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Violent Online Games and Bullying Behaviour of In-school Adolescents in Nigeria

Abstract

Adolescents in Nigeria are as exposed to violent games and movies as their counterparts in the world, this predisposes them to bullying perpetration. This study further investigated how violent online gaming (VOG) impact in-school adolescents' bullying perpetration. Descriptive survey approach was adopted; self-report measure was utilized to gather data on in-school adolescents' online gaming and bullying perpetration. Simple random sampling technique was used in selecting 7 schools, 400 respondents were selected using proportional and simple random sampling techniques. The data generated were analysed using percentage, Pearson's Product Moment Correlation and stepwise regression were used. Majority of participants (96.5%) play violent online games. It was also gathered that considerable percentages (27.7%) of the respondents involved in violent online gaming (VOG) perpetrate various forms of bullying behaviours. Significant and direct link exist between VOG and bullying perpetration of the sampled adolescents.

Keywords: Age, Bullying perpetration, Influence, In-school Adolescents, Violent online games.

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Introduction

The cyberspace is currently the leading platform where adolescents exchange ideas and seek leisure. Websites (which include: blog, instant messaging, chat rooms, discussion forums among others) abound on the cyberspace providing avenue for such interaction and fulfillment. Scholars (Javid *et al*, 2013; Zumarova, 2015) found computers and online games to be one of the prevailing means of relaxation among children and adolescents.

Online games are beneficial to human beings both young and old, they promote cognitive stimulation, enhance problem-solving skills, creative thinking and goal development (Kyriaziset *al*, 2018). However, when the contents of games are cruel and oppressive, they can stimulate aggressive tendencies in adolescents. Past and recent studies (Anderson *et al*, 2001; Greitemeyer *et al*, 2014; Groves *et al*, 2014; Kepeset *al*, 2017; Shao *et al*, 2019) have linked viewing violent online games to adolescents' aggressive behavior. Although these findings were not without controversies; Ferguson (2007) observed that publishing prejudice may influence the high correlation between online/ video games and adolescents' aggressive behaviors. The researcher maintained that inherited tendencies are the basis for aggressive behavior which is only enhanced by environmental factors such as exposure to violent online games (Ferguson *et al*, 2008). Similarly, researchers (Huesmanet *al*, 1997; Ferguson *et al*, 2009; 2012; Ferguson, 2013, 2015; Furugkanamoret *al*, 2016; Huesmanet *al*, 2017) identified cognitive, familial, personality and social factors to be more influential in determining aggressive

behaviors of adolescents than engagement in violent online /video games.

Many of these studies were conducted outside Nigeria, sparse data are available to gain insight into whether significant association exist between violent online games and in-school adolescents bullying perpetration, hence the need for this study.

Statement of the Problem

It has been observed that adolescents in Nigeria expended a quarter of 24 hours in a day on amusement media which mostly contain violent acts; such engagement could impact on the aggressive behavior of youth based on research outcomes in other countries (Ukoha, 2013; Abubakar *et al*, 2018). Such observation could not suffice to substantiate the link between violent online games and bullying behavior of Nigerian adolescents, hence the need to investigate whether violent online games would have same or different effects on adolescents' bullying perpetration. Onwukwe, *et al*(2017) conducted exploratory investigation on the impact that violent online games and movies have on aggressive behaviors of minors in Imo state, Nigeria. It was revealed that violent video games and movies significantly impact the aggressive behavior of the participants. The study focused on children between the age of 5 and 7 years and respondents were teachers. This study focused on adolescents within the age range of 11 and 21 years attending secondary schools. The measure adopted was self-report of engagement in violent online gaming and perpetration of bullying.

Purpose of the Study

The focus of this study was to inquire the influence of violent online gaming on adolescents' bullying perpetration in Nigeria. Basically, the inquiry investigated the link between engagement in violent online games and perpetration of bullying behaviors. It also examined whether variables of age, duration of playing violent games, family type, gender and school type would predict perpetration of bullying behaviours among in-school adolescents involved in violent online gaming.

The following research questions were answered in the study

1. What is the rate of in-school adolescents' involvement in playing violent online games?
2. What is the perceived influence of violent online games on in-school adolescents' bullying perpetration?

The following null hypotheses were tested in this study:

1. There is no significant relationship between violent online game and bullying perpetration of in-school adolescents in Nigeria
2. Age, duration of playing games, family type, gender and school type would not significantly predict perpetration of bullying among in-school adolescents involved in violent online games

Violent Online Games and Bullying Behaviors

Studies have documented links between violent video games and bullying behaviors of in-school adolescents (Abu-Baker *et al*, 2018; Den Hamer *et al*, 2015; Dittricket *al*, 2013; Fantiet *al*, 2012; Lamet *al*, 2013; Cheng *et al*, 2015). Reports

from both cross-sectional and longitudinal studies have revealed extensive prove on the link between engagement in violent video/online games and bullying behavior. In spite these proofs, much attention has not been focus on the influence that violent online games has on the bullying behavior of in-school adolescents in Nigeria. Available related studies in Nigeria were on rate and correlates of cyber bullying perpetration (Olumide *et al*, 2015); psychosocial influence of multimedia violence amongst children of schoolage (Oladeji, 2016); among others. Age, Family Type, Gender, School Type and Duration of Engagement in Online violent games as predictors of bullying perpetration among in-school adolescents involved in violent online games

Studies have found some factors to intervene and restrained the association between engagement in violent online games and cyber bullying. Such factors include the normative notion regarding hostility and trait aggressiveness (Zhu, *et al*, 2018). With regard to gender difference, outcomes of studies are not consistent. Studies conducted by Anderson *et al*, 2010; Bartholow *et al*, 2006; Olson *et al*, 2009 among others revealed that frequent involvement in violent games predict aggressive behavior such as bullying perpetration in adolescent especially the females but it is not true for victimization. Yang (2012) revealed that male when likened to female adolescents desired and derived pleasure from violent online games and perpetrate more bullying behaviors. Khalil *et al*, (2019) noted that significant numbers of male are more inclined to implement what they observe in violent video games compared to female. Huang *et al* (2019) maintained that engagement in violent online games make

Taiwanese adolescents vulnerable to perpetrate and experience cyber bullying and victimization most especially among male students who are at the senior high school. However, Huesman *et al* (2003) found the relationship same across gender and irrespective of parental or parenting factors.

Researchers (Anderson *et al*, 2000; Bushman *et al*, 2006; Anderson *et al*, 2001) emphasized that factors such as hostile attributes, younger age, insufficient problem-solving competencies, inadequate parental supervision, gender and having experienced violence or victimization probably enhance the adverse impacts of viewing/playing violent online games on adolescents bullying behavior. They maintained that these factors are responsible for the variation in the impact that the exposure to violent online games has on children and adolescents. Age has significant difference in longitudinal study. In Fryling *et al* (2015) study, it was further revealed that respondents' age and duration of playing violent online game impact their perception regarding its influence on cyber bullying. Lemmens *et al*, (2010); Abu-Baker *et al* (2018) observed that the duration expended in playing violent online games heightened perpetration of physical bullying. However, Brunberg *et al* (2014); Kovess-Masfaty *et al* (2016) reported no considerable link in the time expended on playing online game and emotional and internal problems of European and Norwegian kids.

Shao *et al* (2019) found that circumstances within the family do not impact the link between playing violent games and aggressive behavior except in the area of normative beliefs the stand that Ferguson *et al*, (2009); (2012); Ferguson,

(2013) had earlier uphold. In their separate findings Ferguson and associates maintained that domestic turbulence and other unfavorable conditions within the family are greatly connected to adolescents' hostility. Regarding school type and bullying behavior of in-school adolescents, Fenny *et al*(2020) found that adolescents that attend learning institution characterized with negative atmosphere as well as those going to non public school among other correlates are likely to perpetrate bullying. Critical look at the review of the literature revealed paucity of data on influence of violent online games on bullying behavior of in-school adolescents in Nigeria. Hence, this study investigated whether the two variables have significant link as well as the moderating effects of age, family type, gender, duration of engagement in online gaming and school types on the link between playing violent online games and in-school adolescents' bullying behavior in Nigeria.

Methodology

Descriptive research approach of correlational and cross-sectional design is considered appropriate for this study to gather information from representative sample of in-school adolescents in Ilorin metropolis regarding the link between playing violent online games and bullying behavior.

Population, Sample and Sampling Techniques

The investigation was carried out in private and public secondary schools within the Ilorin metropolis. The population for the study comprised all the in-school adolescents in Ilorin metropolis, Kwara State, Nigeria. The target population consisted of in-school adolescents drawn from 7 selected schools. Sample was made up of 400

students. Selection of sample was in phases, at the initial phase, the inventory of all the secondary schools (Private and Public) was procured from the Kwara State Ministry of Education and Human Capital Development Examination Unit (2014) as well as Kwara State School Census (2015). Two schools each were selected from Ilorin East and South LGAs while 3 schools were selected from Ilorin West LGA through dip-hat sampling technique totaling 7 schools across the metropolis. In the second phase, one class each from junior secondary and senior secondary sections. In the third phase, proportional sampling was employed to choose from each school based on the population size. The entire sample that participated in the study was 400 who agreed to take part in the study.

Instrumentation

The instrument adopted for this study is a self-designed self-assessment questionnaire titled “Violent Online Games and Adolescents Bullying Behaviour Questionnaire”. It has three parts, the first part inquired respondents’ demography (age, gender, family type, school type and duration of playing games); section B is a list of 20 violent online games requesting respondents to indicate how often they play them with scoring format: always, sometimes, rarely and never played. The games include Grand Theft Auto 5, Resident Evil, Metal Gear Solid, and Ghost Recon among others. The last section comprised 25 statements on the influence of violent online gaming on various forms of bullying behavior. The instrument also contains instructions for participants and the consent.

The research instrument was validated by five experts to establish its content validity. Corrections done were effected

and it was adjudged valid for the study. The test re-test approach was adopted for the reliability, Pearson Product Moment Correlation was used to analyse the two sets of scores obtained from the administrations yielding coefficient of 0.67.

Authorizations to collect data from the respondents were received from the respective school principal. Students were given consent form a day prior to data collection, only those whose parent signed the consent form were given the questionnaire sequel to their agreement to participate. None of the participants was compel to partake.

The format of each part of the questionnaire form holds the weight of scoring. Sections A and B were scored using percentage. The distribution of the respondents across the various demography was considered, the number of respondents who self-reported engagement in playing violent online games by ticking always, sometimes and rarely were taken as involved, while the percentage of those who never played was also noted. The percentages of respondents who agree or disagree to perpetrate bullying behavior were taken.

Data gathered were analysed using both descriptive and inferential statistics. Percentage was used to answer the research questions, while Pearson's Product Moment Correlation and Regressions were used to test the formulated hypotheses.

Results

Table 1 depicts the distribution of respondents across the demographic variables revealing that many of the participants are above 15 years of age, male, attended public

schools, majorly from monogamous family setting and played violent games in duration less than a year.

Table 1: Distribution of respondents across age, family type, gender, school type and duration of playing games

Variables	Frequency	Percentage
Age		
Below 15 years	188	47.0
15 years & above	212	53.0
Total	400	100
Gender		
Female	196	49.0
Male	204	51.0
Total	400	100
School Type		
Private	88	22.0
Public	312	78.0
Total	400	100
FamilyType		
Monogamous	254	63.5
Polygyny	146	36.5
Total	400	100
Duration of Playing Games		
Less than 1 year	174	43.5
1-3 years	108	27
4 years & above	118	29.5
Total	400	100

Research Question 1: What is the rate of in-school adolescents' involvement in violent online game?

Table 2: Percentage distribution of the respondents based on involvement in violent online games

Involvement	Frequency	Percentage
Yes	386	96.5
No	14	3.5
Total	400	100.0

Table 2 indicates that 3.5% (14) of the respondents had never played game while 96.5% (386) of the respondents had played games.

Research Question 2: To what extent has violent online games influenced the bullying behaviour of in-school adolescents who played games in Ilorin metropolis?

Table 2: Influence of Violent online Games on Bullying Behavior of the Respondents involved in violent Games

N	Item	Agree	Disagree
	As a result of playing online games, I do:		
1	threaten someone weaker than I am	142 (36.8%)	244 (63.2%)
2	exhibit aggression towards my peers	142 (36.8%)	244 (63.2%)
3	destroy properties belonging to someone weaker than I am	84 (21.8%)	302 (78.2%)
4	hit/kick someone who is weaker than I am	119 (30.8%)	267 (69.2%)
5	call someone weaker than I am derogatory names	115 (29.8%)	271 (70.2%)
6	feel excited while intimidating other	136 (35.2%)	250 (64.8%)
7	carry weapons to school to defend myself	98 (25.4%)	288 (74.6%)
8	exclude individual weaker than I am from group	120 (31.1%)	266 (68.9%)
9	intimidate people on social media platforms	134 (34.7%)	252 (65.3%)
10	insult someone weaker than I am	124 (32.1%)	262 (67.9%)

11	strike someone weaker than I am on any part of the body	103 (26.7%)	283 (73.3%)
12	steal from someone weaker than I am	99 (25.6%)	287 (74.4%)
13	tease someone weaker than I am at intervals	92 (23.8%)	294 (76.2%)
14	take away objects from some weaker than I am by using force	120 (31.1%)	266 (68.9%)
15	ridicule someone weaker than I am	110 (28.5%)	276 (71.5%)
16	beat someone weaker than I am	90 (23.3%)	296 (76.7%)
17	mock the culture of someone weaker than I am	94 (24.4%)	292 (75.6%)
18	split saliva on someone weaker than I am	91 (23.6%)	295 (76.4%)
19	make offensive action/body movement to someone weaker than me	94 (24.4%)	292 (75.6%)
20	make inappropriate sexual remarks about someone weaker than I am	97 (25.1%)	289 (74.9%)
21	post funny picture of someone weaker than I am	76 (19.7%)	310 (80.3%)
22	make inappropriate jokes with someone weaker than I am	97 (25.1%)	289 (74.9%)
23	post undesirable sexual remarks about someone weaker than I am online	96 (24.9%)	290 (75.1%)
24	make inappropriate physical touching of someone weaker than I am	100 (25.9%)	286 (74.1%)
25	make inappropriate sexual advances on social media or physically with someone weaker than I am	102 (26.4%)	284 (73.6%)
Aggregate Percentage		27.70	72.30

Research Question 3: To what extents do in-school adolescents who did not play game involved in bullying acts?

Table 3: Bullying Behavior of the Respondents Who had Never Played violent online Games

No	Items	Agree	Disagree
As for me, I do:			
1	threaten someone weaker than I am	0 (0%)	14 (100%)

2	exhibit aggression towards my peers	2 (14.3%)	12 (85.7%)
3	destroy properties belonging to someone weaker than I am	0 (0%)	14 (100%)
4	hit/kick someone who is weaker than I am	1 (7.1%)	13 (92.9%)
5	call someone weaker than I am derogatory names	0 (0%)	14 (100%)
6	feel excited while intimidating other	1 (7.1%)	13 (92.9%)
7	carry weapons to school to defend myself	2 (14.3%)	12 (85.7%)
8	exclude individual weaker than I am from group	0 (0%)	14 (100%)
9	intimidate people on social media platforms	0 (0%)	14 (100%)
10	insult someone weaker than I am	2 (14.3%)	12 (85.7%)
11	strike someone weaker than I am on any part of the body	1 (7.1%)	13 (92.9%)
12	steal from someone weaker than I am	1 (7.1%)	13 (92.9%)
13	tease someone weaker than I am at intervals	3 (21.4%)	11 (78.6%)
14	take away objects from some weaker than I am by using force	1 (7.1%)	13 (92.9%)
15	ridicule someone weaker than I am	1 (7.1%)	13 (92.9%)
16	beat someone weaker than I am	0 (0%)	14 (100%)
17	mock the culture of someone weaker than I am	2 (14.3%)	12 (85.7%)
18	spit saliva on someone weaker than I am	1 (7.1%)	13 (92.9%)
19	make offensive action/body movement to someone weaker than me	2 (14.3%)	12 (85.7%)
20	make inappropriate sexual remarks about someone weaker than I am	1 (7.1%)	13 (92.9%)
21	post funny picture of someone weaker than I am	1 (7.1%)	13 (92.9%)
22	make inappropriate jokes with someone weaker than I am	1 (7.1%)	13 (92.9%)
23	post undesirable sexual remarks about someone weaker than I am online	0 (0%)	14 (100%)
24	make inappropriate physical touching of someone weaker than I am	1 (7.1%)	13 (92.9%)
25	make inappropriate sexual advances on social media or physically with someone weaker than I am	0 (0%)	14 (100%)
Aggregate rate of bullying perpetration		6.85%	93.15%

Table 3 indicates that 6.85% of the respondents who had never play violent online games perpetratebullying acts while 93.15 % of the respondents did not perpetrate bullying acts.

Hypothesis 1: Playing violent online games would not significantly relate to perpetration of bullying behaviour of in-school adolescents

Table 4: Descriptive statistics and correlation between playing violent games and bullying perpetration

Var.	N	Mean	SD	df	Cal.r-val.	Sig
Playing VOG	400	49.94	13.71	3.98	.444	.000
Bullying	400	38.62	13.99			

* $\rho < 0.05$; VOG = violent online games

Table 4 indicates moderate significantpositive link between playing violent online games and perpetration of bullying behaviour among in-school adolescents in Ilorin, Nigeria at $r .444$ significant at 0.05 alpha levels.

Hypothesis II: *Gender, age, school type, family type and duration of playing*

games would not significantly predict perpetration of bullying among in-school adolescents who played violent online games

Table 4i: Regression showing relationship among Gender, Age, School Type, Family Type, Duration of playing the game and Bullying Behaviour of Respondents who Play Games

Model	Sum of squares	df	Mean square	F-value	Sig	Dec
Regression	1471.11	5	294.22			
Residual	15764.01	380	41.48	7.09*	.00	Rej.
Total	17235.11	385				

* $p < .05$

Table 4i shows that the significant value (.00) is less than .05, the model is fit. The multiple regressions statistical method is suitable and can be continued. To ascertain the contribution of five independent variables (gender, age, school type, family type and duration of playing the game), Adjusted R-Square was computed as revealed thus:

Table 4ii: Contribution of independent variables through Adjusted R-square

Model	R	R-square	Adjusted R-square	Std. Error of Estimate
1	.292 ^a	.085	.073	6.441

Table 4ii indicates the contribution of independent variables (age, duration of playing the game, family type, gender and school type). The Adjusted R-square shows .073 (7.3%) to the dependent variable (bullying behaviour). To ascertain the contributions of the five independent variables separately, "Beta" weight was computed as shown below:

Table 4iii: Regression Coefficient showing Gender, Age, School Type, Family Type, Duration of playing the game Predicting Bullying Behaviour of the Respondents who played Violent Game

Model	Unstandardised coefficients	Standard coefficients	t	Sig.
	B	Std Error	Beta	
Consta	21.34	2.09		10.21
				0.00

nt	0.85	0.66	0.06	1.29	0.18
Gender	2.42	0.64	0.19	3.78	0.00
Age	2.49	0.83	0.15	2.99	0.00
School	1.11	0.69	0.08	1.61	0.11
Family	-0.20	0.40	-0.03	-0.52	0.61
Duratio n					

Table 4iii indicates contribution of moderating variables (gender, age, school type, family type and duration of playing game) to prediction of bullying behaviour among in-school adolescents that played online violent games. Two (age and school type) out of the five variables significantly contribute to the prediction of bullying behaviour at varying capacity; age, ($\beta = 0.19, t = 3.78, P < 0.05$); school type ($\beta = 0.15, t = 2.99, P < 0.05$). Based on the result, it could be seen that age and school type have a significant relationship with bullying behaviour among in-school adolescents who played violent online games while gender, family type and duration did not have significant relationship with the bullying behaviour among in-school adolescents who played violent online games.

Discussion

The present study substantiates that significant percentage of in-school adolescents in Nigeria play violent online games just like their colleagues worldwide. This is in line with reports from Yang (2013); Teng, Li and Lu (2014), China Audio-Video and Digital Publishing Association Game Publishing Committee (2018); Yao, Zhou, Li and Gao (2019). The findings confirm earlier assertions by Ukoha (2013) and Onwuke et al (2017) that significant percentage of in-school

adolescents in Nigeria spent a lot of time playing online and video games which may link to exhibition of aggressive behavior. Outcomes from this study reiterates moderate but significant link between engagement in violent online games and perpetration of bullying behavior among study sample. The result is consistent with Abu-Baker and Ayyd (2018); Cheng et al., (2015); Den Hammer and Konijin (2015); Dittrick et al. (2013); Fanti et al. (2012); Hassan, Bague and Bushman (2012); Lam, Chen and Liu (2012); Shao and Wang (2019); Yao, Zhao, Li and Gao (2019). However, outcomes of studies conducted by Ferguson and associates 2009, 2011, 2013, 2015 revealed that adolescents' engagement in violent online gaming were not predictive of bullying perpetration. For instance, Ferguson, San Miguel, Garza and Jerabeck(2011) in a longitudinal data maintained that other factors such as depressed mood, unfriendly personality attributes, intra-familial violence and inducement from fellow students were leading indices of aggressive behavior in adolescents. Many studies in recent times have disputed the argument laid by Ferguson and associates. Onwukeet al (2017) confirmed a causal link between engagement in violent online gaming and aggressive behavior in children between the ages of five and seven years. In this study, the percentage (27.7%) of in-school adolescents who reported bullying perpetration as a result of involvement in violent online game far outweigh the percentage (6.85%) of those who are not involved in online gaming and perpetrate bullying behavior thereby confirming that violent online game significantly related to adolescent perpetration of bullying behavior ($r = .444, p = 0.00$).

The outcome of this inquiry found age and school type to be significantly predictive of bullying perpetration of in-school adolescents involved in playing violent online games. The implication of the finding is that the influence that exposure to violent online games would have on the bullying behavior of in-school adolescents depends on their age and type of school attended. The findings corroborate Anderson and Dill (2000); Anderson and Bushman (2001); Bushman and Huesman (2000); Fryling et al., (2015); Huang et al., (2019) who found respondents' age and class level to impact their perception of the influence of violent online/video games on perpetration of bullying behavior. Similarly, Fenny and Falola (2020) found unconstructive learning institution atmosphere and going to non-government institute to have link with bullying perpetration among Nigerian students. The reason for the consistency in findings could be premised on the fact that adolescents who are older might be able to demarcate violent act in games as non real situation, avoid processing such messages to be normal and thereby avoid real life violence as occurred in younger adolescents. Also the policies in schools against bullying behavior differ from school to school, such situation might prevent adolescent attending schools with good policies (strategies) against bullying from implementing what they learnt in violent games compared to those who attend schools with no or poorly implemented policies against bullying.

Gender, duration of playing violent games and family type did not significantly predict bullying perpetration of in-school adolescents involved in playing violent games. The findings lend support to earlier studies (Brunberg, Mentzoni & Froylent, 2014; Kovess-Masfaty et al., 2016) that

reported no considerable link in the time expended on playing online games and emotional challenges and internal problems experienced by European and Norwegian kids. Abu-Baker and Ayyd (2018); Anderson, et al., (2010); Lemmens, Valkenburg and Peter (2010); Oslon, (2009); Yang, (2012) noted significant variation in the impact that violent gaming has on adolescents' bullying perpetration based on gender and duration of playing the games in a day. While (Abu-Baker & Ayyd, 2018; Lemmens et al., 2010; Yang, 2012) observed that the duration expended on playing violent games heightened perpetration of physical bullying in favour of male participants; Anderson et al., Oslon found violent online gaming predictive of bullying perpetration for female adolescents. The measure in the former studies (Abu-Baker, 2018; Lemmens et al., 2010) noted number of hours dedicated in a day to playing online games and physical aggression was considered while the current study considered how long they have been playing the games based on year, it also measured all forms of bullying collectively.

The findings is consistent with Shao and Wang (2019) who found that circumstances within the family do not impact the link between playing violent games and aggressive behavior but with the exemption of normative beliefs. Adolescents across family settings involved in playing online games are likely to perpetrate bullying behavior. The finding is not in line with Ferguson et al., (2009; 2012); Ferguson (2013) who maintained that domestic turbulence and other unfavourable conditions within the family are favourably connected to adolescents' hostility. Researchers (Batanova & Loukas, 2014; Fikkers et al. 2013) had also linked

effective home setting/condition to decreased hostility in adolescents. The reason for variation in the outcomes could be premised on the fact that this study considered polygamous and monogamous family settings. Inquiries were not made on whether the conditions at such homes were favourable or turbulent. It is not all polygamous family settings that are conflict laden while all monogamous families may not be fit into conflict free setting; hence, considering the family type based on polygamous and monogamous type may not be sufficient to depict moderation effect on the link between violent gaming and adolescents' bullying perpetration.

Conclusion

The findings of this investigation broaden past inquiries by establishing the relationship between violent online games and bullying perpetration among in-school adolescents. It also affirms that age and school type explain why individuals respond differently to the impact that violent online games have on bullying behavior of in-school adolescents.

The study is cross-sectional as such, it could not be used to deduce causal relationship between violent online gaming and bullying behavior perpetration. There could be the need for longitudinal study to further explore the relationship. Other mediating variables like self-esteem and other cognitive factors should be considered as they mediate the link between violent online games and bullying behavior aside the demographic variables.

Recommendations

Based on the findings of this study, it is very important for school counselors to enlighten parents and students on the danger of exposure to violent games generally to reduce the

negative outcomes. Also, various (public/private) in Nigeria should develop and properly implement good policies against bullying behavior. Parent should monitor the type and content of games played by their wards especially at younger age to discourage bullying perpetration.

Based on the findings of the inquiry, it was recommended that parents across family settings should monitor their children's online activities as well as enlighten them on the consequences of violent online gaming on their behavior most importantly those below the age of 15 years. School counsellors should identify in-school adolescents involved in playing violent online games to determine the impact that such games has on their bullying behavior; and design strategies to address such influence in them. School authorities should ensure that bullies are adequately handled using effective strategies to hinder them from threatening the safety of students in general.

References

- Abu-Baker, N. N & Ayyd, S. N (2018) The relationship between exposure to media violence and school bullying in Jordan. *Global Journal of Health Science* 10(5), 154-167 URL:<https://doi.org/10.5539/gjhs.v10n5p154>
- Anderson, C. A & Bushman, B. J (2001). Effect of violent video games on aggressive behavior, aggressive cognition, aggressive affect, psychological arousal and prosocial behavior: A meta-analytic review of the scientific literature. *Psychological Science* 12(5); 253-259
- Anderson, C.A., Shibuya, A., Ihori, N., Swing, E.L., Bushman, B. J., Sakamoto, A., Rothstein, H.R.,

- & Saleem, M. (2010) Violent video game effects on aggression, empathy, and prosocial behavior in eastern and western countries: A meta-analytic review. *Psychological Bulletin*, 136(2), 151-173.
- Anderson, C. A & Dill, K. E. (2000). Video games and aggressive thoughts, feelings and behaviors in the laboratory and in life. *Journal of Personality and Social Psychology* 78(4), 772-790.
- Batanova M., & Loukas A. (2014). Unique and interactive effects of empathy, family, and school factors on early adolescents' aggression. *Journal of Youth and Adolescents*.43, 1890-1902.
- Bartholow, B. D., Bushman, B.J, Sestir, M. A. (2006). Chronic violent video game exposure and desensitization to violence: Behavioral and event-related brain potential data. *Journal of Experimental Social Psychology*, 42(4), 532-539.
- Brunberg, G. S. Mentzoni, R. A &Froyland L. R (2014). Is video gaming or video game addiction associated with depression, achievement, heavy episodic drinking or conduct problem? *Journal of Behavioural Addictions* 3(1) 27-32
- Bushman, B. J &Huesmann, L. R. (2006). Short-term and long-term effects of violent media on aggression in children and adults. *Archives of Pediatrics and Adolescent Medicine*, 160:348-352.
- Cheng, F. C., Chiu, C. H., Miao, N. F., Chen, P. H., Lee, C. M., Huang, T. F. & Pan, Y. C. (2015). Online gaming and risks predict cyberbullying perpetration and

- victimization in adolescents. *International journal on public health*, 60(2), 257-266.
- China Audio-video and Digital Publishing Association Game Publishing Committee. (2018). *China Gaming Industry Report*. In Chinese
- Den Hamer, A. H & Konijn, E. A. (2015). Adolescents' media exposure may increase their cyberbullying behavior: A longitudinal study. *Journal of Adolescent Health*, 56(2), 203-208.
- Dittrick, C. J., Beran, T. N., Mishna, F., Hetherington, R & Shariff, S (2013) Do children who bully their peers also play violent videogames? A Canadian national study. *Journal of School Violence* 12(4), 297-318.
- Fanti, K. A., Dimetriou, A. G & Hawa, V. V (2012) A longitudinal study of cyberbullying: examining risk and protective factors. *European Journal of Developmental Psychology*. 9(2), 168-181.
- Ferguson, C. J (2007). Evidence for publication bias in video game violence effects literature: A Meta-analytic review. *Aggressive Violent Behaviour* 12, 470-482. Doi:10.1016/j.alb.2007.01.001
- Ferguson, C. J., Rueda, S., Cruz, A., ferguson, D., Fritz, S & Smith, S (2008). Violent videogames and aggression: Causal relationship or byproduct of family violence and intrinsic violence motivation? *Criminal Justice Behaviour* 31 2231-2237 10.1002/chn.200028/07
- Ferguson, C. J., San Miguel, C & Hartley, R. D (2009). A multivariate analysis of youth violence and aggression: the influence of family, peers, depression and media violence. *Journal of Peadiatric* 155(6), 904-908

- Ferguson, C. J., San Miguel, C., Garza, A & Jerabeck, J. M. (2011) A longitudinal test of video game violence influences on dating and aggression: A 3-year longitudinal study of adolescents. *Journal of Psychiatric Research* 46(2), 141-146 doi:10.1016/j.jpsychires.2011.10.014.
- Ferguson, C. J., San Miguel, C., Garza, A & Jerabeck, J. M. (2012). A longitudinal test of video game violence influences on dating and aggression: A 3 year longitudinal study of adolescents. *Journal of Psychiatric Research* 46(2), 141-146
- Ferguson, C. J. (2013). Adolescents' crime and the media: A critical analysis. New York, NY: Springer
- Ferguson, C. J. (2015). Do angry birds make for angry children? A meta analysis of video game influences on children's and adolescents' aggression, mental health, prosocial behavior and academic performance. *Perspective Psychological Sciences* 10(5), 646-666
- Fenny, O. & Falola, M. I. (2020) Prevalence and correlates of bullying behavior among Nigerian middle school students. *International Journal of Offender Therapy and Comparative Criminology* 64(5) url:
- Fikkers, K. M., Piotrowski, J. T., Weeda, W. D., Vossen, H. G. M., Valkenburg, P. M. (2013). Double dose: high family conflict enhances the effect of media violence exposure on adolescents' aggression. *Societies* 3(3), 280-292.
- Furuya-kanamori, L & Doi, S. A. (2016). Angry birds, angry children and angry meta-analysts: A reanalysis. *Perspective Psychological Sciences* 11(3), 775-782

- Fryling M, Cotler J, Rivituso J, Mathews L, Pratico S (2015) *Cyberbullying or normal game play? Impact of age, gender, and experience on cyberbullying in multiplayer online gaming environments: Perceptions from one gaming forum*. Journal of Information Systems Applied Research, 8(1) pp 4-18. <http://jisar.org/2015-8/> ISSN: 1946-1836. (A preliminary version appears in The Proceedings of CONISAR 2014)
- Greitemeyer, T & Mugge, D.O (2014). Video games do affect social outcomes: A meta analytic review of the effect of violent and prosocial video game play. *Personality Social Psychology Bulletin* 40(5), 578-589
- Groves, C. L., Anderson, C. A., DeLisi, M. (2014). A response to Ferguson: more red herring. *PsycCRITIQUES*, 59, 9.
- Hasan, Y., Bègue, L. & Bushman, B. J. (2012). Viewing the world through “blood-red tinted glasses”: The hostile expectation bias mediates the link between violent video game exposure and aggression. *Journal of Experimental Social Psychology*, 48, 953–956.
- Huang, C. L., Yang, S. C. & Hsieh, L. S. (2019). The cyberbullying behavior of Taiwanese adolescents in an online gaming environment. *Children and Youth Services Review*, 106
- Huesmann L. R., Guerra N. G. (1997). Children’s normative beliefs about aggression and aggressive behavior. *Journal of Personality and Social Psychology* 72(2), 408–419.
- Huesmann, L. R., Moise-Titus, J., Podolski, C. L., & Eron, L. D. (2003). Longitudinal relations between children's exposure to TV violence and their aggressive and

- violent behavior in young adulthood: 1977-1992. *Developmental Psychology*, 39(2), 201-221.
- Huesmann, L. R. Dubow, E. F., Boxer, P., Landau, S. F., Gvirsma, S. D & Shikaki, K. (2017). Children's exposure to violent political conflict stimulates aggression at peers by increasing emotional distress, aggressive script rehearsal and normative beliefs favoring aggression. *Developmental Psychopathology* 29(1), 39-50
- Javid, M & Zerandi, H. P (2013). Leisure time physical activity, playing digital games and health problems in youngsters. *International Research Journal of Applied and Basic Sciences* 4(9), 2852-2856.
- Kepes, S., Bushman, B. J & Anderson, C. A. (2017). Violent video game effects remain a societal concern: Reply to Hilgard, Engelhardt and Rouder. *Psychological Bulletin* 143(7), 775-782
- Khalil, S., Sultana, F., Alim, F., Muzammil, K., Nasir, N., Hassan, A., Mahmood, S. E. (2019) Impact of playing violent video games among school going children. *Indian Journal of Community Health* 31(03)
- Kovess-Masfaty, V., Keyes, K., Hamilton, A., Hanson, G., Bitfoi, A., Golitz, D., et al (2016). Is time spent playing video games associated with mental health, cognitive and social skills? *Social Psychiatry Psychiatr Epidemiology* 51(3), 349-357.
- Kwara State Ministry of Education and Human Capital Development Examination Unit (2014) Kwara State School Census (2015)
- Kyriazis, M & kiourti, E. (2018). Video games and other online activities may improve health in ageing. *Front Medicine (Lausanne)*. Doi:10.3389/fmed.2018.00008

- Lam, L. T., Chen, Z & Liu, X. (2013). Violent online games' exposure and cyber bullying victimization among adolescents. *Cyberpsychology Behavior and Social Networking*, 16(3), 159-165
- Lemmens, J. S; Valkenburg, P. M & Peter, J. (2010) The effect of pathological gaming on aggressive behavior. *Journal of Youth & Adolescence*, 40, 38-47. Doi:10.1007/s 10964-010-9558-x. Retrieved from www.ncbi.nlm.nih.gov
- Oladeji, O. (2016). Psycho-social influence of multimedia violence amongst children of school age in Ile-Ife, Nigeria, *Clinics in Mother and Child Health*, 13(3), 248
- Olumide, A., Adams, P & Amodu, O. K. (2015). Prevalence and correlates of the perpetration of cyberbullying among in-school adolescents in Oyo State, Nigeria, *International Journal of Adolescents Medicine and Health* 28(2)
- Olson, C. K, Kutner, LA, Baer, L., Beresin, E.V. & Warner, D. E. (2009) M-Rated video games and aggressive or problem behavior among young adolescents. *Applied Developmental Science* 13(4), 188-198
- Onwukwe, L. C., Njemanze, V. C., Njoku, E & Obia, W. C. (2017). Effects of violent video movies on aggressive behavior of children in Imo State, Nigeria, *American Journal of Psychology and Cognitive Science* 3(1), 1-7
- Shao, R & Wang, Y (2019) The relation of violent video games to adolescent aggression: An examination of moderated mediation effect. *Frontier in Psychology*
- Teng, Z. , Li, Y. , & Liu, Y. (2014). Online gaming, internet addiction, and aggression in Chinese male students:

- The mediating role of low self-control. *International Journal of Psychological Studies*, 6(2), 89
- Ukoha, E. K. (2013). Media violence and violent behavior of Nigerian youths: intervention strategies, Child and Adolescents Therapy and e-therapy. *Ife Psychologia*, 21(3), 230-237
- Yang, S. C. (2013) Paths to bullying in online gaming: The effects of gender, preference for playing violent games, hostility, and aggressive behavior on bullying. *Journal of Educational Computing Research*, 47(3), 235-249.
- Yao, M., Zhou, Y., Li, J & Gao, X. (2019). Violent video games exposure and aggression: The role of moral disengagement, anger, hostility and disinhibition, *Aggressive Behaviour* 45(6), 662-670. Doi:10.1002/ab.21860
- Zhu, X. W., Chu, X. N., Zhang, Y. H & Li, Z. H (2018). Exposure to online game violence and cyberbullying among Chinese adolescents: Normative beliefs about aggression as a mediator and trait aggressiveness as a mediator. *Journal of Aggression, Maltreatment & Trauma* 29(2), 148-166.
- Zumarova, M. (2015). Computers and children's leisure time, *Procedia- Social and Behavioural Sciences*.