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Playing Video and Computer Games and Aggressive Behaviours of High School Students in Kosovo

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Abstract

Previous research has reported that playing video games is associated with increased levels of aggressive behaviours. That study examine whether the correlation between violent video games and the level of aggressive behaviours in children and adolescents. This study involved a total of (n = 350) participants, of whom (n = 195 or 55.7%) male and (n = 155 or 44.3%) female students. For the collection of data the Reactive-Proactive Aggression Questionnaire (RPQ) was used, and the reactive and proactive aggression was measured via separate scales. The reported results show that playing video games is associated with a higher level of aggressive behaviours (r = .30, p< .00). Male students reported a higher level of aggressive behaviours in comparison to female students t(147)= 2.66, p=.03. The playing of video games is associated with increased aggressive behaviours of students at school, representing a vulnerability of young people related to the exposure to violence in the media.

Keywords: students, video games, aggressive behaviours.

I. INTRODUCTION

Violence has almost always been part of human experience (Krug, Mercy, Dahlberg & Zwi, 2002), as an integral part of family life and social functioning, associated with different stages of development. Adolescence bears a heightened potential for problematic behaviours compared to other developmental stages in every culture and in every

time (Arnett, 1992). In adolescence, cases of aggressive behaviour increase by three to four times in comparison to other ages (Palaghia, 2013).

This sensitivity is more complicated when we look at the role of the media. According to Dietz & Strasburger (1991), review of studies to the preceding 20 years showed multiple effects of media on child and adolescent behaviour and cognition. Even the recent researches report for an agreement for effects of violent video games and movies produced in youth (Bushman, Gollwitzer & Cruz, 2015). Has been documented that television (Martins & Wilson, 2012), and video games (Dickmeis & Roe, 2019) are associated with aggressive behaviours in children and adolescents. Particular emphasis has been placed on the effect of video games on aggressive behaviours, have been shown to have a greater and stronger effect on aggressive behaviours (Shao & Wang, 2019; Buchman, 2003). This effect is reported in duration and types of playing video games in increasing aggression (Evcin & Erzi, 2019). Various studies have shown the effect of video games on aggressive behaviours (Funk et al., 2006; Stojanovic, 2019; Anderson & Huesman, 2003).

Different designs studies as long term, cross-sectional, and experimental design studies, proving that video games have an increased effect on the emergence and development of aggression (Anderson et al., 2001). Video games are very popular, especially among children and adolescents, among of 88% of Americans between 8 and 18 years play video games, when is made comparison in sex, boys are more exposed to video games compared to girls (boys' play 16.4 hr/ week and girls' 9.2 hr/week) (Gentile, 2009). More than 85% of video games included some form of violence and more than half depicted severe forms of violence.

Aggression can be exhibited in various forms. Researchers initially assumed that differences in aggression exist, as one group exhibited reactive aggressive behaviours, while the other group exhibited mostly proactive behaviours (see Dewall et al., 2012). Raine et al. (2006), explained a positive correlation between proactive aggression and psychopathy. While, Brendgen and his associates in the study carried out in 2001 with participants of ages 13 to 17, assessed with proactive and reactive aggression, showed through their results that if there was an early proactive aggression it was more likely for later delinquency to emerge, while early reactive aggression increased the likelihood of increased violence in the future. Very often adolescent

see aggression and its forms are portrayed as justified, fun, and without negative consequences (Funk, Baldacci, Pasold & Baumgarder, 2004). Role of video games on aggressive behaviours has been reported in a large number of studies (see Barlet, Anderson & Swing, 2009; Bensley & Van Eenwyk, 2001).

The way video games reinforce aggressive behaviour is viewed from different angles; according to the American Psychological Association, there are three major effects that come from watching violent media programs (for example video games/television): children may become less sensitive to the pain and suffering of others, they may be more fearful of the world around them, and they may be more likely to behave in aggressive or harmful ways toward others (Tompkins, 2013). Sensitivity is greater when other traits that increase vulnerability are considered, such as: predisposition to aggressive or antisocial behaviour, strict and indifferent parents, poor psychological well-being, or being diagnosed with DBD - disruptive behaviour disorder (Comstock, 2008). Also, genetic predispositions, postpartum practices, cultural influence, personality, and response levels need to be understood (Anderson & Heusmann, 2003).

This form of influence through modelling has also been presented by Bandura (Bandura, 1973; 1983). People may also mimic behaviours portrayed in the media in the short term, and may learn how to behave from media models in the long run (Bushman & Whitaker, 2012). This form of imitating or learning through modelling was observed by Bandura, who founded the *Theory of Social Learning*, which pays special attention to learning through modelling, to how reinforcement has a positive effect on learning behaviour and how punishment has a major role in removing; behaviour. Bandura (1971) notes that most of the behaviours people display are learned either deliberately or inadvertently, through the influence of example. The classic Bobo doll experiment Bandura and his colleagues carried out showed that aggression and its forms may be learned during observation (Bandura, Ross & Ross, 1961, 1963a). Children are more likely to imitate a behaviour proven to be rewarded than a behaviour which is punished (Bandura, 1965; Bandura, Ross & Ross, 1963b). Also Script theory (Huesmann, 1986, 1998) serves as a more specific and detailed expla-nation of social learning processes. Scripts are well-rehearsed, highly associate dsequences of events in a person's memory that usually involve enabling conditions, goals and action. Rehearsals

of situation ,which increases the number of paths through which the script can be activated, and more rehearsals increase the strength of the links between concepts within the script.Thus, if a child has witnessed (through games) different examples of responding to a personal insult by punching the insulter, that child is likely to have achronically accessible aggressive script about insults (Anderson & Bushman, 2002).

Comparison between video games and television has reported for a strong impact of video games in aggressive behaviour (see Bushman, 2013). According to Bushman (2013), there are three reasons why video games are more harmful than movies or television: first – playing video games is active, while watching television is passive, people learn better when they are actively involved. The second reason is that video game players are more likely to identify with a violent character, while watching television the viewer may or may not identify with the negative character, and the third reason is that violent video games immediately reward violent behaviour by raising the score or raising the game to the next level, while on television reward is not directly linked to the viewer's behaviour. Seeing this form of the impact of video game violence on youth behaviour, a study has been carried out examining the impact of video game violence and its impact on behaviour in women. The results showed that short-term exposure to violent video games increased aggressive behaviour in women and also suggested that when the character was of the same sex the effect was even greater (Anderson & Murphy, 2003).

Gender difference In proportions of their total aggression scores, boys and girls are verbally about equally aggressive, while boys are more physically and girls more indirectly aggressive (Björkqvist, 2018). These sex differences appear to be greater in natural environments than in controlled laboratory environments (Hyde, 2005) and much more lasting (Arsenio, 2004). At the same time, our society openly tolerates and even promotes a higher degree of aggression in boys than in girls, but girls report higher level of indirect and verbal aggression (Tsorbatzoudis, Travlos & Rodafinos, 2013). Like many other complex issues, aggression depends on the intertwining of nature and education (Verona, Jinoer, Johnson & Bender, 2006). But, aggression is thought to have its roots in evolution and can be traced back to our ancestors' protective behaviours (Archer & Cote, 2005).

Intercultural studies have shown that high exposure to violent video games increases physical aggression in both cultures, high violence in the US and low violence in Japan, under the hypothesis that exposure to violent video games in the early years of school will predict the change in physical aggression in later years of school. After that, they checked the statistics on gender and earlier aggression. The conclusions confirmed previous longitudinal, experimental and cross-sectoral studies, which suggested that playing video games was a risk factor for later aggressive behaviours, and emphasised the influence of violent video games in different cultures (Anderson, Sakamoto, Gentile, Ihori, Shibuya, Yukawa, Naito & Kobayashi, 2008). In Kosovo, we do not have documented data of relationship between aggressive behaviour and video games, but in Albanian is reported positive correlation between video games and aggression in school (Gusho & Mitrushi, 2017). Which can be used as a base for this study, because both countries have same culture and language, also we are building common education system, same time is reported of higher occurrence of aggressive behaviours in schools in Kosovo (Zaplluzha & Shahini, 2016). The purpose of this study is to examine the correlation of video games and aggressive behaviours of students in high schools of Kosovo, in order to learn how those variables interact in our cultural context.

Reflecting on the goal of the study we constructed the research question of our study:

Do video games have an effect on aggressive behaviours of students in schools?

Based on the study question we presented the hypotheses of our study: 1; Video games predict aggressive behaviours of students in schools. 2; Boys report a higher level of aggressive behaviours than girls. 3; Time spent playing video games is associated with increased aggressive behaviours in school students.

II. METHODOLOGY

Participants

This study involved a total of 350 participants, of whom (n = 195 or 55.7%) male, and (n = 155 or 44.3%) female students. Mean age of the participants in this study was (M = 15.5, DS = 3.08).

Table 1: Participant demographic data

Demographic data		Frequency	Percentage
Sex	Male	195	(55.7%)
	Female	155	(44.3%)
Grade			
	Grade 10	100	(28.6%)
	Grade 11	125	(35.7%)
	Grade 12	125	(35.7%)
Time in playing video games			
	0.5 or 30 min per day	36	10.42%
	1 hour in day	46	13.14%
	2 hours in day	50	14.28%
	3 hours in day	78	22.28%
	4 hours in day	69	19.71%
	4+ hours in day	71	20.17%
Video games preference			
	War games	89	25.42%
	Sport games	164	46.85%
	Strategic games	97	27.71%

Measurement instruments

In order to examine the use of video games and the time spent playing video games questions were prepared only for this study. The questions were constructed in different forms, such as: "How much time per day do you spend playing video games?", ranked from zero hours per day to over four hours per day, "What are your preferred games?", a question that examined various forms of games such as war, sports, strategic. Students most pick just one type of game which she/he preferred the most.

Reactive-proactive aggression (RPQ) – The measurements of proactive and reactive aggression utilized self-reporting tools, created in order to distinguish reactive and proactive aggression (Raine et al., 2006). The scale consists of 23 statements that are related to behaviours assessed as (0-never) to (4-often). A total of 11 statements measure reactive aggression "I react nervously when provoked by others" and 12 statements measure proactive aggression "I hurt others to win a game". The total measurement of aggression is done by combining reactive and proactive aggression, creating total aggression. It is suitable for use from the age of 8 until late adolescence and early youth (Raine et al., 2006). Internal consistency in earlier research has been reported to be (α = .86) for proactive aggression, (α = .84) for reactive aggression, and (α = .90) for total aggression (Raine et al., 2006). In this study the reliability of the questionnaire for total

aggression was high (α = .90), while the reliability for proactive aggression was (α = .85), and also for reactive aggression it was (α = .83).

Procedure

We initially requested the permission to carry out this study from relevant institutions, including the Ministry of Education and the Municipal Education Directorate. Upon the granting of the permission to carry out the study, three schools were identified in the Municipality of Prishtina, followed by a meeting organized with parents, at which meeting the goal of the study was explained and the parents were asked to allow their children to take part in this study. Upon receiving parent approval to conduct this study, we asked for student approval to carry out the study in their class. They were also told that if they did not wish to be part of the study, they were not required to contribute. We then conducted the study. Upon collecting the data using the questionnaire, the results were derived using SPSS.

III. Results

Initially based on the goal and the hypotheses of the study, firsts descriptive analyses have been performed. We initially looked into the total and the average of the descriptive data of this research based in the grades of the sample.

Table 2: Total descriptive data of variables of the study

	Grade 10		Grade 11		Grade 12	
Variables	M	DS	M	DS	M	DS
Proactive aggression	7.42	5.66	9.48	6.11	11.51	6.01
Reactive aggression	12.41	7.81	16.06	8.59	18.32	8.14
Total aggression	19.07	11.25	21.67	10.61	23.43	12.03

Correlation analysis was used to examine the correlation between the research variables. The results of the correlation analysis confirmed our hypothesis by showing that there was moderated positive correlation between the time spent playing video games and the level of aggressive behaviours ($r = .30$, $p < .00$). For more specific analysis scores, see Table 3.

Table 3: Analysis of the correlation between times spent playing video games and the level of aggressive behaviours

Variables	1	2	3
Total aggression			
Proactive aggression	.95*		
Reactive aggression	.94*	.80*	
Time spent playing video games	.30*	.33*	.23*

p = .00

The one-way analysis ANOVA was used to look at the differences in the video game preferences and the level of aggression among the participants of this study. The reported results showed no differences between the preferences for various video games and the total aggressive behaviours F(3,344) = 1.47, p = .22. where the post hoc analysis showed that preferring war game reported that level of aggression (M =33.61, DS = 9.06), preferring strategic game reported this level of aggression (M = 30.31, DS = 10.31) and preferring sport game reported lower level of aggression (M = 27.85, DS = 1.75).

In that survey is looked into whether sex affected the level of aggressive behaviours, where the reported results showed that gender predict the total aggressive behaviours R^2 = .27, F(1.148) = 4.82, p = .02. See Table 4.

Table 4: Multiple regression analysis of the impact of sex on aggressive behaviours

	Sex				
Variables	B	SE B	ß	t	P
Aggressive behaviours	4.82	4.48	.27	6.54*	.02
Proactive aggression	3.18	1.45	.17	3.19*	.03
Reactive aggression	3.04	1.32	.16	3.01*	.03

p <. 03.

We also examined whether the time spent playing video games was associated with increased aggressive behaviours. The reported results showed that time spent playing video games was associated with increased aggressive behaviours R^2 = .301, F(3, 342) = 14.70, p =.03. Looking into sex differences in relation to aggressive behaviours and time spent playing video games, the *t-test* analysis showed differences in overall aggressive behaviours t(347) = 2.66, p = .03, with the values for boys' students being (M = 27.96, DS = 13.87), while for girls'

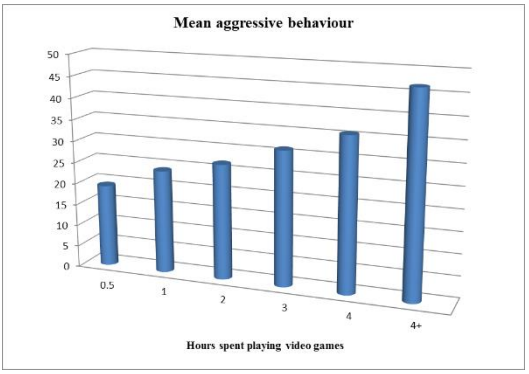
students (M = 20.54, DS = 12.13). For more specific analysis scores, see Table 5.

Table 5: *T-test* analysis of gender differences in aggression

	Male		Female			
Variables	M	DS	M	DS	t	df
Total aggression	27.96	13.87	20.54	12.13	2.66*	346
Proactive aggression	12.76	9.93	8.54	7.69	2.210*	346
Reactive aggression	13.20	8.55	9.90	7.38	2.10*	346
Time spent playing video games	2.58	1.49	.87	1.21	7.603**	346

p = .01, p = .01 and p = .02

Chart 1: Differences in aggression between amounts of time playing video games and aggression



The one-way ANOVA was used to evaluate differences among groups in aggressive behaviours based on the amount of time spent playing video games F(4, 442) = 7.42, p = .01, where the post hoc analysis showed that those who spent more than 4 hours a day playing video games reported a higher level of aggression (M = 46.66, DS = 12.12), while those who played less than one hour reported the following values (M = 19.23, DS = 7.36).

IV. DISCUSSION

The goal of this study was to examine the correlation between playing video games and aggressive behaviours in school students. The results indicated that the amount of time spent playing video games was associated with a higher level of aggressive behaviours. This has also been reported in other studies (Dickmeis & Roe, 2019; Shao & Wang,

2019; Evcin & Erzi, 2019; Stojanovic, 2019; Gentile et al., 2004; Anderson et al., 2008).

The time spent playing video games stimulates aggressive behaviours (Anderson et al., 2010; Anderson & Huesman, 2003), as evidenced in this study, according to which aggressive behaviours are impelled and developed by playing violent video games. This increase in violent behaviours was identified both in proactive aggressive behaviours and in reactive aggressive behaviours triggered by a provocation or attack, which proves that video games make a favourable environment for the emergence of aggressive behaviours (Ferguson et al., 2008; Anderson & Huesman, 2003; Swing & Anderson, 2010; Markey & Scherer, 2009). Passing more time in playing video game influence increasing of aggressive behaviour (Evcin & Erzi, 2019).

They can associate sequences' in the person's memory in which are involve enabling conditions, goals and action, than the way young children rehearsals the situation, which increases the number of paths through which the script can be activated, and rehearsals more time about script in their mind strength the links between concepts within the script that adolescents has about the situation (Anderson & Bushman, 2002).

It is important to understand that playing video games is associated with various cognitive changes that are socially rewarded. Also, this increase in aggressive behaviour among children and youth can be explained by Bandura's modelling (Bandura, 1977). Through modelling, children learn different behaviours and the ways in which these behaviours are transmitted, as presented in the media, i.e. in video games. When such behaviours are rewarded and desired in different games, the child is more likely to model them in social life and in interaction with peers to achieve a certain goal or increase his/her value.

The way video games affect aggressive behaviour has been proven and reported among different findings, that aggressive behaviours are stimulated in various forms by minimizing prosocial behaviours (Greitmeyer et al., 2010). Achieving success in video games increases self-efficacy (Blair, 2004; Funk et al., 2006). In the scope of these effects, video games affect the increase of prejudice towards peers, associated with a decrease in trust and cooperation among them and, vice versa, an increase in the processing of hostile information and

aggression (Rothmund et al., 2001). This chain of negative effects of computer games and aggressive behaviours is also related to the feelings it causes in the child (Anderson & Bushman, 2001), however, the effects were interdependent, with the effect being greater depending on the child's cognitive sensitivity (Olson et al., 2008).

These findings provide us with a clearer understanding of how exposure to video games is correlated with the emergence of aggressive behaviours, and also with aggressive reaction] (Siyez & Baran, 2017). These data are very important for our context, indicating that the young people are spending a large part of the day playing video games, which is correlated with aggressive behaviours of students in schools. This shows a concerning trajectory of how children spend time and, at the same time, how this alters their behaviours. This increases the need for further studies in order for us to have more inclusive research, so as to understand the scale of widespread use of video games in Kosovo, and, on the other side, to examine the role of other factors that may affect the time spent playing video games and factors that increase sensitivity in the development of aggressive behaviours among school children. One of the predictors of the emergence of aggressive behaviours is the time spent playing video games, which according to the data has been shown to affect aggressive behaviours, and has also been reported in America (Anderson et al., 2006) and in Albanians' adolescents (Gusho & Mitrushi, 2017). Controlling the time children spend playing video games has been shown to be crucial in preventing aggressive behaviours.

In relation to gender differences, boys reported higher levels of aggression compared to girls students, which is consistent with the findings presented so far, according to which boys' report higher levels of aggression compared to girls (Olson et al., 2008; Ferguson et al., 2009). These differences are universally spread across different cultures, indicating that girls show less prevalence of the emergence of aggressive behaviours. These differences may be more prevalent in our patriarchal society, which in many cases promotes and rewards aggressive behaviours of boys, and on the other side, generates greater social pressure both in suppressing aggressive behaviours and in creating moral values around social rejection of aggression.

Like other studies, this study, too, has its limitations. The first limitation of this study is its focus on only two schools, involving a not so high number of participants. Its second limitation lies in the fact that

we examined the direct correlation between video games and aggressive behaviours, while not integrating into this relation other mediating factors, such as peers, and their motivation and emotional state. Based on the findings, we recommend that future studies include a comparison of those who are predisposed to aggressive behaviour and those who are not. Another recommendation is to look at the functioning of the family and its role in young people's aggressive behaviour, and, finally, to prepare interventions based on the environment within schools and on the cultural context of Kosovo.

CONCLUSION

Playing video is associated with increasing of aggressive behaviour in adolescents in high school in Kosovo. Boys reported higher level of aggression than with girls'. Youth show higher sensitivity in playing video game therefore that is correlated with more proactive and reactive behaviour.

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