

Digital Games Do Isolate Us? The Relationship between Digital Game Addiction and Loneliness

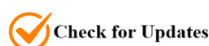
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Abstract: This study was conducted to examine the relationship between students' levels of digital gaming addiction and loneliness. The sample group consisted of a total of 303 voluntary students studying in the 2024–2025 academic year in Bitlis, including students from Bitlis Eren University and Hikmet Kiler Science High School. Of these students, 134 were female and 169 were male. The study employed a quantitative research method using a relational screening model. The data collection form used in the study consisted of three sections. The first section included a "Personal Information Form" prepared by the researcher; the second section comprised the "Digital Game Addiction Scale," whose validity and reliability had been previously established. The third section included the "Loneliness Scale." Data analysis was carried out using the SPSS statistical software package. The research findings revealed a statistically significant difference between gender and scores on the Digital Game Addiction Scale. Additionally, a statistically significant difference was found between the amount of time spent on digital games and scores on both the Digital Game Addiction Scale and the Loneliness Scale. Regression and correlation analyses indicated a low-level positive relationship between digital gaming addiction and loneliness. As a result, digital gaming addiction was found to be a significant predictor of loneliness; however, the level of this predictive power was low. These findings suggest that while digital gaming addiction has a statistically significant effect on loneliness, the magnitude of this effect is limited. Therefore, although digital gaming addiction may contribute to feelings of loneliness, this contribution appears to be minimal.

Keywords: High school and university students, game, digital games, digital game addiction, loneliness.

1. Introduction

The concept of the game dates back to ancient times and has a cultural equivalent in every society. The process of playing games allows individuals, from an early age, to develop cognitive, sensory, physical, and social skills (Madej, 2016). In addition, play is considered one of the fundamental elements of human development. According to the Turkish Language Association, a game is defined as "an activity that allows one to have fun and enjoy oneself based on specific rules and skills" (TDK, 2020). Games are played according to established rules and aim to achieve a certain purpose, with the rules guiding the player's involvement and actions throughout the gameplay (John Wiley & Sons, 2018). These activities play an important role in children's development, contributing not only to motor skills but also to emotional development (APA, 2022). Furthermore, for adults, playing games can support the development of cognitive and emotional skills, reduce stress (Gray, 2011), and foster imagination and social interaction both in physical environments and on digital platforms.

Digital games are defined as a type of game in which players interact within a specific framework to accomplish tasks or achieve goals (Crawford, 1982). With the advancement of technology, digital games have diversified and developed further. To enrich storytelling, games incorporate visual effects and sound design, while innovative technologies, such as augmented reality and virtual reality, expand gaming possibilities (Rollings & Adams, 2003). As digital games increasingly integrate into daily life through technological devices, they can undermine social bonds with people in the surrounding environment (Montag & Walla, 2016). Consequently, individuals may become more engaged with digital environments while simultaneously distancing themselves from real-world social interactions. When this engagement reaches the level of dependency, digital games may be preferred as a coping mechanism, potentially contributing to increased feelings of solitude (Buckner et al., 2012).

When discussed in terms of dependency, it is defined as “the use of an object or engagement in a behavior in such a way that the individual loses control and cannot live without it” (Yeşilay, 2017). Behavioral addiction can manifest in various forms, including online gaming, television, smartphones, and tablets (Keseliören, 2017). Behavioral addiction is considered a subset of technological dependency, encompassing non-chemical dependencies that arise from human-machine interactions (Griffiths, 2005). While the concept of dependency often evokes substance abuse, similar patterns of behavior and attitudes can emerge in the context of gaming.

Digital game addiction is characterized by an inability to control the desire to play, a prioritization of virtual-world engagement over real-life responsibilities, and neglect of everyday activities (Horzum, 2011). It may lead to physical and psychological problems, including poor diet, sleep disturbances, musculoskeletal issues, and depression. Additionally, it can negatively affect family relationships, academic performance, and social communication (Koral & Alptekin, 2023). Consequently, individuals may spend increasing amounts of time in virtual environments, further deepening feelings of social isolation and loneliness.

The rapid development of technology has drastically changed communication and interaction patterns, producing both positive and negative effects on perceived loneliness (Cacioppo & Cacioppo, 2018). Factors such as technological advancements, population growth, and the individualization inherent in modern urban life have contributed to the rising prevalence of loneliness, making it a significant social problem (Demirbaş & Haşit, 2016). Loneliness is further complicated by technology use, as balanced and conscious engagement can strengthen social ties, whereas excessive and uncontrolled use may increase social isolation.

This study aims to examine the relationship between digital game addiction and loneliness among high school and university students. By analyzing the extent to which students’ loneliness levels are associated with their digital game addiction, the research contributes to a better understanding of the potential interactions between these variables.

2. Materials and Methods

2.1. Research Model

In this study, which aimed to examine the relationship between digital game addiction and loneliness among college and high school students, a quantitative research method was employed, specifically utilizing the relational screening model. According to Karasar (2007), the relational screening model is defined as a research approach that seeks to determine the presence and/or degree of a relationship between two or more variables.

2.2. Research Group

The study group, residing in the province of Bitlis in the 2024-2025 academic year with a total of 303 students are studying at the college level and high school volunteer. The participants of 134% of women (%55,8), 169 percent male (%44,2) consists of individuals. Information on demographic variables on students Table 3 are presented below.

2.3. Data Collection

The data collection form that are used within the scope of the research consists of three sections. The first part, which was prepared by the researcher “personal information form” creating; the second section, the validity and reliability made of “digital game Addiction scale constitute. In the third chapter, “The Loneliness Scale” is located. The reliability coefficients of the scales in Table 2 are given.

2.3.1. Personal information form

2024-2025 during the period of education and training, continuing into college and high school who reside in the province of Bitlis 134% of women (%55,8), 169% are male (%44,2) a total of 303 students volunteer; gender, level of education, the choice of a digital game digital games digital games and the separation time of the time changes in the time allocation was prepared by the researcher to determine demographic characteristics such as time.

2.3.2. Digital game addiction scale

Lemmens and friends developed in accordance with the criteria for pathological gambling (Lemmens et al. 2009) (Digital Game Addiction Scale (DOBO-7), a seven-item short-form adapted to languages, and validity and reliability analyses of Irmak in 2015 and reviewed by Erdogan. DOBO-7, five-point Likert-type 7-item and scale scores ranged from 7 to 35 points that can be taken from and consists of a single dimension (Yalçın Irmak & Erdogan, 2015). Answers that can be given to the scale of "never", "Rarely", "Sometimes", "often" and "always" is shaped like. Cronbach's Alpha coefficient was 0.72, calculated for the sample of this study of the scale's Cronbach's Alpha coefficient for internal consistency $\alpha=,87$ were found.

2.3.3. UCLA Loneliness Scale short form

The UCLA Loneliness Scale was originally developed in 1978 and revised by Russell, Peplau, and Cutrona (1980). Russell (1996) updated the scale again, resulting in its current form. Later, in 1987, the 20-item UCLA Loneliness Scale was reduced to 8 items by Hays and Dimatteo, and validity and reliability studies were conducted. Other studies supporting these findings were also carried out; for instance, Doğan et al. (2011) translated the scale into Turkish and performed validity and reliability analyses, concluding that it is a reliable and valid instrument with high internal consistency for measuring loneliness. In the present study, the Cronbach's Alpha coefficient calculated for the internal consistency of the scale was $\alpha = .84$.

Table 1. The Reliability Coefficients of the Scales

Scales	Cronbach's Alpha (α)	Item Number
Digital Game Addiction Scale in total	,87	7
Total Loneliness Scale	,84	8

Table 1 in the summer of reliability values determined by Özdamar; $0,00 < \alpha < 0,40$ "trusted" does not $0,41 < \alpha < 0,60$ "low reliability", $0,61 < \alpha < 0,80$ for "moderate " reliable", $0,81 < \alpha < 1,00$ "highly reliable" is given as (Özdamar, 1999). When Table 1 is examined chronbach's Alpha (α) values, it is observed that the reliability of a high level is sufficient.

2.4. Statistical Analysis

Before analyzing the data, assumptions of normality, homogeneity, linearity, and stability were assessed. Skewness and kurtosis values (Table 2) fell within the ± 1 range, indicating normal distribution and justifying parametric tests. Descriptive statistics (f, %, X, SD) summarized participants' demographics. Independent samples t-tests compared two groups, while one-way ANOVA with Tukey's HSD post-hoc test was used for multiple-group comparisons. Pearson correlation examined relationships between the Digital Game Addiction Scale and its sub-dimensions, and regression analysis evaluated the strength and direction of these relationships.

Table 2. Descriptive Analysis for Scales

Scale	n	Min.	Max.	X	SD	Median	Skewness	Kurtosis
Digital Game Addiction Scale Total	303,00	1,00	5,00	2,05	0,83	2,00	0,95	0,87
Loneliness Scale Total	303,00	1,00	4,00	1,70	0,60	1,50	1,01	0,67

As shown in Table 2, the mean score obtained from the Digital Game Addiction Scale was $X = 2.05 \pm 0.83$, while the mean score on the Loneliness Scale was $X = 1.70 \pm 0.60$.

2.5. Ethical Approval

The study was conducted in accordance with the Declaration of Helsinki and the “Directive on Scientific Research and Publication Ethics of Higher Education Institutions.” Before data collection, participants were thoroughly informed about the study through a detailed presentation and subsequently provided written consent. Ethical approval for this research was obtained from the Ethics Committee of Social and Human Sciences at Bitlis Eren University on May 30, 2025, with decision number 2025/05-23 and registration number E.7353.

3. Results

Digital game addiction and loneliness of some variables with the students for the purpose of analysis the results obtained are described in a survey presented in the form of tables.

Table 3. Frequency Distribution of Participants’ Demographic Variables

Variable	Category	f	%
Gender	Female	134,00	44,20
	Male	169,00	55,80
Education Level	High School	158,00	52,10
	College	145,00	47,90
Preferred Digital Game Type	Action	91,00	30,00
	Adventure	51,00	16,80
	Strategy	59,00	19,50
	Simulation	59,00	19,50
	Role-playing	10,00	3,30
	Other	33,00	10,90
Daily Time Spent on Digital Games	0–2 hours	232,00	76,60
	2–4 hours	50,00	16,50
	5 hours and above	21,00	6,90
Change in Time Spent on Digital Games	Increased	25,00	8,30
	Decreased	198,00	65,30
	No change	80,00	26,40
Total		303,00	100,00

Table 3 in the survey of the students of 55.8% women, %44,2 percent were male; %52,1% of the high school educational level, %47,9% of the university; digital game choice if %30,0% of the action, 16.8% of the adventure of 1% and 9,5% strategy, %19,5% of simulation, % 3,3% role %10,9% to other games; digital games for the period of time allocation %76,6% of 0-2 hours, %16,5% for 2-4 hours, 6,9% to 5 hours and above; digital games in a period time allocation change %8,3% increased %65,3% and decreased %26,4% as a result of this change have been identified.

Table 4. Independent Samples t-Test Results According to Gender

Scale	Gender	n	X	SD	t	p
Digital Game Addiction Scale Total	Female	134,00	1,78	0,74	5134,00	0.00*
	Male	169,00	2,26	0,85		
Loneliness Scale Total	Female	134,00	1,70	0,61	0.091	0,92
	Male	169,00	1,70	0,59		

* $p < 0,05$

According to the results presented in Table 4, a significant difference was found between genders in the Digital Game Addiction Scale total scores. Female students had lower mean scores compared to male students, indicating that digital game addiction levels were higher among males. On the other hand, no significant difference was observed between genders in the total scores of the Loneliness Scale.

Table 5. Independent Samples t-Test Results by Education Level

Scale	Education Level	n	X	SD	t	p
Digital Game Addiction Scale Total	High School	158,00	2,10	0,80	1128,00	0,26
	College	145,00	1,99	0,87		
Loneliness Scale Total	High School	158,00	1,68	0,59	-0.695	0,48
	College	145,00	1,73	0,60		

* $p < 0,05$

As shown in Table 5, no significant differences were found in the total scores of the Digital Game Addiction Scale or the Loneliness Scale according to education level ($p > 0.05$). Although the mean scores of digital game addiction were slightly higher among high school students compared to college students, and loneliness scores were marginally higher among college students compared to high school students, these differences were not statistically significant.

Table 6. ANOVA Results by Digital Game Preference

Scale	Game Preference	n	X	SD	F	p	Tukey
Digital Game Addiction Scale Total	Action (a)	91,00	2,21	0,86	5625,00	0.00*	a > b, e, f
	Adventure (b)	51,00	1,75	0,64			
	Strategy (c)	59,00	2,08	0,85			
	Simulation (d)	59,00	2,18	0,74			
	Role-playing (e)	10,00	2,61	1,20			
	Other (f)	33,00	1,58	0,74			
Loneliness Scale Total	Action (a)	91,00	1,68	0,65	0.362	0.874	--
	Adventure (b)	51,00	1,63	0,55			
	Strategy (c)	59,00	1,78	0,56			
	Simulation (d)	59,00	1,70	0,61			
	Role-playing (e)	10,00	1,73	0,72			
	Other (f)	33,00	1,69	0,54			

* $p < 0,05$

As presented in Table 6, a statistically significant difference was found in Digital Game Addiction Scale scores according to participants' preferred game type ($p < 0.05$). Post-hoc Tukey analysis indicated that individuals who preferred action games scored significantly higher than those who preferred adventure, role-playing, or other games. In contrast, no significant differences were observed in the Loneliness Scale scores across different game preferences ($p > 0.05$).

Table 7. ANOVA Results by Daily Time Spent on Digital Games

Scale	Time Spent	n	X	SD	F	p	Tukey
Digital Game Addiction Scale Total	0–2 hours (a)	232,00	1,89	0,77	30596,00	0.00*	c > b > a
	2–4 hours (b)	50,00	2,32	0,70			
	5 hours and above (c)	21,00	3,17	0,82			
Loneliness Scale Total	0–2 hours (a)	232,00	1,66	0,59	3634,00	0.02*	c > a
	2–4 hours (b)	50,00	1,77	0,65			
	5 hours and above (c)	21,00	2,01	0,51			

* $p < 0,05$

As shown in Table 7, a statistically significant difference was observed in both Digital Game Addiction Scale and Loneliness Scale scores according to the amount of daily time spent on digital games ($p < 0.05$). Post-hoc Tukey analysis revealed that students who played digital games for more than 5 hours per day had significantly higher scores on both scales compared to those who played for 0–2 hours or 2–4 hours.

Table 8. ANOVA Results by Change in Time Allocation for Digital Games

Scale	Change in Time Allocation	n	X	SD	F	p	Tukey
Digital Game Addiction Scale Total	Increased (a)	25,00	2,54	1,04	9928,00	0.00*	a > b > c
	Decreased (b)	198,00	2,10	0,80			
	No change (c)	80,00	1,76	0,76			
Loneliness Scale Total	Increased (a)	25,00	1,71	0,59	0.328	0,72	---
	Decreased (b)	198,00	1,68	0,61			
	No change (c)	80,00	1,75	0,58			

* $p < 0,05$

As shown in Table 8, a statistically significant difference was found in Digital Game Addiction Scale scores according to changes in the amount of time allocated to digital games ($p < 0.05$). Post-hoc Tukey analysis indicated that students who reported an increase in their gaming time had significantly higher addiction scores compared to those whose

gaming time decreased or did not change. In contrast, no significant differences were observed in Loneliness Scale scores across groups ($p > 0.05$).

Table 9. Pearson Correlation Analysis Results

Variables	Digital Game Addiction Scale Total	Loneliness Scale Total
Digital Game Addiction Scale Total	1,00	$r = .145^*$ $p = .012$ $N = 303$
Loneliness Scale Total	$r = .145^*$ $p = .012$ $N = 303$	1,00

* $p < 0,05$

According to the results presented in Table 9, a significant positive correlation was found between the Digital Game Addiction Scale total scores and the Loneliness Scale total scores ($r = .145$, $p < .05$). This finding indicates that as digital game addiction levels increase, loneliness levels also tend to rise.

Table 10. Linear Regression Analysis of Digital Game Addiction Predicting Loneliness

Independent Variable	Dependent Variable	B	Std. Error	β	t	p	R	R ²	F	p
Digital Game Addiction Scale	Loneliness Scale	0.202	0.079	0.145	2537,00	0.01*	0.145	0.021	6438,00	0.01*

* $p < 0,05$

The results of the linear regression analysis (Table 10) indicate that digital game addiction significantly predicts loneliness ($\beta = 0.145$, $p < 0.05$). The positive relationship suggests that higher levels of digital game addiction are associated with slightly higher levels of loneliness among students, although the effect size is low ($R^2 = 0.021$).

4. Discussion

The purpose of the research is to examine the relationship between digital game addiction and loneliness levels of students. The sample of the Research Group, college and high school education period and residing in the province of Bitlis in 2024-2025 who continue their education 134% females, 169 males), a total of 303 constitutes the voluntary contributor.

According to the research findings, a significant difference was found between genders in the total scores of the Digital Game Addiction Scale. Male students had higher average scores on digital game addiction compared to female students. However, no significant difference was observed between genders in the total scores of the Loneliness Scale. Previous literature supports these findings, indicating that digital game addiction tends to be higher in men, which may be associated with increased feelings of solitude (Müller et al., 2020; Rehbein & Baier, 2013). Lopez-Fernandez et al. (2020) reported that men who spend more time on digital games are more likely to develop stronger engagement with this type of activity. In contrast, other studies have found that digital game addiction levels can be higher in women for certain populations. Moreover, some research suggests that the relationship between digital game addiction and loneliness cannot be directly attributed to gender differences (Kowert et al., 2014). Overall, these findings indicate that the relationship between digital game addiction and loneliness is complex, and the influence of gender appears to be limited.

No significant differences were observed in the total scores of the Digital Game Addiction Scale and the Loneliness Scale according to participants' education level. Although high school students had slightly higher average scores on digital game addiction compared to college students, college students showed marginally higher loneliness scores than high school students. Kanat (2019) reported that digital game addiction and loneliness levels may vary according to demographic factors, but no significant differences were found based on education level. Furthermore, research suggests that age may influence loneliness, with older individuals tending to experience higher loneliness, whereas digital game addiction appears to be more prevalent among younger age groups (Perez et al., 2024).

The analysis revealed a statistically significant difference in Digital Game Addiction Scale total scores according to participants' preferred game type. Significant differences were also observed in loneliness scores across game types. Post-hoc Tukey analysis indicated that individuals who preferred action games had higher digital game addiction

scores compared to those who preferred adventure and other game types. Previous studies support these findings: [Liu et al. \(2020\)](#) reported that action games, which elicit intense emotional arousal, may increase the risk of addiction. Similarly, [Przybylski and Weinstein \(2017\)](#) found that individuals' preference for action games is associated with higher levels of gaming addiction. The high excitement and adrenaline associated with action games may make them more addictive than other game genres.

The results indicated a statistically significant difference in both Digital Game Addiction Scale and Loneliness Scale scores according to the amount of daily time spent on digital games. Post-hoc Tukey analysis revealed that students who played digital games for more than 5 hours per day had significantly higher addiction and loneliness scores compared to those who played 0–2 hours or 2–4 hours per day. Similarly, a significant difference was found in digital game addiction scores according to changes in time allocation, with students reporting increased gaming time showing higher addiction scores than those with decreased or unchanged gaming time.

Previous studies support these findings. [Üzgü et al. \(2023\)](#) reported that individuals who spend more than five hours per day on digital games have significantly higher addiction scores compared to those who play less than one hour. [Kuss and Griffiths \(2012\)](#) suggested that excessive time invested in digital games may lead to addiction and negatively affect social relationships. Similarly, [Lemmens et al. \(2009\)](#) found that individuals playing five or more hours per day exhibited higher digital game addiction and loneliness scores compared to those with lower daily playtime. Other research has shown that increased duration of gameplay is associated with stronger addiction symptoms ([Gentile et al., 2011](#); [Lemmens et al., 2009](#)) and may directly influence loneliness levels ([Colwell & Payne, 2000](#); [Seay & Kraut, 2007](#)). These findings suggest that time spent on digital games can independently impact social relationships, regardless of other variables.

Correlation analysis revealed a significant positive relationship between Digital Game Addiction Scale scores and Loneliness Scale scores. Linear regression analysis further indicated that digital game addiction significantly predicts loneliness, although the effect is small. Specifically, higher scores on the Digital Game Addiction Scale were associated with slightly higher levels of loneliness among students. This positive relationship suggests that as digital game addiction increases, loneliness tends to increase as well. However, the limited effect size indicates that digital game addiction is only a low-level predictor of loneliness.

These findings highlight the potential contribution of excessive digital gaming to feelings of loneliness, suggesting that students may benefit from awareness programs and support mechanisms aimed at mitigating the social and emotional impacts of digital game addiction. The results are consistent with previous research demonstrating a link between digital game addiction and increased loneliness ([Colwell & Payne, 2000](#); [Seay & Kraut, 2007](#)).

5. Conclusions

The study found a significant positive relationship between digital game addiction and loneliness, indicating that higher addiction levels are associated with increased feelings of loneliness. Although digital game addiction was a significant predictor of loneliness, the effect was small, suggesting a limited but notable impact. These findings imply that students' gaming habits may contribute to loneliness, highlighting the need for preventive strategies and interventions to promote healthy gaming and reduce associated psychosocial risks.

Limitations

This study was conducted exclusively at Bitlis Eren University and included a limited sample of high school and university students, which restricts the generalizability of the findings to the broader population. Additionally, the research was designed to examine the relationship between digital games and loneliness based on the assumption that digital gaming may contribute to feelings of loneliness. However, the potential for digital games to reduce or mitigate loneliness was not considered. These limitations narrow the scope of the study but also highlight an important direction for future research on the complex relationship between digital gaming and social well-being.

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