they displace these negative emotions onto peers—classmates who are less powerful and pose no threat of retaliation. This phenomenon, sometimes called "kicking the dog," explains why children who experience harsh parenting at home often exhibit aggressive behavior toward friends and classmates rather than toward their parents.

Third, emotion dysregulation plays a mediating role. Authoritarian and harsh parenting styles are characterized by high criticism and low emotional warmth. In such environments, children's emotional expressions (e.g., crying, anger, frustration) are often punished or dismissed rather than validated or guided. Consequently, children fail to develop healthy emotion regulation skills—they do not learn how to identify, label, or manage anger constructively. When frustrated by a peer conflict at school, they lack the internal coping strategies to calm themselves or negotiate verbally, and instead respond with reactive aggression: impulsive,

intense, angry outbursts that are disproportionate to the provocation (27).

In summary, harsh parenting contributes to child aggression through modeling (children imitate parental aggression), displacement (children redirect anger toward safer peer targets), and dysregulation (children lack skills to manage anger constructively). These mechanisms are not mutually exclusive and may operate simultaneously, reinforcing aggressive behavioral patterns over time.

Relationship Between Peer Influence and Aggressive Behavior

The results support research showing a significant relationship between peer influence and aggressive behavior. Strong peer influence is positively associated with higher aggression levels (22). The elementary school years are often referred to as the "gang age," where children spend much time with peers and form groups with similar interests. Unfortunately, during this period, aggressive behavior and bullying are common. Most respondents (94 students) formed friendships with classmates, and 74 preferred friends with similar interests. Peer groups thus shape behavior, contributing to the emergence of aggression.

Relationship Between Violent Media Exposure and Aggressive Behavior

These findings are different from numerous studies, such as those by Gentile et al. (2011) and Ratuela et al. (2020), which reported positive associations between exposure to violent media and aggression (23,24). However, this study aligns with Junco-Guerrero et al. (2024), who found that violent media exposure did not directly influence child-to-parent violence; instead, effects were mediated by violence justification and pathological gaming (25). In this study, many respondents reported minimal exposure to violent films and crime news. Some children also stated that although they enjoyed watching violent scenes, they did not imitate them. Thus, frequency of viewing violent

content alone does not appear to determine aggressive behavior in this context.

Relationship Between Violent Video Games and Aggressive Behavior

Research has shown that video gaming has been linked to negative outcomes such as increased aggression and reduced empathy in children and adolescents (26). Violent video games may have a stronger association with aggressive behavior compared to passive media (such as television or movies) because children interact directly with the aggressive content rather than merely observing it. This interactivity enhances the sense of realism in two ways. First, the player exercises agency – the feeling of "I am doing this" rather than "I am watching someone do this" – by actively controlling violent actions (punching, shooting, killing) using a controller or touchscreen. Second, realistic graphics, sound effects (cries, explosions), and haptic feedback (controller vibration) create immersive sensory experiences that blur the boundary between virtual and real violence, making the aggressive encounter feel more authentic and personally relevant (26,27).

Furthermore, violent video games reinforce aggressive behavioral patterns through systematic operant conditioning. Unlike real-world aggression, which may be punished or have delayed consequences, violent games provide: (a) positive reinforcement (immediate rewards such as points, weapons, level advancement for violent acts); (b) negative reinforcement (removing threats or obstacles through aggression, which feels satisfying); and (c) variable ratio reinforcement (unpredictable rewards after violent actions, which is the most powerful schedule for habit formation). Over repeated sessions, these reinforcement mechanisms strengthen the cognitive association between "aggression" and "positive outcome." When confronted with real-life frustration or peer conflict, children who have been extensively conditioned by violent games may automatically activate aggressive scripts – cognitive schemas that link provocation to violent

response – thereby increasing the likelihood of real-world aggressive behavior (27).

CONCLUSION

The findings of this study suggest that parenting style, peer influence, and violent video game exposure play significant roles in shaping aggressive behavior among elementary school children. Specifically, authoritarian parenting and peer influence were associated with higher levels of aggression, while playing violent video games also showed a significant relationship with aggressive tendencies. However, no significant relationship was found between snacking frequency and aggression, nor between exposure to violent media and aggression, highlighting the complexity of factors influencing aggressive behavior in children.

Implications for Practice: Based on these findings, interventions in schools should focus on promoting positive parenting styles, particularly democratic parenting, which can help children regulate their emotions and reduce aggressive behavior. Additionally, efforts to reduce peer pressure and teach conflict resolution skills may also be beneficial in curbing aggressive tendencies among students. Schools should consider violence prevention programs that involve both students and parents in fostering a more supportive and less confrontational school environment.

Future Research Suggestions: Further research is needed to explore the role of snacking habits in children's aggression, as no significant relationship was found in this study. Future studies could investigate other dietary factors or the quality of the food consumed to determine if they have a more direct impact on aggression. Additionally, research should continue to explore the long-term effects of exposure to violent video games and media on children's behavior, as this study showed a significant relationship but the results may vary across different cultural and social contexts. Moreover, longitudinal studies could provide more insight into how these factors interact and influence the development of aggression over time.

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