ORİJİNAL ARAŞTIRMA ORIGINAL RESEARCH

An Evaluation of the Association Between Digital Addiction and Academic Self-Efficacy within Nursing Faculty Students

Hemşirelik Fakültesi Öğrencilerinde Dijital Bağımlılık ve Akademik Öz Yeterlilik Arasındaki İlişkinin Değerlendirilmesi

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ÖZET

Amaç: Bu çalışmada dijital bağımlılık ile akademik özyeterlilik arasındaki ilişkinin incelenmesi amaçlanmıştır.

Gereç ve Yöntemler: Çalışma, 2 Ekim 2023-1 Eylül 2024 tarihleri arasında Yozgat Bozok Üniversitesi Sağlık Bilimleri Fakültesi'nde öğrenim gören 280 öğrencinin katılımıyla gerçekleştirildi. Veri toplamak için Öğrenci Bilgi Formu, Dijital Bağımlılık Ölçeği, Akademik Öz-Yeterlik Ölçeği kullanıldı.

Bulgular: Katılımcıların %53,9'u kadındı. Akademik Öz-Yeterlik Ölçeği ortalaması 10.82±1.60 idi. Akademik öz yeterlik ölçeği ile dijital bağımlılık ölçeği ve boyutları arasında anlamlı derecede negatif bir ilişki vardır. Katılımcıların yaşlarına göre günlük yaşam etkisi boyut puanlarında istatistiksel olarak anlamlı bir fark olduğu gözlenmektedir (p<0.05). Farkı oluşturan grubu belirlemek için Bonferroni düzeltmesi uygulandı. Katılımcıların cinsiyetine göre oyun boyutu, sosyal medya boyutu, günlük yaşam etkisi boyutu ve dijital bağımlılık ölçeği puanlarında istatistiksel olarak anlamlı bir fark olduğu gözlemlenmiştir (p<0.05).

Sonuç: Hemşirelik öğrencileri arasında dijital bağımlılık seviyeleri arttıkça, akademik öz-yeterlik seviyeleri düşmektedir. Cinsiyet açısından incelendiğinde, oyun bağımlılığı ve dijital bağımlılığın günlük yaşam üzerindeki etkisi erkek öğrenciler arasında kadın öğrencilere kıyasla daha yüksektir. Ancak, kız öğrencilerde sosyal medya bağımlılığı seviyeleri erkek öğrencilerden daha yüksektir.

Anahtar Kelimeler: Akademik öz yeterlilik; dijital bağımlılık; hemşirelik

ABSTRACT

Aim: This study aimed to examine the relationship between digital addiction and academic self-efficacy.

Material and Methods: This cross-sectional study was conducted with the participation of 280 students studying at Bozok University Faculty of Health Sciences from October 2, 2023, to September 1, 2024. The Student Information Form, Digital Addiction Scale, and Academic Self-Efficacy Scale were used to collect data.

Results: 53.9% of the participants were female. The mean Academic Self-Efficacy Scale was 10.82±1.60. There is a significantly negative relationship between the academic self-efficacy scale and the digital addiction scale and its subscales. It is observed that there is a statistically significant difference in the daily life impact subscale scores of participants according to their ages (p<0.05). Bonferroni correction was applied to identify the group that caused the difference. It is observed that there is a statistically significant difference in the scores of the game subscale, social media subscale, daily life impact subscale, and digital addiction scale based on the participants' gender (p<0.05).

Conclusion: As the levels of digital addiction among nursing students increase, their academic self-efficacy levels decrease. When examined in terms of gender, the impact of gaming addiction and digital addiction on daily life is higher among male students compared to female students. In female students, however, the levels of social media addiction are higher than those of male students.

Keywords: Academic self-efficacy; digital addiction; nursing

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INTRODUCTION

Technology offers numerous benefits to our lives, but its excessive and uncontrolled use can lead to significant negative consequences. Digital technologies and applications are widely used in everyday life, and depending on how they are used, they can simplify life or, particularly for young people and children, lead to adverse effects. Engagement in prolonged and purposeless use of digital technologies can impede the social development of young individuals and children, as well as contribute to the development of physical and mental health problems. Among these disorders, addiction is considered the most significant (1,2). In the wake of the rise of electronic devices, the notion of digital addiction has also emerged as a subject of discourse. The ubiquitous generation of novel digital gadgets and applications daily necessitates the inclusion of digital addiction in ongoing empirical investigations (1). Digital addiction, seen as a very consequential form of addiction, is a problem that is especially widespread among the younger population, but it also presents a substantial risk for those in their middle age and older years. Consequently, the population of persons with digital addiction is steadily rising daily, cementing it as one of the most rapidly expanding addictions globally. The younger generation has a preference for digital socialization as opposed to in-person engagement with others, thereby avoiding experiences that do not entail the use of digital media tools. Furthermore, television is today regarded not only as a means of mass communication but also as a phenomenonical entity capable of exerting influence over the whole family (3). Studies investigating the equilibrium between digital media consumption and the absence of digital addiction have shown that people often prioritize filtering their emails. Even when they only read essential or critical emails, they experience an improvement in their self-esteem (4). To mitigate the adverse effects of internet activities on young people and children, enforcing the necessary legislation and engaging in awareness-raising initiatives is imperative (5). It is imperative to do more extensive and inclusive research and assessment studies on digital addiction. Parents should exercise caution during their children's early years and regulate their usage of digital tools and applications. Comprehensive training on digital tools and applications should be offered to all sectors of society to enhance awareness. It is important to raise awareness in society that digital tools and applications have the potential to serve not just as sources of games, entertainment, and relaxation, but also as methods for obtaining information and augmenting educational experiences (1). Addressing any addictions associated with technology is imperative as a matter of public health. In the absence of resolution, there exists a potential for adverse consequences on both society and the economy (6). The objective of this study is to assess the level of digital addiction among nursing students and explore the correlation between this addiction and sociodemographic factors, family and friend features, and the resources that are accessible. Indeed, comprehending the academic self-efficacy of the students can be crucial in determining the actions that can be implemented in this particular situation.

Research Questions

1. What is the level of academic self-efficacy among nursing students?
2. What is the level of digital addiction among nursing students?
3. To what extent do the sociodemographic attributes of nursing students influence their degrees of digital addiction and academic self-efficacy?
4. To what extent does the levels of digital addiction among nursing students affect their academic self-efficacy?

METHODS

The study was carried out using a descriptive research design at the Nursing Department of Yozgat Bozok University Faculty of Health Sciences from October 2, 2023, to September 1, 2024.

The inclusion criteria for the study are as follows: The inclusion criteria for the study were as follows; i. registration in the nursing department, ii. no leave or sick leave, iii. enrollment in school throughout the study period, iv. willingness to engage in the study, v. absence of a psychotic disorder. Excluded from the study were students who were absent from school on the day the research data was gathered and who failed to consent to participate. A pilot study was conducted with 5 participants to determine the sample of the research and after calculating the effect size based on this data, 280 students were included in the sample. Power analysis was calculated through the G*Power package program. Since the effect size will cover all study tests, this effect size was used in the power analysis. The study was performed with a power of 90% and a significance level of 0.05, calculated by the number of patients to be included.

Data Collection and Applications

The primary instruments employed for data collection in this study were the "Student Information Form," the "Digital Addiction Scale," and the "Academic Self-Efficacy Scale." Data forms were distributed to students through an online platform, and data was gathered utilizing data-collecting instruments after acquiring written and verbal agreement from the students who consented to take part in the research.

The Student Information Form: This form was developed by the authors by the literature (4-6). Comprises eight questions collecting personal information from students and their families, including identifying traits

Digital Addiction Scale: The scale created by Arslan et al (7). The stated score for the Cronbach Alpha reliability coefficient of the scale is 0.89. The scale is structured into three factors and comprises 29 items. The Digital Addiction Scale comprises sub-subscales and a specified number of questions included below. Higher scores on the digital addiction measure suggest a greater prevalence of digital addiction. Specified Game Size (1): The factor load variables associated with the items in the game size, namely items 1 to 11, range from 0.52 to 0.63. It has been established that Cronbach's alpha reliability coefficient for the game subscale of this scale is 0.88. Social Media Subscale (2): The factor loading values for items 12 to 23 associated with the social media subscale vary from 0.54 to 0.66. The Cronbach's alpha reliability coefficient for the Social Media Subscale has been calculated to be 0.89. The factor load values for the 6 questions about the impact on daily life (between articles 24 and 29) vary between 0.55 and 0.67. The Cronbach's alpha reliability coefficient for this subscale was 0.90. The measuring instrument is constructed using a 5-point Likert-type scale. According to a 5-point scale, the assertions are scored as follows: "1: Strongly Disagree," "2: Disagree," "3: Neutral," "4: Agree," and "5: Strongly Agree."

Academic Self-Efficacy Scale: The adaption for Turkey was conducted by Yılmaz et al. (8). The measure has seven items and exhibits a unisubscaleal structure that quantifies significant academic self-efficacy. The scale employs a four-point rating system spanning from "It does not fit me at all" to "It fits me perfectly." The Cronbach's alpha coefficient for the Turkish version of the scale is reported as 0.87. The composite scores of the scale go from 35 to 75.

Achieving high scores on the scale suggests that students possess a strong sense of self-efficacy about their learning in their designated areas.

Statistical Analysis

Patient data collected within the scope of the study were analyzed using the IBM Statistical Package for the Social Sciences (SPSS) for Macos 29.0 (IBM Corp., Armonk, NY). Descriptive values were frequency and percentage for categorical data and mean, standard deviation, median, minimum, and maximum for continuous data. The variable was statistically considered significant when $p < 0.05$.

Ethical Dimensions of the Research

This study was conducted according to the principles of the Declaration of Helsinki. Ethics committee approval was obtained before the study. This study was found ethically appropriate by the decision of the Bozok University Scientific Research and Publication Ethics Committee dated 20/09/2023 and numbered 06/26. Complete confidentiality of the research data was guaranteed. All students who participated in the study were informed about its aim and importance and were included after providing written and oral consent. The students were told that their participation was voluntary and that they could withdraw from the study anytime. Those who did not agree to participate were not included in the research.

RESULTS

The distribution of the participant's demographic characteristics in the study is provided in the table. When examining the distribution of participants by age, it is observed that 16.8% are 18 years old, 26.8% are 19 years old, 27.1% are 20 years old, 19.3% are 21 years old, and 10% are 22 years old.

Table 1. Distribution of demographic characteristics of students (n=280)

Variables		n	%
Age	18	47	16.8
	19	75	26.8
	20	76	27.1
	21	54	19.3
	22	28	10.0
Gender	Female	151	53.9
	Male	129	46.1
Economic status	Wealth	110	39.3
	Average	98	35.0
	Poor	72	25.7
Classes	1	47	16.8
	2	75	26.8
	3	130	46.4
	4	28	10.0
Education status (Mother)	Literate	226	80.7
	Primary education	41	14.6
	High school education	10	3.6
	Higher education	3	1.1
Education status (Father)	Literate	235	83.9
	Primary education	30	10.7
	High school education	12	4.3
	Higher education	3	1.1

It is observed that 53.9% of the participants are female and 46.1% are male. When examining the distribution of participants according to their economic status, it is observed that 39.3% of the participants have a good economic status, 35% have an average economic status, and 25.7%

have a poor economic status. When examining the distribution of participants by their classes, it is observed that 16.8% are in the 1st grade, 26.8% in the 2nd grade, 46.4% in the 3rd grade, and 10% in the 4th grade. When examining the distribution of the participants' mothers' education levels, it is observed that 80.7% have primary school education, 14.6% have secondary school education, 3.6% have high school education, and 1.1% have higher education. When examining the distribution of participants' fathers' education levels, it is observed that 83.9% have primary school education, 10.7% have secondary school education, 4.3% have high school education, and 1.1% have higher education (Table 1).

The descriptive statistics of the variables used in the study are provided in the Table 2. It is observed that the average of the academic self-efficacy scale is 10.82±1.60, the average of the gaming subscale is 40.33±10.30, the average of the social media subscale is 46.08±3.35, the average of the daily life impact subscale is 23.88±3.91, and the average of the digital addiction scale is 110.29±13.04. Pearson correlation was applied to test the relationship between the variables used in the study. As a result, there is a significantly negative correlation between the academic self-efficacy scale and the digital addiction scale and its subscales, and the results of the correlation analysis evaluating the relationship between the scale subscales and demographic characteristics are presented (r=-0.680; r=-0.532; r=-0.214) (Table 3, Table 4).

Table 2. Distribution of scales and subscale

Scales	Min	Max	Mean	SD
Academic self-efficacy scale	7.00	18.00	10.82	1.60
Gaming subscale	28.00	55.00	40.33	10.30
Social media subscale	38.00	53.00	46.08	3.35
Daily life subscale	18.00	30.00	23.88	3.91
Digital addiction scale	89.00	133.00	110.29	13.04

SD: Standard Deviation

Table 3. Correlation between variables

Subscale	Academic self-efficacy scale	
	r	p
Gaming subscale	-0,680	0,000*
Social media subscale	-0,532	0,000*
Daily life subscale	0.027	0.649
Digital addiction scale	-0,214	0,004*

*p<0.05

DISCUSSION

Digital addiction is common among university students and results in adverse effects on daily life, including health issues, diminished social interactions, impaired learning processes, and a decline in academic performance (5,9,10). This research was conducted to ascertain the correlation between nursing student's digital addiction and their academic self-efficacy.

The students' levels of digital addiction

The study indicates that nursing students exhibit significant levels of digital addiction, with a mean score of 110.29±13.04 (minimum: 89.00, maximum: 133.00). University students utilize digital tools for information dissemination, educational objectives, and communication (11,12).

Nursing students' heightened adoption of these resources may have influenced our research findings. As per TÜİK 2024 data, internet usage is most prevalent among individuals aged 16-24, including nursing students (13). On the other hand, the escalating utilization of digital technologies among university students in recent years, leading to widespread digital addiction (4). The studies revealed that they on several demographics, identifying high digital addiction among university students (1,3) and moderate digital addiction (11,9). In our study, this is likely to reveal that digital addiction was comparable between students from all grades, indicating that grade level is not a significant factor influencing students' digital addictions. Sağlam et al. (2024) found a significant level of digital addiction among senior students relative to those in lower grades (6).

The variation in samples and learning conditions in the studies may have influenced the discrepancies in the outcomes. Gender significantly affects digital addiction (4). The research indicated that the prevalence of digital addiction was greater among male students compared to female students. Due to men's inferiority in one-on-one communication and socializing, they resort to digital platforms for engagement and engagement in virtual gaming (4). Men's greater technological and internet orientation than women's may have influenced this outcome (14,15). Furthermore, TÜİK's 2024 data indicates that the internet usage rate among men (92.2%) surpasses that of women, corroborating this observation (13). Another finding from the literature studies includes the findings of our study as well as those indicating comparable levels of digital addiction among men and women (3,9,14,15). Engaging in video games via digital platforms constitutes a prevalent form of digital addiction (16). Internet addiction, and consequently, gaming addiction, is more prevalent in men than in women (15). In the present study, it was shown that digital addiction levels in the gaming sub-dimension were higher in males than in females. In the previous studies, the predominance of men utilizing digital technologies primarily for video gaming may have influenced these outcomes (4,6,17-19). Our study indicated that the influence of digital addiction on daily life sub-dimension scores was more pronounced in males than in women. Men have elevated degrees of game addiction, with more time spent playing games impacting their daily lives. Our study reveals that addiction to the internet and digital devices impacts daily life on individual, familial, and societal levels, particularly in domains like health, business, and academia. In recent years, the incidence of social media use and social media addiction increased significantly (20,21). Currently, the accessibility of social media via smartphones and the rise in social media engagement contribute to social media addiction. In previous studies, female students are affected or increased amount of digital addiction in the social media sub-dimension. Social media utilization is linked to communication and sharing and is often employed to monitor agendas and disseminate information (11,22). The extensive utilization of the internet for communication the superior communication proficiency of women compared to men, and their propensity to engage with social media for interaction to influence the study's outcomes. Consistent with our study findings, it is noted that men are more inclined to utilize for gaming, whereas women predominantly engage with social media. In addition, research indicates comparable levels of social media addiction across genders.

Students' academic self-efficacy levels

The research indicated that the self-efficacy levels of nursing students were a mean score of 10.82±1.6 (minimum: 7.00, maximum: 18.00). In recent years, particularly during and following the pandemic, various pedagogical approaches within the education-training system

provided to university students and academic motivation influence the academic success (24). Nursing students acquire new experiences, including clinical practice in hospitals, patient communication, and involvement in patient care yet, the stress encountered throughout this process may influence their academic progress (22). The pronounced prevalence of digital addiction in our study adversely impacts students' academic achievement. In our study, male students exhibited higher academic self-efficacy than their female counterparts. Contrary to the findings of our study, there are the studies indicating elevated academic self-efficacy among female students (16,23,25,26). The research conducted by Alsaç et al. (2023) and Kocaaslan et al. (2021) indicated that the academic self-efficacy levels of nursing students were not influenced by gender (20,24). Recently studies indicate that adverse conditions such as stress and anxiety are less prevalent among male students than female students during their academic tenure, potentially enhancing their academic performance. The academic performance of male and female students may differ based on their areas of interest. The measurement of academic self-efficacy across various learning environments and diverse samples influences the discrepancies in research findings. In contrast to our findings, some studies indicate that academic self-efficacy rises with age due to accumulated experience (25,27). The variability of the age variable concerning academic self-efficacy among individuals and groups may have influenced the determination of disparate outcomes.

CONCLUSION

Nursing students exhibit diminished academic self-efficacy and elevated levels of digital dependency. Moreover, when digital addiction escalates, academic self-efficacy diminishes. Gender analysis reveals that game addiction is more prevalent among male students than female students, and the effects of game addiction and digital addiction on daily life are likewise more pronounced. Female students have higher levels of social media addiction compared to their male counterparts. The findings necessitate students to understand the battle against digital addiction, thereby enhancing their academic self-efficacy. Nursing students should be educated about digital addiction, strategies for addiction prevention, and effective and efficient use of digital tools, particularly in academic contexts. Relevant topics ought to be incorporated into the curriculum, with content regularly reviewed and updated as necessary. Additionally, students' levels of digital addiction and contributing factors should be assessed at regular intervals. It is necessary to continuously assess students' academic self-efficacy, identify influencing factors, and implement suitable planning.

LIMITATIONS OF THE RESEARCH

The study was conducted with nursing department students, and its results cannot be applied to all nursing students. The study's data were derived from participants' self-reports.

Ethical Dimensions of the Research: Ethics committee approval was obtained before the study. This study was found ethically appropriate by the decision of Bozok University Scientific Research and Publication Ethics Committee dated 20/09/2023 and numbered 06/26.

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