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# Effect of Digital Game Addiction and Social Anxiety Levels on Recreational Active Adolescents

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## Abstract

The aim of the research is to investigate the digital game addiction and social anxiety levels of adolescents who play sports recreationally. 226 adolescents (69 girls, 157 boys) who do sports recreationally participated in the research. In the research, the personal information form prepared by the researcher and the short form of the digital game addiction scale (DGAS-7) developed by Lemmens and friends (2009) and adapted into Turkish by Irmak and Erdoğan (2015) and La Greca and others, (1988) developed by Demir and others, (2000) Social Anxiety Scale for Children which was adapted into Turkish, were used. SPSS 22 statistical program was used in the analysis of the research. Manova analysis and regression analysis were used in the research. The level of significance in the research was taken as  $p < .01$ . As a result of the analysis, the digital game addiction score averages of boys were found to be significantly higher than girls. As a result of the regression analysis, it was determined that digital game addiction, together with the variables of gender and having a computer at home, predicted social anxiety at a statistically significant level.

**Keywords:** Digital Game Addiction, Social Anxiety, Adolescent.

## 1. Introduction

The game has evolved to the present day by going through many stages with the development of technology. It is thought that the first emergence of the game is based on natural behaviors inspired by primitive hunting techniques (Yengin, 2010). The game evolved from these primitive techniques over time; It is considered as an enjoyable leisure time activity that has basic elements such as rule, purpose and time (Altunay, 2004), outside of normal life, without financial gain (Huizinga, 1998). As time passed, the game, which found meaning in other structures, had different reflections in different age groups and became usable for different purposes. It has been observed that game activities for adults, mostly for health and personal development (Son and friends, 2007; Vygotsky, 2004; Yarnal, 2006; Yarnal, Chick, & Kerstetter, 2008), for children; relaxation (Huizinga, 1998), having fun (Aksoy & Dere-Çiftçi, 2018; Hazar, 2018), developing motor skills (Mangır & Aktaş, 1993), being ready for life (Singer & Singer, 2005), developing communication skills, helping each other, it has a very important effect on learning,

gaining experience in life, and psychosocial and language development (Ayan & Memiş, 2012).

The game, which especially affects the psychomotor development of children, has left its place to digital games with the development of technology over time. Digital games are games that are programmed using various technologies and allow users to log in as well as provide a visual environment for users (Çetin, 2013). In digital game platforms, the player plays the game either alone against the machine or against other players on the platform (Bozkurt, 2014). Many factors such as stress, challenge, leisure time, relaxation, fun, and distance from real life lead individuals to digital games (Griffiths & Hunt, 1995; Kirriemuir, 2002; Tüzün, 2004; İnal & Çağiltay, 2005; Wan & Chiou, 2006). In particular, children's inclination towards digital games affects their cognitive, affective and social development, while at the same time they are seen as an important tool in children's learning and realizing the creative activity (Kukul, 2013). However, in addition to these positive effects of digital games, there are also negative aspects such as addiction. Digital game addiction is defined as the inability to control the time spent playing games and feeling psychologically deprived when not playing (Irmak & Erdoğan, 2016; Irmak & Erdoğan, 2015). Digital games have many negative effects besides addiction. As a result of the researches, digital games; Many negative effects have been identified, such as increasing children's aggression tendencies (Anderson & Bushman, 2001; Benrazavi, Teimouri, & Griffiths, 2015), causing a decrease in academic achievement, leading to lying behavior, and weakening interpersonal relationships (Horzum, 2011). In the study conducted by Lieberman and others in 2009, they stated that children who turn to digital games instead of exploratory games face negative consequences such as violence, anger, fear, asocialization, and limited time allocated for physical activities. Eni (2017) also states that children who spend their free time with digital games become asocial and their personalities are shaped in this direction. It is also claimed that content containing violence and fear in digital games causes children to become more angry and aggressive (Asagem, 2008).

Based on the above and previous studies, the aim of this study was to investigate the digital game addiction and social anxiety levels of adolescents who play sports recreationally. As a method for this review, the Digital Game Addiction Scale short FORM (DGAS-7) was developed by Lemmens and his friends (2009) to determine the problematic digital game playing behaviors of adolescents between the ages of 12-18.

## **2. Method**

### *2.1 Research Design*

In the research, a relational screening model was used to investigate the relationship between digital game addiction and social anxiety levels of children who play sports recreationally. Relational screening model; It is a research model that aims to determine the existence and/or degree of co-variance between two or more variables (Karasar, 2013).

### *2.2 Sample and Data Collection*

226 adolescents (69 girls, age =  $12.4 \pm 1.2$ ; 157 boys, age =  $12.2 \pm 1.3$ ) who do sports recreationally, participated in the research. Before the questionnaire questions were distributed to the children, a voluntary consent form was distributed. After the questionnaires were collected, incorrect and incompletely filled papers were removed. Answering the survey questions took 15-20 minutes. For the research sample, a personal information form, which was created by the researcher and included the demographic characteristics of the participants, was prepared.

### *2.3 Digital Game Addiction Scale Short Form (DGAS-7)*

The Digital Game Addiction Scale short form (DGAS-7) is a scale developed by Lemmens and others (2009) to determine problematic digital game playing behaviors of adolescents aged 12-18. This form which is used is the 7 item short form of DGAS-21 which consists of 21 items and 7 sub-dimensions. The validity and reliability values of the original DGAS-7 were found to be 0.92 for Cronbach's alpha, CFI=0.904, RMSEA=0.053 (90% CI=0.049 and 0.056), and it has been shown that it can be used in adolescents. The Turkish validity and reliability study was

conducted by Irmak and Erdoğan (2015), and the Cronbach alpha coefficient of the scale was found to be .72. In this study, the Cronbach's alpha coefficient was found to be .60. The scale has a 5-point Likert type, one-factor structure and scores between 1 and 5 (1=never, 5=always) (range: 7-35).

#### 2.4 Social Anxiety Scale for Children

The validity and reliability study of self-report Social Anxiety Scale for Children-Revised Form (SASC-R) scale developed by La Greca and others (1988), was performed by Demir and others (2000). This scale, which originally consisted of 10 questions, was revised in 1993 and turned into a scale of 18 questions. The two components of social anxiety, fear of negative evaluation and distress and discomfort in social environments, were taken as basis in the preparation of the items. In this five-point Likert-type self-report scale, scores range from 18 to 90. The validity and reliability study of the SASC-R in Turkish was made with the participation of 452 students attending classes in 4.-8. by Demir and others (2000). When the internal consistency analysis of the scale was performed according to the Cronbach's alpha method,  $\alpha=0.813$  was found. In this research, the Cronbach Alpha coefficient of the scale was determined as .81.

#### 2.5 Analyzing of Data

SPSS 22 statistical program was used in the analysis of the research. Frequency and percentage analyzes were preferred for the descriptive statistics of the research. Mean and standard deviation analyzes were used to determine the levels of social anxiety and digital game addiction. Manova analysis to determine whether the digital game addiction and social loneliness levels of adolescents who play sports recreationally differ in terms of gender and computer ownership; Standard multiple regression analysis was used to determine the effects of gender, computer ownership and digital game addiction scores on social anxiety. The level of significance in the research was taken as  $p<.01$ .

### 3. Results

In this part of the research, there are findings regarding the relationship and effect of digital game addiction and social anxiety levels of adolescents who play sports recreationally, and the effect of gender on digital game addiction.

Multiple analysis of variance was performed to investigate the DGA and Social Anxiety total scores. DGA and Social Anxiety total scores were entered as dependent variables in the model. Gender (female, male) and having a computer (yes, no) variables were entered into the model as independent variables. While Manova results found the main effect of gender to be significant for DGA ( $\lambda =.963$ ,  $F(2, 221)= 4.207$ ,  $p=.016$ ,  $\eta^2=.037$ ), it was not significant for social anxiety. The comparison test performed on the finding that the main effect of gender was significant for DGA is presented in Table 1.

Table 1: Comparison test on finding that the main effect of gender was significant for DGA

Dependent Variable	Gender	Mean	SD	F	p	$\eta^2$
DGA	Female	1,80	,082	7,755	,006*	,034
	Male	2,06	,050			

\* $p<.01$

As a result of the analysis, the digital game addiction score means of boys were found to be significantly higher than girls ( $p<.01$ ). This significant difference explains 3.4% of the total variance.

Multiple regression analysis was performed to predict social anxiety scores. As an independent variable to the model; digital game addiction (DGA), gender and computer ownership variables were entered. Analysis results are presented in Table 2.

Table 2: Regression analysis for the prediction of social anxiety scores

		R2	Revised R2	$\beta$	t	F
Stage 1	DGA	,088	,084	,297*	4,661	21,728*
	DGA			,312*	4,847	
Stage 2	Gender	,108	,096	-,082	-1,255	8,926*
	Having Computer at home			,101	1,573	

\*p<,01

As a result of the regression analysis, it was observed that there was a weak positive correlation between social anxiety and DGA ( $r=.297$ ,  $p<.001$ ). In addition, it was determined that digital game addiction significantly predicted social anxiety ( $F=21,728$ ,  $p<.001$ ). As a result of the hierarchical regression analysis, it was determined that digital game addiction, together with the variables of gender and having a computer at home, predicted social anxiety at a statistically significant level ( $F=9,926$ ,  $p<.001$ ). It was determined that while digital game addiction alone explained 8.4% of the total variance in the first stage, digital game addiction explained 9.6% of the total variance together with the gender and having a computer at home in the second stage.

#### 4. Discussion

Today, technology, which is developing more and more every day, has a serious effect on the change of people's life style. Technology, which has an important place in people's daily lives, has also caused a change in the game understanding of individuals. Considering the development of technology in terms of gaming, it has been observed that there is a transition from traditional games to digital games. Computer games, which negatively affect the physical and mental health of young people, have become one of the most important factors that create digital game addiction. The addiction of digital games by individuals has affected them to break away from social environments and drift into loneliness. In this study, the effects of digital games on social loneliness were investigated and as a result of the analysis of the data obtained from the field research, findings indicating the existence of the effect were reached.

As a result of this research, the main effect of gender was found to be significant in favor of males for DGA. There are similar studies and similar findings in favor of male students in the literature (Göldağ, 2018; Öncel & Tekin, 2015; Gentile, 2009; Onay, Tüfekçi & Çağiltay, 2005; Tüfekçi, 2007; Gökçearslan & Durakoğlu, 2014; Mustafaoğlu & Yasacı, 2018; Hastings & others, 2009; Griffiths, Davies & Chappell, 2003; Morahan-Martin & Schumacher, 2000; Tekindal & Çalışkan, 2016). In addition, in the studies conducted by researchers such as Buchman & Funk (1996), Sherry (2001) and Fromme (2003), it was concluded that the rate of playing digital games is higher in boys than in girls. Erboylu and Vural (2010) found that there was a significant difference in favor of boys between male and female students in their study in which they investigated computer game addiction on 4th and 5th grade primary school students. Akçay and Özcebe (2012), on the other hand, reported that there is a significant relationship between school-age range and playing computer games, and the frequency of playing computer games increases as children get older. The fact that boys prefer digital games more than girls compared to other activities was evaluated in this study as the reason why boys are more addicted to digital games than girls. In addition, the fact that boys in our country can access computers and digital games more easily than girls are among the reasons for the difference.

In some studies on digital game addiction in which the variable of not having a computer was used, it was found that computer ownership did not affect game addiction (Bilgin, 2015; Gökçearslan & Durakoğlu, 2014; Tüfekçi, 2007; Yılmaz, 2008; Öncel & Tekin, 2015), some, on the other hand, in studies, a contrary result was obtained with the findings that having a personal computer affects digital game addiction (Göldağ, 2018; Şahin & Tuğrul,

2012; Erboy & Vural, 2010; Durdu, Hotomaroğlu & Çağiltay, 2005). In this study, however, the main effect of the variable of having computer or not was not significant for DGA and social anxiety.

As a result of this research, it was determined that digital game addiction, together with the variables of gender and having a computer at home, predicted social anxiety at a statistically significant level. With this result, it is understood that one of the factors affecting social anxiety is digital game addiction. It is thought that the addiction of adolescents to digital games distracts them from social life and therefore they hesitate while exhibiting behaviors in social life. As a result of this situation, it is thought that adolescents feel all the attention on themselves due to the personal myth, which is one of the developmental characteristics of the period, and it affects their fear while exhibiting behaviors. As a result, it can be stated that digital game addiction drags adolescents to social anxiety. It is stated that game addiction causes physical, mental and social disorders for social anxiety, which is seen as one of the consequences of playing digital games too much by children (Ayhan & Çavuş, 2015). Parallel to this situation, as a result of digital game addiction, violence, increase in aggression level, reluctance to communicate with speech, isolation from the environment, biological disorders, decreases in social skill levels occur, and as a result of these situations, the communication between family and child directly affects negatively (Arslan and friends, 2015; Mustafaoğlu & Yasacı, 2018; Güvendi, Tekkurşun Demir & Keskin, 2019).

Similar to this study, in the research conducted by Karaca and others in 2016 on the relationship between computer game addiction and social anxiety of secondary school students, about half of the participants investigated were computer game addicts, however, their social anxiety levels were not as high as expected, and as a result of the research, it has been reported that there is a moderate relationship between social anxiety and computer game addiction.

## 5. Conclusion

In general, when the findings of the study were evaluated, it was concluded that there was a significant relationship between digital game addiction and gender, and more addiction in favor of males. In light of this result, the importance of developing contemporary methods in preventing digital game addictions of males, especially with the things brought by the age, becomes evident. In addition, both families and teachers need to display a stakeholder view in developing methods that catch up with the era and can be effective on young people in guiding young people.

## Recommendations

When the relationship between digital game addiction and social anxiety was examined, it was seen that it was effective on social anxiety in children. It may be necessary to increase the motivation of children to participate in various sports in order to increase their peer relations and make them more socially active. For this reason, children's spending more time both at school and in sports clubs may contribute to a more active and social life.

## Limitations

This study was carried out on children who do sports recreationally. Considering the limitations in the study, it can be expressed as the sample size and the type of the selected sample. We think that examining the differences between licensed and active sports children and children who play sports recreationally in future studies will reveal other results.

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