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Hemşirelik öğrencilerinin Dijital Oyun Bağımlılığı ve Dijital Oyun Bağımlılığına İlişkin Farkındalık Düzeyleri: Tanımlayıcı İlişkisel Çalışma

Nursing Students' Digital Game Addiction and Awareness Levels: A Descriptive Correlational Study

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ÖZ

Bu çalışmada hemşirelik öğrencilerinin dijital oyun bağımlılığı konusundaki farkındalıklarının ve bağımlılık düzeylerinin belirlenmesi amaçlanmıştır. Tanımlayıcı ilişkisel tipteki bu çalışma 01.12.2022-01.03.2023 tarihleri arasında hemşirelik öğrencileriyle gerçekleştirilmiştir. Örneklem büyüklüğü, bilinen örneklem seçim yöntemi kullanılarak n = 362 olarak hesaplanmıştır. Veriler kişisel bilgi formu, Üniversite Öğrencileri için Dijital Oyun Bağımlılığı Ölçeği ve Dijital Oyun Bağımlılığı Farkındalık Ölçeği kullanılarak toplanmıştır. Analizlerde Mann-Whitney U testi, Kruskal-Wallis testi, Spearman'ın rho'su ve lojistik regresyon kullanılmıştır. Hemşirelik öğrencilerinin dijital oyun bağımlılığı puan ortalamaları 33,24±5,5 ve dijital oyun bağımlılığına ilişkin farkındalık puan ortalamaları 46.26±9.4 olarak hesaplanmıştır. Erkeklerin (7,136 kez), psikiyatrik hastalığı olanların (0,137 kez) ve telefonunu uzun süre kullananların (1,228 kez) dijital oyun bağımlılığı riskinin daha yüksek olduğu belirlendi ($p<0,05$). Dijital oyun bağımlılığı farkındalığı ile ilgili faktörler incelendiğinde, kadınlar (0,522 kat), yüksek gelire sahip olanlar (2,894 kat), dijital oyun bağımlılığı puanları düşük olanlar (0,901 kat) daha az risk altında bulunmuştur ($p<0,05$). Hemşirelik öğrencilerinde dijital oyun bağımlılığı riski, erkek cinsiyet, psikiyatrik hastalık öyküsü ve uzun süreli telefon kullanımı ile ilişkilidir. Sonuç olarak, çalışmanın bulguları, dijital oyun bağımlılığına ilişkin farkındalığın artmasının, dijital oyun bağımlılığı riskini azaltıcı bir etkiye sahip olduğunu göstermektedir. Bu nedenle konuyla ilgili eğitim programları düzenlenmesi ve bu programların öncelikli olarak dijital oyun bağımlılığı konusunda risk gruplarına yönelik düzenlenmesi önerilmektedir.

Anahtar Kelimeler: Farkındalık, Dijital Oyun Bağımlılığı, Hemşirelik Öğrencisi

ABSTRACT

This study aimed to determine nursing students' awareness of digital game addiction and their addiction levels. This descriptive relational study was carried out with nursing students between 01.12.2022-01.03.2023. The sample size was calculated as n = 362 using the known sample selection method. Data were collected using a personal information form, the Digital Game Addiction Scale for University Students, and the Digital Game Addiction Awareness Scale. The Mann–Whitney U, Kruskal–Wallis test, Spearman's rho, and logistic regression were used in the analyses. Nursing students' mean scores of digital game addiction were calculated as 33.24±5.5 and the mean scores of awareness of digital game addiction were calculated as 46.26±9.4. It was determined that males (7.136 times), those with psychiatric illnesses (0.137 times), and those who used their phone for extended periods (1.228 times) had a higher risk of digital game addiction ($p<0.05$). When the factors related to digital game addiction awareness were examined, women (0.522 times), those with a high income (2.894 times), ad those with low digital game addiction scores (0.901) were less at risk ($p<0.05$). The risk of digital gaming addiction among nursing students is associated with male gender, a history of psychiatric illness, and prolonged use of phones. Consequently, the findings of the study demonstrate that increasing awareness about digital gaming addiction has a mitigating effect on the risk of digital gaming addiction. Therefore, it is recommended that educational programs on this topic be organized, with a priority given to addressing digital gaming addiction among at-risk groups.

Keywords: Awareness, Digital Game Addiction, Nursing Student

Approval was obtained from the Bolu Abant İzzet Baysal University Human Research Ethics Board in Social Sciences (Protocol No. 2022/449)

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INTRODUCTION

Digital games are played online or offline with the help of computers or other electronic devices. These games attract the attention of individuals from all age groups due to their realistic scenarios and graphic designs. [1] Digitally controlled games have many positive aspects, such as providing hand-eye coordination, enhancing imagination, and developing spatial skills when controlled.[2] Despite the positive characteristics, many studies have drawn attention to their content. Studies particularly warn about digital games involving violence. Previous research has shown that violent digital games are generally associated with psychosocial problems such as loneliness, aggressive behavior, anxiety disorders, low life satisfaction, depression, desensitization to violence, attention problems, and addiction .[3,4] Digital game addiction is the inability to control the behavior linked to playing these games due to the excessive use of computers and video games, resulting in emotional and social problems. [5] The concept of digital game addiction is variously described using terms like excessive game playing, obsessive-compulsive game playing, problematic game playing, and pathological game playing. [2]

Digital game addiction is recognized as a disease according to the DSM-5 diagnostic criteria. [6] Adolescents and young adults are an important digital game addiction risk group. [4] Internet addiction rates among young people are 1,2–18% in European countries, 20,6% in the United States, and 23,7% in Asian countries.[7-9] Newport Academy (2021) reported that 19% of males and 7,8% of females are addicted to digital games. [10] It is important to fight against this addiction, which affects a large part of the population. To combat the addiction, individuals must be aware that it is a disease and should control their gaming hours by becoming aware of whether or not they are playing excessively. Therefore, awareness of digital game addiction should be increased among at-risk groups and the general public.[6] Awareness is a series of focusing and defocusing behaviors, drawing attention to the present moment without judgment or expectation. Individuals with high levels of awareness know, understand, and accept the situation they are currently in.[11]Increased awareness about addictions is important for delaying the onset, maintenance, cessation, and remission of addictive substances or behaviors. [12] Digital awareness education for young people has been found to increase their awareness of the negative aspects of digital content. [13] High awareness of virtual or digital game addiction effectively reduces problematic internet use among young people and adults. [14] According to a study conducted with undergraduate students, as their awareness of digital game addiction increased, their addiction decreased.[11] Although studies examining the relationship between digital addiction and awareness in different groups exist, studies conducted with nursing students are lacking in the literature. However, a study conducted with nursing students determined that high levels of self and external awareness have a protective effect against smartphone addiction. [15] Yang and Kim (2018) implemented a training program on proper internet use for nursing students. As a result of the training, individuals' self-awareness and self-control regarding problematic internet use increased, and internet addiction and time spent on the internet decreased significantly. [16]

Research on nursing students' awareness of digital game addiction and the effectiveness of related educational programs is limited in the current literature. This gap becomes significant as the use of digital games as educational tools increases, leading to more frequent interactions between nursing students and these technologies, and raising the risk of addiction. Therefore, further research aimed at developing and implementing awareness and intervention strategies for digital game addiction in nursing education is essential for improving students' educational processes and overall

well-being. These future nurses are an essential subgroup in terms of exploring and determining their addiction awareness and levels. Identifying and improving their current situation regarding technology and addiction is crucial as nursing students will become future professionals that provide health services and education to society.

This study aimed to determine nursing students' awareness of digital game addiction and their addiction levels.

MATERIAL AND METHOD

Study type

This study was planned descriptively and relationally.

Sample of the study

This study was conducted with nursing students (789 in total) from a university in the northwest of Türkiye between 01.12.2022 and 01.03.2023. The sample size was determined by the known population sampling method. First, the number of students in each class was established. The first-year class consisted of 177 students, the second of 205 students, the third of 197 students, and the fourth of 210 students. The sample size, with a margin of error of 5% and a confidence interval of 99%, was calculated as n = 362 using the formula for known population sampling size.[17] Proportional stratified and simple random sampling methods were used in the sample selection. According to the calculations made for proportional stratified sampling, the number of students included in the study is 81 for the first year, 94 for the second, 91 for the third, and 96 for the fourth. A simple random sampling method determined which students from each class would be included in the study. The students included in the study were selected from a numbered class list with the help of a simple random numbers table. The students included in the study were informed about the study topic. Informed consent and data collection tools were provided, and the researchers explained that participation in the study was voluntary. All students on the list volunteered to participate in the study; they were between 18–26 years old (min–max). The post-hoc power calculated by taking the referasns of income status and digital game addiction awareness was calculated as 99%.

Data collection tools

During the data collection process, a personal information form, the Digital Game Addiction Scale for University Students (DGAS), and the Awareness Scale for Digital Game Addiction (ASDGA) were used.

Personal information form

The personal information form includes 12 questions about age, gender, grade level, education on digital game addiction, the place where students had lived the longest, income level, phone usage time, phone game playing time, number of phones, social media usage time, computer game playing time, and psychiatric history.[6,11,14,23,39]

The Awareness Scale for Digital Game Addiction (ASDGA) was developed by Tekkurşun Demir and Cicioğlu in 2020. It aims to determine the level of awareness of nursing students regarding digital game addiction. The ASDGA is a 5-point Likert scale consisting of 12 items. The total score nursing students receive from ASDGA shows their digital game addiction awareness level: a low awareness score ranges between 12–28, medium awareness between 29–44, and high awareness between 45–60. The Cronbach alpha reliability coefficient of the scale was previously reported as 0,88. [18] In this study, it was calculated as 0.92.

The Digital Game Addiction Scale for University Students (DGAS) was developed by Hazar and Hazar in 2019. The scale consists of 21 items and is designed as a 5-point Likert scale. The addiction levels were classified as the "Normal Group" (1–21), "Low-Risk Group" (22–42), "Risk Group" (43–63), "Addicted Group" (64–84), and "Highly Addicted Group" (85–105) by taking the lowest and highest scores obtained from the scale and dividing them by five. The

Cronbach alpha reliability coefficient of the scale was previously reported as 0,92. [19] In this study, it was calculated as 0,87.

Data collection method

The pilot study of the research was conducted with 20 students from different faculties in the healthcare field, and it was determined that there were no incomprehensible items. The completion time of the questionnaires in the pilot study was approximately 20 minutes.

The study's data collection tools were given to the participants between 01.12.2022–20.12.2022; the researchers waited for the respondents to complete the questionnaires and collected them after the students finished them. Participants were asked to sit separately in different rows to avoid interaction with each other.

Ethical aspect of the study

Approval was obtained from the Bolu Abant İzzet Baysal University Human Research Ethics Board in Social Sciences (Protocol No. 2022/449), and written permission was obtained from the nursing student participants. Written permission was obtained from the institution where the study was conducted. Written permission was obtained from the scale owners via e-mail for the use of the scales (The Awareness Scale for Digital Game Addiction and The Digital Game Addiction Scale).

Data analysis

The analysis of the data obtained from the data collection tool used in the research was performed using IBM's SPSS program. Percentage and frequency values were used in the data analysis, such as gender and income status. Mean and standard deviation were employed to analyze continuous data, such as age and duration of phone usage. The respondents did not answer all questions, resulting in data loss in some demographic variables. The skewness and kurtosis, Kolmogorov–Smirnov, and histogram tests were applied to assess the normality distribution of the variables.[20] Non-parametric tests such as the Mann–Whitney U test, the Kruskal–Wallis test, and Spearman's rho were used for data evaluation. Logistic regression analysis was employed to determine the factors related to digital addiction risk and awareness. In the logistic regression analysis model, categorical variables such as gender, income status, history of psychiatric illness, digital game education, and continuous variables, such as digital game addiction scores and duration of phone usage, were used. Categorical independent variables were converted into dummy variables.

Gender: female: 0, male: 1; income status: very poor: 0, poor: 1, good: 2, very good: 3; digital game addiction: continuous variable; history of psychiatric illness: yes: 0, no: 1; digital game education: yes: 0, no 1; duration of phone usage: coded as a continuous variable. In addition, the score ranges of the measurement tools were used as the dependent variable of the regression model. The results were evaluated at a 95% confidence interval, with a significance level of $p<0,05$.

FINDINGS AND DISCUSSION

Table 1. Socio-demographic characteristics of nursing students.

Variable	n**	%+
Gender		
Female	286	79,9
Male	72	20,1
Place of longest residence		
District-village-town	155	42,8
City-metropolitan city	207	57,2
History of psychiatric illness*		
Yes	44	12,3
No	316	87,7
Class level		
1st year	81	22,4
2nd year	94	26,0
3rd year	91	25,1
4th year	96	26,5
Education on digital game addiction		
Yes	84	23,5
No	273	76,5
Digital game addiction		
Low-risk group	338	93,4
High-risk group	24	6,6
Awareness of digital game addiction		
Low	20	5,5
Medium	99	27,5
High	242	67,0
Income status		
Very poor	20	5,5
Poor	54	15,0
Good	282	78,1
Very good	5	1,4

*anxiety disorder, depression, etc,** Participants did not answer all questions, + The percentages were calculated based on the number of respondents.

In this study, 20,1% of the nursing students are male, 57,2% live in a metropolitan city, and 12,3% have a history of psychiatric illness. Precisely 26,5% of the nursing students are in their fourth year, and 23,5% have received education on digital game addiction. Precisely 93,4% of the students have low-risk digital game addiction, while 6,6% have high-risk addiction. Next, 5,5% have a low awareness of digital game addiction, 27,5% have a moderate awareness, and 67% have a high awareness. Exactly 78,1% of the students reported their income status as 'good' (Table 1). Table 2 presents the statistical analysis results of the relationship between nursing students' digital game addiction, awareness of digital game addiction, and other demographic variables.

In Table 2, women's digital game addiction scores were calculated as 32,42±5,0 and men's scores were 36,59±6,5 ($p<0,05$). In Table 2, the mean score of digital game addiction (34,61±7,4) of the students who received education about digital game addiction was calculated to be higher than the students who did not receive education about digital game addiction (32,93±5,1) ($p=0,031$). There was no significant relationship between the place of longest residence, income status, class level, and the level of game addiction ($p>0,05$).

The average scores of women regarding digital game addiction awareness were calculated as 47,63±8,6 and 41,02±10,6 for men ($p<0,05$). Digital game addiction awareness was higher for those with good or very good income

status than those with very poor income status (p<0,05). There was no significant relationship between the place of longest residence, class level, education on digital game addiction, and digital game addiction awareness (p >0,05) (Table 2).

Table 3 presents the mean and standard deviation data of several demographic variables. The average age of the nursing students is 20,63 ± 1,4, the duration of phone usage is 4,82 ± 2,2, the duration of social media usage is 2,94 ± 1,7, and the time of playing games on the computer is 1,62 ± 1,4. The participants' mean scores for digital game addiction and digital game addiction awareness are 33,24 ± 5,5 and 46,26 ± 9,4 respectively.

Table 2. Comparison of socio-demographic characteristics with digital game addiction and awareness of digital game addiction.

Demographic variable	Digital game addiction		Awareness of digital game addiction	
	$\bar{X}$ ± SS	Mean rank	$\bar{X}$ ±SS	Mean rank
Gender				
Female	32,42±5,0	165,03	47,63±8,6	**192,30**
Male	36,59±6,5	326,97	41,02±10,6	**126,35**
Statistics**	U = 6258,50, Z = –5,331, **p = 0,0001**		U = 6469,00, Z = –4,851, **p = 0,0001**	
Class level				
1st year	33,34 ± 5,3	184,65	45,75±10,0	178,40
2nd year	32,98 ± 5,5	174,97	45,08±9,4	166,24
3rd year	32,94 ± 5,5	175,04	47,30±9,8	192,78
4th year	33,69 ± 5,7	191,36	46,85±8,4	186,33
Statistics**	X^2 = 1,676, df = 3, p = 0,642		X^2 = 3,328, df = 3, p = 0,344	
Education on digital game addiction				
Yes	34,61 ± 7,4	200,01	45,54±10,0	175,04
No	32,93 ± 5,1	172,54	46,36±9,4	179,57
Statistics*	U = 9701,50, Z = –2,157, **p = 0,031**		U = 111333,00, Z = –0,353, p = 0,724	
Place of longest residence				
District-village-town	32,90 ± 5,2	174,86	46,59 ± 9,2	185,09
City-metropolitan city	33,50 ± 5,6	186,47	46,01 ± 9,5	177,92
Statistics*	U = 15013,50, Z = –1,056, p = 0,291		U = 15331,50, Z = –0,646, p = 0,518	
Income status				
Very poor (1)	34,10 ± 6,6	182,88	41,40 ± 9,2	128,35
Poor (2)	33,20 ± 4,7	185,77	45,00 ± 9,0	158,90
Good (3)	33,23 ± 5,5	180,37	46,73 ± 9,4	187,13
Very good (4)	31,40 ± 5,5	157,60	53,00 ± 7,5	249,70
Statistics**	X^2 = 0,389, df = 3, p = 0,942		X^2 = 10,729, df = 3, p = **0,013** **3,4 > 1***	

*Mann–Whitney U test; **Kruskal–Wallis test, p < 0,05

A positive weak significant correlation was found between digital game addiction and phone usage duration (r=0,156, p<0,01) and phone game playing duration (r = 0,237, p<0,01). A positive moderate significant correlation was found between digital game addiction and computer game playing duration (r=0,368, p<0,01). A negative moderate significant correlation was calculated between digital game addiction and digital game addiction awareness scores (r = 0,361, p<0,01) (Table 3).

Table 3. Relationship between the mean values of nursing students' socio-demographic characteristics and the relationship between socio-demographic factors and digital addiction and awareness of digital addiction.

		Correlation	
Socio-demographic characteristics	**x̄ + SD (min–max)**	**Digital game addiction***	**Awareness of digital game addiction***
Age	20,63 ± 1,4 (18–26)	0,026	0,036
Phone usage time	4,82 ± 2,2 (0–15)	0,156**	–0,075
Phone game playing time	1,5 ± 1,0 (0–5)	0,237**	–0,099
Number of phones	1,1 ± 0,5 (1–6)	0,044	–0,073
Social media usage time	2,94 ± 1,7 (0–12)	0,092	–0,046
Computer game playing time	1,62 ± 1,4 (0–6)	0,368**	0,059
Digital game addiction	33,24 ± 5,5 (28–56)	1,000	–0,361**
Awareness of digital game addiction	46,26 ± 9,4 (16–60)	–0,361**	1,000

*Spearman's rho; **p < 0,01; x̄: mean; SD: standard deviation; min: minimum; max: maximum

Table 4 presents a logistic regression analysis indicating a risk association between gender, income status, digital gaming addiction scores, and awareness of digital gaming addiction (p<0,05). When examining the factors associated with awareness of digital gaming addiction, it can be observed that women are 0.522 times (p = 0,028, 95% CI =0,292–0,930) less at risk when compared to men, those with good income status are 2.894 times (p=0,033, 95% CI=1,089–7,693) less at risk when compared to those with poor income status, and those with low digital gaming addiction scores are 0.901 times (p=0,0001, 95% CI = 0,862–0,942) less at risk.

The logistic regression analysis presented in Table 4 also indicates a risk association between gender, psychiatric history, education on digital gaming, phone usage time, and digital gaming addiction (p < 0,05). When compared to women, men are 7.136 times (p = 0,0001, 95% CI = 2,502–20,354) more at risk, those with no psychiatric history are 0,137 times (p = 0,0001, 95% CI = 0,046–0,409) less at risk compared to those with a psychiatric history, those who did not receive education on digital gaming are 0,278 times (p = 0,007, 95% CI = 0,109–0,710) less at risk compared to those who received an education, and those with longer phone usage times are 1,228 times (p = 0,025, 95% CI = 1,027–1,468) more at risk for digital gaming addiction.

The results of this study show that as nursing students' awareness of digital game addiction decreases, their addiction to digital games increases. In addition, low awareness of digital game addiction is identified as a risk factor for developing addiction (Tables 3 and 4). Can and Demir (2020), in their study with athletes and e-sports players, reported that as individuals' awareness of digital game addiction increases, their score for addiction to digital games decreases.[11] Tso et al. (2022) found that low awareness and competence levels among children and adolescents regarding game addiction are significant risk factors for developing digital game addiction.[20] Digital awareness is a process of evaluation, integration, digital content creation (including digital knowledge), problem-solving, communication, and safe and appropriate collaboration with others enabling individuals to use technology safely and intelligently. This awareness is necessary to integrate information and skills in daily life, participate in society and social life, and prevent digital addiction.[21] From primary education onwards, the use of digital games and devices should be addressed at all education levels to increase awareness. Education on digital game addiction should create awareness and positively impact addiction.[22]

Table 4. Logistic regression analysis of the factors related to digital game addiction risk and digital game addiction awareness.

Variable	β	S, E	Wald	df	p	Exp (β)	95% CI for Exp (β) min–max	
MODEL 1								
Gender	–0,651	0,295	4,859	1	**0,028**	0,522	0,292	0,930
Income status								
Very poor			6,089	3	0,107			
Poor	0,605	0,563	1,156	1	0,282	1,832	,608	5,521
Good	1,063	0,499	4,537	1	**0,033**	2,894	1,089	7,693
Very good	1,453	1,263	1,322	1	0,250	4,275	,359	50,841
Digital game addiction	–0,105	0,023	21,415	1	**0,0001**	0,901	0,862	0,942
Constant	3,911	0,840	21,676	1	**0,0001**	49,971		
MODEL 2								
Gender	1,965	0,535	13,506	1	**0,0001**	7,136	2,502	20,354
History of psychiatric illness	–1,989	0,559	12,648	1	**0,0001**	0,137	0,046	0,409
Education on digital games	–1,278	0,478	7,160	1	**0,007**	0,278	0,109	0,710
Duration of phone usage	0,205	0,091	5,057	1	**0,025**	1,228	1,027	1,468
Constant	–2,663	0,585	20,730	1	**0,0001**	0,070		

Binary logistics regression analysis; ref = reference; β = beta coefficient; SE= likelihood ratio; (Exp (β) = odds ratio; Cl: confidence interval

Model 1 **(awareness of digital game addiction)**
*Nagelkerke R Square: 0,163
F = 44,382; df = 5; p = 0,0001

Model 2 **(digital game addiction)**
*Nagelkerke R Square: 0,268
F = 38,030; df = 4; p = 0,0001

However, while there was no change in awareness of digital game addiction among nursing students who reported receiving education on digital games in this study, those who received this education were at a higher risk for developing addiction (Tables 1 and 3). Keskin (2019) did not observe a decrease in digital game addiction scores in individuals with high addiction who received digital game-related education. [23] Özcan and Çelik's (2021) psycho-education program did not affect high school students' levels of online game addiction. [24] This case is concerning in terms of the quality and appropriateness of the education provided. To ensure the effectiveness and permanence of digital game education, it should be suitable for the receiver's age and readiness, implemented with presentation methods that attract their interest, and able to guide the learner.[25] effectively. The fact that the education provided is one-time or short-term and not repeated— that is, the education is not continuous or constant—may be one of the reasons for the results mentioned above. Providing regular education on the potential risks and adverse effects of excessive game playing is crucial. Systematic education can help individuals learn about the symptoms of digital game addiction. Continuity in this type of education can be an effective way to increase awareness of digital game addiction and, therefore, a means to prevent addiction.[26]

In this study, no significant difference was found between the class where students

received education and their digital game addiction and awareness of digital game addiction (Table 2). Similarly, in a study conducted by Körpe and Küçük, no significant difference was found between the class in which nursing students received digital game education and their digital game addiction.[27] Similarly, Azizi et al. (2019) found no significant relationship between education level and internet addiction.[28] This suggests that these students' nursing curriculum or educational content needs to be reviewed.[27,29] Nurses, as important members of the community, need to increase their awareness of digital game addiction and the groups they serve. Especially in school health nursing practices, it is critical to protect students and young people from digital game addiction, prevent addiction, identify at-risk groups, and plan interventions for these groups. Nurses should also play a role in parental and teacher education on digital game addiction. [29]

No significant relationship was found between the ages of the participants and their digital game addiction or awareness (Table 3). Similarly, Kanat (2019) noted that every age group is at risk for game addiction. [30] As with other types of addiction (alcohol, substance, etc.), exposure to addictive substances or behaviors at an early age negatively affects the addiction process and makes treatment more complex and challenging.[31] Therefore, school nurses, teachers, and parents must work together to prevent digital game addiction by providing education and family support early, as this can significantly reduce the risk of digital game addiction.[32] Being male poses a risk for digital game addiction (Table 3). Similar study results emphasized that the male gender is an important variable in the emergence of digital game addiction. [30,33,34]

According to the results of this study, male students are 7,136 times more likely to develop digital game addiction compared to female students (p=0,0001, 95% CI=2,502–20,354). This finding may be attributed to the fact that male nursing students show more interest in digital games and allocate more time to such activities. Studies specifically addressing gender differences in digital game addiction among nursing students are scarce. However, research conducted among university students in general indicates that males are more prone to digital game addiction compared to females. [34-35] Factors such as males' interest in competitive and achievement-oriented games, attempts to socialize through gaming, and earlier access to digital games compared to females may explain this addiction. In this study, the lower risk of game addiction observed among women compared to men can be attributed to various factors. For instance, it may be linked to women engaging in less gaming activity and being less immersed in gaming culture than men. Additionally, women may be more conscious about digital game addiction, and their use of digital tools may serve purposes beyond gaming. [35]

The findings suggest that gender should be taken into account in the development of prevention and intervention strategies for digital game addiction among nursing students. Kanat (2019) noted that males find video games more attractive and suitable for their natural cognitive processes, which increases the likelihood of game addiction. Additionally, Kanat (2019) indicated that males spend more time playing video games due to their interest in technology and ability to get more involved in online video games .[30] In this study, the low awareness of digital game addiction among males may pose a risk for digital game addiction in this group (Table 4). Sezgin et al. (2021) also noted that males are less aware of digital game addiction. [14] However, in a study conducted by Peker et al. (2019), participants were found to have a high awareness of digital game addiction, which was found to be protective against problematic internet use. [34]

As the time spent on mobile phones and computers increases, the risk of digital game addiction in nursing students increases (Tables 3 and 4). Similarly, Anand et al.'s (2018) study indicated that medical students who spend more than three hours daily on non-academic internet activities have higher

levels of internet addiction.[3] Şenormancı et al. also found that usage time predicts internet addiction.[36] Prolonged hours playing digital games are a marker of digital game addiction, which poses a significant risk for this kind of addiction.[3,36]

A psychiatric history among nursing students poses a risk for digital game addiction (Table 4). Similarly, showing signs and symptoms of depression is a risk factor for internet addiction.[3] Individuals with psychological problems understandably experience loneliness, low self-esteem, low energy, and lack of motivation.[37] By playing games online, they may cope with feelings of loneliness and increase their self-esteem by gaining acceptance in social situations. However, in the long term, individuals who distance themselves from social gatherings and family meetings experience increased social isolation and become more prone to psychological problems.[4] This leads to a vicious cycle between digital game addiction and psychological distress.[3]

The results of this study show that a significant relationship between socioeconomic status and digital game addiction was not identified; however, awareness of digital game addiction increased as economic status increased. When individual economic conditions are considered, those with good economic conditions are more aware of digital game addiction (Tables 2 and 4). In contrast to this result, Toker and Baturay (2016) stated that individuals from families with high socioeconomic status tend to exhibit more addictive gaming behaviors.[38]A systematic review found that a high-income level is a significant risk factor for gaming addiction. This is explained by the ability to purchase and use digital devices. [39] However, in today's current conditions, access to digital devices and the internet has become more accessible and more widespread. According to data from the Turkish Statistical Institute (2021), 94,1% of Türkiye's population has internet access, and 85% of individuals aged 16–74 regularly use it. [37] This widespread use reinforces the addiction of those already addicted to the internet, games, and mobile phones and can result in non-addicts becoming addicted.[40] This situation may pose a risk for digital game addiction for users at all income levels. On the other hand, having a high-income level is sometimes a protective factor in terms of awareness of digital game addiction (Table 4). In other words, a high income may enable some to participate in educational seminars and other activities that give them more knowledge about and awareness of digital game addiction.[38]

CONCLUSION AND RECOMMENDATIONS

This study examined the levels of digital game addiction and awareness among nursing students. The findings emphasize the importance of identifying groups at risk of digital game addiction and implementing interventions to increase awareness within these groups.

The results of the study indicated that as awareness of digital game addiction increased, digital game addiction scores decreased. It was demonstrated that awareness of digital game addiction serves as a protective factor against digital game addiction. Additionally, the study revealed that increased use of phones and computers, as well as longer durations of playing games on phones, led to higher scores of digital game addiction. It also identified males and individuals with psychiatric disorders as higher-risk groups.

Based on these findings, interventions and educational programs targeting groups at risk of digital game addiction, particularly males, individuals with psychiatric disorders, and those who spend prolonged periods using phones and computers, should be prioritized. Public health and community mental health nurses have important and critical duties in the implementation of these trainings. These interventions should utilize effective teaching methods and focus on guiding individuals in the right direction. Furthermore, digital game addiction should be included in the nursing curriculum.

In conclusion, increasing awareness of digital game addiction among nursing students is crucial for their own well-being and future profession. By doing so, nursing students can play a more effective role in preventing digital game addiction and contributing to society in this regard.

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