

Effect of media content and media use habits on aggressive behaviors in the adolescents

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ABSTRACT

Objective: This study aims to assess the effect of media content and media use habits on aggression in adolescents.

Methods: This descriptive study was conducted between December 28, 2015 and January 7, 2016. The study sample consisted of 406 (66% male, 44% female, mean age: 15.16 ± 1.56 years) students who were registered in two schools in the provincial center of Konya, Turkey during the 2015-2016 academic year.

Results: Surveyed aggression scores were higher in students who were frequently exposed to violent media ($p < 0.001$). The aggression scores were positively correlated with viewing television, DVDs, films/movies, playing computer/console games, using the Internet, listening to music, playing games on mobile phones, and total screen time and negatively correlated with participating in sports and reading newspapers and books.

Conclusion: Health professionals should provide parents, educators, and children with information and advice on the attentive use of media and the negative health effects related to its uncontrolled use.

Keywords: Adolescent, media, aggression, screen time, violent content

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Adolescents are surrounded by media products in both electronic (televisions, computers, electronic games, the Internet, mobile phones, and music players) and non-electronic (magazines, newspapers, and books) formats. The growing impact of electronic media products on adolescence, an important period in human development, has become of interest. During adolescence, new responsibilities arise that can lead to conflicts with authority and the need to form a personal identity. Adolescents sometimes seek to solve the conflicts they experience, both within themselves and with society, by resorting to violence. These violent acts often occur among adolescents, particularly at school [1-3]. Today, children spend a lot of time with media products and are exposed to scenes of vi-

olence in almost all type of media content [4]. The amount of time spent in front of the screen can be problematic, triggering a sedentary lifestyle as well as tyrannical and risky behaviors. Studies and literature on the subject have shown that exposure to media products with violent content and long periods spent engaged with these products increase the tendency toward aggression and/or aggressive behaviors [5-12]. Aggression is defined by psychologists as any behavior that is intended to harm another person. There are many forms of aggression. For example, verbal aggression usually involves saying hurtful things to a victim. Relational or indirect aggression refers to behavior that is intended to harm a targeted person, such as telling lies to get the person into trouble or to



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harm his or her interpersonal relationships [13]. Even short-term media violence exposure increases the likelihood of physically and verbally aggressive behavior, aggressive thoughts, and aggressive emotions. Recent large-scale longitudinal studies have provided converging evidence linking frequent exposure to violent media in childhood with aggression later in life, including physical assaults and spousal abuse [5, 9, 13-16].

Adolescents who have access to an array of media products prefer to spend time with more than one media product simultaneously rather than focusing on a single media product. Consequently, it is necessary to explore the amount of time spent using all media products and the effect on the adolescent user. This study assessed the effect of media content and media use habits on aggressive behaviors in adolescents.

Research Hypothesis

The following hypotheses have been evaluated in this study.

H0 Violence involving media does not affect the aggressive behaviors of adolescents.

H1 Violence involving media affects the aggressive behaviors of adolescents.

METHODS

Study Design and Sample Population

A descriptive study assessing the effect of media use on aggression in adolescents was conducted between December 28, 2015 and January 7, 2016. The members of the study population ($n = 1157$) were registered at two schools in the provincial center of Konya during the 2015-2016 academic year. Data was collected from 418 students who voluntarily took part in the study. The evaluation excluded 12 students who filled out the form but who reported that they had been subjected to or had experienced violence. The 406 students (138 in elementary and 268 in high school) who were assessed in the study stated that they did not have any psychiatric or neurological diseases and that they had not been subjected to or experienced violence including domestic violence.

Data Collection Instruments

The study data was collected using an aggression inventory and a questionnaire that was developed by the investigators after a review of the relevant literature. After an introduction and explanation, the forms used to collect the data were administered to student groups of 15-20 adolescents. The students took approximately 20-25 minutes to complete the forms.

Study Questionnaire

The questionnaire was prepared by the investigators after a review of the relevant literature [2-5, 9, 17]. This questionnaire was used to collect information on the descriptive characteristics of the students and on media-related variables. The form included questions about the student's exposure to violent scenes in media and the extent to which their families set limits on media consumption, as well as questions about the amount of time the student spent viewing TV, playing computer/video games, using the Internet, listening to music, playing games on mobile phones, participating in sports, and reading newspapers/books (both on weekdays and weekends).

Aggression Inventory

Developed by Tuzgöl [18] utilizing the aggression inventory of Kocatürk [19], the aggression scale used in this study consisted of 45 items for measuring behaviors involving expressed, hidden, physical, verbal, and indirect aggression (exemplified by behaviors like gossiping, spreading rumours, social exclusion etc.) in young people. The scale included 30 items related to aggressive behaviors and 15 items related to nonaggressive behaviors. The inventory used a Likert Scale answering system. For each item in the scale, study subjects were asked to select the choice that best suited them from the following options: (5) always, (4) often, (3) sometimes, (2) rarely, or (1) never. Since 13 scale items were negative statements, those items were scored in the reverse order. Potential aggression scale scores range from 45 to 225. The study reliability was confirmed by repeating the test and calculating the Pearson product-moment correlation coefficient ($r = 0.85$). The Cronbach reliability coefficient of the scale was found to be 0.71.

Ethical considerations

The study began after obtaining institutional permission from the National Education Directorate in Konya and ethical permission, numbered 2015/329 and dated December 22, 2015, from the ethics committee of Konya Selçuk University.

Statistical Analysis

Students' daily screen times were obtained by totaling the time spent viewing TV/DVDs/movies, playing computer/video games, using the Internet, and playing games on mobile phones. The mean daily media use time was calculated using the following formula: (weekday time × 5 + weekend time × 2)/7. The data obtained from the study was assessed using the SPSS version 15.00 program. Techniques for obtaining frequencies and percentages were used to analyze the demographic data and media use habits of the students, and the bivariate Pearson correlation and F tests (variance analysis) were used to test the correlation between the aggression scale and some of the surveyed variables. A value 0.05 was considered statistically significant.

Table 1. Descriptive characteristics of the study group (n = 406)

Gender	n	%
Female	138	34.0
Male	268	66.0
Family Structure		
Nuclear	353	86.9
Broad	42	10.3
Broken	11	2.7
Mother's Education		
Basic education	244	60.1
Secondary school	105	25.9
Undergraduate or higher	57	14.0
Father's Education		
Basic education	142	35.0
Secondary school	110	27.1
Undergraduate or higher	154	37.9
Family Income		
Low	30	7.3
Moderate	185	45.7
High	191	47.0
Total	406	100

Table 2. Variance analysis results of media parameters and aggression scores of the study group.

		n (%)	Aggression Score (Mean/SD)	Significance		Difference
				F	p* value	
Viewing violent programs involving yelling, weapons, quarrels, fights, wars, etc. in television and movies	Always	252 (62.1)	124.12 ± 22.37	18.752	< 0.001	1 and 2
	Sometimes	110 (27.1)	117.95 ± 19.00			1 and 3
	Never	44 (10.8)	103.64 ± 16.95			2 and 3
Viewing violent programs involving yelling, weapons, quarrels, fights, wars, etc. in social network sites	Always	208 (51.2)	126.15 ± 20.83	17.003	< 0.001	1 and 2
	Sometimes	69 (17.0)	113.04 ± 19.61			1 and 3
	Never	129 (31.8)	114.51 ± 22.15			
Viewing violent programs involving yelling, weapons, quarrels, fights, wars, etc. in computer games	Always	241 (59.4)	125.64 ± 20.15	19.823	< 0.001	1 and 2
	Sometimes	46 (11.3)	112.78 ± 21.01			1 and 3
	Never	119 (29.3)	112.15 ± 22.39			
Listening to or viewing violence-involving or promoting songs or clips	Always	83 (20.4)	139.73 ± 18.36	52.277	< 0.001	1 and 2
	Sometimes	62 (15.3)	116.90 ± 19.56			1 and 3
	Never	261 (64.3)	114.81 ± 19.89			
Family forbidding the of viewing and playing of violent programs	Always	267 (65.8)	116.76 ± 21.38	10.273	< 0.001	1 and 2
	Sometimes	38 (9.4)	127.34 ± 20.76			1 and 3
	Never	101 (24.8)	126.72 ± 21.65			

*One Way Variance Analysis (F Test)

Table 3. Distribution of mean media use, newspaper/book reading, and sports participation times of the study group and their aggression scores.

Mean Time (Days/Hours)/Score		Mean/SD
TV/DVD Film/Movie	Weekdays	2.04 ± 2.00
	Weekends	2.74 ± 2.30
	Daily Average	2.24 ± 1.93
Playing Computer/Console Games	Weekdays	1.22 ± 1.94
	Weekends	1.89 ± 2.72
	Daily Average	1.41 ± 2.02
Using the Internet	Weekdays	2.90 ± 2.88
	Weekends	3.76 ± 3.48
	Daily Average	3.15 ± 2.96
Listening to Music	Weekdays	2.26 ± 3.43
	Weekends	2.66 ± 4.01
	Daily Average	2.37 ± 3.46
Playing Games on Mobile Phones	Weekdays	0.83 ± 1.36
	Weekends	0.96 ± 1.55
	Daily Average	0.86 ± 1.32
Participating in Sports	Weekdays	0.74 ± 1.41
	Weekends	0.71 ± 1.53
	Daily Average	0.73 ± 1.31
Reading Newspapers/Books	Weekdays	0.69 ± 0.92
	Weekends	0.80 ± 1.06
	Daily Average	0.72 ± 0.89
Screen Time		7.66 ± 5.31
Aggression Score		120.23 ± 21.88

RESULTS

The descriptive characteristics of the study group are shown in Table 1. According to the analysis of variance, there was no relationship between parental education status, family structure, income and aggression scores.

The students who reported more exposure to violent television, social networking, computer games and music were found to have higher aggression scores than those who reported less exposure (Table 2). The mean media use, newspaper/book reading, and sports participation times of the study group are shown in Table 3.

The aggression scores were positively correlated with viewing television, playing computer/console games, using the Internet, listening to music, playing games on mobile phones, and the total time spent in front of the screen ($r = 0.126, p < 0.05$; $r = 0.233, p < 0.001$; $r = 0.472, p < 0.001$; $r = 0.291, p < 0.001$; $r = 0.300, p < 0.001$; $r = 0.472, p < 0.001$, respectively), and negatively correlated with participating in sports and reading newspapers/books ($r = -0.035, p > 0.05$; $r = -0.103, p < 0.001$) (Table 4).

DISCUSSION

In accordance with previous studies [20-24], we found no significant difference between parental education level, family income status, and aggression. In this study, it supports the findings of previous studies. The aggression scores of the students in this study who were exposed to violent media scenes were high (see Table 2). Previous studies have demonstrated a connection between media violence and aggressive behaviors exhibited in following years [7, 8, 12]. A study that took place in seven countries showed that exposure to violent screen media was positively associated with aggression [6]. In addition, a meta-analysis of 35 reports concluded that exposure to violent video games increased aggressive behaviors [25]. Huesmann [26] reported that exposure to electronic media violence increased the risk of aggressive behavior in both children and adults in the short term and in children in the longterm. Similar studies on Turkish students have found that playing violent video games increases aggressive, antisocial behavior [10] and is associated with youngsters resorting to violence more often in problem-solving situations [11]. Recent meta-analyses have shown that shortly after playing a violent video game, the aggressiveness of the player increases [5, 9]. The results of this study are similar to the results of other studies.

Table 4. Comparison of mean media use, newspaper/book reading, and sports participation times of the study group and their aggression scores.

Mean Time (Hours)	Aggression Score	
	r	p value
Viewing TV	0.126	0.011
Playing Computer Games	0.233	< 0.001
Using the Internet	0.472	< 0.001
Listening to Music	0.291	< 0.001
Playing Games on Mobile Phone	0.300	< 0.001
Total Screen Time	0.472	< 0.001
Participating in Sports	-0.035	0.479
Reading Newspapers/Books	-0.103	0.039

The content and age-based program rating system, also called smart signs, may provide guidance on adolescent protection from the contents of certain TV programs in Turkey. The adolescents in the study group should be provided with education and advice concerning the use of smart signs. Previous studies have shown that parents who set rules on media consumption and serve as positive role models can help to reduce the time adolescents spend in front of the screen [27-30]. Although parental supervision and the frequency of family TV time decreases as children grow older, families should regulate the purpose and content of children's media use, restrict the amount of use, and provide explanatory assistance to children by using the media with them.

The mean total screen-viewing time of the participating adolescents in a day was 7.66 ± 5.31 hours (see Table 3). Several studies have assessed media screen time. In one study, participants spent 2.2 hours daily in front of a screen [31]. Another study found that adolescents spent a daily average of 193 minutes in front of a screen [27]. Haines et al. [32] found that 33.7% of females and 43.9% of males spent two hours and more in front of a screen daily. Studies in China and Australia assessing screen time, which included TV/video viewing and computer use, showed that the mean daily viewing times were 1.4 hours [33] and 3.1 hours [34], respectively. The total screen time of the participating students in the current study was much higher than in these previous studies. This large amount of screen time indicates that the adolescents

in this study chose to spend time with more than one media product simultaneously rather than focusing on a single media product.

Media is an indispensable part of adolescent life, and the negative health impacts of media overuse are inevitable. Experts stress that the screen time of children older than two years should be limited to at most two hours per day [35]. Consequently, the media viewing habits of the students in this study group need to change. Previous studies have found that interventions to reduce adolescent screen time can be effective [36-38]. It would be helpful to provide education on the conscientious use of media to the study group students, their families, and the school staff, and to sponsor an intervention program to limit screen time and media use.

The mean aggression score of the study group was 120.23 ± 21.88 (see Table 3). There was a positive correlation between the media time of the adolescents and their aggression scores (see Table 4). Studies have found that increased screen time during leisure periods is associated with violent, aggressive, and despotic behavior [39]. In a study by Iannotti et al. [40] on adolescents in two different countries, increased screen time was found to be positively correlated with several negative health indicators. The results of this study are similar to those of other studies. The negative correlation between the students' aggression scores and the level of participation in sports and the time spent reading newspapers/books should serve as guidance for parents and educators (see Table 4).

Proper intervention should include redirecting adolescents from spending time using media to participating in quality enriching activities such as sports and creative and social games. Consequently; H1 hypothesis has been accepted.

Limitations

The most important limitation of this study was the selection of a non-randomized study sample. Media use times were evaluated according to the statements of the adolescent study participants rather than more objective sources. To increase the generalization of the results, researchers should conduct randomized controlled experiments with a larger sample group. Previous randomized controlled studies have consistently shown that youngsters who were exposed to scenes with violent content have more aggressive behaviors, thoughts, or feelings in the later periods of their lives compared to those who were not. These previous studies can serve as a guide for researchers interested in the subject [5, 9, 14, 41].

CONCLUSION

Before aggressive behaviors manifest and become persistent, health professionals in collaboration with families should identify uncontrolled adolescent media use. Health professionals should plan and implement evidence-based interventions and early intervention programs targeting behavioral changes. Researchers who are interested in this subject should carry out randomized, controlled studies involving broad sample groups.

Conflict of interest

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