DOI: 10.15503/jecs20162.298.303

An Investigation of the Relationship between Digital Game Addiction, Gender and Regular Sport Participation

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Abstract

This study aims to investigate digital game addiction of high school students according to gender and regular sport participation. For this 398 high school students who were randomly chosen voluntarily participated in the study. In addition to personal information from the Turkish version of Lemmens and colleagues'a game addiction scale was used as a data gathering tool. The Turkish adaptation of the scale was done by Aylin Yalcın Irmak and Semra Erdogan in 2015. The Turkish version of the scale consists of one factor and seven items anchored with a five Likert type scale. In the evaluation of the data linear regression was used. The findings of this study revealed that there was a positive relationship between gender and digital game addiction.

Key words: Digital game addiction, gender, regular sport participation

Introduction

The games that adolescents and young people used to play in the play grounds and on the streets have been replaced in recent years with digital games played in front of the computer on the internet or in game arcades. This changing culture has particularly brought up the concept of "digital game addiction" which is a condition that stems from the steadily growing passion for digital games and their excessive and uncontrolled usage among adolescents and young people. In the literature game addiction has been described as an impulse control disorder characterized by symptoms such as "the inability to control the time spent on game-playing", "a loss of interest in other activities", "continuing to play despite the adverse effects" and "feeling psychologically deprived when not being able to play" (Yalcın Irmak, & Erdogan, 2015a, 2015b).

In order to understand digital game addiction we need to go back at the beginning of digital games.The history of digital games was dominated by two key developments: the first is the rapid increase of popularity and the latter is dynamic technological evolution and diversification (Klimmt, 2009, p. 23).As an example for rapid increase of popularity,in 1962 when Massachusetts Institute of Technology student Steve Russell created Space war -the first interactive computer game- it rune on million-dollar Digital PDP-1 mainframe (Friedman, 1995, p.73).

An addiction to digital games can cause a tremendous amount of consequences to the gamer. In one of the most dramatic stories of online gaming addiction, in 2005, a 28-year-old South Korean man died not by committing suicide, but after playing the game Starcraft at an Internet cafe for 50 hours straight off. By all reports, the man had not slept properly and had eaten very little in that time. While no autopsy was performed, he was believed to have died from heart failure stemming from exhaustion (Young, 2009, p. 355).

Studies show that game addiction may lead to changes in personality or in behavior. According to the study of Mark D. Griffiths and Imogen Dancaster (1995) about the "effect of a type of personality on physiological arousal while playing computer games" they reported systematic measurement of heart rate significantly increased during the game, especially in the case of winning the game or beating one's personal high score is probably equivalent to winning Money in gambling (Griffiths, & Dancaster 1995, p.543). A study conducted with Korean High School students indicated that students who report excessive internet use are characterized by irritability, aggressiveness and impulsivity (Wo, 2003, p.1135).

Game addiction is a worldwide phenomenon in every aspect. For example digital games have become a serious public health concern in China. About 10 percent of China's more than 30 million Internet gamers were said to be addicted (Young, 2009). And although Turkey started to become familiar with digital games together with color TV sets, VCRs and similar electronic goods since 1983 (when government accepted free market policies and only a lucky minority could afford to buy first game consoles or 8 bit computers) (Yılmaz, & Cagiltay 2005) today every person can easily buy and spend time on digital games etc.

While having both negative and positive aspects the thoughts on digital games lead to change. According to Leo Sang-Min Whang and Geun-Young Chang (2004) by digital games, players have the power to talk online, make friends and conduct transactions involving real or virtual assets. The entertaining, interactive and real-time online games have become "killer applications" on the Internet and these are the primary reasons that some teenagers spend hours every day playing these games (Whang, & Chang 2004, p. 592). Also for example in Turkey digital games are accepted as a sport in 2011 by their the incorporation by the Ministry of Youth and Sports (https://tr.wikipedia.org). Because of its being a worldwide phenomenon, digital game

addiction increased attention of researchers from its early stages up to today. For example in a study carried out by Shotton (1999) about the "old" generation of video games, he concluded that although a small number of people were in danger of becoming dependent on digital games at that time, this was a harmless dependence. However, in the 1990s with the construction of video games with realistic graphics and their requirement for complex skills,this lead to psychological dependence and thus more harmful addictive behaviour (Phillips, Rolls, Rouse, & Griffiths 1995, p. 687). And because of emerging as one of the most popular forms of mass mediated entertainment and edutainment worldwide, primarily among adolescents (12-17) and young adults (18-22) much of the research has focused on potential social problems related to video game use such as the effects of violent games on aggression (Anderson and Bushman, 2000, p. 353) or game addiction (Fisher, 1994, p. 545). In this study we have tried to explore the possible relationship between digital game addiction gender and regular sport participation of high school students.

Method

Study Design: In the study a cross-sectional method was used as study design and according to Chris Gratton and Ian Jones (2010) this method is perhaps the most commonly used method in social and sport based studies. According to this method the data obtained from a sampling group relationship is identified and generalized back to the population.

Sampling Group: A total of 398 randomly chosen high school students from several schools of Kutahya city center – a city in the west part of Turkey with the population of 325.000- voluntarily participated in the study. But after outliers were analyzed answers of 6 students were eliminated. So finally the sampling group was consisted of 392 high school students [(%44.1, N=173) female, (%55.9, N=219) male; (%65.6, N=257) do regular sport (%34.4, N=135) not].

Data Collection Tool: In the present study a Turkish version of Lemmens and colleagues' (2009) game addiction scale was used. The Turkish adaptation of the scale was done by Irmak and Erdogan in 2015. The DGAS-7 is a 5-item Likert type, single-dimension scale made up of 7 questions.The Content Validity Index for the DGAS-7 was 0.92, Cronbach's alpha coefficient was 0.72 and item-total correlation ranged between 0.52 and 0.76 (Yalçın Irmak &Erdoğan 2015b).

Data Analyses*:* In the evaluation of data first missing value and outlier analyses were made and 6 participants'answers were eliminated. Also skewness and kurtosis values were evaluated and no skewness or kurtosis issues were found. Than reliability of the scale was assessed via Cronbach's alpha method and Cronbach's alpha calculated as .753. Lastly the linear regression method was used as hypothesis test.

Findings

Table 1. The distribution of the answers of the scale.

	Newer		Rarely		Sometimes		Often		always	
	F	%	f	%	f	%	f	%	f	%
1	180	45,9	94	24	83	21,2	18	4,6	17	4,3
2	137	34,9	123	31,4	102	26	21	5,4	9	2,3
3	134	34,2	104	26,5	96	24,5	43	11	15	3,8
4	171	43,6	90	23	76	19,4	33	8,4	22	5,6
5	207	52,8	78	19,9	68	17,3	21	5,4	18	4,6
6	230	58,7	87	22,2	54	13,8	18	4,6	3	0,8
7	287	73,2	53	13,5	40	10,2	9	2,3	3	0,8

Source: Own chart

Table 2. Regression analyze results

Model Summary			
R	R Square	Adjusted R Square	Std. Error of the Estimate
.428[a]	.183	.179	4.00265
a. Predictors: (Constant), regular sport participation, gender			

Source: Own chart

Table 3.

Anova[a]					
	Sum of Squares	df	Mean Square	F	p.
Regression	1396.802	2	698.401	43.592	.000[b]
Residual	6232.260	389	16.021		
Total	7629.061	391			
a. Dependent Variable: game addiction					
b. Predictors: (Constant), regular sport participation, gender					

Source: Own chart

Table 4.

Coefficients[a]					
	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	Beta	t	P
(Constant)	7.720	.913		8.453	.000
Gender	3.785	.408	.426	9.266	.000
Regular sport participation	-.172	.427	-.019	-.404	.686
a. Dependent Variable: game addiction					

Source: Own chart

Note: According to analysed result there was a significant relationship between participants' gender and game addiction (R=.426, p<.001) but the relationship between doing regular sport and game addiction was found to be insignificant (R=-.019; p>.05). Also analysis results revealed that game addiction according to gender explains 18% of total variance (R^2 =.183), and when t values were considered it can be said that gender is a predictor of digital game addiction (t=9.266; p<.001).

Result and conclusion

This paper has tried to examine the relationship between game addiction, gender and regular sport participation. Firstly analyzed results showed that the relationship between gender and game addiction was found to be significant (R=.426, p<.001). When we examine the literature, studies show that male students dedicate more time than females to playing digital games (Bonanno, & Kommers 2005). For example in the study of Phillips et al. (1995) males were 1-4 times more likely to admit to playing than females. In their study Bonanno and Kommers (2005) they tried to explain this situation as: "*the gender difference in time dedicated to game play can be attributed to the fact that boys find digital games much more attractive and conducive to their natural cognitive processing*". But according to study of Kim et al. (2008) about the online game addiction and some personality traits there weren't any significant differences between males and females game addiction.

Secondly relationship between regular sport participation and game addiction was found to be insignificant (R=-.019; p>.05). So we refuted our hypothesis.

Limitations and future studies

Although this study had some limitations such as the number of participants, we believe it may enlighten similar future studies. The results of this study revealed a relationship between gender and digital game addiction but no relationship according to regular sport participation. According to Nick Yee (2006) as the addiction progress grows, gamers become less interested in hobbies or activities that they used to enjoy and become more fascinated with living inside the game. So future studies may focus on the time spend on both digital games and sport and may focus on different sampling groups.

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