THE TURKISH JOURNAL ON ADDICTIONS
www.addicta.com.tr

ORIGINAL ARTICLE

The Relationship Between Digital Game Addiction and Psychological Resilience in University Students

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Main Points

- It has been determined that the students have psychological resilience above the medium level.
- According to students' addiction levels, 16.8% were average, 48.7% were low risk, 24.4% were risky, 8.2% were dependent, and 1.9% were highly dependent.
- Male students have a significantly higher Digital Game Addiction Scale ($p = .0001$) and Psychological Resilience Scale ($p = .0001$) score than female students.
- A significant negative correlation was found between students' Psychological Resilience Scale scores and Digital Game Addiction Scale scores ($r = -.110$, $p = .001$). As students' addiction to digital games increases, their level of resilience decreases.

Abstract

Playing digital games in a controlled manner can be beneficial, as it allows individuals to relax. However, if young people cannot control their desire to play, it can negatively affect their daily lives. In this case, we talk about the concept of addiction. If digital games are played at an addictive level, they can reduce the psychological resilience of young people. This situation will make it difficult for young people to cope with the problems that may occur in their lives. In this sense, this study was performed to investigate the relationship between digital game addiction and psychological resilience among university students. This study was carried out with a cross-sectional and correlational design. The sample of the study included 1017 university students who were informed about the objective of the study and filled out the data collection forms. The data were collected using a Personal Information Form, the Digital Game Addiction Scale for University Students, and the Brief Resilience Scale. The Statistical Package for the Social Sciences Statistics software, version 27.0 (IBM SPSS Corp.; Armonk, NY, USA), was utilized in the analysis of the obtained data. While 8.2% of the participants were in the addicted group, 1.9% were in the highly addicted group. The male participants had significantly higher mean Digital Game Addiction Scale for University Students ($p = .0001$) and Brief Resilience Scale ($p = .0001$) than the female participants. In addition, a weak, negative, and statistically significant relationship was identified between the Brief Resilience Scale scores and the Digital Game Addiction Scale for University Students scores of the participants ($r = -.110$, $p = .001$). Consequently, as the digital game addiction levels of the participants increased, their psychological resilience levels decreased. Psychological help units for students, mental health centers, student counseling services, and faculty members should play an active part in the early identification of the digital game addiction and psychological resilience levels of students on university campuses, raising the awareness of students regarding digital game addiction, and increasing their psychological resilience levels by resolving their potentially harmful habits.

Keywords: Digital game addiction, psychological resilience, university students

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Received: February 03, 2023
Revision Requested: August 27, 2023
Last Revision Received: August 30, 2023
Accepted: September 28, 2023
Publication Date: February 28, 2024

Introduction

Digital games, which are described as games that are played in front of a screen using various electronic devices (e.g., desktop or portable computers, tablets, smartphones, consoles, and other mobile devices), offer a highly diverse set of games for gamers (Saglam & Topsumer, 2019). While

Cite this article as: Özsavran, M., & Kuzlu Ayyıldız, T. (2024). The relationship between digital game addiction and psychological resilience in university students. *Addicta: The Turkish Journal on Addictions*, 11(1), 60-68.

DOI: 10.5152/ADDICTA.2024.23006

digital games attract the interest of users of all ages, especially youths pay much attention to them, and the time these individuals spend in these environments constantly increases (Irmak & Erdogan, 2016; Taylan et al., 2017). The reasons for young people to play digital games include curiosity, challenging others, feelings of dominance in the game, competition, social communication, feelings of relaxation, escaping stress, a sense of starting over (for many games, the option to restart the game), spending one's free time, and isolating oneself from real life (Hazar, 2019).

The primary purpose of digital games is to entertain individuals, help them overcome stress, and relax. Digital games are a suitable tool to resolve the stress and exhaustion in individuals' lives, allowing them to rest and have fun, and they allow individuals to continue their lives from where they have left off with the feeling of relaxation they create (Ogel, 2017). Previous studies have shown that playing digital games on moderate levels reduces the stress levels of individuals, induces relaxation and emotional calming, and thus has positive effects on the psychological health of individuals (Tarhan & Nurmedov, 2021; Saglam & Topsumer, 2019). Playing digital games in a moderate and controllable manner may be useful as it provides relaxation. However, when individuals cannot control their desire to play games and this situation has reached a point that will affect their daily lives, an addiction may be in question (Irmak & Erdogan, 2016; Toran et al., 2016).

Digital game addiction, which is in the impulse control disorder spectrum and is considered a behavioral addiction (Craighead et al., 2015), can be defined as a state of loss of control experienced due to excessive game-playing despite its negative effects on one's daily life, social life, and individual career and the potential to result in social-emotional problems (Wittek et al., 2016). Because digital game addiction cannot be classified as a disease in diagnostic systems, it is recommended to define it in *Diagnostic and Statistical Manual of Mental Disorders* (Fifth Edition) as "online gaming disorders" (Griffiths et al., 2017; Savci & Aysan, 2017). Digital game addiction is a category of internet addiction. Rather than the act of playing digital games, the issue that should be discussed is whether individuals play these games to an extent that can be considered an addiction (Hazar, 2019).

Digital games that are played on levels that can be considered addiction affect their psychological well-being, disrupt their psychological resilience levels, and reduce their coping and flexibility skills against potential problems (Kaya et al., 2016). According to the American Psychiatric Association (2018), psychological resilience refers to the ability to show good adjustment while facing difficulties, threats, traumas, or significant stressors. Psychological resilience, which indicates flexibility and the capacity to recover quickly (Borekci & Gercek, 2018; Cam & Buyukbayram, 2017), is the skill of the person to recover from and overcome problems, crises, difficult times, and stressors they encounter in life (Bas & Yurdabakan, 2017). In another definition, it is described as the ability to cope with and adjust to challenging conditions, psychological stress, and unpleasant situations. This concept is mainly known as the existence of protective factors that minimize or completely eliminate negative living conditions that are called risk factors (Kavi & Karakale, 2018). The effects of risk factors and protective factors on the individual may vary over time as a result of the individual's interactions with their environment (Masten & Barnes, 2018). It may be argued that the probability of an individual developing psychological resilience increases in proportion to the abundance of protective factors and the scarcity of risk factors in their life.

Individuals may turn to digital games for various reasons, such as the desire to relax by escaping the stressful situations and difficulties in their lives and gain what they cannot gain in real life in a virtual environment (Tekkursun Demir & Mutlu Bozkurt, 2019). Because psychological resilience includes the skills of efficacy in life and coping (Canale et al., 2019), individuals who are psychologically resilient can cope with difficult life events and stress better. Therefore, psychological resilience may be a protective factor in the development of digital game addiction. Based on this point, it is believed that investigating the associations between game addiction and psychological resilience among university students and youths who play digital games will contribute significantly to the relevant literature.

Objective

This study was conducted to investigate the relationship between digital game addiction and psychological resilience in university students enrolled at a state university in the Western Black Sea Region of Türkiye. Considering this objective, answers to the following research questions were sought:

- Are there statistically significant differences in the digital game addiction scale scores of university students according to their personal characteristics and digital game-playing statuses?
- Are there statistically significant differences in the psychological resilience scale scores of university students based on their personal characteristics and digital game-playing statuses?
- Is there a relationship between the digital game addiction and psychological resilience scale scores of university students who play digital games?

Material and Methods

- Psychological resilience may be a protective factor in the development of digital game addiction.
- The students have a psychological resilience above the medium level.
- The level of digital game addiction of male students is higher than that of female students.
- As students' digital game addiction levels increase, their psychological resilience levels decrease.

Design and Sample

This study was conducted with a cross-sectional and correlational design. The population of the study covered 19,431 university students in total who were registered at the university where the study would be carried out in the academic year 2021 – 2022 on two campuses located in Zonguldak. The university where the study was carried out offers programs to students coming from all regions of Türkiye. The sample reflects the different cultural characteristics and points of view of university students coming from different parts of the country excellently. According to the sample calculation formula that is used to find the sample size required to represent a known population (https://www.calculat

or.net/sample-size-calculator.html), it was found that it would be sufficient to include 377 university students in the sample.

The sample included 1017 university students who were informed about the objective of the study and filled out the data collection forms. The inclusion criteria were (1) being a student at the aforementioned university in the fall semester of the academic year 2021 – 2022, (2) voluntarily agreeing to participate in the study, and (3) having no communication barriers.

Data Collection

The study was carried out between May and June 2022 at a state university in the Western Black Sea Region of Türkiye in Zonguldak (by complying with ethical standards that are specified in the 1964 Declaration of Helsinki, its later amendments, and comparable ethical guidelines). To conduct the study, approval was received from the Ethics Committee of Zonguldak Bülent Ecevit University (April 29, 2022/194). Written permissions were obtained from the university where the study would be carried out.

The data were obtained online using a Personal Information Form, the Digital Game Addiction Scale for University Students (DGAS-U), and the Brief Resilience Scale (BRS). At the top of the Personal Information Form, in the informed consent form, it was explained to the participants that (1) the data that would be collected would be applicable only to scientific purposes, (2) the data collection forms did not include any questions to collect the identifying information of the respondent, (3) the participants could leave the study after examining the questions in the data collection forms if they wanted to, and (4) the research protocol would not have any negative effect on the participants. The participants were ensured that all their rights and information would be kept private and secure. Informed consent was received from all participants. Only after the participants filled out the informed consent form could they go on to fill out the other forms.

Personal Information Form

The form contained 23 questions to obtain information on the participants' personal characteristics (e.g., age, gender, education program (department), and class year) and their information regarding playing digital games (e.g., gaming habits, types of games played, duration of playing games, and devices used to access games).

Digital Game Addiction Scale for University Students

This scale was developed to measure the digital game addiction levels of university students and tested for validity and reliability by Hazar and Hazar (2019). It is a five-point Likert-type scale with 21 items and 3 factors, in which each item has response options varying from one (absolutely disagree) to two (absolutely agree). The Cronbach's alpha internal consistency coefficients of the scale were reported as 0.76 for the first factor, 0.78 for the second factor, 0.89 for the third factor, and 0.95 for the total scale. Based on previously recommended Cronbach's alpha coefficients in the literature, the scale and its factors are in the reliable and very reliable categories. The minimum and maximum total scores of the scale are 21 and 105. The categories of total scores are as follows: "1 – 21: Normal, 22 – 42: Low Risk, 43 – 63: At Risk, 64 – 84: Addicted, and 85 – 105: Highly Addicted" (Hazar & Hazar, 2019). In this study, the Cronbach's alpha coefficient of the scale was found to be .96.

Brief Resilience Scale

The scale was created by Smith et al. (2008) and adapted to Turkish by Doğan (2015). It is a five-point Likert-type self-report scale with six items. Each item has the response options of one (strongly disagree), two (disagree), three (neutral), four (agree), and five (strongly agree). Items two, four, and six on the scale are inversely scored. Higher scores indicate higher levels of psychological resilience. The Cronbach's alpha coefficient of the scale was reported as .83 (Dogan, 2015). In this study, the Cronbach's alpha value of the scale was found as .75.

Statistical Analysis

The Statistical Package for the Social Sciences Statistics software, version 27.0 (IBM SPSS Corp.; Armonk, NY, USA), was utilized in the analysis of the obtained data. The data on the descriptive characteristics of the participants are presented as frequency, percentage, arithmetic mean, and standard deviation values. Skewness and kurtosis values were used to test the normality of data distributions. In the comparisons of the quantitative data, the intergroup differences were examined with Kruskal – Wallis analysis of variance, the Mann – Whitney *U*-test, and the Student's *t*-test. Mann – Whitney *U*-tests with Bonferroni correction were used to determine the source of the significant differences that were identified. The results were interpreted with a 95% confidence interval, and $p < .05$ was accepted as statistically significant.

Results

The mean age of the participants was 21.19 ± 1.59 (17 – 28), 54.1% were male, 57.9% were enrolled in bachelor's degree programs, and 49.3% were second-year students (Table 1).

It was found that 71.3% of the participants were playing digital games. Their mean duration of playing digital games was 6.57

Table 1.
Personal Characteristics of the Participants (n = 1017)

Variable	Mean ± SD, Median (Minimum – Maximum)	
Age (years)	21.19 ± 1.59, 21 (17 – 28)	
Gender	*n*	%
Female	467	45.9
Male	550	54.1
Program		
Associate's degree	428	42.1
Bachelor's degree	589	57.9
Class Year		
First	270	26.5
Second	501	49.3
Third	106	10.4
Fourth	140	13.8
Total	1017	100

± 4.74 (0 – 20) years, and they spent a mean time of 2.26 ± 2.23 (0 – 20) hours per day playing digital games. Most participants accessed digital games only via mobile devices (laptop, tablet, and smartphone) (54.7%), and they mostly preferred online games (72.6%) rather than offline games. While most participants stated that they checked digital games only during the day (56.9%), they were mostly alone while playing digital games (77%), and they mostly preferred playing in multiplayer mode (61.1%). Most of the participants did not feel tired during or after playing digital games (70.5%), and most felt safe (62.5%). The participants usually played digital games to overcome unpleasant and distressing situations when they experienced them (56.8%), and they mostly did not consider themselves addicted to digital games (81.5%). The most prevalently played digital games among the participants were respectively tactical/strategy games (40.4%), brain teaser/puzzle games (38.9%), and gambling games (36.6%), whereas their reasons for playing digital games included entertainment/having fun (74.5%), spending free time (56.4%), and the need for winning/success (23.2%). The participants stated their most frequently felt emotions while playing games as fun (80.1%), excitement (40.7%), and happiness (35.3%) (Table 2).

The participants had a mean BRS score of 19.44 ± 4.54, indicating above-average levels of psychological resilience. They had a mean total DGAS-U score of 39.35 ± 17.56, and according to their scores, 16.8% were in the normal group, 48.7% were in the low-risk group, 24.4% were in the at-risk group, 8.2% were in the addicted group, and 1.9% were in the highly addicted group (Table 3).

The male participants had significantly higher mean DGAS-U (p = .0001) and BRS (p = .0001) than the female participants. The mean DGAS-U scores of the participants varied significantly based on the devices using which they accessed digital games (p = .0001). According to the results of the post hoc analysis that was performed to find the source of this significant difference, the mean DGAS-U score of the participants who accessed these games via desktop computers and mobile devices was significantly higher than that of those who accessed them via mobile devices only (p = .0001). The participants who preferred playing online games had a significantly higher mean DGAS-U score than those who preferred playing offline games (p = .0001). In contrast, there were no significant differences in the mean DGAS-U and BRS scores of the participants based on their program of study or class years. The mean DGAS-U and BRS scores of the participants also varied significantly based on their digital game-playing habits (p = .0001; p = .001). Based on the results of the post hoc analysis that was performed to find the source of this significant difference, the participants who checked digital games during the day, when they woke up, and before going to bed had a significantly higher mean DGAS-U score than the participants who checked these games only before going to bed (p = .0001), whereas those who checked these games only during the day had a significantly higher mean BRS score than those who checked them before going to bed at night (p = .0001). The participants who felt fatigued during or after playing digital games had a significantly higher mean DGAS-U score (p = .001), while those who did not experience fatigue had a significantly higher mean BRS score (p = .002). The participants who felt safe while playing digital games had significantly higher mean DGAS-U (p = .0010) and BRS (p = .005) scores. While the participants who played

Table 2.
Characteristics of the Participants Regarding Digital Games (n = 1017)

Variable	Mean ± SD, Median (Minimum – Maximum)	
Duration of playing digital games (years)	6.57 ± 4.74, 6 (0 – 20)	
Time spent playing digital games per day (hours)	2.26 ± 2.23, 2 (0 – 20)	
Plays digital games	*n*	%
Yes	725	71.3
No	292	28.7
Device(s) used to access digital games		
Only desktop computer	94	9.2
Only mobile devices (laptop, tablet, smartphone)	556	54.7
Desktop computer and mobile devices (laptop, tablet, smartphone)	343	33.7
Other devices (virtual reality (VR) goggles, Xbox, PlayStation)	24	2.4
Most preferred games based on connection status		
Online games	738	72.6
Offline games	279	27.4
Digital game-playing habits		
I check them as soon as I wake up in the morning	42	4.1
I check them before going to bed at night	211	20.7
I check them when I wake up and before going to bed	43	4.2
I check them only during the day	579	56.9
I check them during the day, when I wake up, and before going to bed	142	14.0
Preference of settings while playing digital games		
Alone	783	77.0
With family	49	4.8
In a crowded environment	185	18.2
Mode of playing games		
I like playing single-player games	396	38.9
I like playing multiplayer games	621	61.1
Feels fatigued during/after playing digital games		
Yes	300	29.5
No	717	70.5
Feels safe while playing digital games		
Yes	636	62.5
No	381	37.5

(*Continued*)

Table 2.
Characteristics of the Participants Regarding Digital Games (n = 1017) (Continued)

Variable	Mean ± SD, Median (Minimum – Maximum)	
Plays digital games when one feels bad or wants to get away		
Yes	569	55.9
No	448	44.1
Plays digital games in stressful moments		
Yes	422	41.5
No	595	58.5
Plays digital games to overcome unpleasant, distressing situations when one experiences such situations		
Yes	439	43.2
No	578	56.8
Plays digital games to overcome stressful situations		
Yes	408	40.1
No	609	59.9
Plays digital games to overcome negative situations in one's life		
Yes	404	39.7
No	613	60.3
Considers oneself a digital game addict		
Yes	188	18.5
No	829	81.5
Total	1017	100
Types of games played*		
Tactical/strategy	411	40.4
Saga games	233	22.9
Gambling games	373	36.6
Action/adventure	332	32.6
Sports	296	29.1
Role-playing	91	8.9
Simulation	217	21.3
Brain teaser/puzzle games	396	38.9
Reason for playing games*		
Need for winning/success	236	23.2
Being praised	83	8.2
Entertainment/having fun	758	74.5
Need for socializing	176	17.3
Spending free time	574	56.4
There is a popular game that everyone talks about	65	6.4
Thinking of earning income	51	5
Other	7	0.7
Most frequently experienced feeling while playing digital games*		
Happiness	359	35.3
Safety	63	6.2
Peace	152	14.9
Fun	815	80.1
Excitement	414	40.7
Stress	229	22.5
Anger	153	15
Fear	36	3.5

Note: *Multiple options were allowed.

digital games when they felt bad or wanted to get away, those who played them to overcome unpleasant, distressing situations they experienced, those who played them to overcome stressful situations, and those who played them to overcome negative situations in their lives had significantly higher mean DGAS-U scores (respectively, $p = .0001$, $p = .0001$, $p = .0001$, and $p = .0001$), those who did not play digital games in the conditions mentioned earlier had significantly higher mean BRS scores (respectively, $p = .016$, $p = .0001$, $p = .0001$, and $p = .0001$). The participants who considered themselves digital game addicts had a significantly higher mean DGAS-U score ($p = .0001$), whereas those who did not consider themselves digital game addicts had a significantly higher mean BRS score ($p = .0001$) (Table 4).

A weak, negative, and statistically significant relationship was identified between the BRS and DGAS-U scores of the participants ($r = -.110$, $p = .001$). Accordingly, as the digital game addiction levels of the participants rose, their psychological resilience levels became lower (Table 5).

Discussion

In this study, the relationship between digital game addiction and psychological resilience among university students was investigated. While 8.2% of the participants were in the addicted group, 1.9% were in the highly addicted group. The mean BRS score of the participants showed that they had moderate levels of psychological resilience. A weak, negative, and statistically significant relationship was found between the BRS scores and the DGAS-U scores of the participants. Accordingly, as the digital game addiction levels of the participants increased, their psychological resilience levels decreased.

In this study, DGAS-U was employed to assess the digital game addiction levels of the participants. Based on their mean total DGAS-U score, they were considered to be in the low-risk group. According to their individual DGAS-U scores, 16.8% of the participants were in the normal group, 48.7% were in the low-risk

Table 3. Digital Game Addiction Scale for University Students *and Brief Resilience Scale Scores of the Participants and Their Addiction Categories (n = 1017)*

Scale	Mean ± SD	Median (Minimum – Maximum)
Brief Resilience Scale	19.44 ± 4.54	19.0 (6 – 30)
Digital Game Addiction Scale for University Students	39.35 ± 17.56	36 (21 – 105)
Addiction category	*n*	%
Normal	171	16.8
Low risk	495	48.7
At risk	248	24.4
Addicted	83	8.2
Highly addicted	19	1.9
Total	1017	100

group, 24.4% were in the at-risk group, 8.2% were in the addicted group, and 1.9% were in the highly addicted group. Consequently, the rate of university students with digital game addiction was found as 10.1% in this study. Both similar and different results have been reported in recent research carried out in Türkiye. While Orak et al. (2021) found the rate of students with digital game addiction as 11.8%, Aktas and Bostanci (2021) reported a low risk based on the mean total DGAS-U score of students, and they stated the proportion of digital game addiction as 7.9%. Miezaha et al. (2020) reported the rate of students with digital game addiction as 12.2%.

Some studies have revealed digital game-addicted student rates lower than that in this study. The rates of digital game addiction in students were reported as 3.9% by Arikan and Ozturk (2020), and 4.3% by Karatas (2021). This epidemiological difference in the results of different studies on digital game addiction may have originated from cultural differences in reasons for playing games, populations in which studies are carried out, and different time periods covered in studies.

Based on their mean BRS score, the university students who participated in this study had above-average psychological resilience levels. Other studies on psychological resilience in university students have also found moderate levels (Alibekiroglu et al., 2018; Aydin & Egemberdiyeva, 2018; Dereceli, 2021; Erkoc & Danis, 2020; Yildirim et al., 2021). In this sense, the result of this study was in agreement with the results of other studies in the relevant literature.

In the present study, the male participants had significantly higher mean DGAS-U and BRS scores than the female participants. Similarly, Eker et al. (2020) reported higher psychological resilience levels among male students compared to female students. Acikgoz (2016) and Erkoc and Danis (2020) also stated higher levels of psychological resilience among male students. These results were in parallel with the results of this study. The higher psychological resilience levels of men may be explained by their reportedly higher tendency to use technological devices more effectively compared to women, the fact that gender perceptions

Table 4.
Distributions of the Mean Digital Game Addiction Scale for University Students and Brief Resilience Scale Scores of the Students Based on Their Personal Characteristics (n = 1017)

Variable (*n*)	DGAS-U Mean ± SD	BRS Mean ± SD	Post Hoc
Gender			
Female (467)	35.38 ± 15.87	18.78 ± 4.41	
Male (550)	42.73 ± 18.22	19.99 ± 4.58	
p, *t*	.0001; −6.798	.0001; −4.285	
Program			
Associate's (428)	38.45 ± 17.12	19.48 ± 4.57	
Bachelor's (589)	40.00 ± 17.85	19.40 ± 4.52	
p, *t*	.161; −1.392	.256; 0.798	
Class year			
First (270)	39.53 ± 17.64	19.52 ± 4.64	
Second (501)	38.68 ± 17.29	19.22 ± 4.51	
Third (106)	43.16 ± 19.16	19.30 ± 4.61	
Fourth (140)	38.52 ± 16.88	20.12 ± 4.35	
p, *KW*	.109; 2.023	.220; 1.475	
Plays digital games			
Yes (725)	42.21 ± 17.61	19.62 ± 4.75	
No (292)	32.26 ± 15.29	18.97 ± 3.94	
p, *U*	.0001; 8.448	.039; 2.064	
Device(s) used to access digital games			
Only desktop computer (94)	40.60 ± 19.39	19.55 ± 4.28	2 – 3 *p* = .001*
Only mobile devices (556)	36.01 ± 15.97	19.30 ± 4.51	
Desktop computer and mobile devices (343)	44.16 ± 18.28	19.66 ± 4.72	
Other devices (24)	42.91 ± 18.31	18.75 ± 3.19	
p, *KW*	.0001; 53.663	.418; 2.831	
Most preferred games based on connection status			
Online games (738)	41.74 ± 17.69	19.55 ± 4.60	
Offline games (279)	33.04 ± 15.55	19.12 ± 4.38	
p, *U*	.0001; 680.0	.144; 968.5	
Digital game-playing habits			
I check them as soon as I wake up in the morning (42)	42.54 ± 19.22	17.52 ± 2.30	2 – 5 *p* = .0001* 2 – 4 *p* = .002*
I check them before going to bed at night (211)	37.53 ± 15.19	19.07 ± 4.50	

(*Continued*)

Table 4.
Distributions of the Mean Digital Game Addiction Scale for University Students and Brief Resilience Scale Scores of the Students Based on Their Personal Characteristics (n = 1017) (Continued)

I check them when I wake up and before going to bed (43)	46.20 ± 18.44	19.02 ± 3.21
I check them only during the day (579)	36.40 ± 16.32	19.92 ± 4.73
I check them during the day, when I wake up, and before going to bed (142)	51.14 ± 19.51	18.69 ± 4.36
p, KW	.0001; 24.633	.001; 4.975
Feels fatigued during/after playing digital games		
Yes (300)	42.67 ± 19.70	18.72 ± 4.24
No (717)	37.96 ± 16.39	19.73 ± 4.63
p, U	.001; 936.0	.002; 942.5
Feels safe while playing digital games		
Yes (636)	41.40 ± 17.63	19.65 ± 4.56
No (381)	35.93 ± 16.91	19.07 ± 4.49
p, t	.0001; 4.858	.005; 1.958
Plays digital games when one feels bad or wants to get away		
Yes (569)	44.53 ± 18.24	19.13 ± 4.49
No (448)	32.78 ± 14.17	19.82 ± 4.58
p, t	.0001; 11.225	.016; −2.418
Plays digital games in stressful moments		
Yes (422)	45.77 ± 19.03	19.12 ± 4.33
No (595)	34.81 ± 14.86	19.66 ± 4.67
p, t	.0001; 10.292	.061; −1.876
Plays digital games to overcome unpleasant, distressing situations when one experiences such situations		
Yes (439)	45.59 ± 18.15	18.83 ± 4.25
No (578)	34.62 ± 15.52	19.89 ± 4.69
p, t	.0001; 10.376	.0001; −3.709
Plays digital games to overcome stressful situations		
Yes (408)	46.20 ± 18.54	18.74 ± 4.23
No (609)	34.77 ± 15.26	19.90 ± 4.68
p, t	.0001; 10.714	.0001; −3.999
Plays digital games to overcome negative situations in one's life		
Yes (404)	46.60 ± 18.63	18.71 ± 4.27
No (613)	34.59 ± 15.03	19.91 ± 4.65
p, t	.0001; 11.311	.0001; −4.140
Considers oneself a digital game addict		
Yes (188)	51.30 ± 20.02	18.27 ± 3.71
No (829)	36.64 ± 15.74	19.70 ± 4.67
p, t	.0001; 10.920	.0001; −3.930

(*Continued*)

Table 4.
Distributions of the Mean Digital Game Addiction Scale for University Students and Brief Resilience Scale Scores of the Students Based on Their Personal Characteristics (n = 1017) (Continued)

Note: BRS = Brief Resilience Scale; DGAS-U = Digital Game Addiction Scale for University Students; *KW* = Kruskal – Wallis analysis of variance; *t* = Student's *t*-test; *U* = Mann – Whitney *U*-test.
*Post hoc test = Mann – Whitney *U*-test with Bonferroni correction.

are in favor of men in most societies, and men create digital gaming environments and take part in regular activities individually or in groups more frequently. Considering other reports of moderate usage in previous studies, it may be thought that digital games increase the psychological resilience of men by supporting their psychological state.

In this study, the participants who stated that they felt fatigued during or after playing digital games had higher DGAS-U scores, whereas those who said they did not feel fatigued had higher BRS scores. In addition to other problems that may develop as a consequence of playing digital games, fatigue is the most evident feeling individuals have. Individuals who feel tired have higher levels of game addiction, and they play games for longer durations. On the other hand, games that are played for shorter times or moderately support the psychological resilience of those who play them. The result of this study that those who did not feel fatigued had higher psychological resilience scores pointed to this possibility (Bruni et al., 2015; Irmak & Erdogan, 2016; Ogel, 2017).

The participants of this study who felt safe while playing digital games had higher DGAS-U and BRS scores. Students prefer playing digital games, which constitute a safe environment, to relax at the least and get away from the problems in their environment, social circles, and academic lives. This environment not only carries them away from the unfavorable aspects of life but also provides them with what they desire. However, individuals need to have a balance in their game-playing behaviors. If such a balance cannot be achieved, digital game addiction may develop over time. Among the participants of this study, while those who considered themselves digital game addicts had higher DGAS-U scores, those who did not consider themselves addicted to digital games had higher BRS scores. As clearly seen here, the degree of game addiction is also highly important. While involvement in digital games to a higher than moderate extent indicates a noticeable degree of game addiction, involvement to a moderate or lesser extent may increase the psychological resilience of individuals when this involvement is in balance with their social lives. According to the results of this study, while the participants felt safe while playing digital games and the psychological resilience of those who kept digital games in their lives in a balanced manner was high, those who considered themselves addicted to digital games showed greater digital game addiction scores. According to this result, while psychological resilience decreased along with

Table 5.
Correlation Between the Digital Game Addiction Scale for University Students and Brief Resilience Scale Scores of the Participants (n = 1017)

	Digital Game Addiction Scale for University Students
r	−.110
p	.001*

Note: *$p < .005$.

an increase in digital game addiction, when digital game addiction levels decreased, psychological resilience increased.

In this study, a weak, negative, and statistically significant association was identified between the BRS scores and the DGAS-U scores of the participants ($p = .001$). Accordingly, as the digital game addiction levels of the participants increased, their psychological resilience levels decreased. In the detailed review of the relevant literature in this study, no study investigating the relationship between digital game addiction and psychological resilience in university students could be found. In a study where the relationship between digital game addiction and psychological resilience in middle school students was examined, a moderate, negative, and significant relationship was reported between digital game addiction and psychological resilience (Aktas, 2018; Keskin, 2019). In a study where the same relationship was investigated in high school students, a weak, negative, and significant relationship was found between digital game addiction and psychological resilience (Cicek, 2021). Previous studies have provided similar results to those in this study. This study clearly revealed that the digital games of our era are played by individuals of all ages, with students in adolescence and young adulthood being particularly influenced by these games and displaying resembling results.

Consequently, according to their BRS scores, the university students who participated in this study displayed moderate levels of psychological resilience. According to their total DGAS-U scores, 16.8% of the participants were in the normal group, 48.7% were in the low-risk group, 24.4% were in the at-risk group, 8.2% were in the addicted group, and 1.9% were in the highly addicted group. A weak, negative, and significant relationship was observed between the BRS and DGAS-U scores of the participants. As their digital game addiction levels increased, their psychological resilience levels decreased.

The results that were obtained in this study highlighted the necessity for mental health professionals to develop education programs aimed at reducing digital game addiction and strengthening psychological resilience in children and young people at all educational institutions by increasing the awareness of these individuals regarding digital games. An effective digital game addiction screening program may be needed. Such a screening program will allow the early detection of game addiction, and thus, it will prevent game addiction symptoms from worsening further. Moreover, to increase the accessibility and benefits of mental health services, mental health clinics or psychological help units should be established on university campuses for students, and these institutions should be utilized more if they are already present.

The findings of the study demonstrated that most university students play digital games. In their environment, it is also seen that the number of other students playing digital games is constantly increasing. This indicates that students are in close contact with digital game addiction. Many students play games throughout their academic lives, and they face the risk of addiction. On the other hand, in our study, the number of students who displayed behaviors of addition to digital games was low. To prevent the current situation from developing into game addiction and addiction-related behaviors, education programs for lowering the digital game addiction levels and raising the psychological resilience levels of university students should be planned. Psychological help units for students, mental health centers, student counseling services, and faculty members should play an active part in the early identification of the digital game addiction and psychological resilience levels of students on university campuses, raising the awareness of students regarding digital game addiction, and increasing their psychological resilience levels by resolving their potentially harmful habits, hence averting the negative effects of these habits.

A significant association was determined between digital game addiction and psychological resilience in this study. Prospective studies can be planned to investigate the psychological resilience levels of students with pathologic levels of game addiction in detail. Furthermore, taking into account studies showing low psychological resilience among students with digital game addiction, individual or group therapies can be planned for increasing the psychological resilience levels of those who are at risk.

Limitations and Directions/Suggestions for Future Research
This study had two limitations. First of all, the data were collected online. Moreover, the sample consisted solely of students at one university, and it included only Turkish students. Thus, the results of this study may not be generalizable. Different practices may be observed at other universities. Researchers could repeat this study protocol with broader samples and multicenter studies.

Ethics Committee Approval: This study was approved by Ethics committee of Zonguldak Bülent Ecevit University (Approval No: 194, Date: April 29, 2022).

Informed Consent: Written informed consent was obtained from all participants.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – M.Ö., T.A.; Design – M.Ö., T.A.; Supervision – M.Ö., T.A.; Resources – M.Ö., T.A.; Materials – M.Ö., T.A.; Data Collection and/or Processing – M.Ö., T.A.; Analysis and/or Interpretation – M.Ö., T.A.; Literature Search – M.Ö., T.A.; Writing – M.Ö., T.A.; Critical Review – M.Ö., T.A.

Declaration of Interests: The authors have no conflict of interest to declare.

Funding: The authors declared that this study has received no financial support.

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