ATATÜRK ÜNİVERSİTESİ YAYINLARI
ATATURK UNIVERSITY PUBLICATIONS

Research Article *Araştırma Makalesi* DOI: 10.62425/rses.1527333

Investigation into Emotional Intelligence, Social and Emotional Loneliness and Digital Game Addictions of Mid-Adolescent Students

Orta Ergenlik Dönemindeki Öğrencilerinin Duygusal Zeka, Sosyal ve Duygusal Yalnızlık ile Dijital Oyun Bağımlılıklarının İncelenmesi

Bahar GÜLER[1]

[1]Department of Physical Education and Sports, Tokat Gaziosmanpaşa University Faculty of Sports Sciences, Tokat, Türkiye

ABSTRACT

The research was conducted to examine the emotional intelligence, social and emotional loneliness and digital game addictions of mid-adolescent students between the ages of 10-14. The research-designed personal information form, the "Social and Emotional Loneliness Scale" (SELSA) developed by DiTommaso et al. (2004) and adapted to Turkish by Çeçen (2007), and the "Trait Emotional Intelligence Questionnaire – Adolescent Short Form" (TEIQue-ASF) developed by Petrides and Furnham (2000) and adapted into Turkish by Ergin (2017) were used to collect data. Additionally, the "Digital Game Addiction Scale" (GAS) developed by Lemmens et al. (2009) and adapted into Turkish by Irmak and Erdoğan (2015) was utilized. The analysis of the data was performed in computer environment with SPSS-25 statistical package programs. Skewness and kurtosis tests were performed to determine the distribution of the data. Descriptive statistics were applied to normally distributed data, t-test was used for independent groups, and simple linear Pearson correlation analysis and multiple regression test were performed to determine the relationship between variables. In conclusion, it was founded that as the digital game addiction of middle-adolescent students increased, social and emotional loneliness increased and that emotional intelligence (5.4%) was at an explanatory level in predicting digital game addiction.

Keywords: Digital game, loneliness, emotional intelligence, students

ÖZ

Araştırma, 10-14 yaş aralığındaki ortaokul öğrencilerinin duygusal zeka, sosyal ve duygusal yalnızlık ile dijital oyun bağımlılıklarını incelemek amacıyla yapılmıştır. Araştırmacılar tarafından hazırlanan kişisel bilgi formu, DiTommaso ve ark. (2004) tarafından geliştirilen ve Çeçen (2007) tarafından Türkçeye uyarlanan "Sosyal ve Duygusal Yalnızlık Ölçeği" (SELSA) ve Petrides ile Furnham (2000) tarafından geliştirilen ve Ergin (2017) tarafından Türkçeye uyarlanan "Kişilik Duygusal Zekâ Ölçeği – Ergen Kısa Formu" (TEIQue-ASF) veri toplamak amacıyla kullanılmıştır. Ayrıca, Lemmens vd. (2009) tarafından geliştirilen ve Irmak ile Erdoğan (2015) tarafından Türkçeye uyarlanan "Dijital Oyun Bağımlılığı Ölçeği" (GAS) kullanılmıştır. Verilerin analizi, SPSS-25 istatistiksel paket programı ile bilgisayar ortamında gerçekleştirilmiştir. Verilerin dağılımını belirlemek için çarpıklık ve basıklık testleri yapılmış, normal dağılıma sahip verilere tanımlayıcı istatistikler uygulanmış, bağımsız gruplar için t testi kullanılmış ve ölçekler arasındaki ilişkiyi belirlemek için basit doğrusal Pearson korelasyon analizi ve çoklu regresyon testi yapılmıştır. Sonuç olarak, orta ergen öğrencilerinin dijital oyun bağımlılığı arttıkça sosyal ve duygusal yalnızlığın arttığı ve duygusal zekanın (%5,4) dijital oyun bağımlılığını açıklamada anlamlı bir yordayıcı olduğu belirlenmiştir.

Anahtar Kelimeler: Dijital oyun, yalnızlık, duygusal zeka, öğrenci

Geliş Tarihi/Received	02.08.2024
Kabul Tarihi/Accepted	21.02.2025
Yayın Tarihi/Publication Date	25.03.2025

Sorumlu Yazar/Corresponding author: Bahar GÜLER
E-mail: bahar.guler@gop.edu.tr

Cite this article: Güler, B. (2025). Investigation into emotional intelligence, social and emotional loneliness and digital game addictions of mid-adolescent students. *Research in Sport Education and Sciences, 27*(1), 24-34.

Introduction

Emotions have an important role in the control of human life as a social being. Emotions play a critical role in enabling individuals to understand themselves, set goals, evaluate alternatives, predict future outcomes, make decisions, and effectively execute actions, including the ability to respond quickly in decision-making processes (Damasio, 1994). In addition to emotions in controlling human life, the concept of emotional intelligence emerges when it comes to analyzing behavior and determining the underlying causes. Emotional intelligence is defined as an individual's ability to control their impulses, regulate their mood, empathize, motivate themselves, and endure difficulties (Goleman, 1995). Emotional intelligence has been defined as the ability to recognize both one's own emotions and the emotions of others, as well as to use these emotions in social relationships (Cornell, 2003). While emotions and emotional intelligence play a pivotal role in personal and social interactions, the lack of emotional and social connections can lead to negative feelings such as loneliness.

As a social being, humans need to interact and coexist with others to maintain an orderly life. Loneliness arises in people who have problems in establishing relationships with people. Loneliness is a feeling that arises when rejected or misunderstood by other people, unable to find friends or partners to carry out the activities that one wants to do, and (Rook, 1984). Weiss (1973) categorizes loneliness into two types. One is social and the other one is emotional loneliness. Social loneliness is due to the lack of social relations. Emotional loneliness, on the other hand, is a type of loneliness that results from a person's lack of closeness or attachment to another person. The consequences of loneliness can have a significant impact on a person's mental and physical health. Chronic loneliness has been linked to increased stress, depression, and even cardiovascular problems. Efforts to combat loneliness often involve improving social skills, expanding social networks, and fostering deeper emotional connections with others. However, one of the factors contributing to the rise of loneliness in modern times is the increasing reliance on digital tools. While digital devices simplify tasks, they also encourage social isolation by absorbing individuals for long hours. This can lead to a disconnection from real-life interactions and further contribute to feelings of loneliness (Magid et al., 2024).

One of the reasons that push people to loneliness is digital tools that develop rapidly and enter our lives quickly. It can be said that digital devices not only make our lives easier, but also make people lonelier by taking hold of them for hours. Today, the computer field, which affects every segment of society, has brought the concept of digital games to children's lives as an innovation (Erboy et al., 2010). The influence of digital games has spread globally, affecting people of all ages and cultures. With the rapid advancement of technology, digital games have become a prominent part of modern entertainment, captivating individuals in various regions. This widespread influence has led to a significant shift in how people spend their leisure time, as more and more individuals are drawn into the immersive experiences offered by these games. The amount of time spent on digital games can make individuals addicted over time. Digital game addiction can be defined as individuals' incessant playing games, the game becoming an integral part of their life, not fulfilling their responsibilities in real life and preferring the game to other activities (Griffiths, 2002). People may have psychological problems such as loneliness and may have low social relationships and competence in their lives. It is highly likely that they can play digital games to meet their needs that they cannot meet in real life and to get rid of the negative mood (Caplan, 2003). Therefore, individuals who experience emotional loneliness may prefer to play digital games in a virtual environment instead of interacting with people face to face in order to meet their unmet needs in real life (Liu & Peng, 2009).

When the literature is investigated, there are different studies on emotional intelligence, social and emotional loneliness, and digital game addiction (Kim et al., 2009; Irmak & Erdogan, 2016; Lemmens et al., 2011; Mentzonı et al., 2011; Kubey et al., 2001; Jeong et al., 2017). These studies often explore the individual effects of these factors, yet few have integrated them to analyze their interconnectedness. Emotional intelligence, for instance, has been linked to both the social and emotional aspects of loneliness, suggesting that people with lower emotional intelligence may experience more intense feelings of loneliness. Moreover, while digital game addiction has been studied in isolation, its relationship with emotional and social factors such as loneliness has not been comprehensively explored. Therefore, there is a significant gap in the literature regarding the combined impact of these variables, particularly in the context of middle adolescence, where social and emotional development is particularly crucial. In this direction, the aim of the study is to examine the relationship between emotional intelligence, social and emotional loneliness and digital game addiction of students participating in

recreational activities in middle adolescence.

Methods

Research Pattern

In the study, both the descriptive research method and the relational research design, which are among the quantitative research methods, were used together. The descriptive research method aimed to provide an overall view of the data after it was collected and to better understand the relationships between variables (Büyüköztürk et al., 2008). The relational research design, on the other hand, aimed to examine the relationships between two or more variables in line with the purpose of the study. The combination of these two research designs enabled the analysis of the data in a broader context and facilitated the testing of the study's hypotheses. While the descriptive method provided a detailed presentation of the participants' characteristics, the relational design helped identify potential relationships between these characteristics (Tenenbaum & Driscoll, 2005). Thus, the use of both designs together ensured a more comprehensive approach to the research.

Study Group

The study group of the research consists a total of 568 students of whom 285 girls and 253 boys (Mage=12.07 ±1.07), between the ages of 10-14, who study in schools affiliated to the Ministry of National Education in Tokat between 2021-2022 academic year. Convenience sampling refers to a sampling method that involves selecting individuals who are easily accessible, located in the immediate vicinity, and willing to participate, without covering a specific region (Erkuş, 2009).

Data Collection

A personal information form, "Social and Emotional Loneliness Scale" (SELSA), “Trait Emotional Intelligence Questionnaire – Adolescent Short Form” (TEIQue-ASF) and the “Digital Game Addiction Scale” (GAS) were used to collect data.

Social and Emotional Loneliness Scale (SELSA)

The Social and Emotional Loneliness Scale (SELSA), developed by DiTommaso et al. (2004), was later adapted to Turkish by Çeçen (2007). The scale is a Likert-type, self-report instrument consisting of 15 items, where respondents indicate their level of agreement on a 7-point scale, ranging from 1 = Strongly Disagree to 7 = Strongly Agree, allowing for a nuanced assessment of emotional and social loneliness. The scale consists of three dimensions: family, romantic, and social. The social dimension is represented by social relationships, while the emotional dimension is formed by romantic relationships and family relationships. Specifically, the family relationships dimension is measured by items 1, 4, 8, 11, and 12, the romantic relationships dimension by items 3, 6, 10, and 14, and the social relationships dimension by items 2, 5, 7, 9, and 13. Additionally, items 2, 3, 5, 6, 8, 9, 11, 12, and 14 are reverse-coded. The Cronbach's alpha values for the scale were found .74 for social loneliness, .83 for romantic loneliness and .77 for family loneliness.

Trait Emotional Intelligence Questionnaire – Adolescent Short Form” (TEIQue-ASF)

The Emotional Intelligence Trait Scale-Adolescent Short Form (TEIQue-ASF), developed by Petrides and Furnham (2000), is a 7-point Likert scale designed to assess emotional intelligence in adolescents. The Turkish adaptation of the scale was carried out by Ergin (2017), with responses ranging from 1 (strongly disagree) to 7 (strongly agree). This measurement tool consists of 4 subscales—Well-being, Self-control, Sociability, and Emotionality—and includes 15 items in total. Items 2, 4, 6, 7, and 9 are reverse-coded. The internal consistency reliability of the instrument was assessed using Cronbach's alpha coefficient. The Cronbach's alpha values were found to be .77 for the Well-being factor, .70 for Self-control, .69 for Sociability, .65 for Emotionality, and .78 for the overall scale.

Digital Game Addiction Scale (GAS)

The adaptation of the Game Addiction Scale (GAS), developed by Lemmens et al. (2009), to Turkish was carried out by Irmak and Erdoğan (2015) to assess participants' levels of digital game addiction. The GAS is a unidimensional scale consisting of 7 items. Participants were asked to rate the items on a 7-point Likert scale. The Cronbach's alpha coefficient for the GAS was 0.72, and the three-week test-retest correlation was 0.80. The scale does not include any reverse-coded items, and higher scores indicate an increased risk of digital game addiction.

Data Collection Process

The data collection process of the study was carried out by following the necessary steps to allow participants to respond to the measurement tools within the scope of the research. First, voluntary participants for the study were identified and selected according to the appropriate sampling criteria. Participants were informed about the purpose of the study and confidentiality principles, and their written consent was obtained. No questions regarding personal identity information were asked from the students who voluntarily participated and filled out the informed consent form, as the principle of confidentiality was respected. During the data collection process, each participant was administered 3 scale forms and personal information forms. The scales were presented to the participants in a face-to-face setting, and the required responses for each scale were collected. The data collection process was carried out in accordance with ethical rules and with due consideration for participants' privacy. Ethical approval for the study was obtained from the Scientific Research and Publication Ethics Committee of Tokat Gaziosmanpaşa University with the decision dated 23.05.2023 and E-54589112-824.99-2484357. Verbal consent was obtained from all the participants.

Data Analysis

The analysis of the appropriate data obtained from the sample group was conducted using the SPSS-25 statistical software. Before analyzing the data, the skewness and kurtosis values, which indicate the normal distribution of the data, were examined to determine whether the conditions for parametric tests were met. It was found that these values were within the acceptable range of -2 and +2, indicating that the data followed a normal distribution. Therefore, in addition to descriptive analyses, independent samples t-test, Pearson's correlation analysis for detecting relationships between the scales, and multiple regression analysis were applied (Tabachnick & Fidell, 2015). Furthermore, a significance level of p = .05 was considered for all analyses.

Results

Table 1

Distribution of Scale Scores (SELSA, TEIQue-ASF, GAS) (n:568)

Scales		M	SD	Skewness	Kurtosis
	Family	2.81	1.41	.588	-.389
	Romantic	4.32	.99	-.814	1.428
SELSA	Social	3.09	1.40	.286	-.642
	Total	3.41	.87	.156	.159
	Well-being	4.33	1.01	-.686	.814
	Self-control	4.04	1.70	-.074	-.920
TEIQue-ASF	Sociability	3.39	1.48	.286	-.391
	Emotionality	4.33	1.35	-.264	-.336
	Total	4.09	0.86	-.562	1.449
GAS		2.03	0.81	0.58	1.19

(SELSA) *Social and Emotional Loneliness Scale*
(TEIQue-ASF) *Trait Emotional Intelligence Questionnaire – Adolescent Short Form*
(GAS) *Digital Game Addiction Scale*

Table 1 presents the descriptive statistics for the scales used in the study. Tt can be observed that the highest mean score in the Social and Emotional Loneliness Scale (SELSA) is in the Romantic dimension (M= 4.32), while the lowest mean score is in the Family dimension (M= 2.81). For the TEIQue-ASF, the highest mean scores are found in the Well-Being and Emotionality dimensions (M= 4.33), and the lowest mean score is in the Sociability dimension (M= 3.39). The overall mean score for the GAS scale is M= 2.03. Additionally, it was determined that the skewness and kurtosis values for each dimension of the scales fall between -2 and +2, indicating that the data is normally distributed.

Table 2
Comparison of SELSA, TEIQue-ASF and GAS Scores by Gender

Scales		Gender	n	*M*	SD	df	t	*p*
SELSA	Family	Male	283	2.70	1.32	566	-1.92	.056
		Female	285	2.92	1.49			
	Romantic	Male	283	4.33	1.00	566	.154	.878
		Female	285	4.32	.98			
	Social	Male	283	3.14	1.32	566	.862	.389
		Female	285	3.04	1.47			
	Total	Male	283	3.39	.86	566	-.513	.608
		Female	285	3.43	.88			
TEIQue-ASF	Well-being	Male	283	4.26	1.06	566	-1.73	.084
		Female	285	4.41	.95			
	Self-control	Male	283	4.18	1.74	566	2.01	**.044***
		Female	285	3.90	1.66			
	Sociability	Male	283	3.29	1.49	566	-1.64	.102
		Female	285	3.49	1.45			
	Emotionality	Male	283	4.26	1.44	566	-1.28	.202
		Female	285	4.40	1.25			
	Total	Male	283	4.05	.93	566	-.977	.329
		Female	285	4.12	.79			
GAS		Male	283	2.23	.87	566	6.13	**.000****
		Female	285	1.82	.70			

***p<0.01. *p<0.05*
(SELSA) Social and Emotional Loneliness Scale
(TEIQue-ASF) Trait Emotional Intelligence Questionnaire – Adolescent Short Form
(GAS) Digital Game Addiction Scale

The statistical significance of mean scores for the three scales in the study was tested using an independent samples t-test. According to the analysis results, it was found that there were no significant differences in the SELSA mean scores based on gender. However, there was a statistically significant difference in the TEIQue-ASF mean scores, specifically in the Self-Control dimension [$t_{(566)}$ = 2.01, p<.05]. In this dimension, male participants had higher mean scores than female participants. Additionally, there was a significant gender difference in the mean scores of the GAS [$t_{(566)}$ = 6.13, p<.01], with female participants having higher mean scores than male participants.

Table 3
Comparison of SELSA, TEIQue-ASF and GAS Scores According to Playtime

Scales		Playtime	n	*M*	SD	df	t	*p*
SELSA	*Family*	Daytime	279	2.74	1.33	566	-1.24	.214
		Nighttime	289	2.88	1.48			
	Romantic	Daytime	279	4.42	.895	566	2.18	**.029***
		Nighttime	289	4.24	1.07			
	Social	Daytime	279	3.23	1.39	566	2.38	**.018***
		Nighttime	289	2.95	1.40			
	Total	Daytime	279	3.46	.828	566	1.42	.154
		Nighttime	289	3.36	.907			
TEIQue-ASF	Well-being	Daytime	279	4.39	.990	566	1.16	.244
		Nighttime	289	4.29	1.03			
	Self-control	Daytime	279	4.17	1.66	566	1.82	.069
		Nighttime	289	3.91	1.74			
	Sociability	Daytime	279	3.36	1.49	566	-.505	.614
		Nighttime	289	3.42	1.46			
	Emotionality	Daytime	279	4.33	1.39	566	-.032	.975
		Nighttime	289	4.33	1.30			
	Total	Daytime	279	4.13	.885	566	1.08	.279
		Nighttime	289	4.05	.839			
GAS		Daytime	279	1.86	.724	566	-.4.91	**.000****
		Nighttime	289	2.19	.873			

***p<0.01. *p<0.05*
(SELSA) Social and Emotional Loneliness Scale
(TEIQue-ASF) Trait Emotional Intelligence Questionnaire – Adolescent Short Form
(GAS) Digital Game Addiction Scale

An independent samples t-test was conducted to test whether there were significant differences in the mean scores of participants on the SELSA, TEIQue-ASF, and GAS scales based on the time they played games. The analysis results revealed that participants' mean scores on the SELSA scale were significantly different in the Romantic [$t_{(566)}$ = 2.18, p<.05] and Social [$t_{(566)}$ = 2.38, p<.05] dimensions. In both of these dimensions, participants who reported playing games during the day had higher mean scores. There were no statistically significant differences in participants' mean scores on the TEIQue-ASF based on the time they played games (p>.05). Additionally, there was a significant difference in the mean scores of participants on the GAS based on game-playing time [$t_{(566)}$ = -4.91, p<.05], with participants who reported playing games during the day having lower mean scores than those in the other group (Table 3).

Table 4

Correlation Results as to SELSA, TEIQue-ASF and GAS

Factors		1	2	3	4	5	6	7	8	9	10
1.Family	R	1									
		568									
2.Romantic	r	.002	1								
	p	.968									
3.Social	r	.309	.229	1							
	p	.000	.000								
4.SELSA Total	r	.707	.505	.792	1						
	p	.000	.000	.000							
5.Well-being	r	-.282	-.116	-.191	-.300	1					
	p	.000	.006	.000	.000						
6.Self-control	r	-.220	-.031	-.135	-.204	.345	1				
	p	.000	.454	.001	.000	.000					
7. Sociability	r	.097	.011	.073	.096	.177	-.047	1			
	p	.021	.795	.083	.023	.000	.265				
8. Emotionality	r	-.225	-.124	-.287	-.323	.461	.389	.030	1		
	p	.000	.003	.000	.000	.000	.000	.471			
9. TEIQue-ASF Total	r	-.257	-.102	-.208	-.289	.810	.662	.416	.693	1	
	p	.000	.015	.000	.000	.000	.000	.000	.000		
10.GAS Total	r	.182	-.044	.046	.106	-.055	-.045	.211	-.053	.012	1
	p	.000	.298	.275	.011	.191	.280	.000	.203	.781	

Pearson correlation analysis was conducted to test the relationship between the total scores and subscale mean scores of the scales used in the study. The analysis results revealed a statistically significant negative relationship between the SELSA and its subscales and the well-being and emotionality subscale mean scores of the TEIQue-ASF (p<.05). Additionally, a negative and significant relationship was found between the total score of SELSA and all subscales of the TEIQue-ASF, except for the sociability subscale. The relationship between participants' mean scores on the GAS and SELSA was statistically significant and positive. No statistically significant relationship was found between the mean scores of the TEIQue-ASF and GAS (p>.05).

Table 5

Multiple regression analysis results between SELSA and GAS

Variable	B	Standart Error $_B$	β	t	*p*	Binary r	Partial r
Constant	1.888	0.167	-	11.316	.000	-	-
Family	0.106	0.025	0.182	4.183	.000	0.182	0.173
Romantic	-0.036	0.035	-0.044	-1.030	.303	-0.044	-0.043
Social	0.000	0.026	-0.001	-0.012	.990	0.046	-0.001
R= 0.187		R^2= 0.035					
$F_{(3,564)}$= 6.846		P= .000					

According to the results of the multiple linear regression analysis conducted to predict digital game addiction based on the SELSA subscales, the binary and partial correlations between the predictor and criterion variables were examined. It was found that there is a positive and weak correlation between the Family subscale and GAS (r=0.18), which decreases to r=0.17 when other variables are controlled. The three variables used explain 3.5% of the total variance in GAS. According to the standardized regression coefficients (β), the relative importance of the predictor variables on GAS is in the order of

Family, Romantic, and Social. The t-test results for the significance of the coefficients indicated that the Family variable is a significant predictor of GAS.

Table 6
Results of Multiple Regression Analysis between TEIQue-ASF and GAS

Variable	B	Standard Error $_B$	β	t	*p*	Binary r	Partial r
Constant	1.955	0.166	-	11.754	.000	-	-
Well-being	-0.069	0.039	-0.086	-1.789	.074	-0.075	-0.073
Self-control	0.002	0.022	0.004	0.077	.939	0.003	0.003
Sociability	0.126	0.023	0.227	5.412	.000	0.222	0.222
Emotionality	-0.013	0.029	-0.022	-0.458	0.647	-0.019	-0.019
R= 0.232		R^2= 0.054					
$F_{(4,563)}$= 7.982		P= .000					

The results of the multiple linear regression analysis conducted to predict digital game addiction based on the TEIQue-ASF subscales show that the binary and partial correlations between the predictor and criterion variables were examined. A positive and weak correlation was found between Sociability and GAS (r=0.22), which remained the same (r=0.22) when other variables were controlled. The four variables used explain 5.4% of the total variance in GAS. According to the standardized regression coefficients (β), the relative importance of the predictor variables on GAS is in the order of Sociability, Well-Being, Emotionality, and Self-Control. The t-test results for the significance of the coefficients indicated that Sociability is a significant predictor of GAS, while the other variables do not have a significant effect.

Discussion

The primary aim of this study is to compare students' levels of emotional intelligence, social and emotional loneliness, and digital game addiction based on various variables and to examine the relationships between these variables; the findings obtained have been discussed in line with the study's hypotheses. The average scores obtained by the students from the scales used in the study were compared based on the gender variable. According to the results, statistically significant differences were found between male and female students in the TEIQue-ASF self-control sub-dimension and GAS. It can be suggested that male students exhibit higher self-control, indicating their ability to manage emotions, control negative feelings and impulses, adapt to changes in life, and prepare for challenges. The average SELSA scores of the participants do not show significant differences based on gender. These findings align with the results of a study conducted by Ekinci, Yalçın, and Ayhan (2019) in the literature.

It was seen that the evaluations of mean and standard deviation scores obtained from the students' SELSA-S, TEIQue-ASF, GAS and factors were between 1 and 5 for all factors, and the average score was 3. According to the total scores of the scale, it was observed that the social and emotional loneliness scores and emotional intelligence scores were above the average, while the digital game addiction scores were below the average. The family factor (SELSA) scores were below average and the other factors were above average (Table 1). This finding can be interpreted as that students experience more romantic loneliness and their digital game addiction levels are low. In secondary school students (Guvendi et al., 2019), it was reported that adolescents were in the risky group for digital game addiction, that is, their average scores are high.

The mean scores of the students participating in the study were compared against gender variable. According to the results obtained, a statistically significant difference was found between male and female students in the Self-control factor (TEIQue-ASF) and the GAS scores ($p<0.05$). Men were found to be more self-controlled, to control their emotions, manage their negative emotions and impulses, as well as adapt to changes in life and be ready for difficulties. In addition, no significant difference was found among SELSA scores. Similarly, Ekinci et al. (2019) concluded in another study that there was no significant difference between gender and loneliness. Some studies (Akagündüz, 1997; Tan, 2000; Eren, 1994)

emphasized that there was no relationship between gender and loneliness. It has been observed that men are more addicted to digital games. Dursun and Eraslan-Çapan's (2018) study revealed that gender significantly predicted digital game addiction in favor of men. Again, there are studies in the literature showing that boys are more addicted to digital games than girls (Horzum, 2011; Li & Wang, 2013; Şahin & Tuğrul, 2012; Güvendi et al., 2019; Şahin et al., 2021; Chiu et al., 2004; Griffiths & Meredith, 2009). In the study among university students conducted by Satılmış (2021), it was reported that men were more addicted to the Internet than women. Karaaslan (2015) stated in his research that boys were more prone to digital games than girls because they were more intertwined with technology. In terms of cultural structure, it is understood that girls spend more time as well as have more responsibilities at home. Thus, it can be said that boys' addiction increases considering that they have a wider range of opportunities in reaching digital games.

The playtime is an important factor that increases game addiction (Lee & Kim, 2017). When the research findings were evaluated according to the playing time, a significant difference was found in Romantic (SELSA) and Social (SELSA) factors and GAS scores ($p<0.05$). While the average scores were found higher in the Romantic and Social factors among those who play games during the day, and in the digital game addiction the average score was found higher among those who play games at nighttime. (Table 3). In the literature, there are not many studies examining digital gaming addiction and loneliness in terms of playtime. It can be said that those who play games during the day experience loneliness in their romantic and social relationships, while those who play games at night are more addicted to digital games. It can be due to the fact that the child who follows a daytime education spends more time playing digital games at night. In addition, it can be said that children who play games during the day do not spare enough time for their romantic and social relationships and spend most of their time on games, so they distance themselves from the aforementioned relationships and drift into loneliness. Kılıç (2020), on the other hand, similarly stated in his study that children who play digital games at night have more digital game addiction than children who play during the day, and differently, they have a higher level of loneliness in their social and romantic relationships. By Ekinci et al. (2021), it was determined that there was a positive and low relationship between digital game addiction and loneliness.

When the correlations between SELSA, TEIQue-ASF, and GAS were examined, SELSA had a negative ($r=-.289$) relationship with TEIQue-ASF and a positive ($r=.106$) relationship with GAS. A positive correlation was found between GAS and TEIQue-ASF, but this was not significant (Table 4). This means that while social and emotional loneliness increases, digital game addiction increases and emotional intelligence decreases. When evaluated at the level of factors, it is seen that the relations between TEIQue-ASF (Well-being-Self-control-Emotionality) and SELSA (family-romantic-social) are negative. Studies supporting the research findings have emphasized that social and emotional loneliness increases as digital game addiction increases (Kılıç, 2020), and internet addiction levels increase as individuals' loneliness levels increase (Durualp and Çiçekoğlu, 2013). Again, studies have shown that excessive internet use is associated with high levels of social and emotional loneliness (Moody, 2001). Ançel et al. (2014) revealed in their research that there was a negative and significant relationship between problematic internet use and TEIQue-ASF scores. In the literature, there is a body of research showing the negative relationship between problematic internet use and TEIQue-ASF (Far et al., 2014), and there are studies showing that problematic internet use negatively affects emotional intelligence (Parker et al., 2008; Mesgarani et al., 2013). When the scores of emotional and social loneliness in predicting digital game addiction were examined, it was found that there was a low-level significant relationship (Table 5). When the correlations between SELSA factors (predictive variable) and GAS (predicted/criteria) were examined, it was seen that there was a positive and low correlation ($r=0.18$) between "Family" and GAS. According to the t-test results regarding the significance of the regression coefficients, it was revealed that the family factor was an important predictor of the SELSA. SELSA with all its factors explains 3.5% of the total variance in GAS. Anlı (2018) reported that the contribution of loneliness in social relationships and loneliness in emotional relationships to the internet addiction was significant, while loneliness in family relationships was insignificant and explained 11% of the total variance in digital game addiction. According to the results of the regression analysis, it was observed that emotional intelligence predicted digital game addiction at a low level (Table 6). The t-test for the significance of the regression coefficients showed that sociability plays an important role in predicting digital game addiction, and all factors explained 5.4% of the total variance in GAS. It can be said that 5.4% of digital game addiction is explained by emotional intelligence. Dursun and Eraslan-Çapan (2018) revealed in their study that psychological needs predict 11% of the variance of digital game addiction.

As a result, students in middle adolescence experience loneliness in their social and emotional relationships above average. In addition, it was observed that emotional intelligence scores were above the average and digital game addiction

scores were below the average. 3.5% of digital game addiction is explained by social and emotional loneliness and 5.4% by emotional intelligence. As social and emotional loneliness increases, digital game addiction also increases. It has been observed that children who play games at night are more addicted to digital games.

Recommendation

Families need to be more controlled in this regard and to impose some restrictions on digital gaming. Accordingly, families should show the necessary attention and care so that students do not feel weak in social and emotional loneliness. In addition, school administrators and teachers have great responsibilities for the effective operation of this process. It is recommended that they shed light on these problems and create awareness by organizing seminars, projects, information meetings and regular trainings. A larger sample group, different variables and different analysis methods can be suggested for future research.

Etik Komite Onayı: Bu çalışma için etik komite onayı Tokat Gaziosmanpaşa Üniversitesi'nden (Tarih: 23 Mayıs 2023, Karar No: 78, Protokol No: E-704 00699-000-2300160224) alınmıştır.
Hasta Onamı: Çalışmaya katılan tüm katılımcılardan sözlü onam alınmıştır.
Hakem Değerlendirmesi: Dış bağımsız.
Yazar Katkıları: Fikir: B.G; Tasarım: B.G; Denetleme: B.G; Kaynaklar: B.G.; Veri Toplanması ve/veya İşlemesi: B.G; Analiz ve/ veya Yorum: B.G; Literatür Taraması: B.G.; Yazıyı Yazan: B.G.; Eleştirel İnceleme: B.G.

Çıkar Çatışması: Yazarlar, çıkar çatışması olmadığını beyan etmiştir.
Finansal Destek: Yazarlar, bu çalışma için finansal destek almadığını beyan etmiştir.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Tokat Gaziosmanpaşa University (Date: May 23, 2023, Decision Number: 78, Protocol No: E-70400699-000-2300160224).
Informed Consent: Verbal consent was obtained from all the participants.
Peer-review: Externally peer-reviewed.
Author Contributions: Concept: B.G; Design: B.G; Supervision: B.G; Resources: B.G.; Data Collection and/or Processing: B.G.; Analysis and/or Interpretation: B.G; Literature Search: B.G.; Writing Manuscript: B.G.; Critical Review: B.G.
Conflict of Interest: The authors have no conflicts of interest to declare.
Financial Disclosure: The authors declared that this study has received no financial support.

References

Akagündüz, İ. (1997). *Annesi çalışan ve çalışmayan lise öğrencilerinin yalnızlık düzeylerinin bazı değişkenler açısından incelenmesi* [Yayımlanmamış Yüksek Lisans Tezi, Hacattepe Üniversitesi. Ankara].

Ançel, G., Açikgöz, I., & Yavaş Ayhan, A. G. (2015). Problemli internet kullanımı ile duygusal zeka ve bazı sosyodemografik değişkenler arasındaki ilişki. *Anatolian Journal of Psychiatry/Anadolu Psikiyatri Dergisi*, 16(4).

Anlı, G. (2018). İnternet bağımlılığı: Sosyal ve duygusal yalnızlık. *Uluslararası Bilimsel Araştırmalar Dergisi, 3*(2), 389-397.

Büyüköztürk, Ş., Akgün, Ö. E., Demirel, F., Karadeniz, Ş., & Çakmak, E. K. (2015). *Bilimsel araştırma yöntemleri*. Pegem Akademi.

Caplan, S. E. (2003). Preference for online social interaction: A theory of problematic Internet use and psychosocial well-being. *Communication Research, 30*(6), 625-648.

Chiu, S. I., Lee, J. Z., & Huang, D. H. (2004). Video game addiction in children and teenagers in Taiwan. *CyberPsychology & Behavior, 7*(5), 571-581.

Cornell, J. S. H. (2003). Relationships between emotional intelligence and demographic variables within Florida's inmate population. University of Florida.

Çeçen, A. R. (2007). The Turkish short version of the social and emotional loneliness scale for adults (SELSA-S): ınitial development and validation. *Social Behavior and Personality: an international journal*, *35*(6), 717-734.

Damasio, A. R. (1994). Descartes' error: Emotion, rationality and the human brain. New York: Putnam, 352.

DiTommaso, E., Brannen, C., & Best, L. A. (2004). Measurement and validity characteristics of the short version of the social and emotional loneliness scale for adults. *Educational and Psychological Measurement, 64*(1), 99-119.

Dursun, A., & Eraslan-Çapan, B. (2018). Digital game addiction and psychological needs for teeanergers, *Inonu University Journal of the Faculty of Education, 19*(2), 128-140. DOI: 10.17679/inuefd.336272.

Durualp, E., & Çiçekoğlu, P. (2013). Yetiştirme yurdunda kalan ergenlerin yalnızlık düzeylerinin internet bağımlılığı ve çeşitli değişkenler açısından incelenmesi. *Dokuz Eylül Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 15*(1), 29-46.

Ekinci, N. E, Karaali, E., Parçalı, B., Suner, A., & Satılmış, S. E. (2021). COVID-19 pandemic, loneliness and digital game addiction. *Pakistan Journal of Medical & Health Sciences, 15*(7), 2175-2179.

Ekinci, N. E., Yalcin, I., & Ayhan, C. (2019). Analysis of loneliness levels and digital game addiction of middle school students according to various variables. *World Journal of Education, 9*(1), 20-27.

Eren, A. (1994). Lise öğrencilerinin yalnızlık düzeyleri ve psikolojik ihtiyaçlarının incelenmesi [Yayımlanmamış yüksek Lisans Tezi, Gazi Üniversitesi Sosyal Bilimler Enstitüsü, Ankara].

Ergin, E. (2017). Duygusal zeka özelliği ölçeği-adölesan kısa formu'nun uyarlama çalışması [Yayınlanmamış Yüksek Lisans Tezi, Selçuk Üniversitesi, Konya].

Erkuş, A. (2009). Davranış bilimleri için bilimsel araştırma süreci. Ankara: Seçkin Yayıncılık.

Far, N. S., Samarein, Z. A., Yekleh, M., Tahmasebi, S., & Yaryari, F. (2014). Relationship between the components of emotional

intelligence and internet addiction of students in Kharazmi University. *International Journal Psychol Behavour Research, 3*(1), 60-66.
Gentile, D. (2009). Pathological video-game use among youth ages 8 to 18: A national study. *Psychological Science, 20*(5), 594-602.
Goleman, D. (1995). Emotional intelligence: Why it can matter more than IQ. New York: Bantam Books.
Griffiths, M.D. (2002). The educational benefits of video games. *Education and Health, 20*(3), 47–51
Griffiths, M.D., & Meredith, A. (2009). Videogame addiction and its treatment. *Journal Contemp Psychother 39*:247–253.
Güvendi, B., Demir, G. T., & Keskin, B. (2019). Ortaokul öğrencilerinde dijital oyun bağımlılığı ve saldırganlık. *OPUS Uluslararası Toplum Araştırmaları Dergisi, 11*(18), 1194-1217.
Horzum, M.B. (2011). İlköğretim öğrencilerinin bilgisayar oyunu bağımlılık düzeylerinin çeşitli değişkenlere göre incelenmesi. *Eğitim ve Bilim Dergisi, 36*(159), 56-68.
Irmak, A. Y., & Erdoğan, S. (2016). Ergen ve genç erişkinlerde dijital oyun bağımlılığı: güncel bir bakış. *Türk Psikiyatri Dergisi, 27*(2), 128-137.
Irmak, A.Y., & Erdoğan, S. (2015). Dijital oyun bağımlılığı ölçeği türkçe formunun geçerliliği ve güvenilirliği. *Anadolu Psikiyatri Dergisi, 16*(Ek sayı 1):10-18.
Jeong, E. J., Kım, D. J., & Lee, D. M. (2017). Why do some people become addicted to digital games more easily? A study of digital game addiction from a psychosocial health perspective. *International Journal of Human–Computer Interaction, 33*(3), 199-214.
Karaaslan, A. İ. (2015). Dijital oyunlar ve dijital şiddet farkındalığı: ebeveyn ve çocuklar üzerinde yapılan karşılaştırmalı bir analiz. *Uluslararası Sosyal Araştırmalar Dergisi, 8*(369), 806-818.
Kılıç, M. (2020). 15-18 yaş arası okul sporlarına katılan öğrencilerin dijital oyun bağımlılığı ile sosyal ve duygusal yalnızlık düzeylerinin incelenmesi [Yayımlanmamış Yüksek Lisans Tezi, Kırıkkale Üniversitesi].
Kim, J., Larose, R., & Peng, W. (2009). Loneliness as the cause and the effect of problematic Internet use: The relationship between Internet use and psychological well-being. *Cyberpsychology & Behavior, 12*(4), 451-455.
Kubey, R. W., Lavın, M. J., & Barrows, J. R. (2001). Internet use and collegiate academic performance decrements: Early findings. *Journal of Communication, 51*(2), 366-382.
Lee, C., & Kım, O. (2017). Predictors of online game addiction among Korean adolescents. *Addiction Research & Theory, 25*(1), 58-66.
Lemmens, J. S., Valkenburg, P. M., & Peter, J. (2011). Psychosocial causes and consequences of pathological gaming. *Computers in Human Behavior, 27*(1), 144- 152.
Lemmens, J.S., Valkenburg, P.M., & Peter, J. (2009). Development and validation of a game addiction Scale for adolescents. *Media Psychology*, 12:77-95.
Lıu, M., & Peng, W. (2009). Cognitive and psychological predictors of the negative outcomes associated with playing MMOGs (massively multiplayer online games). *Computers in Human Behavior, 25*(6), 1306-1311.
Li, H., & Wang, S. (2013). The role of cognitive distortion in online game addiction among Chinese adolescents. *Children and Youth Services Review, 35*(9), 1468-1475.
Magid, K., Sagui-Henson, S. J., Sweet, C. C., Smith, B. J., Chamberlain, C. E. W., & Levens, S. M. (2024). The impact of digital mental health services on loneliness and mental health: Results from a prospective, observational study. *International Journal of Behavioral Medicine, 31*(3), 468-478.
Mentzonı, R. A., Brunborg, G. S., Molde, H., Myrseth, H., Skouverøe, K. J. M., Hetland, J., & Pallesen, S. (2011). Problematic video game use: estimated prevalence and associations with mental and physical health. *Cyberpsychology, Behavior, and Social Networking, 14*(10), 591-596.
Mesgarani, M., Shafiee, S., Ahmadi, E., & Zare, F. (2013). Studying the relationship between internet addiction and emotional intelligence, sensation seeking and metacognition among those who referred to cafes. *International Research Journal of Applied and Basic Sciences, 4*(4), 889-893.
Moody, E. J. (2001). Internet use and its relationship to loneliness. *CyberPsychology & Behavior, 4*(3), 393-401.
Parker, J. D., Taylor, R. N., Eastabrook, J. M., Schell, S. L., & Wood, L. M. (2008). Problem gambling in adolescence: Relationships with internet misuse, gaming abuse and emotional intelligence. *Personality and Individual differences, 45*(2), 174-180.
Petrides, K. V., & Furnham, A. (2000). On the dimensional structure of emotional intelligence. *Personality and individual differences, 29*(2), 313-320.
Rook, K. S. (1984). Promoting social bonding: Strategies for helping the lonely and socially isolated. *American Psychologist, 39*(12), 1389.
Satılmış, S. E. (2021). Sosyal izolasyon sürecinde üniversite öğrencilerinin serbest zamanda sıkılma algısı ve internet bağımlılığı ilişkisi [Yüksek Lisans Tezi, Manisa Celal Bayar Üniversitesi Sosyal Bilimler Enstitüsü].
Şahin, C. & Tuğrul, V.M. (2012). İlköğretim öğrencilerinin bilgisayar oyunu bağımlılık düzeylerinin incelenmesi. *Zeitschrift für die Welt der Türken / Journal of World of Turks, 4*(3), 115-130.
Şahin, D., & Kahraman, Ö. G. (2021). Okul Dönemi çocuklarının bilgisayar oyun bağımlılığı ile davranış problemleri arasındaki ilişkinin incelenmesi. *Milli Eğitim Dergisi, 50*(230), 13-28.
Tabachnick, B. G., & Fidell, L. S. (2015). Çok değişkenli istatistiklerin kullanımı (M. Baloğlu, Çev.). Ankara: Nobel Yayın Dağıtım
Tan, D. (2000). Lise öğrencilerinin yalnızlık düzeyleri ile denetim odaklarının aile destek düzeyleri ve özlük nitelikleri açısından karşılaştırmalı olarak incelenmesi [Yayınlanmamış Yüksek Lisans Tezi, Selçuk Üniversitesi Sosyal Bilimler Enstitüsü].
Tenenbaum, G., & Driscoll, M. P. (2005). Methods of research in sport sciences: Quantitative and qualitative approaches. Meyer & Meyer Verlag.
Weiss, R.S. (1973). Loneliness: The experience of emotion and social isolation. Cambridge: MIT Press.