

Original Article

The Relationship between Digital Burnout Levels of Nursing Students and their Professional Self-Efficacy

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Abstract

Background: In recent years, international problems such as pandemics, natural disasters and global warming have deeply affected nursing education by causing an increase in dependence on technology. The results of this study will enable the determination of the relationship between nursing students' burnout towards digital technologies and their professional self-efficacy and will contribute to the training of professional nurses.

Aim: This study was carried out to evaluate the relationship between the digital burnout levels of nursing students and their self-efficacy.

Methodology: The research was carried out in a descriptive-relationship-seeking design. The sample of the study consisted of 246 nursing students at a state university. As a data collection tool; the "Personal Information Form", "Nursing Profession Self-Efficacy Scale" and "Digital Burnout Scale" were used.

Results: The majority of the research consisted of female (76.8%), first-year students (50.8%), students who spend 3-5 hours a day with digital tools (65.4%) and use smart phones (99.2%). It was determined that the Quality of Care sub-dimension score of smartphone users and the Occupational Situations sub-dimension score of male students using smartphones were statistically significantly higher ($p < 0.05$). The Digital Aging sub-dimension score of the women, those whose mothers were primary school graduates, and those who used digital tools for 6 hours or more per day were found to be statistically significantly higher ($p < 0.05$). There was a difference in all student groups according to the place of residence, and it was determined that the Digital Deprivation sub-dimension scores of those who used digital tools for 6 hours or more were statistically significantly higher than the other groups ($p < 0.05$). It was determined that the Emotional Exhaustion sub-dimension and WTO total score of the students who used digital tools for 6 hours or more were statistically significantly higher ($p < 0.05$).

Conclusion: Nursing self-efficacy and digital burnout have a negative significant relationship.

Keywords: digital burnout; nursing student; self-efficacy.

Introduction

Digital technologies enabling us to produce, store, share information, and communicate have become a structure used by people of all ages and groups today (Small et al., 2022). It was determined that one out of every four people using digital technology is active on the internet for most of their time, and most adult individuals use the internet daily (Firth et al, 2019). According to the Turkish

Statistical Institute's (TSI) 2021 data, 82.6% of individuals between the ages of 16 and 74 use the Internet. In addition, it was determined that while the status of households in Turkey having internet access from home was 90.7% in 2020, this rate reached 92.0% in 2021. As it has become so widespread and is at the center of our lives, researchers have begun to examine digital tools' physical, mental,

psychological, and behavioral effects. As a result of these studies, in the case of continuous use of digital technologies, sleep problems, decrease in physical activity, deterioration in emotional and social intelligence, attention deficit, depression, addiction, social isolation, and problems in brain functions are reported (Babadag-Savas & Balci-Alparslan, 2021; Small et al., 2022). As a result of all these problems, digital burnout can be seen, which negatively affects the life of the individual in physical, psychological, social, and cognitive aspects, and it causes stress, dissatisfaction, decrease in productivity, and inadequacy (Sharma et al., 2020; Yigit, Topcu, & Bayar, 2022).

Self-efficacy is the planning of action towards the goal, the awareness of the necessary skills to achieve this goal, the correct use of these skills, the achievement of success as a result, and the motivation that these achievements create in the individual (Bandura, 1977). It is grouped in two ways, low and high. The most important difference between these two groups is the attitudes toward the targeted initiatives. Individuals with high self-efficacy do not fall into defeat when they encounter negativities in their attempts but take action again. That is, high self-efficacy motivates the individual to the desired goal and arouses the desire to try again (Vicdan & Tastekin, 2019; Bandura, 1977). Self-efficacy in nursing is to take action again, question methods and strategies, and have the necessary motivation to choose the best and right method in the face of any problem encountered in practice (Vicdan & Tastekin, 2019). Nursing students with high professional self-efficacy are in a position to not be defeated by the negativities they encounter during both their theoretical and clinical practices, are open to professional and personal developments, are in an effort to acquire new knowledge, are prone to teamwork, make high-quality care practices, choose and implement the most accurate method (Vicdan & Tastekin, 2019; Alavi et al., 2017).

It is thought that the state of digital burnout due to the intense use of digital tools may affect the self-efficacy of nursing students and as a result, their success in nursing practices. When the literature was examined, it was seen

that no study was found to determine the relationship between digital burnout and nursing students' self-efficacy. Based on the gap in the literature, this study was carried out to determine the relationship between the digital burnout levels of nursing students and their professional self-efficacy. In this context, answers to the following questions were sought throughout the research:

- What is the digital burnout level of nursing students?
- What is the self-efficacy level of nursing students?
- What is the relationship between the digital burnout levels of nursing students and their professional self-efficacy?

Method

Research Design: The present study employs the descriptive research design.

Population and Sample: The population of the research consists of 291 nursing students studying at a university. The sample was not calculated in the study, and the entire population was tried to be reached. In this context, a sample of 246 students who agreed to participate in the research and who could be reached via the online form formed the sample. The criteria for inclusion in the study are stated below.

Inclusion Criteria

- Studying in nursing
- Having classes during the data collection period,
- Being 18 years old or older,
- Having the necessary internet access to fill out the online survey form,
- Voluntarily agreeing to participate in the study.

Data Collection: Research data were collected between 03.05.2023 and 30.06.2023 through an online questionnaire created by the researchers. This online questionnaire consisted of the Personal Information Form, the Nursing Profession Self-Efficacy Scale (NPSES), and the Digital Burnout Scale (DBS).

Personal Information Form: It consists of questions about age, gender, marital status, income, grade, educational levels of the parents, hours of daily use for digital tools, smartphone use, age of the first mobile phone use, and place of residence.

Nursing Profession Self-Efficacy Scale (NPSES):

The scale, adapted by Vicdan and Tastekin (2019), consists of "Attributes of Caring Situations" and "Professionalism Situations" subscales and a total of 16 items. This scale is used to measure self-efficacy, which is effective in coping with difficult situations in patient care and professional situations. The scale, which does not contain reversed items, was created in a 5-point Likert type and it is scored as Strongly agree: 5, Agree: 4, Undecided: 3, Disagree: 2, and Strongly disagree: 1. The lowest score that can be obtained from the scale is 16, and the highest score is 80. As the score increases, professional self-efficacy increases. The Cronbach's Alpha reliability coefficient was found to be 0.87 for the total of the scale (Vicdan & Tastekin, 2019). In this study, Cronbach's Alpha coefficient for the total scale was calculated as 0.93.

Digital Burnout Scale (DBS): The scale, which was developed by Erten and Ozdemir (2020), consists of three subscales, "Digital Aging", "Digital Deprivation" and "Emotional Exhaustion", and 24 items. The "Digital Aging" subscale focuses on the inability of the person to balance the real world and the virtual world as a result of spending too much time on digital platforms. The "Digital Deprivation" subscale measures how badly the individual feels physically or psychologically when the individual is away from digital platforms. The "Emotional Exhaustion" subscale measures how emotionally exhausted the individual is. Scoring of the 5-point Likert-type scale is as Totally agree: 5, Agree: 4, Undecided: 3, Disagree: 2, and Strongly disagree: 1. The lowest score that can be obtained from the scale is 24, and the highest score is 120. It can be said that as the score obtained from the scale increases, the level of digital burnout also increases. The Cronbach's Alpha reliability coefficient was found to be 0.946 for the total of the scale (Erten & Ozdemir, 2020). In this study, the Cronbach Alpha coefficient for the total of the scale was calculated as 0.94.

Data Analysis: SPSS version 23.0 was used to analyze the data. For the sociodemographic characteristics of individuals, number, percentage, frequency, mean, and standard

deviation values were examined. In the literature, it is stated that Skewness and Kurtosis values between -1,5 and +1,5 are sufficient for normal distribution (Tabachnick & Fidell, 2013). In this study, Skewness: -0.096 and Kurtosis: 0.014 were determined for the DBS; Skewness: -0.523 and Kurtosis: -0.043 were determined for the NPSES; therefore, the scales showed normal distribution. In this direction, the t-test was used in the comparison of two independent groups, ANOVA was used in the comparison of 3 or more groups, and Pearson Correlation Analysis was used to determine the relationship between the scales.

Ethical Issues: An Ethics Committee approval, dated 02.05.2023, protocol number 023/218 and decision number 218.24.09 were obtained by the Non-Interventional Clinical Research Ethics Committee of a state university to conduct the study. Institutional permission was obtained from the relevant university where the research was conducted. Before the research, the students signed the informed consent form. The research was conducted in accordance with the principles of the Declaration of Helsinki.

Results

When the results obtained from the study are evaluated, the mean age of the students is 20.70, 76.8% of them are women, 54.5% of them have an income level equal to their expenses, 94% of them are studying in the first grade, 50.8% of their mothers and 48.4% of their fathers are primary school graduates, 86.2% of them live with their family or relatives, 65.4% of them spend 3-5 hours a day with digital tools and 99.2% of them use smartphones (Table 1).

The mean score of the subscale of the Attributes of Caring Situations of smartphone users and the mean score of the subscale of the Professionalism Situations of smartphone users are statistically significantly higher. In addition, the mean score of the subscale of the Professionalism Situations is statistically significantly higher for those who have the income level of "income is less than expenses" than those whose income level is "income is equal to expenses", those who are in the first and second grades than those who are in the third year, and those who use

smartphones than those who do not use smartphones. NPSES mean score is statistically significantly higher for those who have an income level of "income is less than expenses" than those whose income level is "income is equal to expenses", those who study in the first year than those who study in the third year, and those who use smartphones compared to those who do not use smartphones. The mean score of Digital Aging is statistically significantly higher for women than men, those whose mothers are primary school graduates than those whose mothers are secondary school graduates, and those who use digital tools for 6 hours or longer a day than those who use them 3-5 hours a day. There are differences in all student groups according to the place of residence, and the mean score of the Digital Deprivation of those who use digital tools for 6 hours or longer is statistically significantly higher than the other groups. The mean score of the subscale of the Emotional Exhaustion of the students who use digital tools for 6 hours or longer is statistically significantly higher than those who use digital tools for 3-5 hours, and the mean score of the DBS of the students who use digital tools for 6 hours or longer is statistically significantly higher than those who use digital tools for 5 hours or less (Table 1).

The students' NPSES mean score is 69.86, and the DBS mean score is 67.55. In addition, the mean score of the subscale of the Attributes for Caring Situations is 40.82, the mean score of the subscale of the Professionalism Situations is 29.04, the mean score of the subscale of Digital Aging is 34.20, the mean score of the subscale of the Digital Deprivation is 16.72, and the mean score of the subscale of the Emotional Exhaustion is 16.62 (Table 2).

It was determined that there are statistically significant negative correlations between the mean score of the subscale of Digital Aging and the mean scores of the NPSES Total and its subscales, between the mean score of the subscale of Digital Deprivation and the mean

score of the subscale of the Professionalism Situations, between the mean score of the subscale of the Emotional Exhaustion and the mean score of the NPSES and its subscales, between the mean score of the DBS and the mean score of the NPSES and its subscales. The levels of these correlations are presented in Table 3 (Table 3).

Discussion

The results obtained in this study, which was conducted to determine the relationship between the digital burnout levels of nursing students and their professional self-efficacy, were discussed within the scope of the following research questions.

What is the digital burnout level of nursing students?

In this study, it was determined that the level of digital burnout of students, in general, was below average. It was also determined that those who use digital tools for 6 hours or longer a day have higher levels of digital burnout. It is thought that this situation is caused by the majority of students (76.4%) using digital tools for 5 hours or less a day. As a matter of fact, in the study of Durmus et al. (2022) in which they investigated the digital burnout levels of nursing students, It was determined that students who spend more than 5 hours a day online have higher burnout than those who spend less than 5 hours a day (Durmus et al., 2022). In this context, it can be recommended to teach the correct use of digital tools to society, especially to university students, and to add topics related to the use of digital technology in education curricula.

In the study of Kayri and Gunc (2016), it was stated that the level of parental education affects the use of the internet and digital technology, and it is thought that the level of digital aging may also be affected as a result. As a result of this study, the fact that the digital aging levels of those whose mothers are primary school graduates are higher than those whose mothers are secondary school graduates supports the existing information in the literature.

Table 1. The Relationships between the Sociodemographic Characteristics of the Students and the Mean Scores of the NPSES, DBS, and Their Subscales

		NURSING PROFESSION SELF-EFFICACY SCALE (NPSES)			DIGITAL BURNOUT SCALE (DBS)				
Age: 20.70±1.23		n (%)	Attributes of Caring Situations	Professionalism Situations	Total	Digital Aging	Digital Deprivation	Emotional Exhaustion	Total
Gender	Female	189 (76.8)	40.67±4.10	28.68±3.85	69.35±7.32	34.90±9.79	17.01±5.87	16.82±5.65	68.74±19.01
	Male	57 (23.2)	41.31±4.89	30.24±4.00	71.56±8.16	31.87±9.72	15.77±5.60	15.96±5.57	63.61±18.14
Test and significance values			t: -0.990 p: 0.323	t: -2.658 p: 0.008	t: -1.941 p: 0.053	t: 2.049 p:0.042	t: 1.416 p: 0.158	t: 1.004 p: 0.317	t: 1.803 p: 0.073
Income Level	Income is less than expenses	95 (38.6)	41.38±4.19	29.90±3.93	71.29±7.54	35.29±10.54	16.58±5.43	17.05±5.85	68.93±19.46
	Income is equal to expenses	134 (54.5)	40.29±4.43	28.48±3.73	68.78±7.50	34.00±8.97	16.97±6.08	16.55±5.38	67.52±18.03
	Income is more than expenses	17 (6.9)	41.76±3.38	28.64±4.84	70.41±7.13	29.64±11.41	15.58±5.97	14.76±6.32	60.00±21.77
Test and significance values			F: 2.250 p: 0.108	F: 3.789 p:0.024 (1>2)	F: 3.165 p: 0.044 (1>2)	F: 2.462 p: 0.087	F: 0.466 p: 0.628	F: 1.212 p: 0.300	F: 1.619 p: 0.200
Grade	1	94 (38.2)	41.28±4.12	29.87±3.79	71.15±7.26	33.63±8.93	15.64±5.18	15.82±5.02	65.11±16.43
	2	60 (24.4)	40.73±4.56	29.58±3.71	70.31±7.72	35.36±9.89	17.88±5.65	16.98±5.65	70.23±18.91
	3	92 (37.4)	40.40±4.30	27.84±3.97	68.25±7.54	34.02±10.68	17.07±6.39	17.19±6.16	68.29±21.05
Test and significance values			F: 1.001 p: 0.369	F: 7.231 p: 0.001 (1>3, 2>3)	F: 3.658 p: 0.027 (1>3)	F: 0.588 p: 0.556	F: 3.007 p: 0.051	F: 1.534 p: 0.218	F: 1.459 p: 0.235
Educational Level of the Mother	Illiterate	65 (26.4)	40.63±4.51	28.56±4.10	69.20±7.97	34.38±9.64	17.60±6.12	17.07±5.55	69.06±18.88
	Primary School	125 (50.8)	40.71±4.29	29.20±3.95	69.91±7.64	34.59±10.28	16.25±5.48	16.74±5.54	67.59±18.93
	Middle School	23 (9.3)	42.30±3.52	29.47±4.55	71.78±7.50	28.52±9.63	16.56±7.14	13.95±6.34	59.04±21.52
	High School	22 (8.9)	40.68±3.88	29.40±3.26	70.09±6.58	36.09±6.94	17.00±5.66	17.54±4.21	70.63±14.01
	University or Higher	11 (4.5)	40.36±5.40	28.45±2.87	68.81±6.56	36.81±8.28	16.72±5.53	16.27±7.40	69.81±19.72

Test and significance values			F: 0.769 p: 0.546	F: 0.460 p: 0.765	F: 0.550 p: 0.699	F: 2.423 p: 0.049 (2>3)	F: 0.582 p: 0.676	F: 1.578 p: 0.181	F: 1.465 p: 0.213
Educational Level of the Father	Illiterate	13 (5.3)	42.30±2.81	28.69±3.85	71.00±5.83	34.76±10.71	18.15±5.38	15.38±4.07	68.30±15.95
	Primary School	119 (48.4)	40.82±4.34	29.06±4.04	69.89±7.71	35.05±10.68	16.28±6.16	16.87±6.08	68.21±20.72
	Middle School	45 (18.3)	41.02±4.54	29.42±3.71	70.44±7.75	34.95±8.07	17.86±4.92	17.55±4.52	70.37±14.97
	High School	46 (18.7)	40.86±4.17	29.06±3.88	69.93±7.40	31.13±9.62	16.63±6.18	15.43±6.07	63.19±19.39
	University or Higher	23 (9.3)	39.47±4.50	28.34±4.20	67.82±7.81	34.17±7.62	16.17±5.12	16.56±4.87	66.91±16.12
Test and significance values			F: 0.974 p: 0.422	F: 0.307 p: 0.873	F: 0.554 p: 0.696	F: 1.428 p: 0.225	F: 0.850 p: 0.495	F: 1.035 p: 0.390	F: 0.908 p: 0.460
Place of Residence	With Family or Relatives	212 (86.2)	40.78±4.30	29.07±3.87	69.85±7.57	34.23±9.69	16.51±5.60	16.52±5.55	67.27±18.34
	Dormitory	32 (13.0)	40.96±4.41	28.87±4.24	69.84±7.54	34.28±10.66	18.59±6.78	17.37±5.98	70.25±21.80
	Student House	2 (0.8)	42.00±4.24	29.00±8.48	71.00±12.72	29.50±17.67	9.50±4.94	14.50±12.02	53.50±34.64
Test and significance values			F: 0.100 p: 0.905	F: 0.034 p: 0.966	F: 0.023 p: 0.978	F: 0.229 p: 0.795	F: 3.390 p: 0.035 (1,2,3)	F: 0.454 p: 0.636	F: 0.900 p: 0.408
Duration of the Use of Digital Tools (Daily)	Between 0-2 hours	27 (11.0)	40.88±5.05	29.59±4.19	70.48±8.76	32.00±9.26	14.55±4.54	15.85±5.60	62.40±17.73
	Between 3-5 hours	161 (65.4)	41.04±3.95	29.31±3.52	70.36±6.71	33.45±9.68	16.12±5.60	16.09±5.28	65.67±18.20
	6 hours or longer	58 (23.6)	40.15±4.84	28.05±4.74	68.20±8.98	37.31±10.00	19.41±6.12	18.44±6.27	75.17±19.51
Test and significance values			F: 0.925 p: 0.398	F: 2.500 p: 0.084	F: 1.840 p: 0.161	F: 4.139 p: 0.017 (3>2)	F: 9.531 p: 0.000 (3>1, 3>2)	F: 4.103 p: 0.018 (3>2)	F: 6.816 p: 0.001 (3>1, 3>2)
The Status of Using a Smartphone	Present	244 (99.2)	40.89±4.20	29.10±3.89	70.00±7.41	34.16±9.84	16.72±5.84	16.62±5.63	67.52±18.93
	Absent	2 (0.8)	31.50±7.77	21.50±0.70	53.00±8.48	38.50±12.02	16.50±0.70	16.50±9.19	71.50±20.50
Test and significance values			t: 3.132 p: 0.002	t: 2.756 p: 0.006	t: 3.226 p: 0.001	t: -0.619 p: 0.536	t: 0.055 p: 0.956	t: 0.031 p: 0.976	t: -0.296 p: 0.768

F: One-Way ANOVA, t: Independent Samples t-test, p: Significance Level

Table 2. The Mean Scores of the NPSES, DBS, and Their Subscales

		Minimum	Maximum	Mean	Standard Deviation
NPSES	Attributes of Caring Situations	22.00	45.00	40.821	4.301
	Professionalism Situations	19.00	35.00	29.044	3.939
	Total	42.00	80.00	69.865	7.564
DBS	Digital Aging	12.00	59.00	34.203	9.840
	Digital Deprivation	6.00	30.00	16.727	5.824
	Emotional Exhaustion	6.00	30.00	16.622	5.638
	Total	24.00	118.00	67.552	18.907

Table 3. Correlations between the Students' Age and the Mean Scores of the NPSES, DBS, and Their Subscales

			NPSES			DBS			
		Age	Attributes of Caring Situations	Professionalism Situations	Total	Digital Aging	Digital Deprivation	Emotional Exhaustion	Total
Age	r		-0.054	-0.113	-0.089	0.049	0.054	0.103	0.073
	p		0.402	0.077	0.163	0.445	0.395	0.106	0.254

NURSING PROFESSION SELF-EFFICACY SCALE (NPSES)	Attributes of Caring Situations	r	-0.054		0.684***	0.925***	-0.207*	-0.069	-0.219*	-0.194*
		p	0.402		0.000	0.000	0.001	0.281	0.001	0.002
	Professionalism Situations	r	-0.113	0.684		0.910***	-0.253*	-0.127*	-0.238*	-0.242*
		p	0.077	0.000		0.000	0.000	0.047	0.000	0.000
	Total	r	-0.089	0.925	0.910		-0.250*	-0.105	-0.248*	-0.236*
		p	0.163	0.000	0.000		0.000	0.100	0.000	0.000
DIGITAL BURNOUT SCALE (DBS)	Digital Aging	r	0.049	-0.207	-0.253	-0.250		0.590**	0.780***	0.935***
		p	0.445	0.001	0.000	0.000		0.000	0.000	0.000
	Digital Deprivation	r	0.054	-0.069	-0.127	-0.105	0.590		0.620***	0.800***
		p	0.395	0.281	0.047	0.100	0.000		0.000	0.000
	Emotional Exhaustion	r	0.103	-0.219	-0.238	-0.248	0.780	0.620		0.895***
		p	0.106	0.001	0.000	0.000	0.000	0.000		0.000
	Total	r	0.073	-0.194	-0.242	-0.236	0.935	0.800	0.895	
		p	0.254	0.002	0.000	0.000	0.000	0.000	0.000	

r: Pearson Correlation Analysis Coefficient, p: Significance Level, *: Weak Correlation, **: Moderate Correlation, ***: Strong Correlation

Discussion continues

In this context, it is recommended that all individuals, especially parents, be informed about the use of digital tools, digital exhaustion, and self-efficacy, and be supported in raising awareness. As a result of the initiatives, awareness of children, young people in the family, and therefore, society would be raised.

The inability to maintain the balance between the real and virtual world, which occurs due to the use of digital tools, is defined as digital aging (Erten & Ozdemir, 2020). In this study, it was determined that women's digital aging level is higher than men, and this situation is thought to be related to psychological resilience. When we look at the literature, it was stated that the psychological resilience levels of men are higher than women (Karademir & Acak, 2019; Kumar, 2016), which supports the results of the present study. In order to prevent digital aging and related digital burnout, individuals can be informed about the correct and effective use of digital tools, the reduction of excessive digital tool exposure, and the prevention and coping methods to increase psychological resilience. Awareness can be raised by including excessive digital exposure and digital burnout in social media and education programs.

With the increase in the time spent in digital environments, it is expected that there will be a decrease in the adaptability of individuals and their ability to maintain the balance between the real world and the virtual world, and an increase in the levels of stress and digital aging (Singh et al., 2022). As a result of this study, digital aging and digital deprivation levels were found to be higher in those who use digital tools for 6 hours or longer a day than those who use digital tools for less, which supports the information in the literature. At this point, one of the first steps to be taken is to keep the digital tool usage time in balance and reduce it. Families need to provide adequate and balanced control at the point of the use of digital tools, and students should be made aware of this issue.

What is the self-efficacy level of nursing students?

As a result of this study, it was determined that the student's self-efficacy level for the nursing profession is above average. The COVID-19 pandemic and the earthquakes in Kahramanmaraş, Turkey on February 6 caused the transition to distance education. Although it is thought that this situation would disrupt the theoretical and clinical practices, it is thought that the skills training given online or in the laboratory environment and the summer internships within the scope of the National Internship Program (Republic of Turkey Human Resources Office, 2023) increase the professional competence of the students. In this context, it is important to carry out clinical practice programs, to complete the skills training of the students with laboratory applications, and to support them in areas where they are inadequate.

It was stated that smartphones provide interpersonal interaction and sharing of ideas, and contribute to academic development by sharing information and documents due to their benefits such as having internet access and facilitating communication (Batdi et al., 2019). As a result of sufficient academic development, it will be inevitable for the student to have a high level of self-confidence and self-efficacy. As a result of this study, it was determined that the self-efficacy of smartphone users about patient care and professional situations was found to be significantly high, which proves the aforementioned relationship. However, it is recommended to be careful in the use of smartphones, as individuals experience uneasiness when they do not have a smartphone, and the use of smartphones in lessons causes distraction for both students and instructors (Bahi & Deluliis, 2015).

Digital aging, which occurs due to the unconscious use of digital tools, also negatively affects the cognitive, social, and psychological states and professional self-efficacy of the individual (Adnan & Gezgin, 2016). In this study, it is thought that the digital aging level of men is lower than that of

women, and accordingly, their higher self-efficacy is due to this situation. It is also thought that this situation might be caused by problematic smartphone use. As a result of the problematic use of digital tools, it is expected that digital aging would increase and self-efficacy would be negatively affected. It was stated in the literature that problematic mobile phone/smartphone use is higher among women (Gezgin et al., 2016; Aktas & Yilmaz, 2017). In this context, providing psychological counseling units, libraries, and social life areas in universities, and giving lessons on the use of smartphones and digital tools may reduce the student's tendency to digital tools and problematic digital tool use.

Social exclusion, feelings of loneliness, professional inadequacy, and failure may occur due to problematic smartphone use (Cakir & Oguz, 2017; Ozaltin et al., 2022). It was stated that problematic smartphone use is affected by income level (Kuyucu, 2017). According to the result of Kuyucu's (2017) study, which proves this situation in the literature, it was determined that individuals with low-level income have less smartphone addiction than individuals with high-level income (Kuyucu, 2017). As a result of this study, it is thought that the professional self-efficacy of those whose income is less than their expenses is significantly higher, due to this situation. For this reason, it is necessary to raise awareness among students, especially those with low-level income, about smartphone addiction and to include this subject in their education curricula. In addition, educators should be made aware of the symptoms and effects of addiction.

The first clinical experience is one of the most stressful parts of nursing education for students (Aciksoz et al., 2016). It will be inevitable for students who are deprived of this experience or delayed in realizing this experience to have low self-efficacy in professional situations due to reasons such as professional inadequacy, fear of making mistakes, and insecurity. As a matter of fact, in this study, the self-efficacy of the first and second-year students for professionalism situations is significantly higher than the third-year students, and this situation is associated with the delayed first clinical

experience of the students who are now in the third year as a result of the transition to distance education due to the pandemic. In line with this result, the subjects that students are inadequate for their professionalism situations should be determined, the necessary deficiencies should be addressed, and self-efficacy feelings should be developed by instilling confidence and courage in students.

What is the relationship between the digital burnout levels of nursing students and their professional self-efficacy?

It was determined that there is a negative relationship between the digital burnout of nursing students and their professional self-efficacy.

Nursing education is carried out in a theoretical and practical way. However, the distance education process caused disruptions in applied courses and negatively affected the skill development process of students (Dewart et al., 2020). Despite the increasing need for nurses all over the world, the fact that the self-efficacy of future nurses is not at the desired level makes it necessary to determine the deficiencies in education and the factors affecting professional self-efficacy. At this point, necessary importance should be given to theoretical, practical, and skill training. Students need to be strengthened in the areas where they feel inadequate. On the other hand, instructors are required to communicate between students and nurses in the units where internships are made, to support students, and to be with them in clinical applications. In this environment of trust, it is thought that more effective and correct learning would take place and there would be an increase in the level of professional self-efficacy.

Conclusion and Recommendations: In this study, which was conducted to determine the relationship between the digital burnout levels of nursing students and their professional self-efficacy; It has been determined that digital burnout is below the average but not at a low level, nursing profession self-efficacy is above the average but not at the desired level, and as digital burnout increases, nursing

profession self-efficacy decreases. In this direction;

Rational use and management of digital tools can be added to education programs.

Social responsibility programs and activities can be organized where students can spend their free time.

In order to increase self-efficacy, the acquisition of sufficient theoretical and practical knowledge and skills can be strengthened.

If necessary, clinical skills can be supported with laboratory applications.

It can be suggested to use different learning-teaching techniques to reduce burnout due to digital tools and screen exposure, which increased with the distance education process, which was first passed after the COVID-19 pandemic process and then the Kahramanmaras, Turkey earthquakes on February 6. Education can be supported by informing both students and trainers about these techniques.

In addition, strategies for coping with stress and relaxation can be offered to alleviate the burden of digital tools.

Limitations of the Study: Since the data of this study were collected after the earthquake in Kahramanmaras, Turkey on February 6, the results might have been affected by the psychological, social, and societal changes caused by the earthquake. Problems in the internet connection due to the earthquake during the data collection process; therefore, the inability to deliver the online questionnaire to some students are among the main limitations of the study.

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References

- Aciksoz S., Uzun S. & Arslan F. (2016). Assessment of relationship between nursing students' self-efficacy and levels of their anxiety and stress about clinical practice. *Gulhane Medical Journal*, 58(1), 129-135.
- Adnan M. & Gezgin D. M. (2016). A modern phobia: Prevalence of nomophobia among college students. *Ankara University Journal of Faculty of Educational Sciences (JFES)*, 49(1), 141-158.
- Aktas H. & Yilmaz N. (2017). Smartphone addiction in terms of the elements of loneliness and shyness of university youth. *International Journal of Social Sciences and Education Research*, 3(1), 85-100.
- Alavi A., Zargham-Boroujeni A., Yousefy A., & Bahrami M. (2017). Altruism, the values dimension of caring self-efficacy concept in Iranian pediatric nurses. *Journal of Education and Health Promotion*, 6. https://doi.org/10.4103%2Fjehp.jehp_142_14.
- Bahi RR., Deluliis D. Nomophobia (Yan, Z., Ed.). (2015). *Encyclopedia of Mobile Phone Behavior* (Volumes 1, 2, 3), IGI Global, Hershey, PA.
- Bandura A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191. <https://doi.org/10.1037/0033-295X.84.2.191>.
- Batdi V., Elaldi S., & Akpınar B. (2019). Multiple analysis of the effect of smart phones on the academic success and presentation qualification levels of teacher candidates. *International Journal of Turkish Literature, Culture and Education (TEKE)*, 8 (2), 1183-1204.
- Cakir O., & Oguz E. (2017). The Correlation between High School Students' Loneliness Levels and Smart Phone Addiction. *Mersin University Journal of the Faculty of Education*, 13(1), 418-429.
- Dewart G., Corcoran L., Thirsk L., & Petrovic K. (2020). Nursing education in a pandemic: Academic challenges in response to COVID-19. *Nurse Education Today*, 92, 104471. <https://doi.org/10.1016%2Fj.nedt.2020.104471>.
- Durmus S. C., Gulnar E., & Ozveren H. (2022). Determining digital burnout in nursing students: A descriptive research study. *Nurse Education Today*, 111, 105300. <https://doi.org/10.1016/j.nedt.2022.105300>.
- Erten P., & Ozdemir O. (2020). The Digital Burnout Scale. *Journal of Inonu University Faculty of Education*, 21 (2), 668-683.
- Firth J., Torous J., Stubbs B., Firth J. A., Steiner G. Z., Smith L., ... & Sarris J. (2019). The "online brain": how the Internet may be changing our cognition. *World Psychiatry*, 18(2), 119-129.
- Gezgin D. M., Sumuer E., Arslan O., & Yildirim S. (2017). Nomophobia prevalence among pre-service teachers: A case of Trakya University. *Journal of Trakya University Faculty of Education*. 7(1): 86-95.
- Human Resources Office of the Presidency of the Republic of Turkey. National Internship

- Program.
<https://kariyerkapisi.cbiko.gov.tr/ulusalstajprogrami>. Accessed: 11.07.2023.
- Karademir, T., & Mahmut, A. C. EC (2019). Investigation of psychological resilience levels of university athletes. *Kahramanmaraş Sutcu Imam University Journal of Social Sciences*, 16 (2), 803-816.
- Kayri M., & Gunuc S. (2016). Comparing internet addiction in students with high and low socioeconomic status levels. *Addicta-The Turkish Journal on Addictions*, 3(2). <http://doi.org/10.15805/addicta.2016.3.0110>.
- Kumar S., Singh N. S., & Mitra S. (2016). Comparison of mental toughness between male and female volleyball players of 12th south Asian games. *International Journal of Applied Research*, 2(6), 268-270.
- Kuyucu M. (2017). Use Of Smart Phone And Problematic Of Smart Phone Addiction In Young People: "Smart Phone (Colic)" University Youth. *Global Media Journal TR Edition*, 7(14): 320-351.
- Ozaltın E., Soyler H. C., & Gunay E. (2022). Smartphone Addiction, Perceived Parental Attitude, Social Exclusion and Academic Self-Efficacy in Secondary School Students. *Journal of Social, Humanities and Administrative Sciences*, 5(8), 1093–1109.
- Savas, B.B., & Alparslan G.B. (2021). A New Concept Digital Dementia: Nursing Students' Digital Dementia Status. *Journal of Continuing Medical Education*, 30 (6), 415-420.
- Sharma M. K., Anand N., Ahuja S., Thakur P. C., Mondal I., Singh P., ... & Venkateshan S. (2020). Digital burnout: COVID-19 lockdown mediates excessive technology use stress. *World Social Psychiatry*, 2(2), 171. https://doi.org/10.4103/WSP.WSP_21_20.
- Singh P., Bala H., Dey B. L., & Filieri R. (2022). Enforced remote working: The impact of digital platform-induced stress and remote working experience on technology exhaustion and subjective wellbeing. *Journal of Business Research*, 151, 269-286.
- Small G. W., Lee J., Kaufman A., Jalil J., Siddarth P., Gaddipati H., ... & Bookheimer S. Y. (2022). Brain health consequences of digital technology use. *Dialogues in Clinical Neuroscience*. <https://doi.org/10.31887/DCNS.2020.22.2/gsmall>.
- Tabachnick B. G., Fidell L. S., & Ullman J. B. (2013). *Using multivariate statistics* (Vol. 6, pp. 497-516). Boston, MA: pearson.
- Turkish Statistical Institute. Household Information Technologies (IT) Usage Survey. 2021. Access Address: [https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-\(BT\)-Kullanim-Arastirmasi-2021-37437](https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2021-37437). Accessed: 01.02.2023.
- Vicdan A.K., & Tastekin A. (2019). An adaptation study of the nursing profession self-efficacy scale into Turkish. *Acıbadem University Journal of Health Sciences*, (3), 504-510.
- Yigit A.G., Topcu T., & Bayar H.T. (2022). The role of cognitive prejudices in the effect of technostress on digital burnout. *Journal of Mehmet Akif Ersoy University Faculty of Economics and Administrative Sciences*, 9 (3), 1857-1883.