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Factors Associated with the Use of Video Games: Aggression, Domestic Violence, and Depression

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Abstract: The objective of this study was to examine the differences between depressive symptoms, family violence, and aggression in students with different levels of exposure to violence in video games. We selected a nonrandom sample of 401 college students (58.5% male and 41.5% female), ranging in age from 17 to 27 years. We used the Center for Epidemiologic Studies Depression Scale; to assess domestic violence, we designed a scale of 16 reagents, which measures: verbal aggression, physical aggression, humiliation, and respect (α = 0.83). We created a scale of 13 items to assess aggression (α = 0.83). On the use of video games, the students were asked whether they used them or not, why they play, the approximate amount of time a week they spend playing them, their favorite game, and whether the video games they use have violent content and what type. The main findings showed significant differences in the three variables examined, where the young, who had a greater level of exposure to video games with violent content, had more symptoms of depression, domestic violence, and aggressive behavior compared with students with minor or no exposure to violence in video games.

Key words: video games, depression, aggression, violence, students

1. Introduction

The mass media are the channels through which information flows and reaches a large proportion of the population. Thus, they have become the new channels of interpersonal communication. The Telephonic Foundation (2008) conducted a study among 25,000 children and adolescents between 10 and 28 years old living in Argentina, Brazil, Chile, Colombia, Mexico, Peru, and Venezuela, and the results indicated that 95% of the respondents access the Internet, 83% have a mobile phone, and 67% play video games. In addition, 49% mentioned that they frequently use chat services, e-mail, text messages, and listen to music; in the same way, 50% reported accessing online games and 52% reported playing with their mobile.

On the other hand, the Kaiser Family Foundation (Rideout, Foehr & Roberts, 2010) reported that children and teens aged 8 to 18 years spend an average of one hour and 29 minutes per day on the computer. When asked how much time they spent on the computer by activity, the results showed that children and adolescents spent the most time on social networks (*M* = 22 minutes); video games ranked second (*M* = 17 minutes). Specifically on the use of video games, the results showed a significant increase from 1999 to 2009, indicating that they remain popular among children 8 to 18 years old, more so than watching TV and listening to music. In 1999, the average time that children spent on video games was 26 minutes a day; this increased to 49 minutes in 2004 was up to one

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hour 13 minutes by 2009. The data apply to any game platforms. When comparing by gender, males reported playing an average of one hour 37 minutes, and women 49 minutes.

According to the evidence, the use of electronic media plays an important role in the recreational behavior of children and young people; therefore, several studies have evaluated the effect of the use of electronic media on children. Some studies indicate that excessive use of electronic media decreases mental activity and physical development in adolescents. Ruan, Shamah, Gomez, and Hernandez (2007) reported that due to the amount of time young people spend watching television and interacting with the Internet, video games, and other hypermedia, they do less and less moderate and intense exercises as part of their weekly routine. On the other hand, other studies point to the fact that the intensive use of media fosters thoughts, emotions, behaviors, fears, and desensitization in young people (Hogan, 2005). Van den Bulk and Eggermont (2006) suggest that the use of a computer or television during off-hours shifts the amount of time spent for meals and family communication. Some authors argue that poor eating habits in the youth and subsequent disorders may be a side effect of the excessive use of media.

On the other hand, some studies provide evidence of the effect that violent video games have on aggressive thoughts, feelings, and behavior in children and adolescents (Anderson, 2004). However, other studies indicate that the interaction effect between video games and the presence of aggressive behavior in children is small (Bensley & van Eenwyk, 2001; Browne and Hamilton-Giachritsis, 2005; Sherry, 2001).

Historically, two approaches have been used to try to explain the effect of exposure to violence in media: the social learning approach and the catharsis model. Models based on social learning theory, such as the General Aggression Model (Bushman & Anderson, 2002), suggest that exposure to media violence may develop violent behavior; i.e., people who see more violence in media develop violent behavior with more frequency and strength compared with people with no such exposure. In contrast, the catharsis model suggests that aggression is primarily a biological urge that requires expression (Lorenz, 1963); according to this model, the presence of violence in media can provide a release for aggressive impulses. Sherry (2007) suggested that the exposure of individuals to long periods of using violent video games was associated with less aggression than those who were less frequently exposed.

Some researchers say children and teens understand that video games with violent content are simply a form of play; they are able to distinguish the violence and aggression in the fantasy from that in the real world (Goldstein, 2001; Malliet, 2006).

Olson, Kutner, and Warner (2008) suggest that adolescents are attracted to violent games for five reasons: (1) fantasies of power and fame; (2) change, exploration, and mastery; (3) emotional regulation, especially coping with anger and stress; (4) sociability (cooperation, competition, and status-seeking); and (5) learning new skills (particularly in the case of sports games).

Research on media effects and video games with violent content on players suggest that they may increase people's aggressive thoughts, feelings, and behavior in both laboratory settings and real life. Aggressive behavior can result from playing or watching violent programs, can be an expression of hostile treatment received, and/or may be the result of the combination of these and other factors (Porter & Starcevic, 2007).

The objective of this research was to determine the differences in depression, domestic violence, and aggression among adolescents with different levels of exposure to violence in video games.

2. Method

2.1 Participants

We selected a nonrandom sample of 401 college students, of whom 50.1% belong to public and 49.9% to private universities. Of the sample, 58.5% were male and 41.5% were female, ranging in age from 17 to 27 years, with an average of 21 years (SD = 1.81). Out of the 401 students, 80.8% reported living with their parents.

2.2 Instruments

We used the Certificate of the Center for Epidemiologic Studies (CES-D, Radloff, 1977; Mariño, Medina-Mora, Chaparro & González-Forteza, 1993), which consists of 20 items, to measure the presence and duration of depressive symptoms during the week prior to its implementation ($\alpha = 0.85$). To assess domestic violence, we designed a scale of 16 items based on the Child Abuse Scale (Vladimirsky, Sanchez & Marin, 2003), which measures: verbal aggression, physical aggression, humiliation, and respect ($\alpha = 0.83$). For aggression, a Likert scale was designed consisting of 13 items with four response options: never to always ($\alpha = 0.83$). On the use of video games, the students were asked whether they used them or not, why they play, the approximate amount of time a week they spend playing them, their favorite game, and whether the video games they use have violent content and what type.

2.3 Procedure

The application of the instruments was made individually; the purpose of the investigation was explained to the students and their voluntary participation was requested.

2.4 Results

Of the total, 75% of adolescents reported playing video games at least once a month, of whom 62% were male and 38% were female ($X^2 = 5.60$, $p < .05$). Regarding the reasons why they use video games, the highest percentage for both men and women said “to pass the time”, followed by “in search of fun”, as shown in Table 1.

Table 1 Reason for the Use of Video Games by Sex

Reasons	Men		Women	
	F	***%***	***f***	***%***
To pass time	62	33.9	41	35.7
For fun	49	26.8	19	16.5
Competition	11	6.0	12	10.4
To distract from daily life	20	10.9	12	10.4
To simulate being another person	18	9.8	14	12.2
To communicate with other players	7	3.8	4	3.5
Relaxation	8	4.4	3	2.6
To feel physically superior	4	2.2	3	2.6
To feel mentally and emotionally superior	4	2.2	6	5.2
Others	--	--	1	0.9

As for game preference (Table 2), the football game FIFA was most frequently reported by men, while Mario Kart, an auto racing game featuring different characters, was most frequently reported by women.

Table 2 Video Game Preference by Sex

Videogame	Men		Women	
	f	*%*	*f*	*%*
Grand theft auto	30	16.4	4	3.4
The legend of Zelda	1	0.5	14	12.1
Sim city	3	1.6	20	17.2
Resident evil	13	7.1	5	4.3
Madden NFL	22	12.0	--	--
Mario Kart	42	23.0	39	33.6
FIFA	47	25.7	8	6.9
Dragon quest	1	0.5	14	12.1
Age of empires	3	1.6	4	3.4
Final fantasy	5	2.7	6	5.2
Mortal Kombat	2	1.1	--	--
Need for Speed	8	4.4	1	0.9
Gran turismo	5	2.7	--	--
Other	1	0.5	1	0.9

The results on the number of hours per week that students spend on games showed a statistically significant relationship between the number of hours and the participants' sex (X^2 = 26.56, p <.001). As shown in Figure 1, both men and women said they play from 6 to 10 hours a week (highest percentage), followed by 2 to 5 hours for men and 30 minutes to an hour for women.

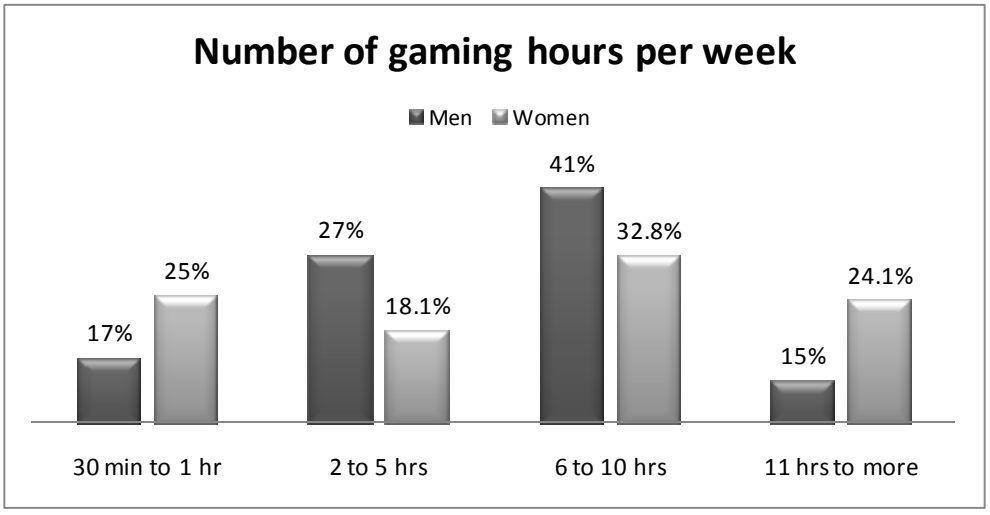

Figure 1 Number of Gaming Hours Per Week

When the students were asked if their favorite video games have violent and/or aggressive content, the findings showed no significant relationship between the presence of violent and/or aggressive content and the sex of the students (X2 =. 570, p > .05). It is noteworthy that 57.8% of women and 59.1% of men said their favorite video games have this type of content.

In order to create an indicator of exposure to video games with violent content, the following variables were combined: whether or not to they use video games, whether the games have violent content, and the amount of time spent playing. With this combination we obtained six groups; namely, those who: (1) have never used video games, (2) have played video games but without violent content, (3) have played video games with violent content and play on average 30 minutes to an hour a week, (4) have played video games with violent content and play on average 2 to 5 hours a week, (5) have played video games with violent content and play on average 6 to 10 hours a week, and (6) have played video games with violent content and play on average 11 hours or more a week.

Figure 2 shows that one third of the men said they play video games without violent content; those who reported they do not play video games ranked second, while those who play video games with violent content and play on average 6 to 10 hours a week ranked third. In the case of women, those who reported not playing games were slightly bigger in number, those who play video games without violent content ranked second, and similar to the men, those who spend between 6 and 10 hours a week playing video games with violent content ranked third.

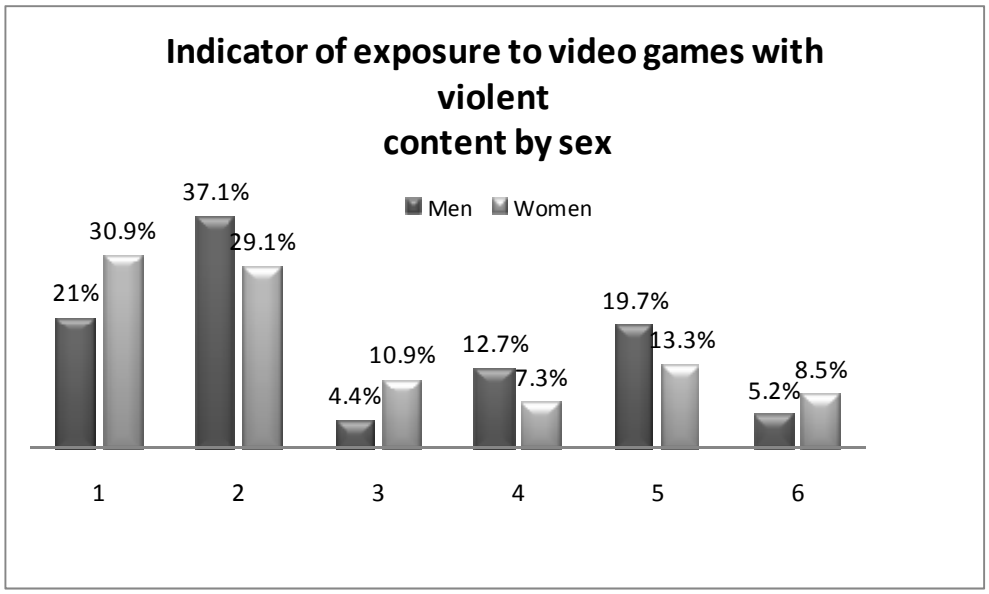

Figure 2 Indicator of Exposure to Video Games with Violent Content by Sex

Having established the indicator, an analysis of variance was performed to determine differences in aggression, domestic violence, and depressive symptoms among the video game exposure groups by sex. The results showed significant effects of exposure level ($F = 6.62$, $p < .001$) but not of sex ($F = 1.65$, $p > .05$).

With respect to the interaction by exposure level, the results were significant for all three dimensions. Young people with a higher level of exposure to video games with violent content had higher scores on the scale of violence ($F = 9.66$, $p > .001$) compared with those who reported never playing video games. These results were similar for both men and women; in the case of women, those who were exposed to games with violent content from 2 to 5 hours a week had higher scores (Table 3).

Regarding depressive symptoms, for both sexes those who were exposed to video games with violent content from 30 minutes to an hour a week had the lowest scores ($F = 6.52$, $p > .001$). Among the women, the group that showed higher depressive symptoms was the one exposed from 2 to 5 hours a week; among the men, it was the group that reported playing 11 hours or more a week (Table 4).

Table 3 Domestic Violence by Exposure Level to Video Games with Violent Content by Sex

Indicator	Sex	*M*	*SD*
Have never played video games	**Men**	21.6	5.5
	Women	22.3	6.1
Have played video games but without violent content	**Men**	24.2	5.3
	Women	24.3	5.3
Have played video games with violent content and play on average 30 minutes to an hour	**Men**	26.2	5.9
	Women	24.7	6.7
Have played video games with violent content and play on average 2 to 5 hours	**Men**	24.1	5.8
	Women	30.3	9.2
Have played video games with violent content and play on average 6 to 10 hours	**Men**	27.3	7.5
	Women	27.3	7.5
Have played video games with violent content and play on average 11 hours or more	**Men**	29.6	6.4
	Women	28.2	6.8

Table 4 Depression by Exposure Level to Video Games with Violent Content by Sex

Indicator	Sex	*M*	*SD*
Have never played video games	**Men**	33.8	8.8
	Women	36.8	9.7
Have played video games but without violent content	**Men**	34.6	7.9
	Women	36.4	7.9
Have played video games with violent content and play on average 30 minutes to an hour	**Men**	32.5	7.9
	Women	35.1	7.2
Have played video games with violent content and play on average 2 to 5 hours	**Men**	38.1	10.8
	Women	45.4	11.6
Have played video games with violent content and play on average 6 to 10 hours	**Men**	39.1	10.9
	Women	41.2	13.1
Have played video games with violent content and play on average 11 hours or more	**Men**	44.4	10.1
	Women	40.1	12.3

Finally, with respect to aggression ($F = 5.43$, $p < .001$), the women who obtained the lowest scores belonged to the youngest group, which play video games with violent content an average of 30 minutes to an hour per week. The highest scorers were those who reported playing for 2 to 5 hours a week. As for the men, the lowest scorers were those who play video games without violent content, while the highest score was reported for those who play video games with violent content for 11 hours or more a week (Table 5).

Table 5 Aggression Levels by Exposure Level to Video Games with Violent Content by Sex

Indicator	Sex	*M*	*DE*
Have never played video games	**Men**	26.9	4.7
	Women	26.6	4.9
Have played video games but without violent content	**Men**	23.6	5.3
	Women	24.0	4.8
Have played video games with violent content and play on average 30 minutes to an hour	**Men**	26.3	5.1
	Women	22.9	6.7
Have played video games with violent content and play on average 2 to 5 hours	**Men**	26.2	6.9
	Women	31.2	7.8
Have played video games with violent content and play on average 6 to 10 hours	**Men**	26.2	7.5
	Women	27.8	8.6
Have played video games with violent content and play on average 11 hours or more	**Men**	28.7	5.9
	Women	26.9	7.8

3. Discussion

This research examined the differences between the symptoms of depression, domestic violence, and aggression in students with different levels of exposure to violence in video games. The main findings showed significant differences in the three variables examined, in which the young, who had a greater level of exposure to video games with violent content, had more symptoms of depression, domestic violence, and aggressive behavior compared with students with minor or no exposure to violence in video games.

These results agree with those suggested by previous authors (Anderson, 2004; Porter & Starcevic, 2007) who explained that exposure to video games with violent content is associated with aggressive thoughts, feelings, and behavior in children and adolescents. Also, Porter and Starcevic (2007) explained that the use of video games with violent content may be an expression of hostile treatment received combined with other factors.

On the other hand, the percentage of students who reported playing video games was higher than that reported in the study of the Telephonic Foundation (2009), with a difference of 12%. However, no data were available for comparison because of methodological differences in both the data collection and the selection of subjects. Therefore, we could only note that a significant number of young people use video games and that further research is needed to determine both the possible consequences of their excessive use and the factors associated with the development and improvement of prevention and intervention programs.

Regarding the number of hours per week students spend on video games, the results of this study showed a significant relationship between the number of hours and gender. Even though the highest percentage was in the range of 6 to 10 hours a week in both sexes, the second highest percentage was 30 minutes to an hour among the women and 2 to 5 hours among the men. These results are partly similar to those of the study by Rideout, Foehr, and Roberts (2010), which indicate a difference in the average amount of time spent playing video games by sex, with men spending a longer time compared to women.

According to the literature, there are conflicting data on the impact that video games can have on young people, which could be partly due to the different criteria used for comparison. For example, some do comparisons between young people who play video games and those who do not, or over a certain period of time. Hence, with a sample comprising groups of students with different levels of exposure to video games with violent content, this study developed a composite index: whether or not they play, whether or not the video games have violent content, and the amount of time they spend playing video games per week.

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