(RESEARCH ARTICLE)

Violent media games contents as correlates of aggressive behavior among in-school adolescents

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Abstract

The study focused on ascertaining the extent violent media games' contents relate to aggressive behavior among in-school adolescents. Two specific purposes, and two research questions guided the study. Two hypotheses were tested. The study adopted correlational research design. The population of the study was 30,839 students from 128 public secondary schools which consists of 15, 676 males and 15,163 female students. The sample of the study was 395 students. Multi stage sampling procedure was adopted for the study. The instruments for data collection were structured questionnaire titled: (1) Violent Media Games Content, and (2) Aggressive Behavior Questionnaire. The instruments were face validated by one specialist in measurement and evaluation and two specialists in Guidance and Counselling, all from Ebonyi State University, Abakaliki. The reliability of the instruments were established using Cronbach Alpha, and yielded a coefficient value of 0.856. 359 copies of the instruments were distributed to the respondents with the help of three research assistants. All the copies were returned. The research questions were answered using Pearson Product Moment Correlation Coefficient (PPMCC). The PPMCC was used to test the hypotheses at 0.05 level of significance. It was revealed that low level positive relationship exist between violent media games' content and aggressive behavior among in-school adolescents and there was a statistical significant relationship between violent media Games' content and Aggressive behavior based on gender. It was recommended, among other things, that school authorities should organize workshops for in-school adolescents in order to educate male and female students on the danger of watching violent media games, while the government should regulate the kinds of media games imported into the country.

Keywords: Violence; Media Games; Gender; Aggression; Adolescents

1. Introduction

Media game is a game which is played through an audiovisual apparatus. It is a voluntary interactive activity where one or more players follow rules that end in quantifiable outcome. It is a combination of various digital media types with images, sound and media, into interactive, imaginative presentation that convey messages to the viewer (Dill & Dill [1]); a ray of motion, picture-drive interactive and communication system which create in the mind of the players a feeling of hate, love, revenge, subordination and insubordination, revolt and loyalty, that can be exhibited without regret (Bartha low & Anderson [2]). It follows that media games provide an array of powerful tools that may help to make or mar the players. The range of options in media games for players are killing, maiming, dismembering or sexually assaulting an image which may be a human being (Chesley [3]).

Violent media games contents reinforce certain behaviors for adolescents (Boyibi [4]). They condition in-school adolescents to directly behave in more violent manners. While playing a violent media game, players are rewarded with increased score, higher social reputation or other benefits for performing aggressive acts like killing other characters.

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Such players may come to associate behaving aggressively with being rewarded. There is therefore the increasing likelihood that such players would act aggressively in the future with the expectation of receiving some rewards. Violent Media Games contents depict violence, injury, blood, human or non-human targets, use of weapons to injure or kill characters or destroy objects for rewards or as conditions to progress in the game (Boyibi [4]). One finds out that the games are displayed with a very high degree of realism.

The types of violent media game contents which in-school adolescent watch include

1.1. Resident Evil 7 Biohazard

It has nightmare-inducing pulse-pounding, and incredibly violent moments (Haynes [5]). It tosses an ordinary guy into a macabre setting full of monsters and mayhem which terrifies even the most hard-core horror players. It glorifies cruelty as players use shotguns, chainsaws, explosives and other weapons against human and inhuman creatures (Parkin [6]). There is a bullying quality to the violence, the Bakers are beating up those weaker than them, kicking and cutting off a limb for good measure. The game is abusive, vicious, cruel and exploitative.

1.2. Bullet-storm

This game focuses on players using guns, kicks, and an electric whip like device to destroy their opponents (Brandon [7]). There is plenty of blood, gore, and dismemberment; players get prints for killing enemies in extreme ways. The game is a first-person shooter where players assume the role of a space pirate who must escape a planet populated by mutant cannibals (Sergio [8]). The game is laced with very strong profanity, sexual references, alcohol consumption and challenges players to be creative in their kills.

1.3. Mortal Kombat

It is a game where every warrior will be summoned to a last epic battle, and survival depends on their ability to fight (Kennedy [9]). Fights in the games are brutal with blood often appearing following each punch, kick, throw or weapon slice (Peters [10]).

1.4. Conan Exiles

Conan's world, environment, subject matter, highlight cannibalism, terture, human sacrifice, the use of swords, axes, arrows, spears to attack and kill enemies during combat; certain weapons allow players to cut human enemies in half (Hopkins [11]). Female characters are frequently depicted topless, with realistic breasts/nipples, the characters drink several types of alcohol.

1.5. Dark Souls

It is a violent, bloody action role-playing game. Combat is the focus of the game's basic game play. Players usually fight a range of foes, including monsters, the undead, and other creatures (Starkey [12]). It involves the use of weapons-swords, axes and magic in order to overcome adversaries.

1.6. Dead by Day Light

This is a slasher game, a remorseless killer hunts down survivors to sacrifice them to an evil entity, using various weapons to hack, stab, and impale characters. Injured players may crawl on the ground leaving pools of blood behind and can be hung on meat hooks in brutal death sequences, the killers usually move faster than a sprinting survivor (Jaya [13]). Players take on the roles of both killer and survivor in a deadly game of hide and seek (Sahebm [14]).

1.7. Call of Duty

The game involves players engaging in graphic combat that entails constant killing using realistic weapon (Knorr [15]). The players act as good guys during most of the campaign, but soon take the role of games villain to enable them do evil (Weston [16]). The players engage in firefights, killing many of the enemy combatants with various realistic guns or bombs, granades, rocket launchers, and flamethrowers. Knorr [15] had noted that the game affects one's ability to process emotions, it could make people callous, reduces empathy and inhibits ability to process emotional facial expression and control of one's responses.

1.8. Manhunt

This is a stealth-based urban horror styled game. It consists of twenty levels (scenes) and four unlockable bonus scenes (Douglas [17]). Players survive the scenes by dispatching, enemy gang members using firearms, and stealthily executing

them. To carry out execution players approach a hunter from behind, undetected. To facilitate being undetected, each scene is full of 'dark sports' (shadows where the players can hide). Enemies cannot see into the shadows (unless they see the player actually entering the area). The players hide in the shadows and tap a wall in order to attract the attention of a nearby hunter. When the hunter has examined the area and is moving away, players can emerge from the shadows behind them, and execute them (Millsap [18]). The players use plastic bags, broken bottles and garden tools to execute enemies.

A careful examination of the above games would reveal anger, self-centeredness, no empathy, brutal actions, and use of destructive weapons which are variables of aggression. It follows that the degree of exposure to violent media games would predispose one to aggressive behavior (Shao & Wang, [19]).

Aggression is an action intended to cause harm to others while violence is an extreme form of aggression that has the potential to produce severe physical harm such as injury or death to others (Boyibi, [4]). It therefore implies that not all aggressive behavior is violent, but all violent behavior is aggressive. It is difficult to determine whether or not aggression has occurred because it appears in so many forms, ranging from minor acts (names calling or pushing) to more serious acts (hitting, kicking or punching) to severe acts (Stabbing, shooting or killing) (Boyibi, [4]).

Notwithstanding the above situations Williams and Chapel [20] observed that aggression is a type of confrontational behavior where the individual exhibits hostile power which suppresses other people's rights. Those who are at the receiving end of aggressive behavior usually feel diminished, dominated, embarrassed, guilty or ashamed. Aggression can take many forms (Judy, Gabby and Crystal, [21]). When it involves kicking, hitting, punching, slapping, any act that cause physical hurt or damage to property it is physical aggression (Cherry & Susman, [22]). Shouting, swearing, insults, cruel and unkind remarks intended to cause pain and distress is called verbal aggression.

Relational aggression entails actions aimed at damaging another person's reputation or relationship, example, bullying, gossiping.

Hostile aggression involves proactive emotional or reactive acts with an intent to hurt someone or destroy something. Reactive acts of aggressive behaviors are often unplanned and impulsive; they are usually a response to feelings of anger, fear, or a need to retaliate against someone (Willams & Chapel, [20]). When the aggression is proactive there is a calculated and planned actions with some motives other than harming someone.

1.9. Passive aggression

They include all indirect expression of negative feelings, example, silent treatment, snide or sarcastic remarks and redirecting blame.

The aggressive behaviors displayed by adolescents appear to stem from aggressive media clips the adolescents watch (Cherry & Susman, [22]). Violent media games can desensitize people to violence. Desensitization is a protective phenomenon that occurs automatically over time in response to difficult experiences. The process of desensitization to violent media games appears gradual and unconscious consequent on repeated presentations of violence as necessary, justified and fun (Boyibi, [4]). Violent media games seem to have the potentials to teach negative behaviors to in-school adolescents-increase in negative aggressive thoughts, angry feelings, physiologic arousal, hostile appraisal, and decreases pro-social behaviors (helping people and empathy) (Bushman, [23], Onwukwe, Demanze, Njoku & Obia, [24], Romanchych, [25]; Zhang, Cao & Tian, [26]). However, no significant changes were observed in in-school adolescents playing violent media games and those playing a non-violent game (Kuhn, Kugler, Schmalen, Weichenberger, Witt & Gallinat, [27]). The degree of exhibiting aggressive behaviors due to violent media games exposure differs among in-school adolescents (Boyibi, [4]).

It might be that gender of the in-school adolescents moderate the relationship between violent media games and aggression. Male in-school adolescents were found to exhibit more aggressive haviour after being exposed to violent media games (Shi, Boak, Mann & Turner, [29]; Al-Harbi, [30]; Zhang, Cao & Tian, [26]). It follows that in-school adolescents imitate what they see while watching or playing violent media games. However, it could be observed that girls are less likely to be exposed early in life to violent sense hence they can perceive violent scenes critically and exposure to particular content of violent scenes is likely to make girls less aggressive (Boyibi, [4]).

Some theories have been propounded which help to explain how playing violent media games relate to aggressive behavior. The scrip theory of aggression by Huesmann [31] state that observing violence in the mass media help

adolescent to learn aggressive contents. When the content (script) is learnt it can be retrieved later and used as a guide for behavior. Aggressive behaviors are as a result of script influence on the individual.

The social learning theory (Bandura, [32]) noted that behaviors are acquired by observing and imitating others. Bandura observed that learning is a cognitive process that take place in a social context through observation or direct instruction. Aggressive behaviors are therefore acquired through watching, playing violent media games. In-school adolescents are likely to practice how the characters they observed behaved.

The degree of aggression exhibited by in-school adolescents towards themselves has become worrisome to parents and teachers. Stake holders in education industry are desirous of finding out the potential connection between aggressive behavior and playing of violent media games among in-school adolescents. Both girls and boys exhibit aggressive behaviors which make one to ask, where do they learn such aggressive acts? Yao, Zhou, Li & Gao [33] had suggested that exposure of in-school adolescents to violent media games may increase aggressive behavior among in-school adolescents. The researchers have observed incidences of aggression among in-school adolescents in Ikom Education zone of Cross River State, Nigeria. Some of these in-school adolescents come to school with sophisticated phones. The students fight themselves with dangerous weapons. The aggression seems to be more prevalent among the students using android phones who watch and play violent media games. However, it is not certain the extent violent media games content relates to in-school adolescents' aggressive behaviors in public secondary schools in Ikom Education zone of Cross River State, Nigeria. The study aims at finding out the types of violent media game watched by in-school adolescent, the extent of relationship between violent media games and aggressive behavior among in-school adolescent, the extent of relationship between violent media games and aggressive beaviour in-school adolescent based on gender. The research questions are: What are the types of violent media games watched by in-school adolescent? What is the extent of relationship between violent media games content and aggressive behaviors? What is the extent of relationship between violent media games content and aggressive behavior among in-school adolescent by gender? The hypothesis are: there is no significant relationship between violent media game content and aggressive behaviors among in-school adolescents; there is no significant relationship between violent media games content and aggressive behavior among in-school adolescents based on gender.

2. Methodology

The research design for the study was correlational design. It sought to establish the extent of relationship between violent media games' content and aggressive behaviors among in-school adolescents in Ikom Education Zone of Cross-River State. The area is chosen because students manifest much aggressive behaviors ranging from verbal, physical, passive, to relational aggression.

Moreover, students from the area appear to be often violent towards their teachers. The population of the study was 30,839 students consisting of 15, 676 males and 15, 163 females from 128 public secondary schools. Junior secondary school III to senior secondary school II students were used for the study. These classes were chosen because they appear more to be engaged in playing violent media games. They also invest much money in playing the violent media games.

The sample for the study was 395 respondents. The sample size was determined using Yaro Yemen [34] sample size determination–formula. Multi-stage sampling procedure was adopted. The zone was stratified into six groups–Boki, Ikom, Etung, Obubra, Abi and Yakurr. In the second stage, purposive sampling was used to divide the study area into two-Boki, Ikom, Etung as group 1 while Obubra, Abi and Yakurr were taken as the second group, the division was based on proximity of the areas. In the third stage, simple random sampling was used to select two groups (Boki and Ikom) while Obubra and Yakurr were sampled for a group. The sample size for Ikom, Boki, Obubra and Yakurr was 107, 39, 166 and 83 respectively using simple random sampling method by ballot with replacement. Eight secondary schools were sampled using simple random sampling. From each of the eight schools simple random sampling technique was used to sample 50 male and 50 female students in Ikom, 49 male and females' students each from schools in Boki, 50 male and female students each from Obubra, and 48 males and 49 female students in Yakurr study area.

Two instruments were used for the study.

- Violent Media Game Contents Questionnaire (VMGCQ)
- Aggressive Behavior Questionnaire (ABQ)

The VMGCQ has 34 items which are based on the literature reviewed. Items 1-14 focused on research question one while items 15-34 focused on research questions two.

The ABQ was adapted from Buss and Warren [35]. In the present study 26 items were used.

The response patterns ranged from Yes or No for items 1-14. A 4-point scale response format was adopted (Very High Extent, High Extent, Low Extent, and Very Low Extent) for answering research questions 2 and 3.

The instruments were face validated by specialist in Measurement and Evaluation and two specialists in Guidance and Counselling. They examined the appropriateness of the items, content coverage and clarity of language and suitability of the items. The reliability of the instrument was established using 25 students. The internal consistency of the items was established using cronbach Alpha reliability procedure. The reliability coefficient was 0.856 which indicates high internal consistency (Frost [36]).

Four research assistants were used to administer 395 copies of the questionnaire to the respondents. The assistants took permission from the school authorities, helped the respondents where they had confusion to fill the instrument. The questionnaire was filled and collected at the spot. All 395 copies were collected.

3. Results

The results of the research questions and hypotheses are presented below. Presentation and interpretations were done according to the research questions and hypotheses.

3.1. Research Question 1

What are the types of violent media games watched by in-school adolescents?

Table 1 Frequency and percentage of the types of violent media games watched by in-school adolescents

S/N	Item Statement: 1 watch	Yes	No
1	Resident Evil 7	383 (97%)	12 (3%)
2	Bullet-storm	367 (93)	28(7%)
3	Mortal Kombat	350 (885)	45(12%)
4	Conan Exiles	345 (87%)	50 (13%)
5	Dark Souls III	328 (835)	67 (12%)
6	Dead by Dayligh	307 (78%)	88 (22%)
7	Call of Duty	277 (70%)	118 (30%)
8	Manhunt	265 (70%)	130 (30%)
9	Grand Theft Auto	216 (55%)	130 (30%)
10	Contra	137 (35%)	179 (45%)
11	Ninja Gaiden	56 (14%)	258 (65%)
12	Doom	26 (7%)	339 (86%)
13	Wolfentein 3D	6 (2%)	369 (93%)
14	Military War Game	6 (2%)	389 (98%)
	Grand Frequency/Percentage		389 (98%)

The result in Table 1 shows that 219 (55%) of in-school adolescents watched violent media games while 176 (45%) did not. The highest frequency and percentage [383 (97%) of the violent media games watched was Resident Evil 7.

3.2. Research Question 2

What is the extent of relationship between violent media games content and aggressive behavior among in-school adolescent?

Table 2 Extent of relationship between violent media game content and aggressive behavior among in-school adolescents

	Mean	SD	N	Correlation	Interpretation
Content	48.58	11.96	395		
				0.587	Moderate Positive Correlation
Aggression	69.16	9.88	395		

Table 2 shows that the correlation coefficient is 0.587 implying that there is moderate positive correlation between violent media games content and aggressive behavior among in-school adolescents. This is because values between 0.4 and 0.6 shows a moderate positive correlation.

3.3. Research Question 3

What is the extent of relationship between violent media games content and aggressive behavior among in-school adolescents by genders?

Table 3 Extent of relationship between violent media games content and aggressive behavior among in-school adolescents by gender

	Mean	SD	N	Correlation	Interpretation
Content	58.87	15.04	395		
				0.374	Low Positive Correlation
Gender: Male	51.10	12.40	213		
Female	46.35	10.85	182		

Table 3 shows that the correlation coefficient is 0.374 implying that there is low positive correlation between violent media games content and aggressive behavior among in-school adolescents by gender. This is because values between 0.2 and 0.4 shows a low positive correlation. More so, the finding showed that males watch violet media games content more than girls in the study area.

3.4. Hypothesis 1

There is no significant relationship between violent media games content and aggressive behavior among in-school adolescents.

Table 4 Relationship between violent media games content and aggressive behavior among in-school adolescents.

	Mean	SD	N	Correlation	P-Value (Sig.Value)	Decision
Aggression	69.16	9.88	395	0.587	0.000	Accept
Content	48.58	11.98	397			

Table 4 showed a correlation of 0.587 and it implies a moderate positive relationship between the variable (aggression and content). Furthermore, the table shows a significant value (probability value) of 0.000 which is less than 0.05 and it indicates that there is a statistically significant relationship between violent media games content and aggressive behavior among in-school adolescents.

3.5. Hypotheses 2

There is no significant relationship between violent media games content and aggressive baviour among in-school adolescents by gender.

Table 5 Relationship between violent media games content and aggressive behavior among in-school adolescents by gender.

	Mean	SD	N	Correlation	P-Value (Sig.Value)	Decision
Content/Aggression	58.87	15.04	395			
				0.374	0.000	Accept
Gender						
Male	51.10	12.40	213			
Female	46.35	10.85	182			

Table 5 showed a correlation of 0.374 and it implies a low positive relationship between the aggression/content and gender. Furthermore, the table shows a significant value (probability value) of 0.000 which is less than 0.05 and it indicates that there is a statistically significant relationship between violent media games content and aggressive behavior among in-school adolescent by gender.

4. Discussion of Findings

Result of research question one table 1 revealed that 55% (219) of in-school adolescents watched violent media games while 45% (176) did not. The highest frequency and percentage 383 (97%) of the violent media games watched was Resident Evil 7, one of the violent media games watched by in-school adolescents. The above findings is line with Haynes [5]. Resident Evil 7 Biohazard is horror-survival game with its variety of bad guys and foes. It is incredibly spooky. It is heart pounding, nightmare-inducing with very violent sequences. (Simelanep, [37]). The author observed that the shadows hold the promise of danger, either from the venomous insects or a roving member of the Baker family.

Other violent media games mostly watched by in-school adolescents are Bullet Storm (93%) and Mortal Kombat (88%). The players use guns, kicks, electric whip like devices to inflict pain on their opponent. Mortal Kombat has some brutal violence, fatalities, and brutal blows which spray the screen with blood and brains (Techspot, [38]) following each punch, kick, throw or weapon slice (Peters [10]). The behaviors are imitated by students who are seen kicking fellow students either in the classroom or outside the classroom when they joke, play or fight. Students often imitate using rubber guns or paper like guns in line with the content they watched. The increase in aggressive behaviors of the students from the study area have therefore a relationship with the media contents they watch.

Result from research question two table 2 revealed that there is a moderate positive correlation between violent media games content and aggressive behavior among in-school adolescents. The correlation coefficient is 0.587. It means that adolescents generally behave more aggressively when they are exposed to more violent contents. The finding is line with findings of Rong and Yunglan [39]. They noted that exposure to VMGs enhance violent feelings, thoughts and behaviors as well as physiological desensitization to violence in actual world. Hypothesis 1 table 4 revealed a statistical relationship between violent media game content and aggressive behaviors among in-school adolescents. The above findings are in line with the findings of Hasan et al [40] and Ybarra et al [41]. However, the present result is at variance with the findings of Colwell and Kato [42] and Unsworth, Devilly and Word [43] who found there was no statistically significant relationship between exposure to VMG and adolescence aggression.

The result from table 3 revealed a correlation coefficient of 0.374 implying a low positive relationship between watching VMG contents and in-school adolescents aggressive behavior based on gender. It means watching VMG by male and female in-school adolescents is related to their aggressive behavior. It further implies that VMG can activate the aggressiveness of male and female adolescents. Their exposure to such VMG could affect their understanding and perception thereby making them imitate and display, such behaviors Hypothesis 2, table 5 also showed a significant relationship between VMG and aggressive behaviors among in-school adolescents based on gender. It also implies that the more they keep watching VMG the more they can exhibit aggressive behavior.

However, males who watch VMG showed more aggressive behaviors more than girls. The difference between them may be attributed to the more freedom given to boys which help them to explore their environment more than girls (Al-Harbi, [30]). Furthermore, Shi, Boak, Mann and Tuner [29], Zhang, Cao and Tian [26] all agree that there is a relationship between VMG and aggressive behaviors among in-school adolescents.

5. Conclusion

It is now discovered that in-school adolescents in the study area watch different kinds of violent media games. The games are very brutal, deadly, bloody and the players use dangers weapons. The in-school adolescents who watch them are likely to be influenced. They exhibit aggressive behaviours both inside and outside the school. It means there is a correlation between violent media game content and aggressive beaviour of both boys and girls, though at a moderate level.

Recommendations

The following recommendations were made

- Parents should monitor their wards on the type of media games they watch.
- The Government, Ministry of Education, and school principals should regulate the media games watched and played by the students School Guidance Counsellors should be employed to work effectively in the school. As at now almost all school in the study area lack school Guidance Counsellors.

Compliance with ethical standards

Disclosure of conflict of interest

No conflict of interest to be disclosed.

Statement of informed consent

Informed consent was obtained from all individual participants included in the study.

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