

Relationship between Computer Games and Aggression in Junior High School Students in Zabol City in Academic Year 2015 – 2016

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Abstract

Introduction: adolescents are major audience of computer games, harmful effects of which including aggression may be an obstacle for education of students and also cause disorder in educational environment. In addition, it causes self-harm in aggressive people. Thus, current study aims at determining aggression level in adolescents and its related factors.

Materials and Methods: In this cross sectional descriptive study 369 junior high school students in Zabol city took part who were studying during academic year 2015- 2016. Data were collected by demographic, computer games and Buss and Perry aggression questionnaires. Data were statistically analysed using SPSS 22 software.

Findings: Among 369 population in the study, 57.2 percent were female and remaining were males. 73.7 percent of students used computer games, and 51.1 percent of them showed aggression. Mean score of aggression was 79.60 ± 15.87 Findings showed significant relationship between aggression score in male seventh grade students and users of harsh games ($P < 0.05$). Also, there was significant relationship between physical aspect of aggression and gender, physical aspect and aggression anger with the type of computer games and between anger and aggression hostility and educational grade of students ($P < 0.05$).

Conclusion: Considering significant relationship between computer games and aggression, there is need for designing formulated educational programs for increasing awareness and changing attitude and subsequently changing adolescent behaviour for optimal use of modern technology in order to reduce their adverse effects.

Keywords: Adolescents, computer games, student, aggression.

Introduction

In the civilized community of today where we live, interpersonal violence is legally considered as crime and aggression with others will be followed by their reaction and may cause the next set of disputes [1, 2]. Adolescence is one of the most critical periods of human life when one is caught by many problems. With puberty arrival, childhood temperament gets stormy, extensive development emerges in their body and psychology, one may be aggressive or calm and quiet. All animal and human aspects which lay in his existence manifest due to puberty hormones [1-3]).

In today world, scientific development not only has influenced human life, space and the environment where he lives, but also it has changed principles governing relationships and interactions among human beings and their attitudes toward each other, others, and the world [2,4].

World of adolescents is not an exception and one of the manifestations of these changes is in the type of hobbies and the way of spending free times by this group of society. Its evident manifestation is in emergence and extension of electric games [5, 6].

Thus, with emergence and development of these games, producers of games offered more and more games, so that always quality of the machines and tools got increased and various games were offered, and each game had higher level of violence and severity compared to the previous ones [7, 8].

With increasing violence in these games, many adolescents tended to these games, so that today impacts of these games in children and adolescents have become one of the major issues in the communities. Hence, psychologists and experts believe that these games, like many other tools, should be used under supervision of parents for children and adolescents, and excessive and unlimited use of them would bring about harmful and dangerous outcomes [9, 10].

Considering industrial changes in the countries, our country is almost among those countries which are transiting from traditional to industrial state. Entrance of industry in the families and change in family behaviour and education system are factors which cause that the transition generation is neither in industrialized culture nor away from traditional state. These factors lead to social disorders. Entrance of video and computer games, which considerably contain harsh and violent appearance, as well as suicides in TV programs, violent programs in animation children programs and series and action films are generalized in behaviour of children in the family, school, and society. Various studies have shown that adolescents immediately after watching violent programs assault their peers in the family or school and show violent behaviour [11, 12].

Findings by the study in 2000 showed that children at ages 2- 7 averagely played computer games 34 minutes per day. Also, sale of computer games in 2004 in USA was about 7-10 milliard dollar and it is growing annually [3].

In the other study which was conducted for investigating relationship between video violent games and emergence of aggression in 397 students at ages 14- 18 showed that violent video games with human gaols were significantly related to emergence of aggression states in students. But the relationship was not significant in relation with other aggression states such as physical,

verbal aggression and anger. Also, findings suggested significance relationship between household economic level and playing these games in adolescents [4].

Findings by a study on prevalence of computer games on 1,500 students in Zanjan showed 53% prevalence among the subjects. 43 percent of these people played more than 3 hours per day. Computer games prevalence was 69% and 39% among boys and girls, respectively [5].

Findings by different studies reported high influence of these games on adolescents which leads to reduction of physical activities, and ultimately reduction of physical and psychological health, isolation, aggression, depression, computer addiction, and anxiety [6].

Considering importance of the topic, i.e. aggression, which can be an obstacle for education of students and cause disorder in educational environment, and ultimately it can cause harassment of students and others, aggressive behaviours of adolescent students should be solved, otherwise it would lead to harms for the school and society. Hence, this issue is investigated in order to solve the problem and identify role of factors affecting this issue. Considering different and sometimes contradictory findings in other places, and given lack of study on this issue in Zabol city's students, current research was conducted aiming at investigation of relationship between computer games and aggression in junior high school students in Zabol city in 2016.

Methodology

It is a descriptive- analytical research work and research population included all junior high school students in Zabol city during academic year 2015- 2016. Sample size was estimated as 369 students based on following formula considering minimum aggression prevalence ($P = 0.4$) [4] at confidence level as 95 percent and 5 percent error level. Multistage cluster sampling was used. That is, firstly all junior high schools were specified and 20 schools were randomly selected, and questionnaires were given randomly to students.

$$n = \frac{Z_{1-\frac{\alpha}{2}}^2 p(1-p)}{d^2}$$

Data collection was done based on the questionnaire which has been used previously in similar plans [3]. It contained three parts. First part included demographic data such as gender, educational level, previous year GPA, parental education, parent job, household income. Second part was related to computer games in which age of beginning playing computer games, place of playing games, hours of playing games daily, name of computer game, type of computer game used by students were asked in closed manner. Third part included standard questionnaire with 29 items proposed by Buss and Perry [4] which measured aggression. It contained five options as follows: minimum score was 1 for option "I don't have this characteristic at all", and maximum score was five for option "I have these characteristics in high level". Of course, it is except for items 9 and 16 which were scored inversely. Thus, highest score was 145 and lowest score was 29. The higher was score it denoted higher aggression.

Following data collection, data were described in the form of frequency, percentage, mean, and standard deviation using SPSS 22 software. Data were analyzed using independent T test and one way variance analysis. $P < 0.05$ was considered as significance level.

Findings

This study was conducted on 369 students in Zabol city in 2015. They were junior high school students; 211 students were females (57.2%) and 158 ones were male (42.8%). Results showed that 272 (73.7%) considered computer games as their hobbies, while 97 (26.3%) didn't play these games. Mean aggression score in students playing computer games was 97.60 ± 15.87 , and accordingly they were classified into subjects with aggression score above average and without aggression below average. 61 (62.9%) ones of students playing computer games did not show aggression, while 139 (51.1%) students playing games showed aggression.

Regarding quality of playing computer games, results indicated that 40.8 percent started playing these games early in elementary school. Regarding place of playing games, 81.6 percent played at home. In terms of duration of playing computer games, 126 (46.3%) played computer games below one hour daily. The mean for playing computer games was cell phone (42.3%), and 28.7 percent of them were interested in playing violent games. 63.6% of students' parents disagreed with playing computer games by them. Demographic information of respondents as well as descriptive information related to computer games are given in Table 1.

Table 1. Demographic information of respondents and descriptive information related to computer games

Characteristics		Female (%)	Male (%)	Total (%)
Academic grade	Seventh	43 (41.3)	61 (58.7)	104 (28.2)
	Eighth	111 (72.5)	42 (27.5)	153 (41.5)
	Ninth	57 (50.9)	55 (49.1)	112 (30.4)
GPA	18 – 20	164 (71.6)	65 (28.4)	229 (62.1)
	16 – 18	39 (39.8)	59 (60.2)	98 (26.6)
	14 – 16	8 (25)	24 (75)	32 (8.7)
	Below 14	0 (0)	10 (100)	10 (2.7)
Household income	Below 0.5 million	98 (47.3)	109 (52.7)	207 (56.1)
	0.5 – 1 million	51 (63)	30 (37)	81 (22)
	1-1.5 million	27 (73)	10 (27)	37 (10)
	1.5 – 2 million	21 (84)	4 (16)	25 (6.8)
	Above 2 million	14 (73.7)	5 (26.3)	19 (5.1)
Hours of playing games	No playing	63 (64.9)	34 (35.1)	97 (26.3)
	Below 1 h daily	90 (71.4)	36 (28.6)	126 (34.1)
	1-2 h daily	46 (52.9)	41 (47.1)	87 (23.6)
	Over 2 h daily	12 (20.3)	47 (79.7)	59 (16)
Initiation of playing computer games	Before school	21 (30)	40 (70)	70 (25.7)
	Elementary school	60 (54.1)	51 (45.9)	111 (40.8)
	High school	67 (73.6)	24 (26.4)	91 (33.5)
Location of playing	Game net	3 (30)	7 (70)	10 (3.7)
	Home	128 (57.7)	94 (42.3)	222 (81.6)

computer games	With friends	17 (42.5)	23 (57.5)	40 (14.7)
Means of playing computer games	Laptop	24 (75)	8 (25)	32 (11.8)
	Play station	12 (21.8)	43 (78.2)	55 (20.2)
	Mobile phone	63 (54.8)	52 (45.2)	115 (42.3)
	Tablet	22 (61.1)	14 (38.9)	36 (13.2)
	Other	27 (79.4)	7 (20.6)	34 (12.5)
Type of computer games	Exciting	39 (67.2)	19 (32.8)	58 (21.3)
	Violent	17 (21.8)	61 (78.2)	78 (28.7)
	Intellectual	55 (76.4)	17 (23.6)	72 (26.5)
	Competitive	37 (57.8)	27 (42.2)	64 (23.5)
Parent's opinion	Disagree	87 (50.3)	86 (49.7)	173 (63.6)
	Agree	61 (61.6)	38 (38.4)	99 (36.4)

Table 2. Status of overall aggression and its aspects in respondents in terms of gender, game type and duration of playing game

Variables		Overall aggression	Aggression aspects			
Gender			Physical	Verbal	Anger	Hostility
Females		77.35 ± 16.17	23.03 ± 5.89	13.35 ± 4.15	18.26±5.62	22.72±6.31
Males		82.08±15.20	27.37±6.45	13.69±4.14	18.79±5.18	22.32±6.02
Total		79.06±15.87	25.01±6.51	13.60±4.14	18.50±5.42	22.49±6.17
Sig. level		0.0	0.000	0.742	0.420	0.515
Game type	Exciting	78.60±14.96	23.69±4.67	14.09±4.21	17.87±5.80	23.05±5.83
	Violent & warlike	86.91±13.83	28.95±5.70	14.33±4.54	20.67±4.94	22.96±6.11
	Intellectual & creative	37.75±16.49	22.01±6.38	12.90±4.07	17.54±5.37	21.29±6.72
	competitive	78.19±15.26	24.77±6.79	13.06±3.49	17.59±5.04	22.77±5.86
	Sig. level	0.028	0.000	0.095	0.000	0.288
Educational grade	Seventh	81.23±15.71	25.63±7.15	13.80±4.36	19.62±5.03	22.17±6.00
	Eighth	81.06±16.55	25.03±6.51	13.08±3.91	19.17±5.82	23.78±6.54
	Ninth	76.17±14.83	24.33±5.81	14.02±4.16	16.54±4.80	21.27±5.65
	Sig. level	0.0	0.429	0.263	0.000	0.019

Also, T test results showed relationship between playing computer games or lack of playing games with mean score of overall aggression (sum of four scales of verbal, aggression, anger, and hostility) is significant ($P = 0.039$). It was so that mean score of aggression was higher in users of computer games. This relationship was significant with physical aggression ($P = 0.015$) so that physical aggression was observed more in computer game users. But the relationship was not significant regarding subscales of verbal aggression, anger and hostility ($P > 0.05$).

According to one way variance analysis, there was significant relationship between mean score of aggression and educational grade of students. According to Toki test, mean score in anger sub scale was higher in seventh grade (19.62) compared to eighth (19.17) and ninth (16.54) grades.

Also, mean score in hostility sub scale was higher in eighth grade (23.78) compared to seventh (22.17) and ninth (22.27) grades.

According to one way variance analysis, mean score and aggression and type of computer game used by students showed significant relationship and according to Toki test, mean score in action games (28.95) was higher than intellectual games (22.01), emotional games (23.69), and competitive games (24.77), and it was higher in action games (20.67) than intellectual (17.54), emotional (17.78) and competitive (17.59) games.

In relation with relationship between demographic variables and aggression, results of independent t test showed there is significant relationship between gender and physical aggression, so that mean score of aggression was 27.37 in boys and 23.03 in girls who used computer games.

But no significant relationship was observed regarding relationship between other demographic characteristics and descriptive information of computer games including GPA, educational level and occupation of parents, household income level hours of playing, means of playing, location of playing, and agreement or disagreement of parents with playing games and mean score of aggression in students according to chi square test ($P > 0.05$).

Discussion and Conclusion

Findings showed that 73.7% of played computer games (45.58% girls and 54.42% boys), and aggression was observed in 51.1 percent of them (42.1% girls and 62.9% boys).

In our study, significant relationship was observed in playing computer games and incidence of aggression in students, so that more than half of student users of computer games showed aggression. In the study by Tirgar et al. on 292 students in Kerman city in 2013 and study by Rajabi Gilani et al. on 573 students in Kermanshah in 2012 also similar findings were obtained [6, 7]. In fact, tendency to playing computer games in adolescence period is a kind of escaping by students for discharging their energy, while it influences their psychology and causes incidence of aggression in them.

In the current study, there was significant relationship between four aspects of aggression and computer game playing including physical aggression and anger aggression, so that playing computer games was more effective on incidence of physical aggression and anger in students. In the study by Farmanbar et al. on secondary school students in Rasht in 2013 also showed that incidence of physical aggression in users of computer games was more [3]. Study by Tirgar et al. and Abdolkhaleghi et al. on 333 male secondary school students in Tehran suggested that between violent computer games playing had higher impact on incidence of aggression in students [4, 7]. It can be described in this way that viewing violent scenes in this type of games in these games by adolescents and their interest in power seeking and lack of proper understanding of virtual world in these ages causes modeling and tendency to experiencing these conditions in real world, and it leads to incidence of higher aggression in adolescents.

In this study, mean score of aggression in boys was higher than girls and aggression was significantly associated with physical aspect. The study by Rajabi Gilani et al. also suggested the same finding [6]. In fact, having higher area of activity in different environments in the society for boys has led to higher influence of computer games on them compared to girls.

In this study, there was no significant relationship between playing computer games and hours of playing games, while findings by Rajabi Gilani et al., Abdolkhaleghi et al., and Shojaee et al. on 100 adolescents of computer game users in Ghom showed significant relationship between hours of playing computer games and overall aggression, physical aggression, verbal aggression, and hostility [4, 6, 8]. It can be described in this way that in our study higher number of computer game users spent below 1 hour on playing games, while in the populations under study by the mentioned authors longer hours were spent on playing games, and thus it caused higher impact of these games on the thinking and behavior of adolescents. In this research, no significant relationship was observed between academic achievement of students (GPA) and duration of playing computer games and aggression, while aggression was observed in students with lower GPA and longer hours of playing games in studies by Tirgar et al., Farmanbar et al., and Shojaee et al. [3, 7, 8]. It can be described in this way that hours of playing games in our study is often below 1 hour in the population and over half of the population had high GPA, and considering disagreement of over half of parents with playing computer games in the population under study and considering cultural situation of Zabol city compared to cities with central situation and access to facilities and the gap between parents and children in these cities, this difference is not less expected.

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