



The Comparison of Social Intelligence, Sexual Identity, Violence, and Addiction Tendency in Adolescents Dependent on Playing Online Grand Theft Auto Video Game and Normal Ones: A Cross-sectional Study

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Original Article

Abstract

Introduction: The purpose of this study is to compare social intelligence, sexual identity, violence, and addiction tendency among adolescents dependent on playing online Grand Theft Auto (GTA) video game and normal cases.

Materials and Methods: This was a cross-sectional study based on the comparison between a playing group and a control group. The target population consisted of all adolescents playing online GTA video game among whom 60 adolescents were recruited using convenience and purposive sampling method and filled questionnaires about sexual identity, social intelligence, violence, and addiction tendency. Besides, 60 adolescents who had never played any online games were considered as the control group. Data were analyzed using the analysis of covariance (ANCOVA) method.

Results: It seems that the social intelligence and addiction tendency to play video games were effective on adolescents dependent on playing video games in accordance with their sexual identity ($P \leq 0.018$). However, addiction to play video games did not have a significant effect on male and female identity ($P \leq 0.809$).

Conclusion: Although playing GTA video game online did not have significant effect on adolescents' sexual identity, it probably significantly affect their social intelligence and addiction tendency.

Keywords: Online playing; Social intelligence; Psychological index; Sexual identity

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Introduction

Video games, like many new forms of entertainment that have gained widespread popularity, has raised concerns about their side effects on extremist players. In particular, adolescents spend their time playing video games, ignoring other educational, social, and leisure activities (1). The interest and acceptance of computer games is such that, according to experts, half of all personal computers are purchased for gaming purposes (2). These games, which are often online, provide users with a world of excitement and violence using vibrant images and exciting sounds. In most of these games, there are fictional story environments that aim to kill a monster, gain experience, and find treasure (3). These harsh and

stressful environments lead to the formation of aggressive behaviors in adolescents. The results of studies have shown that adolescents who choose single-player games will find a separate perspective from society, and this will lead to the development of aggressive thoughts and tendencies in them (4).

Age classification of computer games are systems for classifying video games based on their content. Most of these systems are formed by the governmental sector and are based on the classification of moving image content (5). These systems help parents monitor the cultural content used by their children (6). However, most parents do not pay attention to the age label on the cover of the games bought by their children, and even they are themselves careless about it

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when shopping (7). This may be due to the thinking that playing is a childish job and that the number on the boxes does not matter much (8).

More than half of parents allow their children to experience games rated 18+ without having supervision or information about the game (9). A survey of more than 2,000 families across the UK by ChildCare Institute found that parents had less understanding of games compared to other media. 86% of parents said they did not care about the age rating on games, and 23% said they did not follow the same guidelines for movies (10).

In terms of genetic psychology, adolescence is an important period in the psychological development of a person that is positioned between childhood and adulthood and separates the childhood from adulthood with profound changes (11). Going through this stage is a transformation and the adolescent is constantly changing in this period, with an increasing need for mental tranquility (12). In addition, adolescents need to be perceived as existent by others (13). Meanwhile, the tendency to the virtual world provides the necessary ground for the adolescent to express his emotions so that he can easily communicate with others and produce a new form of social human being (14). Adolescents show the greatest interest in terms of flexibility in accepting the new human community (15). The spread of video games and online hobbies among adolescents indicates the importance of the virtual world to fill their leisure time, and therefore, has caused many problems (16).

Game style as a determining component that acts in line with the nature of pleasure and enjoyment for players, is the subject influencing various dimensions of the game, including production, demand, sales, exports, selection, and player exposure (17). The first creators of video games did not seek production style and setting a basis for attention to pleasure-making, rather the game style emerged as an important and significant category in the field of game development a little later (18). Video games labeled age group 18+ have the highest number of users under this age group and are used under game consoles which make it very easy for teenagers to access, thus creating many problems for them (19). Some families do not do much planning for their adolescents' leisure time and lack enough knowledge about games, rather they try to fill their child's leisure time merely by buying games. Therefore, the present study aims to compare social intelligence and sexual identity in Iranian adolescents dependent on video games, especially online Grand Theft Auto (GTA) video game in normal teenagers. The main hypothesis was that GTA

video games had a significant effect on the psychological characteristics of sexual identity and social intelligence of adolescents.

Materials and Methods

This was an analytical crss-sectional study performed to compare the two groups of game and control and its details were approved by the ethics committee.

The statistical population of the study consisted of 185 adolescents aged 12 to 18 years in Shiraz, Iran, in 2019 who played online games including GTA. The sampling was performed using the convenience and purposive sampling method and 120 adolescents involved in video games were selected using Morgan sampling table. These individuals were randomly selected from the gaming centers of Shiraz. The study inclusion criteria included playing more than 4 hours a day, no history of behavioral disorders based on self-reported form including age, gender, education, and duration of playing the game. Playing less than 4 hours and having a history of behavioral disorders were considered as the exclusion criteria according to the diagnosis of a psychologist experienced in the field of mental and behavioral disorders.

Questionnaires of aggression, gender role identity, social intelligence, and addiction were utilized to collect data. To increase the validity of these questionnaires, first the face validity of the items was examined using the views of psychologists and supervisors. The Aggression Questionnaire is a 24-item instrument that measures aggression on a five-point Likert scale with a score of 1 (strongly disagree) to 5 (strongly agree), respectively, with the range of scores varying between 24 and 120 (20). Internal consistency (IC) (Cronbach's alpha) of the Aggression Scale has been reported to be 0.84 to 0.91 (21).

The gender role identity scale consists of 16 items and has been proposed by Schertzer et al. This questionnaire includes two subscales of masculine and feminine characteristics and is used as a tool to measure the role of gender, which measures the level of sexual identity in seven degrees from 1 (never) to 7 (always). The range of scores of the questionnaire fluctuates between 16 and 112 (22). IC (Cronbach's alpha) of this scale was calculated by Schertzer et al. as 0.87 (22).

The Social Intelligence Questionnaire has 21 items and three subscales of "Social Information Processing, Social Awareness, and Social Skills" assessing the social intelligence level with a five-point Likert scale from 1 (very low) to 5 (very high), with scores ranging from 0 to 105 (23). IC of this instrument was reported to be 0.75 (24). The Addiction Tendency Questionnaire is a 16-item

instrument with three “social, individual, and environmental” dimensions that measures the degree of addiction of subjects on a five-point scale from 1 (very low) to 7 (very high) and its score range from 0 to 16 (25). IC of the Addiction Tendency Questionnaire was obtained by Mirhesami as 0.79 (26).

The normal data distribution for each variable was evaluated using Kolmogorov-Smirnov (K-S) test. Moreover, the homogeneity comparison of variances was performed using Levene’s test and intergroup comparison with control considering the pre-test scores using the analysis of covariance (ANCOVA) test. In this analysis, the psychological indicators including social intelligence and gender identity of individuals as variables studied entered the ANCOVA equation with the mediating role of the adolescents’ addiction to the GTA online video game. Finally, the data were analyzed in SPSS software (version 21, IBM Corporation, Armonk, NY, USA). Test power was determined to reduce the type 1 and type 2 errors by increasing the sample size. Furthermore, Cronbach’s alpha coefficient was employed to analyze the reliability of the questionnaires. $P < 0.05$ was considered as the data significance level.

Results

In the present study, IC of the questionnaires of aggression, sexual identity, social intelligence, and addiction using Cronbach’s alpha coefficient was 0.79, 0.84, 0.71, and 0.78, respectively. The characteristics of the studied samples by group are presented in table 1.

The Levene’s test was indicative of homogeneity of variances in the study variables in the two groups

($P > 0.050$). The results of the ANCOVA test to determine the effect of game addiction, social intelligence, and sexual identity are presented in table 2.

Given the data in this table, computer game addiction significantly affected social intelligence ($F = 5.722$, $P \leq 0.018$), sexual identity ($F = 4.867$, $P \leq 0.029$), and aggression ($F = 5.066$, $P = 0.026$). The results of the ANCOVA test used to determine the effect of game addiction in female and male identity in the two groups are presented in table 3

The results of table 3 showed that considering the level of significance in covariate, the researcher’s assumption regarding the effect of video game addiction on masculinity ($F = 0.001$, $P \leq 0.978$) and femininity ($F = 0.058$, $P \leq 0.809$) was not approved.

Discussion

The present study was conducted aiming to compare social intelligence, sexual identity, aggression, and addiction tendency in adolescents addicted to video games (GTA) and normal adolescents. Based on the results, it can be concluded that the use of video games increases aggression and addiction of adolescents and affects their social intelligence. The results were consistent with the findings of the studies by Vernadakis et al. (27), Jelsma et al. (28), and Ghobadi et al. (29). In today’s society, due to the increasing development of technology in order to facilitate affairs, the lack of suitable places for adolescents to spend leisure time and the prevalence of psychological problems in society, a negative avoidance approach is observed in most parents (30).

Table 1. Demographic characteristics of the studied samples

Variable	Age (year)	Game	Control	Total	P value (Comparison of the two groups)
Participants [n (%)]		60 (50)	60 (50)	120 (100)	0.050
Gender [n (%)]	Female	2 (3.3)	1 (1.6)	3 (2.5)	0.015*
	Male	58 (96.0)	59 (98.3)	117 (97.5)	
Education [n (%)]	Illiterate	0 (0)	0 (0)	0 (0)	0.018*
	Elementary	0 (0)	0 (0)	0 (0)	
	Secondary school	18 (30.0)	1 (1.6)	19 (15.8)	
	Diploma	42 (70.0)	59 (98.3)	101 (84.2)	
Age (year) (mean \pm SD)		12 \pm 6	12 \pm 6	18 \pm 6	0.021*
Duration of using video games (hours)		2555 hours	0		0.150
Duration of playing per day (hours) (mean \pm SD)		7 (7) \pm 2	0		0.030*
Social intelligence score based on Silvera questionnaire		5548	5257		0.050
Addiction Tendency score based on Botvin Questionnaire		2291	2285		0.020*
Aggression score based on Eysenck questionnaire		3935	3864		0.017*
Gender identity score based on Silvera Questionnaire	Female identity	2480	2319		0.050
	Male identity	2358	2293		0.050

SD: Standard deviation; *Significant difference at the $P \leq 0.05$ level

Table 2. Analysis of covariance (ANCOVA) test to examine the effects of computer game addiction, social intelligence, and sexual identity

Dependent variable	Source of changes	Sum of squares	Degree of freedom	Mean squares	Statistic F	P value
Social intelligence	Covariate	350.431	1	350.431	5.722	0.018
	Group	338.978	1	338.978	5.535	0.020
	Error	7165.546	117	61.244		
Sexual identity	Covariate	300.155	1	300.155	4.867	0.029
	Group	378.760	1	378.760	6.141	0.015
	Error	7215.823	117	61.674		0.809
Game addiction	Covariate	3.751	1	3.751	0.0580	≤ 0.001
	Group	4082.591	1	4082.591	63.585	
	Error	7512.227	117	64.207		0.026
Aggression	Covariate	311.945	1	311.945	5.066	≤ 0.001
	Group	919.638	1	919.638	14.936	
	Error	7204.033	117	61.573		0.809

In other words, parents prefer to keep their children closer to themselves rather than allowing them to spend their free time in the community (31). Therefore, most parents, by buying different games for their children, keep them at home (next to themselves) more and at the same time, due to difficult economic conditions and the need for more income, they have little time to spend at home. Most parents have no knowledge of games and are unaware of their impacts and the many problems they cause for the family and community. On the other hand, with the growth of game console production and the emergence of different games in different types and styles, the excitement and attractiveness of new games attract all age groups (32).

With the growth of the Internet and its speed, online games (such as GTA) have found a special place. In this type of games, the user can compete with real people (in the past, the games were solo or maximum two people) and compete with their friends or other people in a virtual environment with. These achievements, on the other hand, have made teenagers more isolated and by engaging them in online games, make them experience a free but similar world to real life, which has led to many problems (33).

Internet gaming disorder is one of the most important disorders caused by engaging in online

games, which is defined by excessive dependence on digital games, and according to the new definition, this disorder is different from addiction to digital games (34). Currently, the only authority that has recognized and defined this disorder is the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) (35). According to the definition of this manual, internet gaming disorder involves the players who play obsessively and with deprivation of other benefits of the game; so that their persistence and frequent online activities lead to significant clinical distress or anxiety and aggression (36). Adolescents who are always involved in video games tend to be isolated and introverted and will be unable to communicate dynamically with others, and this isolation, by negatively affecting the social intelligence of individuals, causes many problems in society (37). Based on the available evidence, the incidence of this disorder is higher in Asian countries as well as in young men (38).

Today, video games are more of a cultural phenomenon than television and music (39) and can be studied from different angles of technology, economy, art, and of course culture. The importance of these emerging media is such that some have even claimed that if one wants to know something about a country's culture, he must pay attention to this medium (video games) (40).

Table 3. Analysis of covariance (ANCOVA) test to examine the effects of computer game addiction on male and female identity

Gender identity	Source of changes	Sum of squares	Degree of freedom	Mean squares	Statistic F	P value
Male identity	Covariate	0.051	1	0.051	0.001	0.978
	Group	1642.505	1	1642.505	25.569	≤ 0.001
	Error	7515.927	117	64.239		
Female identity	Covariate	3.751	1	3.751	0.058	0.809
	Group	4082.591	1	4082.591	63.585	≤ 0.001
	Error	7512.227	117	64.207		

The issue of video games is rooted in observational learning, which is one of the most important learning methods in children and adolescents (41). Adolescents learn more by observing the behavior and actions of others than by learning directly from experience. For this reason, television and computer programs are one of the major sources of influencing children's and adolescents' behavior due to their attractive and lovable role models (42). One of the factors that people turn to electronic media according to their abilities and functions is gaining self-awareness, strengthening personal values, finding behavioral patterns, imitating the values considered by others and in a word, identifying (43). Identity is specified in how to answer the question "Who am I?" that in response to it, "I am ..." appears. Identity also refers to the uniqueness, individuality, and fundamental differences that distinguish one person from all others (44).

Reasons for adolescents' addiction to video games include escaping from real social relationships, stimulating or calming effects of games, and providing a level of control that is not actually experienced (43). On the other hand, some experts are concerned about the violent and sexual content of video games (45). Some also believe that with the introduction of video games into the world of adolescents, problems such as social crimes, academic failure, loneliness (individual and social) emerging due to the poor interpersonal communication, and addiction to video games in adolescents, especially in boys are associated with coping problems such as poor academic achievement and aggressive behaviors and attitudes. Violent images in movies and video games have significant short-term effects on motivation, thoughts, and emotions, and a possible increase in terrifying or aggressive behavior, especially in boys (47).

Limitations

Although the present study was one of the first research measures to compare the effects of video games on the psychological characteristics of adolescents, there were some limitations including the type of sample selection. Therefore, it is suggested that future studies select samples that play in an environment other than gaming centers.

Recommendations

It is suggested that using the results of the present study, parents with adolescent children learn targeted programs based on awareness of the harmful effects of this type of games to use a specific pattern to choose a game based on their age to avoid its effects. It is also recommended that the effect of these games on other psychological characteristics of adolescents be investigated.

Conclusion

Addiction to online video games seems to have a significant negative impact on social intelligence, addiction, and aggression in adolescents; while it did not show much effect on their sexual identity.

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Authors' Contribution

Mohammad Amin Nimroozi: Study design and ideation, attracting financial resources for the study, support, executive, and scientific study services, providing study equipment and samples, data collection, analysis and interpretation of results, manuscript preparation, specialized evaluation of the manuscript in terms of scientific

concepts, approval of the final manuscript to be submitted to the journal office, the responsibility of maintaining the integrity of the study process from the beginning to the publication, and responding to the referees' comments; Ali Mohammad Rezaei: support, executive, and scientific study services, providing study equipment and samples, data collection, analysis and interpretation of results, manuscript preparation, specialized evaluation of the manuscript in terms of scientific concepts, approval of the final manuscript to be submitted to the journal office, the responsibility of maintaining the integrity of the study process from the beginning to the publication, and responding to the referees' comments.

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Conflict of Interest

The authors declare no conflict of interest.

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