ORIGINAL ARTICLE

Impact of Playing Violent Video Games Among School Going Children

[1]Salman Khalil, [2]Farheen Sultana, [3]Farzana Alim, [4]Khursheed Muzammil, [5]Nazim Nasir, [6]Atiq ul Hassan, [7]Syed Esam Mahmood

[1]Associate Professor, Department of Community Medicine, Jawaharlal Nehru Medical College, Aligarh Muslim University , Aligarh; [2]Department of Home Science, Faculty of Agricultural Sciences, Aligarh Muslim University, Aligarh; [3]Professor, Department of Home Science, Faculty of Agricultural Sciences, Aligarh Muslim University, Aligarh; [4]Associate Professor, Department of Public Health, College of Applied Medical Sciences, Khamis Mushayt Campus, King Khalid University, Abha, Kingdom of Saudi Arabia (KSA); [5]Assistant Professor, Department of Basic Sciences, College of Applied Medical Sciences, Khamis Mushayt Campus, King Khalid University, Abha, Kingdom of Saudi Arabia (KSA); [6]Assistant Professor, Department of Basic Sciences, College of Applied Medical Sciences, Khamis Mushayt Campus, King Khalid University, Abha, Kingdom of Saudi Arabia (KSA); [7]Professor, Department of Family & Community Medicine, College of Medicine, King Khalid University, Abha, Kingdom of Saudi Arabia (KSA).

Corresponding Author

Corresponding Author: **Dr. Khursheed Muzammil**, Associate Professor, Deptt of Public Health, College of Applied Medical Sciences, Khamis Mushait Campus, King Khalid University, Abha, Kingdom of Saudi Arabia (KSA).
E Mail ID: **ktahir@kku.edu.sa** & drkmb25@gmail.com

Citation

Article Cycle

Abstract

Introduction: Children who play violent video games can become violent and aggressive. An aggressive emotional change in their behavior and deviation in academic performance is usually noticed. **Aim:** To assess the impact of violent video games playing among school going adolescents. **Materials and Methods:** A cross-sectional study was conducted among a random sample of 400 adolescents recruited from four selected English medium schools of a City of Northern India by convenient sampling. Each student was interviewed by using a self-structured questionnaire which covered demographics, video gaming behaviors, and effects of video game playing on adolescents. **Statistical Analysis:** Collected data were entered in Microsoft Excel and subjected to suitable statistical tests. **Results:** 83.75% of the participants play video games while 1/3rd preferred to play violent games. 72.24% of the parents did not monitor the video game content of their children. Both boys (58.56%) and girls (17.12%) got aggressive during parent's interference while playing violent video games. Most of the male (62.07%) were willing to apply actions of violent video games in real life. About 63.21% male violent video gamers showed poor academic performance as compared to girls (33.33%). **Conclusion:** Adolescents and their parents should be updated about the negative impact of excessive video game playing on health and psychosocial functioning.

Keywords

Violent video games, School Children, Adolescents.

Introduction

Video game is an electronic interactive game familiar to all for their vibrant colors, sound effects, and sophisticated graphics. The very first video game is associated with William Higinbotham and Steve Russell. It was William Higinbotham who first

designed and implement a video game & Steve Russell was the first to create a game inspiring the multibillion-dollar video games industry. (1) Video games are the most favorite medium for entertainment for school children especially & are gaining too much popularity among all ages. (2) Recently, the video gaming industry is amplifying rapidly and now it has become the 2nd largest industry next to the film industry. Different video games are available far-ranging from simple games to advanced adventurous, fighting and puzzle games. We can group these video games like puzzle, action, racing, card, simulations, bold and all these types of video games are further categorized into three main types viz. Educational Video Games, Entertainment Video Games & Violent Video Games. (3) Now-a-days, different types of video games are top-rated but violent video games and the characters used in it are creating a very negative image in the minds of school children. (4)

Aims & Objectives

- To identify and assess the impact of violent video games on school children.
- To find out the prevalence of playing violent video games among school children.
- To find out the behavioral pattern of school children exposed to violent video games.
- To find out the effect of violent games on the academic achievements of school children.
- To find out the effect of violent games on peer relationship of school children.

Material & Methods

A school-based cross-sectional study was conducted for four months in the four randomly selected English medium schools of Aligarh City, U.P., India, and these schools were Aligarh Public School, Al-Barkaat Public School, St. Fidelis Sr. Sec. School and Our Lady Fatima. A total of 50 male & 50 female students from each of these four schools were randomly selected following equal random representation from each of the class selected (i.e., from 5th to 9th standard) making a sample size of 400 study subjects (200 boys and 200 girls) by convenient sampling. All these randomly selected study subjects were interviewed individually by using a self-structured and pre-tested questionnaire as a study tool for the purpose of the study. A pilot study was also conducted on 40 study subjects (10% of sample size) before the start of the research & necessary changes were made in the study tool

wherever required. Approval from IEC (Institutional Ethical Committee) was taken well in advance. Prior consent was also taken from the study subjects as well as from the Principal of the respective schools before the conduction of the study. Those subjects who didn't give their consent to be part of the study were excluded & were replaced accordingly by other randomly selected subject to reach the sample size. Collected data were entered in Microsoft Excel and subjected to suitable statistical tests by using EpiInfo statistical software.

Results

In our study, about 85% of the male and 82.5% of the female study subjects play video games. (Table 1) About 50% of the males and 43.64% of females who play video games were in the age group of 10 to <12 and 12 to <14 respectively. We find that boys play video games at a relatively younger age as compared to girls, and this finding was statistically significant. 51.17% of the boys who play video games prefer to play violent games in contrast to girls who prefer to play racing games (36.97%), this difference in the preference of playing video games was also found to be statistically significant. Majority of the Boys (48.82%) involved in video gaming spend 3 – 5 hours, however, majority of the girls (33.33%) spend only 2 – 3 hours for the same and found to be statistically significant. About 46.47% of boys who play video games through play station whereas the majority of the girls (55.15%) play on mobile, this difference in media use to play video games was also found to be statistically significant. About 72.24% of the parent do not monitor the video game content of their wards. (Table 2) Majority of the boys (58.56%) and girls (17.12%) got aggression during parent's interference while playing the violent video game as compared to non-violent gaming, and this was found to be statistically significant. (Table 3) The reason for liking the intense video game by the majority of the study subjects was attributed to adventurous playing, followed by fun to play respectively. However, no statistical significance found in the reason of liking violent video games by male and female subjects. (Table 4) Maximum boys (55.17%) who play violent video games fight with their siblings & friends after losing the game whereas the majority of the girls (41.66%) congratulate their counterparts after losing the violent video games. This difference in the reaction of the study subjects to siblings & friends after losing extreme video gaming is found to

be statistically significant. (Table 5) Most of the boys (62.07%) who play violent video games have shown their willingness to apply actions of violent video games in real life; however, the same is reversed in majority of the girls (50%). (Table 6) Nearly 63.21% of the boys playing violent video games have shown poor academic performances as compared to only 33.33% of girls, and this finding in the difference of academic achievements among the male & female study subjects was found to be statistically significant. (Figure 1)

Discussion

The mind is everything in a way because whatever you think today you will become like that some other day. The origin of the video game was with a primary purpose to have entertainment &, education, facing challenging situations and stress reduction. Nowadays, the majority of video games are full of violent contents. The findings of a study on video game content analysis revealed that 89% of video games contain some or other forms of extreme elements, and when children play such games, their lifestyle and personality get changed. By doing so, they developed aggressive tendencies leading to increase chances of psychological changes and affecting their pro-social behaviors and diminution in educational performances, and this was also found to be consistent with similar finding especially among males in our study. (Figure 1)

Video games have traditionally been seen as boy's toys. (6) In video games, male teenagers perceived as the primary target audience by the game industry and mostly continue to be so until recently (Laurel, 2008). (7) In the early years, arcades filled with science fiction shooting, racing, and sports attracted a male teenage audience. This trend continued with the first console and computer games and later with violent titles such as Mortal Kombat and Doom which further shaped the medium's reputation (Subrahmanyam & Greenfield, 1998). (8) In 2005, the BBC's Audience Research department undertook research which revealed that the gender split of those who play a video game is almost even, (9) which is also consistent with our finding. (Table 1) In a study conducted by Anderson CA et all in 2008, 78.41% of students were violent video gamers; however in our research it was inconsistent, i.e., about 51.17% of boys were passionate gamers. (Table 2) They reported 40.1% students engaged with video games less than 2 hours per day, 38.8%

used to play between 2 and 4 hours per day and 21.1% used to play for more than 4 hours per day (10) these findings are more or less consistent with our results. (Table 2)

According to a Dartmouth meta-analysis published in the Proceedings of the National Academy of Sciences (PNAS), playing violent video games by adolescents is associated with increases in physical aggression over time. (11) Studies have shown that violent video games contribute to antisocial and aggressive behavior. (12) A similar finding observed in this study. (Table 3) On the contrary, there is another study in which researchers found that playing violent video game leads to desensitization to violence. (13) Generally, the school-going children are predominantly engaged in playing video games. We believe that children's minds have a particular form of learning ability and taking higher marks of what they see in front of them. Their mind concentrates on certain things, which are colorful and attractive. They have more fun & found playing the violent video game as more adventurous. (Table 4) In a study conducted by Redmond DL, that in case of losing an intense video game, a child's reaction or communication with the parents or siblings not hampered. (14) However, in the current study, a reversal has been noted. (Table 5)

Violence is a form of aggressive behaviors, but not all aggressive actions are violent. Very few studies found that playing violent video games increases the chances of later delinquency, criminal behavior, or lethal violence. Such studies are challenging to conduct and require more & more children. Aggressive behavior is a result of playing violent video games. It also results in more lethal violence or other criminal acts, but there is no clear evidence to support that assumption. (15) A study conducted by Craig A. Anderson (2000) violent video game effects on aggression-related variables Study found that real-life extreme video gameplay was positively related to aggressive behavior and delinquency. The relation was stronger for characteristically aggressive individuals and men. Academic achievement was negatively associated with the overall amount of time spent playing video games. (16) Some other similar researches suggest that playing violent video games will increase aggressive behavior. A meta-analytic review of the video-game research literature reveals that violent video games increase aggressive behavior in children and young adults. Experimental and non-experimental studies

with males and females in laboratory and field settings support this conclusion. Analyses also reveal that exposure to violent video games increases physiological arousal and aggression-related thoughts and feelings. Playing violent video games also decreases prosocial behavior. (17,18) Our study also revealed that in most of the cases, there is a willingness to apply actions of violent video games in real life by the study subjects (Table 6) which is not a good sign for their positive personality development. Children today are flooded with electronic media. We have grown up with access to cell phone, iPads, laptops, computer and all too often violent video games. There is a cause-effect relationship between video games violence and aggression among children. We expect that videogames have a significant impact as children copy the actions of their favorite character, they don't observe simply rather they participate actively to get rewards. So, it is the responsibility of the government to weigh between the economic profitability of video game industries especially by selling violent video games and the future of our children by preventing the change in their aggressive behavior and psychosocial development as a whole.

Conclusion

The impact of violence in the games interpret the everyday life of the child, which could be a problem with fitting into real society. There is a significant difference between playing violent video games and other types video games and theses violent video games are harmful to the children because of not only that it makes them more aggressive; it can make diagonal their perception of reality and make it difficult to differentiate between fantasy and actual violence. Praise and repetition can also play a significant role in the development of a child because it could go and promote violent behavior. Boys indulged in violent video games have reportedly poor academic performance as compared to girls. The reaction after losing a violent video game among the boys is notable viz. fighting with each other and it's a serious concern in their behavioral development and should be looked into.

Recommendation

First of all parents should avoid buying violent video games for their kids as far as possible to save their children in developing adverse behavior which is not right in their psychosocial development as a whole. Parents should exchange their views among themselves about the playing habits of their kids & help each other in designing a suitable schedule for playing video games which may not contribute to affect their academic performance also.

Limitation of the study

Study setting can be expanded to more schools as only four English medium private schools were selected. Time constraint was the only limitation for not involving other government schools (English & Hindi medium both) in the study for the broader applicability of the findings. Many personal differences among children viz. family environment and culture etc. have not been taken into account in the study as a result of short duration of study.

Relevance of the study

Playing violent video games by school children is heading towards a threat in their personality development. No efforts have been noticed so far in this direction which may worsened the situation further. Hence, it's the time to intervene and save the future of our children.

Authors Contribution

SK: Concept, study design & statistical analysis.
FS: Acquisition of data and data entry for analysis.
FA: Supervision & incorporated scientific intellect.
KM: Drafted entire manuscript as per IJCH format.
NN: Revision of the draft for intellectual content.
AH: Reviewing the pre-final draft critically.
SEM: Approving the final draft for submission.

Acknowledgement

References

1. Steve Rabin (Ed). Introduction to Game Development, 2nd Edition; 2010. Course Technology, a part of Cengage Learning 20 Channel Center Street Boston, MA 02210 USA. ISBN-13: 978-1-58450-679-9 ISBN-10: 1-58450-679-2: p.4

2. Mitchell A, Savill-Smith C. The use of computer and video games for learning: A review of literature. Learning & Skills Development Agency, Regent Arcade House 19–25 Argyll Street London W1F 7LS (2004). ISBN 1-85338-904-8: p.2

3. The many different types of video games & their subgenres. Blog & News, posted by Vince; ID Tech, Singapore (2018).

4. Liu Y, Teng Z, Lan H, Zhang X, Yao D. Short-term effects of prosocial video games on aggression: an event-related potential study. Front Behav Neurosci. 2015;9:193. doi: 10.3389/fnbeh.2015.00193. eCollection 2015. PubMed PMID: 26257620; PubMed Central PMCID: PMC4513560.[PubMed].

5. Amialchuk A, Kotalik A. Do Your School Mates Influence How Long You Game? Evidence from the U.S. PLoS One. 2016;11(8):e0160664. doi: 10.1371/journal.pone.0160664. eCollection 2016. PubMed PMID: 27494337; PubMed Central PMCID: PMC4975493.[PubMed].

6. Lotte Vermeulen, Jan Van Looy, Cédric Courtois, Frederik De Grove (2019) Girls Will Be Girls? A Study into Differences in Game Design Preferences across Gender and Player Types

7. BBC (2005). Gamers in de UK. Digital play, digital lifestyles.

8. Adam Lobel, Rutger C. M. E. Engels, Lisanne L. Stone, William J. Burk, and Isabela Granic Video Gaming and Children's Psychosocial Wellbeing: A Longitudinal Study; J Youth Adolesc. 2017; 46(4): 884–897. Published online 2017 Feb 21

9. Dartmouth College. "Children's violent video game play associated with increased physical aggressive behavior." ScienceDaily. ScienceDaily, 1 October 2018.

10. SAGE Publications. "Why do people play violent video games? Storytelling and meaningful choices may play a part." ScienceDaily. ScienceDaily, 9 April 2015.

11. Prot, S., Anderson, C. A., Gentile, D. A., Brown, S. C., & Swing, E. L. (2014). The positive and negative effects of video gameplay. In A. Jordan & D. Romer (Eds.). Media and the Well-Being of Children and Adolescents (109-128). New York: Oxford University Press.

12. Dustin L. Redmond (2010), The effect of video games on family communication and interaction

13. The American Psychological Association Task Force on Violent Media. (2017). The American Psychological Association Task Force Assessment of Violent Video Games: Science in the Service of Public Interest. American Psychologist. 72(2): 126-143

14. Anderson, C.A. Violent Video Games: Myths, Facts, and Unanswered Questions. Psychological Science Agenda. October 2003, Vol. 16, No.5

15. Anderson CA, Bushman BJ. Human aggression. Annu Rev Psychol. 2002;53:27-51. doi: 10.1146/annurev.psych.53.100901.135231. PubMed PMID: 11752478.[PubMed].

16. Chambers JH, Ascione FR. The effects of prosocial and aggressive videogames on children's donating and helping. J Genet Psychol. 1987 Dec;148(4):499-505. doi: 10.1080/00221325.1987.10532488. PubMed PMID: 3437274.[PubMed].

17. Connor, D.F., Steingard, R.J., Cunningham, J.A., Anderson, J.J., & Melloni, R.H. (2004). Proactive and reactive aggression in referred children and adolescents. American Journal of Orthopsychiatry, 74, 129-136.

18. Cooper, J., & Mackie, D. (1986). Video games and aggression in children. J of Appl. Soc. Psychol. 16, 726-744.

Tables

TABLE 1 DISTRIBUTION OF SUBJECTS WHO PLAY OR DON'T PLAY VIDEO GAMES. (N=400)

Play Video Games	Male (n=200)	Female (n=200)	Total (N=400)	p-value
	No. (%)	No. (%)	No. (%)	
Yes	170 (85.0)	165 (82.5)	335 (83.75)	
No	30 (15.0)	35 (17.5)	65 (16.25)	**> 0.05**
Grand Total	**200 (100.0)**	**200 (100.0)**	**400 (100.0)**	

TABLE 2 DISTRIBUTION OF SUBJECTS WHO PLAY VIDEO GAMES BY DIFFERENT VARIABLES. (N=335)

S. No.	Variables	Male (n=170)	Female (n=165)	Total (n=335)	p-value
		No. (%)	No. (%)	No. (%)	
1	Age group (years)				
	• 10 to <12	85 (50.0)	30 (18.18)	115 (34.33)	
	• 12 to <14	49 (28.8)	72 (43.64)	108 (32.24)	**< 0.001**
	• 14 to ≤16	36 (21.2)	63 (38.18)	112 (33.43)	
2	Video game preferences				
	• Violent	87 (51.17)	24 (14.54)	111 (33.13)	
	• Racing	23 (13.52)	61 (36.97)	84 (25.05)	
	• Sports	18 (10.58)	38 (23.03)	56 (16.71)	**< 0.001**
	• Action	31 (16.47)	12 (07.27)	43 (12.83)	
	• Puzzle	11 (06.47)	30 (18.18)	41 (12.24)	
3	Time spend in gaming (hours)				
	• < 2	17 (10.0)	36 (21.81)	53 (15.82)	**< 0.001**
	• 2 – 3	29 (17.06)	55 (33.33)	84 (25.07)	

	• 3 – 5	83 (48.82)	44 (26.66)	127 (37.91)	
	• > 5	41 (24.12)	30 (18.18)	71 (21.19)	
4	Media to play the video game				< 0.001
	• Computer	62 (36.47)	46 (27.88)	108 (32.24)	
	• Play station	79 (46.47)	28 (16.97)	107 (31.94)	
	• Mobile phone	29 (17.06)	91 (55.15)	120 (35.82)	
5	Parent monitor the video game content				> 0.05
	• YES	41 (24.12)	52 (31.51)	93 (27.76)	
	• NO	129 (75.88)	113 (68.48)	242 (72.24)	

TABLE 3 DISTRIBUTION OF SUBJECTS BY THEIR REACTION TO PARENT'S INTERFERENCE WHILE PLAYING THE VIDEO GAME. (N=335)

Sex	Reaction	Type of video game		Total (N=335)	p-value
		VIOLENT (N=111)	NON – VIOLENT (n=224)		
Male (n=170)	Aggressive	65 (58.56)	19 (08.48)	84 (25.07)	< 0.001
	Non-aggressive	22 (19.82)	64 (28.57)	86 (25.67)	
Female (n=165)	Aggressive	19 (17.12)	12 (05.36)	31 (09.25)	< 0.001
	Non-aggressive	05 (04.50)	129 (57.59)	134 (40.00)	
	Grand Total	111 (100.0)	224 (100.0)	335 (100.0)	

TABLE 4 DISTRIBUTION OF SUBJECTS BY THEIR REASON FOR LIKING THE VIOLENT VIDEO GAME. (N=111)

S. No.	Variables	Male (n=87)	Female (n=24)	Total (N=111)	p-value
		No. (%)	No. (%)	No. (%)	
1	Fun to play	22 (25.29)	06 (25.00)	28 (25.22)	> 0.05
2	Adventurous	32 (36.78)	07 (29.17)	39 (35.13)	
3	Thriller	19 (21.84)	06 (25.00)	25 (22.52)	
4	To spend time	14 (16.09)	05 (20.83)	19 (17.12)	
	Grand Total	87 (100.0)	24 (100.0)	111 (100.0)	

TABLE 5 DISTRIBUTION OF SUBJECTS BY THEIR REACTION TO SIBLINGS & FRIENDS AFTER LOSING VIOLENT VIDEO GAMING. (N=111)

S. No.	Reaction	Male (n=87)	Female (n=24)	Total (N=111)	p-value
		No. (%)	No. (%)	No. (%)	
1	Fighting	48 (55.17)	06 (25.00)	54 (48.65)	< 0.05
2	Quarrelling	26 (29.88)	08 (33.33)	34 (30.63)	
3	Simply congratulate	13 (14.94)	10 (41.66)	23 (20.72)	
	Grand Total	87 (100.0)	24 (100.0)	111 (100.0)	

TABLE 6 DISTRIBUTION OF SUBJECTS BY THEIR WILLINGNESS TO APPLY ACTIONS OF VIOLENT VIDEO GAMES IN REAL LIFE. (N=111)

S. No.	Willingness	Male (n=87)	Female (n=24)	Total (N=111)	p-value
		No. (%)	No. (%)	No. (%)	
1	Yes	54 (62.07)	05 (20.83)	59 (53.15)	< 0.05
2	Never	11 (12.64)	12 (50.00)	23 (20.72)	
3	Sometimes	22 (25.29)	07 (29.17)	29 (26.17)	
	Grand Total	87 (100.0)	24 (100.0)	111 (100.0)	

Figures

FIGURE 1 DISTRIBUTION OF SUBJECTS PLAYING VIOLENT VIDEO GAMES BY THEIR ACADEMIC PERFORMANCE. (N=111)

Announcement

IAPSMUPUKCON, 2019
Dear Sir/Madam,

Greetings from the city of TAJ

On behalf of the Organizing Committee, it gives me immense pleasure to invite you to "XXII Annual Conference of Indian Association of Preventive & Social Medicine (IAPSM) UP & UK Chapter" which is being organized by the Department of Community Medicine, FH Medical College, Etmadpur, Agra, Uttar Pradesh on 14th & 15th of December 2019.

The main theme of the Conference is "Health Environment and Sustainable Development – Challenges to Public Health". The conference will also focus to cover the entire spectrum of Community Medicine & Public Health topics.

The conference will offer a great opportunity to discuss important public health issues, exchange knowledge and share ideas having the presence of eminent faculties, scholars and public health specialists of Uttar Pradesh and Uttarakhand as well as from other parts of the country of National and International repute on a common platform. We expect several vigorous initiatives and robust solution that will follow the conference, leading to effective action that would be of great benefit to the people worldwide.

On behalf of the Organizing Committee, I request your kind participation in this conference. Your participation and support will be highly valuable for making this event an invigorating experience. We will try our best to make this event a memorable one and eagerly look forward to see you all in December 2019

With warm regards
Dr S.C. Gupta   Dr Panchsheel Sharma   Dr Himalaya Singh   Dr Amarveer S. Mehta
Organizing Chairman   Organizing Secretary   Co-Organizing Secretary   Treasurer