

Effects of Violent Video Games and Violent Movies on Aggressive Behaviour of Children in Imo State, Nigeria

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Abstract

Video gaming and movie watching have firmly taken their roots in society and violence cum aggression has increased astronomically. The debate among researchers is whether or not engagement in violent movies and video games causes aggression. This study investigated the effects of violent video games and violent movies on aggressive behaviours of children. Two hypotheses were formulated. Thirty-eight participants were selected using simple random sampling and were randomly assigned into four groups. They comprised of 24 males and 24 females within the age range of five to seven years with a mean score of 6.37 and a standard deviation of 0.82. After the experimental manipulation, the participants were observed from a flank for 30 minutes and their responses were rated. The data obtained was analysed using a paired samples t-test and result proved that both violent video games and violent movies have a significant effect on aggressive behaviour of children. Based on the findings; we strongly recommend that children's involvement in violent video games and movies be scrutinized.

Keywords

Violent Video Games, Violent Movies, Aggressive Behaviour, Children, Imo State Nigeria

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1. Introduction

The proliferation of the mass media is one of the most remarkable developments in our social environment since the twentieth century. In this scenario, radio, television, movies, video games and the internet have taken the centre stage. For better or worse, the mass media is having a colossal impact on our values, behaviour and perception. Unfortunately, the adverse effect of one particular aspect of the mass media-violent movies has particular detrimental effects on viewers and others as well. [1] A classic study by Bandura and Ross confirmed that watching violent movies has an effect on aggressive behaviour. [2] On the contrary, other studies

question the truth of this finding, contending that there is no connection between violent video games and aggressive behaviour. [3] However, research evidence has accumulated over many years and across nations that exposure to violence in television and video games increases the risk of violent behaviour and can also lead to changes in the psychological and cognitive development of an individual. [4-10]

The debate about whether violence in video games and media perpetuate violence in real and later life is still brewing among researchers, [6, 8, 11, 12] and the effects of other moderator variables like aggressive trait, sex and age has been studied. [13, 6, 14-16] Among Nigerian children, females tends to be more aggressive after the consumption of

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violent movies than males. [12, 4]

Extent literature has documented that the amount of video game play and habitual exposure to media violence is mediated by hostile behaviours and negative outcomes. [17-20] Research on the nexus between violent video games and violent movies on aggressive behaviour in Nigeria and Africa is sparse as most of the studies in this area are located in Europe, America and Asia. This study therefore aims at investigating the effect of violent video games and violent movies on aggressive behaviour of children.

2. Literature and Theoretical Framework

Video games have been described as powerful and persuasive tools, [21] which may decrease or promote prosocial outcomes [22] and it may also be argued that it is not possible to ignore the attraction of video games. The amount of time spent on video games is rapidly increasing and this finding is evident internationally. [23-26]

Although studies on violent movies and video games and the effect it imposes on violence in Nigeria and the rest of Africa are still in its infancy, cursory observation reveals that many Nigerians patronize video games along the streets, in shops, in schools and in viewing centres and also in their homes. Many under-aged kids watch violent movies in their homes and most parents do not put parental control or monitor the type of movies they watch.

Exposure to violent media poses a large risk on the health and well-being of children and youth. [27] Children today are looking for heroes or role models to look up to, in the real world and increasingly in the mediated world. Adolescents are especially likely to look for role models to identify with, because they are in the process of developing their own identities. [28] Adolescent boys who look to the mass media for role models will find plenty of tough male warriors or super heroes, who solve problems using aggression, show no remorse for their actions and are rarely punished for acting aggressively. [29, 30]

Aggression refers to a range of behaviours that can result in both physical and psychological harm to oneself, other people or objects in the environment. [31] From a behavioural perspective, Buss [32] characterized an aggressive act as a response that delivers noxious stimuli to another organism. Aggressive acts are divided into two categories which are: hostile aggression and instrumental aggression. If an actor's major goal is to harm or injure a victim, his or her actions is qualified as hostile aggression. On the contrary, instrumental aggression describes those situations in which one person harms another as a means to a

non-aggressive end (e.g., knocking down a playmate while trying to grab his toy). [33] Clearly, the same overt act could be classified as either hostile or instrumental aggression, depending on the circumstances. If a young boy hits his sister and teased her for crying, we might consider this to be hostile aggression. But these actions might be labelled instrumental aggression had the boy grabbed a toy that his sister was using. Instrumental aggression, therefore involves acting on purpose perhaps as a means of revenge, provoking someone or modelling their favourite character in movies or TV series. [33] When children engage in aggressive behaviour, they tend to feel irritable and restless. They may feel impulsive and may find it hard to control their behaviours. [34]

Two traditional theories takes a central stage in the explanation of the nexus between violent media and aggression: Tolman's [35] latent learning theory and Bandura's [36] social learning theory. Tolman argued that learning can take place without reinforcement but requires reinforcement to be activated. This explains why children exhibit aggressive behaviour which they may have learnt through aggressive movies in the past. The information is retained in memory in expectation for the appropriate situation. Bandura argued that behaviour is learned through observation of models and that the acquisition of information follows a cognitive processing pattern involving attention, retention, reproduction and motivation. [36, 37] In other words, for aggression to be learned, the individual must pay attention to the action of the model(s) and retain the information so acquired in memory in order to reproduce it at the time it is needed. However, for this behaviour to be reproduced there must be motivation and this emphasizes the need for drive and energy in the enactment of the behaviour.

The theoretical fulcrum for this study will be based on the General Aggression Model (GAM). [38] and the Social Information Processing (SIP) theory. [39] For the former authors, the GAM is a structural perspective to the diverse causes of aggression which attempts to combine many rational and confirmed aspects of various theories on aggression and appears to rely heavily on the activation and use of schemas and scripts concerning aggression. [38] Hence, this theory underscores the priming of aggressive scripts leading to the salience of aggressive acts and cognitions [38, 40] According to the GAM, for aggression to occur, personal (traits like hostile attributions, labile self-esteem, gender, beliefs, etc) and situational factors (Aggressive cues, provocation, frustration, etc) must interact with a person's internal dispositions such as cognition, psychological and physiological arousal and affect. [41] According to the above authors, this is followed by a decision making process which involves the assessment of possible goals and outcomes that could result in a well-

articulated behaviour (usually less aggressive) or impulsive behaviour (usually more aggressive). Such behaviours have reciprocal influence on the behaviour of others and may initiate further aggression. [41] Thus, the GAM argues that aggressive media has the tendency to change scripts for diverse social situations resulting in increased compliance to aggressive responses. [42] Hence, GAM theorists posit that affective and cognitive states triggered by violent movies and games especially those that heighten aggressive cognitions and behaviours are affected by alterations in knowledge structure and experiences. [42, 43]

Therefore, cognition and emotion enjoy a great degree of reinforcing symbiosis. An individual's emotional state has likelihood to influence the construal of societal cues and the modulation of arousal impacts on the verbal and behavioural reactions of an individual in a given situation. [38, 42, 44]

Social information processing theory is a step further in that it analyzes the impact of an altered knowledge structure and Hostile Attribution Bias (HAB). [41] Anderson and his collaborators argue that violent media has the tendency to bias the encoding and construal of social cues through the instrumentality of the HAB. [15] SIP was conceptualized as a cognitive processing model for the assessment of the processes that underlie aggressive and pro-social behaviour. [39] Thus, video games tend to stimulate a great degree of negative affect including hostile attribution bias especially when exposure to such media is enduring and continuous. [38]

Thus, two hypothetical postulations guided this study. The first is that violent video games will have a significant effect on aggressive behaviour and the second is that violent movies will have a significant effect on aggressive behaviour. Violent video game is operationally defined as *Mortal Kombat*, a type of game existing as software (usually run by a video game console) characterized by diverse forms of aggression such as physical combat or shooting. Similarly, violent movie is defined as *Heavenly Sword* which is an animated high definition (HD) sequence of images having characters that exhibit physical aggression through physical combat or by the use of harmful objects such as weapons. Aggressive behaviour is operationally defined as any activity of an individual that is intended to harm or that actually harmed another person or people. For the purpose of this study such behaviours include fighting, pushing, punching, kicking and verbal threats to others.

3. Method

3.1. Participants

The participants used for this experiment were 48 pupils (24 males and 24 females) from little Rock School which is

located at Works Layout, Owerri, Imo State, Nigeria. The participants were randomly selected from primary 1 to 4 and were within the age range of five to eight years (mean = 6.37) with a standard deviation of .82.

3.2. Instruments

Two instruments were used in this study. The first instrument was a video game which was in two categories. The first category was a highly aggressive video game containing human characters and a strong commentary voice (*Mortal Kombat*) which was administered to the experimental group while the second type was a non-aggressive video game which had no human character or violent actions (*Zuma*) and this was administered to the control group. The second instrument used for this research was a video set which entailed a desktop, a speaker and a projector. Two types of movies were displayed in the experiment. The first category was a HD (High Definition) 3D (three dimension) movie which featured exquisite aggression and sophisticated comic characters with violent scenes (*Heavenly Sword*), while the other movie was an animation which had no violent scenes (*Rio 2*). The violent categories of both instruments were administered to the experimental group while the non-violent types were administered to the control group.

3.3. Procedure

The experimenter obtained permission from the Headmistress of Little Rock Primary School to use pupils as participants and also two spacious, standard classrooms for the experiment. The experimenters selected a total of 48 pupils (24 males and 24 females) from primary 1 to 4 using simple random sampling technique. This involved instructing participants to pick one piece of folded paper from a bowl containing small pieces of folded papers titled A or B. Children who chose letter A were selected. Children from primary 3 and 4 ($n = 24$) were involved in the video game experiment and those from primary 1 and 2 ($n = 24$) participated in the movie experiment. The experimenters randomly assigned the participants into four groups (video game experimental, video game control, movie experimental and movie control groups). There were equal number of males and females in all experimental conditions. In the violent video game condition, participants played *Mortal Kombat* in pairs (i.e. participant 1 vs participant 2) and each game lasted between 5-8 minutes depending on when one participant wins. The participants from the control group played *Zuma* one after the other and this exercise lasted for 40 minutes.

For the movie condition, the participants in the experimental group were exposed to a movie - *Heavenly sword* which was displayed through a projector. This activity lasted for 45 minutes. The participants in the

control group watched a non-violent movie called Rio 2. It also lasted for 45 minutes.

The experimenters employed the services of a confederate who was trained on how to observe and rate aggressive and non-aggressive behaviour. Behaviours which were scored as aggressive comprise fighting, pushing, punching, kicking and verbal threats to others. The participants were observed from a hidden angle outside the experimental setting and were rated. On the basis of the observations, the participants were scored as aggressive (2 points) and not aggressive (1 point).

In an effort to control for extraneous variables, we balanced for the influence of age by selecting participants of similar ages in each of the experimental conditions. To control for gender, the experimenters ensured that there were equal number of males and females in both experimental and control conditions. In order to avoid the influence of demand characteristics; the participants behaviour were observed from a flank outside the experimental setting.

3.4. Design/Statistic

The researcher employed a 2 x 2 between subject factorial design involving two variables. The first variable is video

Table 2. Paired Sample Test for aggressive video game vs control and aggressive movie vs control.

	Mean	Standard deviation	T	Df	Sig. (2 tailed)
Aggressive Video Game & Control	.58	.52	3.93	1	.01
Aggressive Movie & Control	.75	.45	5.75	1	.00

Dependent Variable: Aggressive Behaviour. $P < 0.05$

The first hypothetical postulation which avers that violent video games will have a significant effect on aggressive behaviour was accepted $t(24, 1 = 3.93, p < 0.05)$. This denotes a causal nexus between violent video games and aggression. Similarly, the second hypothesis which states that violent movies will have a significant effect on aggressive behaviour was accepted $t(24, 1 = 5.75, p < 0.05)$ denoting a causal relationship between violent movies and aggression.

5. Discussion

This study confirmed the first hypothetical postulation that there will be a significant effect of violent video games on aggressive behaviour of children. This means that there is a causal link between violent video games and aggression in children. This finding is in concordance with past findings on the link between violent video gaming and observed aggressive and delinquent behaviour among children [46, 47, 15] heightened levels of physical and verbal aggression towards targets. [48] It revealed that violent video games showed mild but meaningful effect sizes for aggressive

game which has two levels comprising violent video game and non-violent video game and the second variable is movie with two levels: violent movie and non-violent movie. The study was analyzed using a paired samples t-test. It was employed in this study because of the small sample size and this statistical technique is the simplest method of testing the difference existing between two groups. [45]

4. Results

Table 1. Mean and Standard Deviation scores of the participants in the two pairs of experimental groups.

	Mean	N	Standard Deviation
Aggressive Video Game	1.83	12	.38
Control	1.25	12	.45
Aggressive Movie	1.83	12	.38
Control	1.08	12	.28

The mean difference between the scores of participants in the experimental condition for video game (1.83) and the control (1.25) suggests the likelihood of a significant causal relationship between aggression and violent video gaming. This is also the case with the movie condition which shows a wide margin of difference between the means of experimental (1.83) and control groups (1.08).

cognitions ($r = .12$ -.27) and aggressive behaviours in longitudinal, cross sectional and experimental studies ($r = .18$ -.21). Such effects are partly accounted for by heightened availability of aggressive norms which alters the database of violent media audience and an increase in HAB which tends to alter the encoding and interpretation of information. [8] This finding can also be explained in line with social learning theory [36] which argues that an individual learns by observing the behaviour of the model and becoming vicariously reinforced and this entails being reinforced by observing the consequence of the action of the model. Thus, in video gaming, the participants learn aggression because highly aggressive actors are reinforced by their victories. Also following earlier theory on latent learning, [35] an individual can postpone exhibition of what have been learnt to a time when the right situation emerges. A reinforcing situation is simply needed to activate the behaviour.

However, a number of studies contradict the finding on the existence of causal relationship between aggression and video gaming. [49, 3] The outcome of a longitudinal study [49] claimed that the connection between video games and aggression is nothing but the consequence of other processes

occurring in the child's life. They concluded that video game violence was not related to child or parent reported pathological aggression. These authors tend to suggest that the aggressive behaviour acquired during video gaming wanes with the passage of time. Nonetheless, the outcome of such surveys though longitudinal cannot convincingly vitiate the finding of experimental studies. However, studies indicate that exposing an individual to violent media and physical aggression particularly violent video games predict aggression for as long as 30 months. [50]

The second hypothetical proposition that violent movies will have a significant effect on aggressive behaviour in children was confirmed. Earlier studies on children's behaviour after they watched an adult model showed that the children in the aggressive model condition made more aggressive responses than the children in the non-aggressive model condition. [2, 51] Similarly, a follow up study revealed that early childhood exposure to TV violence predicted aggressive behaviour for both males and females. [52] Also, a longitudinal study showed that adolescents exposed to violent movies exhibited aggressive behaviour later in life. [53] This finding is explained by the GAM, which emphasizes that individuals are primed by aggressive movies thereby enhancing the salience of aggressive acts and cognitions. It also factors in a number of personal and situational factors as well as an individual internal disposition such as emotional arousal within the ambience of causal factors in aggression.

On the contrary, Freedman 54 vehemently rebuts the belief that television violence causes aggression. He posits that there is no convincing evidence that watching violent video games and movies produce long term effects in children. However, his is a position paper and cannot be strongly used as a basis for conclusion. In addition, research evidence is opposed to this theoretical position. [53, 50, 8]

Among the limitations of this study are the use of small sample size and the inability of the study to test for age differences on the response to aggressive movies and games. This study due to its design was also not able to follow up on the participants in order to ascertain whether the resultant forms of aggression exhibited by the participants will persist over time. A longitudinal study will be adequate to determine the long term effects of exposure to violent video games on Nigerian children.

6. Conclusion

This study confirmed that violent video gaming and exposure to violent movies has a significant effect on children's aggressive behaviour. It has strong implications for families and society at large. It reinforces the ongoing call for the reduction of exposure of children to violent media because of

its momentous effect on aggression among children. Certainly, it is children that grow up to become adolescents and adults. So in giving children unmitigated access to aggressive movies and games, parents inadvertently proliferate aggression; and it is undeniable that aggression is the basis of a great degree of physical pain and psychological impairment in human societies and its consequences has consistently been a burden on the perpetrators and victims just as it is an impediment to the growth of human societies. [55, 56]

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