

Potential Negative Effects of Violent Video Games Exposure on Aggressive Behavior Among Children in Pediatric Ward of Nizwa Hospital, Oman

Ameena Sayed Hasan Amin Mohammed Ahmed¹, Akila Muthukrishnan^{1a}, Chinnasamy Lathamangeswari², Hariprasath Pandurangan³, Naveena J.H³, Ibtesam Nomani⁴, Afnan A. Albokhary⁴, Badria A Elfaki⁵, Hassanat E Mustafa⁵, Pushpamala Ramaiah⁶

¹School of Nursing, College of Pharmacy and Nursing, University of Nizwa, Sultanate of Oman

^{1a}Assistant Professor, School of Nursing, College of Pharmacy and Nursing, University of Nizwa, Sultanate of Oman

²Assistant Professor, Faculty of Nursing, Riyadh ELM University, Riyadh, Saudi Arabia.

³Assistant Professor, Amity College of Nursing, Amity University Haryana, India.

⁴Assistant Professor, Faculty of Nursing, Umm Al Qura University, Makkah, Saudi Arabia.

⁵Assistant Professor, Faculty of Nursing, Umm Al Qura University, Makkah, Saudi Arabia, Faculty of Nursing, Al Neelain University, Khartoum Sudan.

⁶Professor, Faculty of Nursing, Umm Al Qura University, Makkah, Saudi Arabia.

Corresponding Author: Akila Muthukrishnan, Assistant Professor, School of Nursing, College of Pharmacy and Nursing, University of Nizwa, Sultanate of Oman

ABSTRACT

Background: Violent video games are a new generation of games nowadays to attract children to play and become addicted to them. Daily exposure to it and spending more than 3-4 hours to it without monitoring or limitation time cause serious side effects in behavior over time. **Aims and Objectives:** The present study aimed to determine the impact of video game exposure on children's aggressive behavior in pediatric wards at Nizwa Hospital, Oman. **Methodology:** A cross-sectional descriptive study was adopted to collect data from the pediatric wards among fifty school children (6-13 years). The selection of the sample was made using the purposive sampling technique. **Results:** It was reported that 72% wanted to play video games, 64% violent video games and 50% of children spent 5-6 hours playing video games weekly. In addition, 80% of children felt they wanted to fight, 56% wanted to shout after playing, 47% developed an aggressive mood, 65% thought it was fun to see somebody fighting, and 68% were not afraid when they saw blood. 54% have moderate aggression behavior, 36% got mild aggression behavior, and 30% got severe aggression behavior. **Conclusion:** Study of aggressive behavior among children will bring awareness to enhance knowledge among children and parents about video games' side effects and for parents to monitor the child during play and improve children's behavior.

Keywords: violent, video games, aggression, aggression, children, fun, behavior.

Background of the study

Aggression is commonly understood as behavior intended to harm another person, even if the aggression attempt fails. Aggression is associated highly with violence in physical assault and murder (Anderson & Brad, 2001). Most video games are violent and affect children's behavior. A recent study shows that 89% of video games contain violence, and 50% of video game exposure by children includes severe violent actions. In addition, the children prefer to play violent video games, as shown in a children's survey held from 4th to 8th Grade. The survey stated that "50% preferred human violence or fantasy violence games" (Anderson, C. A., & Bushman, B. J, 2010).

Children spend a lot of time and get exposed to the internet site of violent video games. Both girls and boys play violent games for about seven hours per week, and 8th and 9th-grade school students spend 13 hrs in a week. Boys play 5 hrs in a week and have the practice of playing without parental control. Children also say, "Parents never limit the amount of time spent playing video games." (Anderson, C. A., & Bushman, B. J, 2010). Participants who use video games with violent content have more aggression problems than participants who have not been exposed to violent video games. Besides, boys obtained higher aggression scores than girls. (Milani Luca, 2015).

Aggression behavior and physical fights among school children are more prevalent in Qatar (Yousef, 2017). The study investigated the relationship between violent video game exposure and school behavior problems among 202 students aged 14-17 years. Changing lifestyles and exploring a lot of video games to attract children to play have become accustomed to getting an addiction to video games. Although parents ignore the severe side effects on their children, parents do not impose any

norms to stop playing. Carnagey and Anderson (2010) studied school students, and they showed that children spend 7hrs weekly, and almost the supervision from parents was absent. In addition, playing violent video games among school children will increase aggressive behaviors. Many studies have examined the relationship between exposure to violent video games and physical aggression and violence. Studies reported a high rate of physically aggressive behavior in both boys and girls in primary school students (Prescott, A. T., Sargent, J. D., & Hull, J. G. (2018). The nature of exposure to violent video games influences the prevalence of physical aggression among school children.

Besides, playing violent video games will enhance parental stress. There are some studies about parental concern about video games concerning spending time, video content, and violence, but the parents don't believe the side effects of these games. It also creates a conflict of low perception of violent video games among parents because parental monitoring was associated with positive outcomes, such as better school performance, fewer behavior problems, more educational gameplay, and less violent gameplay. (Hastings et al. (2011) Studied " Young Children's Video/Computer Game Use: Relations with School Performance and Behavior" for 70 children between 6-10 years of age and their parents explored that (21.4%) of parents did not know the rating level of playing video games and have a lack of parental monitoring (content, amount of gameplay, attention, and behavior in children). Content and time monitoring of video gameplay is associated with more violent gameplay and exposure. However, many of these effects are unknown to parents.

Antisocial behavior, isolation behavior, and decreased school performance are also the impact of watching violent video games. Justin et al. (2019) study in the United States of 242 participants playing violent video games with guns showed that 42 children who played video games have gradually gained the habit of touching the handgun and were likely to shoot themselves or their parents. Another study shows increasing physical and verbal aggression and antisocial behavior. "I feel trapped by my responsibilities as a parent" after exposing to violent video games. (Milani Luca, 2015). This study was designed to examine physical aggression and violent video games on aggressive behavior among children in Pediatric Ward based on this rationale.

The findings will benefit the parents in correcting their attitudes in several ways. First, parents need to know the kind of games their children are exposed to ensure their exposure to inappropriate video games for their age. Secondly, reducing the hours of exposure to violent video games daily and teaching them about these restrictions need to be insisted. In addition, they should be able to know how to choose good video games for their children to play it.

The information from this study was of benefit to all children, parents, teachers, and pediatric nurses to assist them in overcoming and dealing with this situation. Thus, the finding from this study will provide and gain more knowledge on the adverse effect of violent video games and the link with children's aggression and will help reduce the risk of it in societies and solve unprecedented consequences.

Research question

The research question formulated for the study is:

What is the impact of exposure to violent video games on aggressive behavior for school children?

Objectives of the study

The study's objectives are to

1. Determine the effect of video game exposure on the aggressive behavior of children.
2. Correlate violent video game exposure and aggressive behavior.
3. Associate aggressive behavior with selected demographic variables.

Research Hypothesis

The null hypothesis was developed according to the order of research questions as follows:

There is no significant association between violent video game exposure and aggressive behavior

Variables of the study

In this study, several independent and dependent variables were identified, which are listed as follows: Independent variables are identified as school-age children (6-13 years). Dependent variables are recognized as the impact of violent video game exposure and aggressive behavior. The study was conducted among children (6-13 years) in the pediatric ward at Nizwa hospital. Nizwa hospital is located in the state of AL Radah in Nizwa area in the Dakhliya Region of Oman. Nizwa hospital has 305 beds, including inpatients and intensive care units (Adult ICU, Pediatric ICU, Coronary care unit, Special care baby unit, and burn unit). It also contains the accident and emergency, delivery rooms, dialysis unit, and maternity care. The focus

wason children who are the target population because most of them play video games; for this reason, this study was appropriate to conduct in a pediatric unit at Nizwa hospital.

Population and sampling

The target population of this study is the children between (6-13 years) in the pediatric ward at Nizwa hospital, Al-Dakhliya region. A total of 60 subjects, equivalent to about 25% of the study population, were selected to participate. The subjects were determined using the purposive population sampling method based on the small number of subjects that met the selection criteria. Crossman (2018) explained that a purposive sample, also known as judgmental, selective, or subjective sampling, a non-probability sample, was adopted. Ten school children were selected for the pilot study before the study's full implementation to assess the tool's suitability and were excluded from the main study.

Tools and the pilot study

Data collection was done using a self-developed questionnaire, which was constructed and modified as needed based on literature reviews and past studies on the related issue (Shao, R., & Wang, Y. 2019) and (AH Buss & MP Perry, 1992). The questionnaire was self-reported about assessing the impact and aggression behavior of violent video games in children. It contains three parts:

Part A: contains items related to the demographic data of the study participants. It includes age, sex, amount of time spent watching video games, and the type of video games. **Part B:** contains items related to exposure to video games. This is a self-administered questionnaire with 11 items containing yes or no responses with a total score of 21. The "yes" response is scored as two, and the "no" response is scored as 1. The score interpretation is as follows: 1-7- mild exposure; 8-14- moderate exposure; and 15-21- severe exposure.

Part C: contains items related to the influence of video games on aggressive behavior. This is a self-administered questionnaire with six items containing yes or no responses with a total score of 12. The "yes" response is scored as 2, and the "no" response is 1. The score interpretation is as follows:

1-4- mild aggressive behavior

5-8- moderate aggressive behavior

9-12- severe aggressive behavior

Upon the approval of the proposal, a pilot study was conducted before the actual implementation of the study. Ten children from the study population were selected to participate in the pilot study. Subjects were asked to provide suggestions and recommendations for any changes and corrections to the tool to ensure its usability. Based on the outcome of the pilot study, some modifications were made, including unclear sentences and mistakes. Based on the data collected from the pilot study, the tool was subjected to Cronbach's Alpha test to ensure reliability and internal consistency before being utilized in the actual data collection process.

Data collection procedure

Personal visits were having been made to the related hospital to explain the nature of the data collection procedures. The collection of data was done in four weeks. Potential subjects were approached and described the nature of the study and the manner of the questions to be answered, and the assessment of knowledge and aggressive behavior on violent video games. The question tool was collected on the same day to avoid any influential elements that may dilute the relevancy of the responses. The data was collected on 12 September 2020 with assistance from Nizwa hospital staff and children's mothers, and it was completed in a month. The questionnaires were distributed to the children to answer. Each child took between 15 to 20 minutes to complete the questionnaire. In assisting the children, the researcher has made sure that they have an accurate understanding of the meaning of each question. Completed questionnaires were collected on the same day. The data collected from this study were analyzed using the Statistical Package of Social Sciences (SPSS) application descriptive analysis.

Ethical consideration

A letter of acknowledgment from the head of the department, the Dean College of Pharmacy and Nursing, School of Nursing, University of Nizwa, was obtained. Permission letters to conduct the study were submitted to the director of Nizwa hospital in Wilayat Nizwa. They were explained about the anonymity and confidentiality of the information and their right to withdraw from the study.

Results:

Distribution of subjects according to Age (N=50)

Of 50 subjects who participated in this study, they were categorized into seven age categories 6-7 years, 7-8 years, 8-9 years, 9-10 years, 10-11 years, 11-12 years, and 12-13 years. (Mean 7.14; SD 0.832). Findings show that the majority, 24 children presented (48%) in the age groups between (6-7), (9-10), and (10-11). From the analysis, it was observed that the largest group belongs to the ages of (6-7), (9-10), and (10-11) years. The mean age was 7.14 and indicated the majority of participants were between (6-7), (9-10), and (10-11) years, with 48%.

Distribution of subjects according to Sex (N=50)

Nizwa Hospital has a high number of males than females in pediatrics wards. Nizwa Hospital has 60 pediatric beds, and more than 40 males were admitted during data collection periods.

Table 1: Distribution of subjects according to hours of playing video games:

Hours	Frequency	Percentage	Mean	SD
1-2	7	14%	16.66	7.40
3-4	18	36%		
5-6	25	50%		
Total	50	100%		

Table 1 shows that out of 50 children, the biggest group of children spent 5-6hrs playing video games daily, representing (25 children) 50% of the total, followed by 3-4hrs that represented (18 children) 36% of the total subjects. The smallest group that plays 1-2hrs daily presented (14%), including seven children from total participants.

Distribution of subjects according to the type of video games of subjects (N=50)

It shows that out of 50 children who participated in the study, 64% of children played violent video games, 12% played sports video games, 10% played car video games, 8% played puzzles video games, and 6% played adventure video games. So, the biggest group of children were involved in violent video games, and the smallest group liked to play adventure video games.

Impact of exposure to violent video games on emotion (N=50)

Another aspect explored by this study was the impact of violent video games. The study formulated 11 items looking into the impact of assessing the intensity of watching violent video games. Subjects were asked to indicate their responses by placing an [tick] on the response box. Table 2 illustrates the findings from the analysis.

Table 2: Distribution of the Impact of exposure to violent video games on emotion (N=50)

Impact of exposure to violent video games	Yes		No	
	f	%	f	%
I feel that I want to fight	40	80.0%	10	20.0%
I feel you want to shout	28	56.0%	22	44.0%
Always feeling angry	26	52.0%	24	48%
Mood changes to an aggressive mood	37	47.0%	13	26.0%
Feeling stress	30	60.0%	20	40.0%
Feeling not comfortable	18	36.0%	32	64.0%
Feeling fun when you see somebody fighting	28	56.0%	22	44.0%
Feeling angry when you don't play the violent video games	33	66.0%	17	34.0%
You want to try to kill somebody	29	58.0%	21	42.0%
I don't like to sit with the family	44	88.0%	6	12.0%
Not afraid when you see blood	34	68.0%	16	32.0%

Table 2 illustrates the descriptive finding in analyzing the perceived impact of exposure to violent video games among children.

Table 3: Distribution of level of exposure to violent video games (N=50)

Level of Exposure	F	%	Mean+-S.D.	Level of Behavior	F	%	Mean+-SD
Mild	12	24	13±.75	Mild	18	36	13±2.34
Moderate	24	48		Moderate	27	54	
Severe	14	28		Severe	15	30	

Analysis of the finding showed that there was a higher response score on 'Yes' responses from the 11 items on the impact of exposure to violent video games. 12 (24%) of children had mild exposure, 24 (48%) of children had moderate exposure, and 14(28%) of children had severe exposure to aggressive video games. The overall mean score of exposure to violent video games was 13, with the S.D. of .75 indicating that most children had moderate exposure to video games. It shows that 72% of children are playing violent video games. Moreover, 70% of the participants' parents allow them to play violent video games, but their parents monitor only 44% during play.

Variables	Yes		No		SD	Mean
	<i>f</i>	%	<i>f</i>	%		
1. Do you play violent video games?	36	72.0%	14	28.0%	11	25
2. Does your parents monitor you when you play video games?	22	44%	28	56%	3	25
3. Do your parents allow you to play violent video games?	35	70%	15	30%	10	25
4. Do you think a person who commits crimes because of video games?	23	46%	27	54%	2	25
5. Do you think after playing video games that you like fighting (fighting and fighting) or making trouble?	19	38%	31	62%	6	25

The finding of the Pearson Correlation test shows that in examining the correlation between age and the impact of violent video games on emotion, violent video game exposure was correlated with aggressive behavior $p<0.01$.

DISCUSSION

The result of the study was influenced by the age of the respondents, which shows that the age group between (6-7)(9-10) and (10-11) years are at a higher risk in the impact of exposure to violent video games and children's aggression. A Kaiser Family Foundation survey (Donald F. Roberts, V. U. 2015) is relevant to the study, which found that 49% of all video game players

are (8- to 18) year-olds with television, Play station, or Xbox and cell phone. (Gough, C., 2020) the U.S. statistic shows that most video game players are aged 18-35 years, considering 38%, but under 18 years, only 21%.

It was clarified that video games player are more predominant among boys, with 70% (8 to 18 years), including 38% of (8 to 10 year) boys and 74% of (11 to 14 year) old Boys. Besides that, another study about factors Correlated to Violent Video Game Use by Adolescent Boys and Girls supports our study findings (Olson et al. 2007).

The study (Kovess-Masfety et al. 2016) about "Is time spent playing video games associated with mental health, cognitive and social skills in young children?" and a study by Dhiaa, S., & A Tawfeeq, W. (2016) stated that in a developing country primary schools 47.6% of children, especially boys, play violent video games more than other types of games. In addition to that, Luca Milani, and Elena Camisasca (2015), supported our study and stated that (33.5%) of participants played violent video games out of 116 video gamers. Moreover, Salman Khalil et al. (2019) studied " Impact of Playing Violent Video Games Among School Going Children " among 10-12 years old and showed that 51.17% of the participants play violent video games and got aggressive behaviors.

According to a cross-sectional study conducted among 400-primary students in Baghdad primary schools by Dhiaa, S., & A Tawfeeq, W. (2016) found that 33.13% of players are violent video gamers. Among the children, 16.71% of players are sports video gamers, 12.24% puzzles, 25.05% car racing video games, and 12.24% are adventurous video gamers. Chiu, Dr. Shao-I, et al. (2004) conducted a study in Taiwan among children and teenagers that including children of 12 years old in Northern Taiwan primary school, and documented that favorite games are rated as adventure (55.5%), role-playing (50.6%), car racing (42.3%), violence (83.4%). So, the biggest group prefers violent video games due to feeling excited, fun, attractive, and the most popular games nowadays.

Our findings are congruent with Gentile D.A., Bender P.K. & Anderson C.A. (2017) about "violent video game effects on salivary cortisol, arousal, and aggressive thoughts in children, Computers in Human Behavior" as a sample of One hundred and thirty-six children among 8-12 years old. Participants played randomly violent or nonviolent video games. The results found that violent video gamers had increased cortisol and cardiovascular arousal more than nonviolent gamers. Also, the fight-or-flight type response in children increases due to violent play. And all of that findings cause changing moods, stress, and danger in children. However, Dhiaa S., & A Tawfeeq, W. (2016) clarified that (62.07%) of boys and (50%) of girls apply most of the actions of violent video games that happen in real life, such as fighting, 45%, and 30.63% Quarrelling.

On the other hand, some studies approved that playing violent video games has no relationship with worse emotions in children. Still, it reduces stress and anxiety and changes children's moods to happiness. Ivarsson et al. (2013) "The Effect of Violent and Nonviolent Video Games on Heart Rate Variability, Sleep, and Emotions with Different Violent Gaming Habits" documented that the high-exposed group to violent video games had high levels of feeling happy high emotions. Reduced stress, excitement, no interruption of sleep, and decreased heart rate after playing were also reported.

Dhiaa Saba and Tawfeeq Waleed's (2016) study shows that 38.7% of girls and 42.8% of boys have electronic devices in their beds, giving them a high chance of playing without parental supervision. They can play any games at any time. (Teng et al. 2019) " A longitudinal study of the link between exposure to violent video games and aggression in Chinese: The mediating role of moral disengagement." to 630 school students in China to examine the relationship between violent video games and changing behavior (e.g., stealing cars, killing characters), found that there is a significant relationship between video games and aggression and immoral behavior.

An irrelevant study approves that violent video games lead to violent behavior, according to a survey by Justin et al. (2019). A project conducted in the united states on 242 children playing violent video games with guns explored that they were more likely to shoot themselves or their parents.

Adolescent violence is linked to household education. Then, parents should foster a pleasant family environment, display as little wrath and aggressiveness as possible in public, and promote and practice positive moral principles. To reduce the harmful effects of violent video game exposure, parents should embrace authoritative parenting techniques rather than autocratic and indulgent parenting styles. On the other hand, while minimizing exposure to violent video games is vital for teenagers with a poor family environment, it is also important to shift their normative attitudes about aggressiveness, no longer perceiving aggression as an alternative method to address problems.

Conclusion

When children play video games rather than engage in physical activities, it can have adverse effects on their health. Without exposure to the outside world, a child's cognitive development may suffer. According to several studies, playing video games for long periods of time can lead to obesity, weaken the muscles and joints, cause numbness in the hands and fingers, and affect eyesight. With their emphasis on fast pacing and graphic violence, video games have the potential to inflame children's

irritability and aggressiveness. Anger or rage that manifests in unruly behavior might occur when things don't go as planned or when constraints are placed on them. Hence, parents need to train children to regulate children in their appropriate play activities.

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