



ORIGINAL ARTICLE

Examining the Online Game Addiction Level in terms of Sensation Seeking and Loneliness in University Students

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Main Points

- There is a positive and significant relationship between online game addiction and loneliness.
- There is a positive and significant relationship between online game addiction and sensation seeking.
- Sensation seeking positively predicts online game addiction.
- Loneliness positively predicts online game addiction.
- It has been found that the sensation-seeking variable predicts online game addiction to a higher degree than the loneliness variable.

Abstract

The aim of the present research is to examine the relationship between university students' online game addiction and sensation-seeking behavior, and loneliness levels. The study group consists of 342 university students studying at Sakarya and Karabük Universities. Data were collected using the Online Game Addiction Scale, the Brief Sensation-Seeking Scale for Young Adults (BSSS-8), and the UCLA Loneliness Scale. The data were analyzed by Pearson's correlation coefficient and regression. The results of the research revealed that there is a positive and statistically significant correlation between online gaming addiction and loneliness and sensation seeking. In addition, as a result of the regression analysis, it was determined that sensation seeking predicts online gaming addiction at a higher level than the loneliness variable, and that both variables significantly predict online gaming addiction.

Keywords: Online game, online gaming addiction, sensation seeking, loneliness, addiction

Introduction

University students begin to socialize as they complete the process of developing their identity. Until 20 years ago, students could socialize through traditional games on the streets or other environments. Today, however, these games have moved to virtual environments. Opportunities for socialization are provided via phones, game consoles, tablets, and computers, as a result of technological developments. A study found that 72% of adolescents play online games every day, and more than half make friends with others in the game environment (Lenhart, 2015). Online games are one of the areas

where individuals spend time in the virtual environment. Online gaming addiction, on the other hand, refers to obsessively playing online games, which leads to social, psychological, and occupational disorders in the individual (Ng & Wiemer-Hastings, 2005). Batmaz, Ulusoy, & Inceoğlu (2020) found that there is a statistically significant correlation between cyber-victimization, cyberbullying, and digital gaming addiction, and that digital gaming addiction has a mediating role. The most important difference between online games and other types of games is that many people can play games through different online networks (Kim, Park, Kim, Moon, & Chun, 2002). Online game addiction can

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be predicted by sensation seeking or loneliness, as it is an online activity performed in a virtual environment, and loneliness and sensation seeking can lead people to search for stimulants that can be obtained through online gaming.

Research shows that there is a positive relationship between online game addiction and sensation seeking (Bekir & Çelik, 2019; Mehroof & Griffiths, 2010). In this context, a study revealed that risk-taking and sensation-seeking behaviors increased during adolescence (Chambers et al., 2003). According to Liu, Li, & Santhanam (2013), many individuals play online games due to the competitive nature of the games, while others play for hedonic satisfaction (enjoyment, fun, and escape), social satisfaction (social interaction), and benefit satisfaction (success and self-promotion) (Li et al., 2013). Under the follow-up study of children's interest in games played in virtual environments rather than with the traditional gaming tools, the interest, curiosity and sensation in digital games is evident. (Tekkurşun & Bozkurt, 2019). Sensation seeking is also thought to lead individuals toward a violent tendency. In summary, along with sensation-seeking behavior, the loneliness variable may also have an effect in the development of online game addiction among university students.

Loneliness is a situation that occurs when the individual feels personal inability to establish the desired relationships, and is felt when there is a difference between the desired interpersonal relationships and the interpersonal relationships that actually exist (De Jong-Gierveld, 1998). In a study, it was found that there is a correlation of a low positive significance between online game addiction and loneliness among university students (Yilmaz, Karaoğlan Yilmaz, & Kilic, 2018). Furthermore, Yağbasan and Sener (2019) found that digital games contribute to the fulfillment of some needs such as communication with other individuals for socialization purposes, relieving loneliness, and achieving a sense of belonging/love, respect/appreciation and domination, etc. However, another study found that online game addiction in general does not affect the loneliness levels of university students (Tekindal & Çalışkan, 2016). Overall, it is thought that online game addiction may be related to loneliness.

As a result, taking into account the results of the research in the relevant literature (Baysak et al., 2018; Bekir & Çelik, 2019; Bonnaire & Phan, 2017; Karaer, 2018; Mehroof & Griffiths, 2010; Öztosun, 2018; Wack & Tantleff-Dunn, 2009; Yıldırım, 2019; Yiğit, 2018), this study aims to examine the relationship between online gaming addiction, and sensation seeking and loneliness. In line with this aim, the research hypotheses are listed below:

1. There is a correlation between online game addiction and loneliness and sensation seeking.
2. Sensation seeking and loneliness predict online gaming addiction.

Methods

The research was carried out with the relational survey method.

Participants

In this research, the convenience sampling method was used. In this context, the data for the study were collected from 342 university students, of whom 219 (64%) were female and 123 (36%)

were male, who studied in the Sakarya and Karabuk Universities. The participants ranged in age from 17-40 ($x = 20.09$).

Measuring Tools

Online Game Addiction Scale

Data on the level of online game addiction were collected by the Online Game Addiction Scale, which was developed by Kaya (2013) for high school students and adapted to college students by Bekir and Yıldırım (2018). The scale is a five-point (1 = completely disagree, 5 = completely agree) Likert-type and three-dimensional (failures, success, economic gain) measurement tool consisting of 21 items. There is no reverse scoring item in the scale. Points for both the total and the sub-dimensions can be obtained from the scale. The Exploratory Factor Analysis for validity showed that the scale had a three-factor structure that explained 62.99% of the total variance. The factor analysis found that factor loads were ranked between .58 and .83. In the study, 50 university students were simultaneously administered this scale and the Young's Internet Addiction Test, to examine the criterion validity of the Online Game Addiction Scale; and the relationship between them was examined. This data was examined by correlation analysis. A positively significant relationship was found between these scales ($r = .59.7, p < .000$). There are no reverse encoded items on the scale.

Brief Sensation-Seeking Scale for Young Adults

This scale was developed by Hoyle, Stephenson, Palmgreen, Lorch, & Donohew (2002), adapted for young adults by Stephenson, Velez, Chalela, Ramirez, & Hoyle (2007) and adapted for the Turkish population by Çelik and Turan (2016). The scale is a five-point (1 = strongly disagree, 5 = strongly agree) Likert-type and one-dimensional measurement tool consisting of 8 items. Sensation-seeking points are obtained by collecting the scores obtained for each item of the scale. There are no reverse scoring items in the scale. The results of the confirmatory factor analysis, conducted to determine the validity of the scale in the adaptation study, showed that the scale had a single-factor structure as in the original, and acceptable fit indices ($\chi^2/SD = 4.46$, RMSEA = .07, GFI = .96, CFI = .94, IFI = .94, NFI = .93, AGFI = .93, and NNFI = .91). In addition, the internal consistency coefficient was found to be .79 in the adaptation study.

UCLA Loneliness Scale

This scale was developed by Russel et al. (1978) and adapted for the Turkish population by Demir (1989). The UCLA Loneliness Scale, which was developed to determine the general loneliness level of the individual, consists of 20 items. Items containing positive statements are scored as never: 4, rarely: 3, sometimes: 2, often: 1, and items containing negative statements are scored as the opposite. The highest score that can be obtained from the scale is 80, the lowest score is 20. Higher scores on the scale are accepted indicators of more intense loneliness. In order to determine the validity of the scale, the correlation between the UCLA loneliness scale and the Beck depression scale ($r = .77, p < .001$) and the social introversion subscale ($r = .82, p < .001$) was examined, and the scale was found to have criterion validity. In addition, the internal consistency coefficient was found as .96, and the test re-test reliability level was found as .73 in the adaptation study.

Procedure

The data for this research were collected from students studying at the Karabük and Sakarya Universities in the fall semester of the 2020-2021 academic year. Permission was obtained from the Ethics Committee of Siirt University to obtain research data. The participants were informed about the research data collection tools and the scales were administered online (Google Forms) for 5-10 minutes. Data were collected from students who volunteered by checking the consent box at the beginning of the form.

Statistical Analysis

The data were analyzed by the Pearson correlation coefficient and regression analysis.

Results

In the study, the relationships between loneliness, sensation seeking, and online game addiction were examined with the Pearson correlation coefficient. The results of correlation analysis are presented in Table 1.

Table 1 reveals that there is a positive and significant relationship between online game addiction, loneliness ($r = .179$), and sensation seeking ($r = .231$). Regression analysis was performed to determine the predictive power of these variables on online game addiction, and the results are shown in Table 3. Before the regression analysis, the data were examined in terms of regression assumptions, and the results are presented in Table 2 and Figure 1.

From the results in Table 3, it can be said that the sensation-seeking variable ($B = .223$) predicts online game addiction to a higher degree than does the loneliness variable ($B = .168$). It is seen that both the variables significantly predict online game addiction. In addition, in this study, the online game addiction levels in individuals grouped in terms of loneliness and sensation-seeking (low, medium, high) were also graphically examined, and are presented in Figure 2.

Table 1.
The Results of Pearson Correlation Analysis

Variables	1	2	3
Online Game Addiction	1		
Loneliness	.179**	1	
Sensation Seeking	.231**	.048	1
x	40.57	16.81	25.99
SD	15.60	3.59	5.85

** $p < .01$

Table 2.
Descriptive Statistics and Regression Assumption

Variables	N	Min.	Max.	Skewness	Kurtosis	VIF	CI
Online Game Addiction	325	21.00	75.00	.235	-1.103	1.000	1.000
Loneliness	325	9.00	29.00	.919	.766	1.002	8.207
Sensation Seeking	325	8.00	40.00	.008	-.187	1.002	13.449

Table 3.
The Results of Regression Analysis

Model	Unstandardized Coefficients		Standardized Coefficients	t	p
	B	S.E.	B		
Constant	12.829	5.318		2.412	.016
Loneliness	.730	.232	.168	3.138	.002
Sensation Seeking	.595	.142	.223	4.178	.000

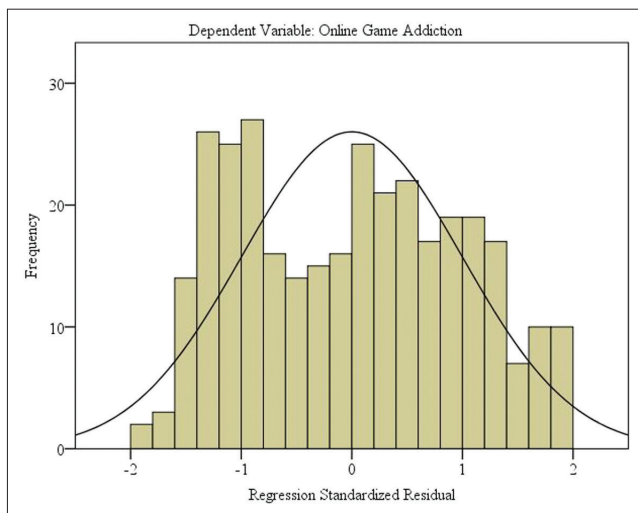


Figure 1. Normal distribution curve.

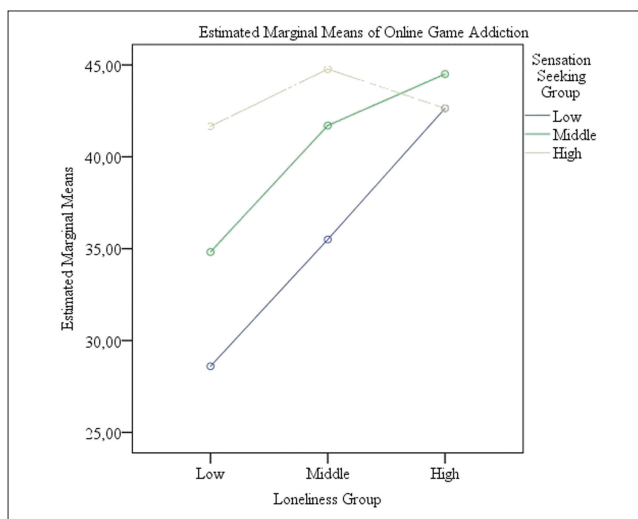


Figure 2. Comparison of online game addiction level between groups in terms of their loneliness and sensation-seeking behaviors.

Discussion

The results of the research revealed that there is a positive and statistically significant correlation between online game addiction, loneliness, and sensation seeking. Furthermore, when the research results are examined, it is seen that the sensation-seeking variable predicts online game addiction to a higher degree than the loneliness variable. An examination of the literature shows that there are studies supporting this research result (Bekir & Çelik, 2019; Mehroof & Griffiths, 2010). In this study, it can be said that the reason for the positive relationship between online game addiction and sensation seeking is that such games contain rich, different, new, and entertaining content. In addition, the fact that there is a positive relationship between online game addiction and sensation seeking may be attributed to the fact that online games give individuals the opportunity to express themselves more comfortably and without social pressure. The increase in risk-taking and sensation-seeking behaviors during adolescence (Chambers, Taylor, & Potenza, 2003) and the fact that the internet enables adolescents to practice these behaviors support the results of these research findings. Supporting this, Li et al. (2013) found that many of the online gamers play these games for a competitive environment, while others play games for hedonic satisfaction (enjoyment, fun, and escape), social satisfaction (social interaction), and utilitarian satisfaction (success and self-promotion). In addition, it has been determined in previous studies that individuals with high sensation-seeking tendencies enjoy entertainment such as sending and receiving pictures, playing online games, and downloading ringtones to their mobile phones (Leung, 2008). Zuckerman (1994) identified sensation seekers as risk takers. Other researchers have identified the sensation-seeking behavior as curiosity (Raine, Reynolds, Venables, & Mednick, 2002). According to Zuckerman (1994), sensation seeking is the investigation of a wide range of new, complex, and vivid sensations and experiences, and finding opportunities to take various risks that can be physical, social, or financial. Having new experiences, online messaging, and socializing in online games may increase the relationship with sensation seeking.

Another research finding is that there is a positively significant relationship between online game addiction and loneliness. This finding is supported by the studies in the literature (Oktan, 2015; Şahin & Tuğrul, 2012; Yılmaz et al., 2018). Loneliness decreases the level of arousal in individuals, and can therefore cause a biological and psychological imbalance. In this case, individuals may tend to play online games to increase their arousal levels that have been lowered due to loneliness, in order to achieve biological and psychological balance. In addition, the need for belonging and relationship is among the basic psychological needs for individuals. These needs may not be met adequately in individuals with a high level of loneliness. Individuals who feel lonely may meet these psychological needs by playing online games. Therefore, in this study, a relationship may have been found between online game addiction and loneliness.

Limitations and Directions/Suggestions for Future Research

By a general evaluation, this study has some limitations, but also contributes significantly to the literature in terms of discovering

the variables that predict online game addiction, which has increased as a result of the widespread use of the internet in recent years. The data of this study were collected from students studying at only 2 universities. Therefore, data from more universities can be collected for future research. In addition, the research data are limited only to the data obtained from the scales. In future studies, data can be collected using different measurement methods.

Studies using a mixed design can be conducted on this subject. Based on the findings of the study, studies can be conducted on ways to meet the loneliness and sensation-seeking needs of individuals in our educational institutions and in the society, to prevent online game addiction.

Ethics Committee Approval: Ethics committee approval was received for this study from the Ethics Committee of Siirt University.

Informed Consent: Informed consent was obtained from the participants.

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