

## A Study of the Relationship between Violent Video Game Playing and Aggression among Adolescents in the Klang Valley, Malaysia

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**Abstract.** The present study explored the relationship between violent video game playing and the levels of aggression among adolescents in selected schools in the Klang Valley of Malaysia. Past research on violent video games discovered consistent links to increased levels of aggression. The objectives of this study were to examine if exposure to violent video games predicted aggressive behavior. In addition, this study also aimed to determine gender differences in amount of violent video game play and levels of aggression. Adolescents between 13 to 17 years of age were recruited from two schools in the Klang Valley for the purpose of this study. Demographic information was gathered along with Habitual Video Game Violence (HVG) exposure scores. The Buss Perry Aggression Questionnaire which consists of four subscales assessing physical and verbal aggression (PA and VA, respectively), the emotional component of anger (A) and hostility (H), were administered to gather data on aggressive levels in the participants. 994 respondents (499 males and 495 females), from two schools in the Klang Valley completed the survey questionnaire. Findings indicated that, there were significant gender differences in three factors, namely, violent video game playing habits, physical aggression and hostility. Significant correlations were found between violent video game playing habits and physical aggression (.30), verbal aggression (.16), anger (.17) and hostility (.13) at  $p < .01$ . Linear Regression analysis revealed that 6.1% of variance in aggressive behavior was explained by violent video game playing habits. Present findings were consistent with previous research indicating a significant relationship between violent video game playing and aggression among adolescents. Most importantly, the present study calls for attention towards the high levels of hostility observed among female adolescent game players in Malaysia. It is important to take note of the need to conduct studies on a larger population of students across various geographical regions in Malaysia to attain clearer representations of our current findings.

**Keywords:** adolescent, aggression, violent video games

### 1. Introduction

The issue of violent video games as a detrimental influence on adolescents has been of much concern in the past years. Controversies surrounding this issue focus on the mature and violent themes of many popular video games. Parents, politicians, and researchers alike have expressed concerns that such contents might foster antisocial behaviour and maladjustment [1].

A large number of studies have reported on the relationship between violent media exposure and aggression. Researchers have particularly dedicated much of their attention to studying the relationship of playing video games and subsequent acts of aggression among children and adolescents [2]. Gamers have total control over the situations they confront, thus, the freedom is attractive for adolescents who are in the midst of constructing an identity [3]. Olson, Kutner and Warner [4] suggested that young adolescent activities are less subject to parental oversight compared to those of younger children. Furthermore, rising levels of autonomy and privacy gained provides greater opportunity for young adolescents to expose themselves to extended hours of video game play.

#### 1.1. Video games and violent content

It has been repeatedly noted that children's and adolescents' favourite video games often contain violence [5] A study conducted by Provenzo in 1991 reported that of the 47 leading Nintendo video games

that he analyzed; only seven of them did not contain violence[2]. In addition, as much as 89% of games played by adolescents contain violence designed to cause injury or death to another person [7]. Currently, of all games classified by the industry's rating group as appropriate for everyone aged 10 and older, more than 90% contain violence [5]. Recent media reports in Malaysia indicate that although video games have strict ratings on the level of violent content, parents and vendors are often not aware of the importance and sometimes, even the existence of these video game ratings [8]. It is significant to note that incidence of aggressive behavior among secondary school students in Malaysia has also been on the rise [9, 10].

Although prominent researchers in this area of study have now implied that the relationship between violent media and aggression is well established [11], and that it is time to move beyond this, the strength of this relationship in a Malaysian context is unknown. It would be erroneous to plainly assume similar patterns across cultures without empirical support.

## **1.2. Links between Violent video games and Aggression**

Past research on violent video games discovered consistent links to increased levels of aggression. A preliminary study by Anderson and Dill (2000) reported a significant correlation between scores on a video game violence exposure (VVE) measure and indices of aggressive behaviour, and found that this association was robust to statistical control of other predictors, such as aggressive personality and gender [12]. These findings were further supported by a recent cross-cultural longitudinal study, comparing American and Japanese adolescents. The researchers reported that violent video game play predicted aggression among adolescents, even after controlling for gender and previous aggressiveness [5].

Four correlational studies in the past, have examined the relation between video game playing habits and real-world aggressive behavior. Across the four studies, the ages of participants ranged from 4<sup>th</sup> graders to 12th graders. Measures of aggression included self, teacher, and peer reports. Three of the studies [12] yielded reliable positive correlations between video game playing and aggression. The fourth [12] correlation did not differ from zero. But, none of the studies distinguished between violent and nonviolent video games. Thus, none test the hypothesis that violent video games are uniquely associated with increased aggression.

On the other hand, Giumetti and Markey (2007) argued that anger significantly moderated the effects of video game violence on aggression. Their findings indicated that participants who were angry were more affected by violent video games than participants who were not angry [13]. Conversely, a two year longitudinal study on the moderating effects of age, sex and parent-child communication as moderating variables on a Finnish sample, found that digital game violence predicts aggressive behavior in adolescents both in the long term and in the short term [7]. Interestingly, the study reported that even good parent-child communication does not necessarily eliminate one from the effects of exposure to violent games. With regards to gender differences, higher levels of pathological gaming, regardless of violent content, were found to predict an increase in physical aggression among boys [14]. The relationship between violent video game play and aggression among female adolescent, however, is less understood and calls for more insight.

Additionally, meta-analytic reports have also indicated similar findings. Anderson and Bushman (2001) used modern meta-analytic techniques to combine the results of empirical studies of violent video game effects on five types of outcome variables: aggressive behaviour, aggressive cognition, aggressive affect, helping behaviour, and physiological arousal [15]. They found significant effects of violent video games on each of these five variables. These studies indicate that the effect of violent video games is multifaceted and that it can be observed in various indices of aggression. This warrants the need for further studies to establish the pattern of relationship between violent video games and the various dimensions of aggression in order to gain better insight of this research area.

## **1.3. Aims of the present study**

The current study seeks to compare the levels of different types of aggression, namely physical aggression, verbal aggression, anger and hostility as well as aggression as a whole (as measured by the Aggression Questionnaire) and the total amount of video game play between male and female adolescents. In addition the present study examines the relationships of these variables, as well as ascertaining the patterns and strength of these relationships.

## 2. Method

### 2.1. Participants

A total of 994 students (499 males and 495 females) were recruited from two secondary schools in the Klang Valley in Malaysia. The participants were between 13 to 17 years of age ( $M=13.9$ ), of which 543 participants were from a private secondary school and 451 participants were from a public private school.

### 2.2. Instruments

Demographic information (namely, age, gender, academic year, race, academic position in class, parental income and number of siblings) was gathered along with habitual video game violence (HVGV) exposure scores. In this method, 3 favorite video games are listed by each participant and then rated each on amount of violent content and on how frequently they played each of the 3 games. HVGV were computed by multiplying the violent content rating by the frequency of play for each listed game, then averaging the 3 scores. This has been the standard procedure for several years [12].

The Buss Perry Aggression Questionnaire [16] which is to be used to assess participants' present levels of aggression, consists of four subscales assessing physical and verbal aggression (PA and VA, respectively), the emotional component of anger (A) and hostility (H). The alpha coefficients for physical, verbal, anger and hostility subscales were 0.86, 0.78, 0.83 and 0.76 respectively. Coefficient alpha for the complete aggression questionnaire is 0.92, thus indicating strong reliability [17].

### 2.3. Procedure

The questionnaire was administered to secondary 1 to secondary 3 students in their respective schools by their teachers during a class period. Participants were given brief instructions on how to complete the questionnaire. It was emphasized that questionnaires would remain anonymous, that no 'right' or 'wrong' answers exist, and that participants were to answer all the questions with complete honesty. Once the questionnaires were completed, teachers collected back the questionnaires and submitted it to the principals of their school, from whom the researchers collected the completed questionnaires from.

## 3. Results

Figure 1 presents gender differences in amount of total video game play. Total violent video game play accounts for the amount of violent content and the frequency of play among male and female student. There were significant gender differences on this variable, with boys ( $M=3.8$ ;  $S.D.=1.3$ ) spending more time on video games than girls ( $M=2.8$ ;  $S.D.=1.2$ ), ( $t(992)=13.2$ ,  $p<0.05$ ).

Table 1: Gender differences in amount of total violent video game play

Variable	M		SD		t	df	Sig. (2-tailed)
	M	F	M	F			
Tot Vid Games	3.80	2.77	1.27	1.19	13.2	992	.000

$p<0.5\%$

With regards to gender differences in types of aggression (Table 2), t-test analysis revealed significant differences between genders, with male students being more physically aggressive ( $M=3.2$ ,  $S.D.=1.2$ ) compared to female students ( $M=2.8$ ,  $S.D.=1.1$ , ( $t(992)=5.27$ ,  $p<0.05$ ). A significant difference between genders was also observed in Hostility ( $t(992)=3.54$ ,  $p<0.05$ ). However, the differences between male and female were found to be reversed with female students ( $M=3.88$ ;  $S.D.=1.3$ ) being more hostile than male students ( $M=3.59$ ;  $S.D.=1.3$ ).

Table 2: Independent Sample t-test for differences between males and females

Variable	M		SD		t	df	Sig. (2-tailed)
	M	F	M	F			
Physical Aggress	3.15	2.77	1.22	1.10	5.27	992	.000
Verbal Aggress	3.17	3.05	1.21	1.14	1.66	992	.097
Anger	3.21	3.23	1.11	1.03	-0.33	992	.742
Hostility	3.59	3.88	1.28	1.29	-3.54	992	.000

$p < 0.5\%$

Table 3: Correlation matrix for Total violent video game play and components of aggression

Variables	1	2	3	4	5
Tot Vid Play	-				
Physical Aggress	.301**	-			
Verbal Aggress	.175**	.517**	-		
Anger	.171**	.524**	.526**	-	
Hostility	.128**	.439**	.510**	.594**	-

\*\* Correlation is significant at the .01 level (2-tailed).

The relationship between violent video game play and types of aggression is presented in Table 3. All four components of the Aggression scale: Physical aggression, Verbal aggression, Anger and Hostility were found to be positively associated with total amount of violent video game play. Physical aggression was more strongly correlated ( $r = .30$ ,  $p < 0.01$ ) to total violent video game play compared to other components of aggression.

Table 4: Regression Analysis of total video games played predicting total aggression

Dependant variable	Beta	Unique variance
Total Aggression	.25**	6.1%

$p < .01\%$

Further analysis was conducted using a simple linear regression procedure (Table 4) to determine the proportion of variance explained in amount of aggression. Total violent video games played accounted for 6.1% of the proportion of variance in total aggression and significantly predicted aggression.

#### 4. Discussion

The findings suggest that male adolescents play more violent video games as compared to females. Despite apparent awareness of this gender differences, establishing empirical validation to it raises concerns, as prior findings indicate that young men may be more affected by violent video games than young women [18]. Besides, the current study also indicates higher levels of physical aggression among adolescent boys as compared to adolescent girls who play violent video games. This, in part, may be due to the fact that adolescent boys are generally the heaviest players of violent games and the most susceptible to pathological involvement [14]. Although counter-arguments could suggest that men are more aggressive than women in general, it is crucial to draw attention to the possibility that boys may be more sensitive or easily primed by aggressive cues [19, 21]. Nevertheless, female adolescent players were found to be more hostile than their

male counterparts, justifying the view that females tend to also display aggression, though in a more covert and less externalized manner. Nevertheless, the high levels of hostility observed among adolescent girls here presses for further research as it presents as itself as an unexpected outcome, bearing in mind cultural distinctions with regards to gender roles within the Asian context.

The results of this study also supports the prediction that violent video game play is related to higher levels of aggression among adolescents, as higher levels of total violent video game play was found to be associated with higher levels of all four components of aggression (physical aggression, verbal aggression, anger and hostility). Furthermore, total amount of violent video game play was also found to be a significant predictor of aggression among adolescents aged 13- 17 years old. As more studies of violent video games are conducted, the significance of violent video game effects on key aggression variables has become clearer [15]. The current study also supports a cross-cultural finding by Anderson, et.al, (2008) that even in collectivistic cultures with lower levels of violence and aggression, violent video game playing leads to increased aggression [5]. While correlational studies raise questions on the direction of the relationship, it is imperative to note that prior findings show that *low –hostile* students who have the highest exposure to violent video games are more likely to have been involved in fights than *high-hostile* students who have the lowest exposure to violent video games [20].

#### **4.1. Implications of the current study and future directions**

Within the Malaysian context, this study exposes critical evidences. Firstly, it is now clear that increased exposure to violent video games leads to increased levels of aggression among Malaysian adolescents in similar trends as observed in the West. Secondly, it indicates that although gender differences exist in types of aggression displayed, both male and female adolescents are capable of higher levels of aggressive behaviors due to violent video game play. There is a strong implication that exposure to violent video games increases the acceptance of physical aggression as a conflict resolution strategy when dealing with others [22]. Considering the drastic increase in bullying and occurrences of aggressive behavior display in Malaysian local schools, this finding could pose as preliminary evidence to the need for implementing video game ratings and more controlled use.

In addition, due to scarce availability of research within the Asian context, future studies could replicate the current study to establish stronger foundations, by also examining possible moderating factors such as trait hostility, socio-economic factors and parent –child relationships. It is certainly essential that longitudinal and experimental designs be adopted as well, as the lack of such designs in this domain of study proves a challenge in drawing convincing, irrefutable arguments.

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