

ARAŞTIRMA / RESEARCH

# Internet Addiction in Nursing Students: An Evaluation in Terms of Feelings of Inadequacy and Psychological Resilience Predictors

## Hemşirelik Öğrencilerinde İnternet Bağımlılığı: Yetersizlik Duyguları ve Psikolojik Dayanıklılık Yordayıcıları Açısından Bir Değerlendirme

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### Abstract

**Objective:** This study aimed to determine the relationship between internet addiction, psychological resilience, and inadequacy feelings in nursing students.

**Materials and Methods:** This study was designed as a correlational and cross-sectional study. The sample of the study consisted of 536 students studying at the health sciences faculty of a university in the west of Turkey. The personal information form, the Internet Addiction Scale (IAS), the Psychological Resilience Scale (PRS), and the Inadequacy Feeling Scale (IFS) were used for data collection between February and April 2018.

**Results:** It was determined that meeting the participants' expectations, being a controlling father, and doing the homework on the internet had a decreasing effect on the IAS score averages. On the other hand, aimless surfing on the internet, daily internet connection time, and playing games were found to have an increasing effect on IAS score averages. It was found that the increase in PRS dedication and control subscale scores reduced the symptomatic status of internet addiction. In addition, it was found that the increase in the IFS discouragement, denial of self-worth, and superiority useless effort subscale scores had an increasing effect on the symptomatic status of internet addiction.

**Conclusion:** It is determined that feelings of inadequacy and psychological resilience are important factors in students' internet addiction. Training programs on problem solving, coping with stress, and effective internet use can be planned for youth, who are the future of society.

**Keywords:** Internet addiction, inadequacy feelings, nursing students, psychological resilience.

### Öz

**Amaç:** Bu çalışmanın amacı, hemşirelik öğrencilerinde internet bağımlılığı, psikolojik dayanıklılık ve yetersizlik duyguları arasındaki ilişkinin belirlenmesidir.

**Gereç ve Yöntem:** Bu çalışma, ilişkisel ve kesitsel bir çalışma olarak tasarlanmıştır. Araştırmanın örneklemini, 536 hemşirelik öğrencisi oluşturmuştur. Veriler Kişisel Bilgi Formu, İnternet Bağımlılık Ölçeği (İBÖ), Psikolojik Dayanıklılık Ölçeği (PDÖ), Yetersizlik Duygusu Ölçeği (YDÖ) aracılığıyla Şubat-Nisan 2018 tarihleri arasında toplanmıştır.

**Bulgular:** Katılımcıların beklentilerinin karşılanması, babanın kontrolcü olması ve ödevlerin internette yapılması İBÖ puan ortalamalarını azaltıcı etkiye sahip olduğu tespit edildi. Öte yandan, internette amaçsız gezinmenin, günlük internete bağlanma süresinin ve oyun oynamanın İBÖ puan ortalamalarını artırıcı etkiye sahip olduğu belirlendi. PDÖ kendini adama ve kontrol alt ölçek puanlarındaki artışın internet bağımlılığının semptomatik durumunu azaltıcı etkisi olduğu bulundu. Ayrıca, YDÖ cesaretin kırılması, kendi değerini yadsıma ve yararsız üstünlük çabası alt ölçek puanlarındaki artışın internet bağımlılığının semptomatik durumunu artırıcı etkisi olduğu bulundu.

**Sonuç:** Yetersizlik duygularının ve psikolojik dayanıklılığın öğrencilerin internet bağımlılığı üzerinde önemli etkenler olduğu belirlenmiştir. Toplumun geleceği olan gençlere yönelik problem çözme, stresle baş etme ve etkin internet kullanımı konusunda eğitim programları planlanabilir.

**Anahtar Kelimeler:** Hemşirelik öğrencileri, internet bağımlılığı, psikolojik dayanıklılık, yetersizlik duyguları.

## 1. Introduction

With advancements in technology, the internet has become an exclusive service that may be accessed in internet cafes with computers. The internet has also become a mass medium, which allows people to access any kind of information they need, have fun, and have simultaneous communication with their loved ones (1,2). The internet has several advantages. It can gather people with similar interests and allow people to express themselves freely without any concerns for criticism. It can also offer options to move away from daily stress. (3). Widespread and continuous use of the internet among individuals brings along its uncontrolled use (4). Especially due to the free internet access offered by universities to their students and the prevalent use of smartphones, most students carry the internet in their pockets. This situation enables teenagers to connect to the internet whenever and wherever they want (5). The rates of intercontinental internet use all over the world were reported to be 95% in North America, 85.2% in Europe, and 48.1% in Asia (6). In Turkey, the rate of internet use was 82.6%, among people aged between 16 and 74 years (7).

The sudden widespread use of the internet caused pathological use of it and led to the emergence of the concept of "internet addiction", which is defined as a new type of addiction in the literature (8-10). Internet addiction is defined as the loss of importance of time spent without the internet, overuse of the internet, inability to control self-regarding the internet, status of nervousness when deprived of the internet, aggressiveness, and having an influence on the family, work, and social life of the individual (10). Previous studies showed that internet addiction rates varied between 0.3 and 38% (11). It was reported that individuals who were charmed by the world of the internet had difficulties making friends, felt lonely, and had problems with communication (12,13).

Nursing students may experience a feeling of inadequacy due to problems such as intensive clinical practices, providing care for patients at terminal term, witnessing death, being exposed to communicable diseases, and communication problems experienced by healthcare professionals or academic staff, in addition to the academic responsibilities and difficulties of university life. What is more, they do not know how to overcome these circumstances. Individuals with a sense of inadequacy can access social media to meet their needs for success, satisfaction, and social relationships online, which they cannot see in their real lives (9,12). Nursing students should improve their psychological resilience to endure these indicated difficulties, protect their mental health, and become nurses who will be healthy individuals and provide quality care in the future (14). Psychological resilience is the ability of individuals who are faced with negative experiences to protect themselves against the elements that threaten their lives. It was indicated that individuals who had low psychological resilience could quit fighting against problems. Several studies have reported that individuals with low psychological resilience have high levels of internet addiction (12,15,16).

Since feelings of inadequacy and psychological resilience are the main factors guiding the behaviors of nursing students, it is important to reveal the roles of these factors in internet addiction. No previous study was found among studies performed in Turkey that evaluated the relationship of internet addiction with psychological resilience and feelings

of inadequacy in nursing students, and this study is a study that will contribute to the literature in this regard. It aimed to examine the relationship between psychological resilience and feelings of inadequacy in university students and their internet addiction levels.

## 2. Material and Methods

### 2.1. Study Type

This study was designed as a correlational and cross-sectional study.

### 2.2. Participants and Procedure

The population of the research consisted of all students (N = 620) registered in the nursing department of the university's faculty of health sciences between February and April 2018. The university is located on the west coast of Turkey. No sample selection was made in the research. The sample of the study consisted of 536 (86.50%) students who volunteered to participate in the research and met the inclusion criteria. The inclusion criteria of the study were being over the age of 18, being willing to participate in the research, and being able to read and write in Turkish. Exclusion criteria from the study are being under the age of 18, unwilling to participate in the research, not being able to read or write Turkish, and not being a student in the nursing department.

### 2.3. Data Collection Tools

Data were collected by the personal information form, which was prepared by the researchers based on the relevant literature, the Internet Addiction Scale (IAS), the Psychological Resilience Scale (PRS), and the Inadequacy Feeling Scale (IFS).

#### 2.3.1. The personal information form

The form was prepared based on the literature and consisted of a total of 28 questions, of which 21 questions included the sociodemographic characteristics of the students and 7 questions included their internet usage characteristics (12,17,18).

#### 2.3.2. Internet Addiction Scale (IAS)

The validity and reliability study of IAS was carried out in Turkey by Bayraktar and Gün (19). The scale is a five-point Likert type scale and consists of 20 questions. On the scale, the participants are expected to mark the most appropriate one from the options "Never", "Rarely", "Occasionally", "Often", "Very Often", and "Always" to the questions asked. Each marked question is given a score between 0 and 5 and a total score of 0-120. There is no reverse-coded item. The ones who get a score from the scale between 0 and 69 are described as asymptomatic; those with scores of 70-99 are considered moderately symptomatic; and those with scores of 100-120 are considered pathological internet users. The validity and reliability study of the scale was carried out in Turkey. The Cronbach's alpha value of the scale was found to be  $\alpha=0.91$  (19). In this study, Cronbach's alpha coefficient of IAS was determined as  $\alpha=0.90$ .

#### 2.3.3. Psychological Resilience Scale (PRS)

PRS was developed by Işık (20) to determine the resilience levels of individuals. The scale consists of 21 items. The scale has three sub-dimensions. Self-Dedication (1, 2, 3, 5, 6, 18, 21 items), Control (4, 10, 11, 12, 15, 19, 20 items), and Challenge (7, 8, 9, 13, 14, 16, 17 items). The scale is a 5-point Likert type (0- totally disagree, 4- totally agree). Some items (2 and 15 items)

are reverse-scored. The evaluation of the scale is based on the mean scores taken from the sub-dimensions. Moreover, the level of resilience is obtained from the total score of the scale. The Cronbach's alpha reliability coefficient for the whole scale was determined as  $\alpha=0.76$  (20). In this study, the Cronbach's alpha coefficient was found to be  $\alpha=0.83$  for the whole scale,  $\alpha=0.80$  for the self-dedication subscale,  $\alpha=0.67$  for the control subscale, and  $\alpha=0.66$  for the challenge subscale.

### 2.3.4. Inadequacy Feeling Scale (IFS)

IFS was developed by Akdoğan and Ceyhan (21) to determine the feelings of inadequacy among university students. This scale consists of 20 items. The scale is in five-point Likert type, in the range of "always (5)", "often (4)", "sometimes (3)", "rarely (2)", "never (1)". It has three subscales, such as Discouragement (DC) (1, 6, 7, 10, 13, 15, 16, 19 items), Denial of Self-Worth (DSW) (2, 3, 11, 17, 18, 20 items), and Superiority Useless Effort (SUE) (4, 5, 8, 9, 12, 14 items). Sub-dimensions are scored separately. A total score regarding the feeling of inadequacy is also obtained from the scale. The total score ranges between 20 and 100. A high score on the scale indicates a high level of inadequacy. There is no-reverse coded item. The Cronbach's alpha coefficient was reported as  $\alpha=0.86$  for the whole scale,  $\alpha=0.80$  for the discouragement subscale,  $\alpha=0.71$  for the denial of self-worth subscale, and  $\alpha=0.73$  for superiority useless effort (21). In this study, the Cronbach's alpha coefficient was found to be  $\alpha=0.86$  for the whole scale,  $\alpha=0.78$  for the discouragement subscale,  $\alpha=0.76$  for the denial of self-worth subscale, and  $\alpha=0.76$  for superiority useless effort.

### 2.4. Data Collection

The data collection tools were performed by the researchers. This study was conducted through face-to-face interviews with Pamukkale University Faculty of Health Sciences, Nursing of Department students between February and April 2018. The forms were arranged according to the schedules of the students and applied in the classrooms. The students answered the forms within approximately 15 minutes.

### 2.5. Data Analysis

Data analysis was performed with the use of the SPSS 24.0 package program. Descriptive statistics, the Independent-Samples T test, the Mann-Whitney U test, the One-Way ANOVA, multiple logistic regression and Pearson correlation analyses were used to analyze the data. In the Pearson correlation analysis, weak ( $r=0.000-0.240$ ), moderate ( $r=0.250-0.490$ ), strong ( $r=0.500-0.740$ ), and very strong ( $r=0.750-1.000$ ) values were used to evaluate the relational strength (22). Conformity to the normal distribution was tested with the Kolmogorov-Smirnov test, and univariate analysis was performed to determine the variables to be taken into the regression model. Variables which were found to have a statistically significant correlation with the dependent variable before the regression analysis were included in the regression model. Generally,  $p=0.250$  is accepted as a limit for this, and it is recommended that variables with a  $p$  value below 0.250 should be included in the model (23). The results were assessed within a confidence interval of 95% and at a significance level of  $p<0.050$ .

### 2.6. Ethical Considerations

The study was carried out in accordance with the principles of the Declaration of Helsinki. Ethical approval was obtained from the Pamukkale University Non-Interventional Research

Ethics Committee (date: January 30, 2018; decision no: 60116787-020/8331). Written permissions were obtained from the faculty and the authors of the scales that were used in this study. The students who were included in the study provided verbal consent.

### 3. Results

The distribution of the symptomatic status of the students according to their sociodemographic characteristics is shown in Table 1.

**Table 1. Distribution of Symptomatic Status of the Students Based on Socio-demographic Characteristics**

Variables	Non-symptomatic (n=496)		Symptomatic+Pathological (n=37+3)	
	n	%	n	%
<b>Age (Mean±SD)</b>	20.12±9.35		20.09±10.17	
<b>Gender</b>				
Female	416	83.9	29	72.5
Male	80	16.1	11	27.5
<b>Class</b>				
1 <sup>st</sup> year	146	29.4	10	25.0
2 <sup>nd</sup> year	136	27.4	13	32.5
3 <sup>rd</sup> year	95	19.2	10	25.0
4 <sup>th</sup> year	119	24.0	7	17.5
<b>Oppressive, authoritarian paternal attitude</b>				
Yes	72	15.3	9	23.1
No	398	84.7	30	76.9
<b>Supervisory paternal attitude</b>				
Yes	103	21.9	2	5.1
No	367	78.1	37	94.9
<b>Comparative paternal attitude</b>				
Yes	33	7.0	3	92.3
No	437	93.0	36	7.7
<b>Inconsistent/hesitant paternal attitude</b>				
Yes	45	9.6	5	12.8
No	425	90.4	34	87.2
<b>Democratic/participating paternal attitude</b>				
Yes	180	38.3	17	43.6
No	290	61.7	22	56.4
<b>Oppressive, authoritarian maternal attitude</b>				
Yes	65	13.5	5	12.5
No	416	86.5	35	87.5
<b>Supervisory maternal attitude</b>				
Yes	100	20.8	8	20.0
No	381	79.2	32	80.0
<b>Comparative maternal attitude</b>				
Yes	66	13.7	6	15.0
No	415	86.3	34	85.0
<b>Inconsistent/hesitant maternal attitude</b>				
Yes	28	5.8	5	12.5
No	453	94.2	35	87.5
<b>Democratic/participating maternal attitude</b>				
Yes	173	36.0	11	27.5
No	308	64.0	29	72.5
<b>Participation in social activity</b>				
Yes	184	37.1	13	32.5
No	312	62.9	27	67.5
<b>Status of feeling happy</b>				
Yes	344	69.4	26	65.0
No	152	30.6	14	35.0
<b>Status of realizing life expectations</b>				
Yes	205	41.3	8	20.0
No	291	58.7	32	80.0
<b>Duration of internet connection/day</b>				
0-3 hours	192	38.7	6	15.0
1-3 hours	167	33.7	8	20.0
More than 5 hours	137	27.6	26	65.0
<b>Status of affecting social life</b>				
Yes	289	58.3	28	28.0
No	207	41.7	12	30.0
<b>Internet use for Aimless web search (Websurf)</b>				
Yes	250	50.6	27	67.5
No	244	49.4	13	32.5
<b>Internet use for video-film-MP3</b>				
Yes	344	69.6	29	72.5
No	150	30.4	11	27.5
<b>Internet use for online shopping</b>				
Yes	169	34.2	17	42.5
No	325	65.8	23	57.5
<b>Internet use for social share</b>				
Yes	443	89.7	34	85.0
No	51	10.3	6	15.0
<b>Internet use for online news, magazines</b>				
Yes	257	52.0	22	55.0
No	237	48.0	18	45.0
<b>Internet use for internet games</b>				
Yes	74	15.0	13	37.5
No	420	85.0	27	62.5
<b>Internet use for doing homework</b>				
Yes	314	63.6	15	37.5
No	180	36.4	25	62.5

Table 2 includes sociodemographic characteristics affecting the symptomatic status of nursing students. A statistically significant difference was determined in the symptom status of internet addiction according to supervisory of nursing students' fathers, duration of daily internet connection and realizing their expectations from life ( $p < 0.050$ ). In addition, it was determined that aimless web search on the internet (Websurf), playing games,

and doing homework have a statistically significant difference in the symptomatic status of the IAS score averages ( $p < 0.050$ ). On the other hand, it was determined that the students' age, gender, class, maternal attitudes, participation in social activities, seeing themselves happy, and the effect of the internet on social life did not have a statistically significant effect on the symptomatic status of the IAS score averages ( $p > 0.050$ ).

**Table 2. Socio-demographic Characteristics Affecting Symptomatic Status of Nursing Students**

Variables	Internet Addiction Scale	
	Mean±SD	p
<b>Gender</b>		
Female	46.68±14.00	
Male	51.92±18.66	0.145 <sup>1</sup>
<b>Class</b>		
1 <sup>st</sup> year	48.78±13.02	
2 <sup>nd</sup> year	52.68±11.66	
3 <sup>rd</sup> year	44.18±14.58	0.282 <sup>2</sup>
4 <sup>th</sup> year	46.12±14.66	
<b>Oppressive, authoritarian paternal attitude</b>		
Yes	45(36.50-58.50)	
No	44(36-55)	0.552 <sup>5</sup>
<b>Supervisory paternal attitude</b>		
Yes	47(38.50-59.50)	
No	44(36-55)	<b>0.030<sup>5</sup></b>
<b>Comparative paternal attitude</b>		
Yes	50(38.25-63.00)	
No	44(36-55)	0.195 <sup>5</sup>
<b>Inconsistent/hesitant paternal attitude</b>		
Yes	42(37-54)	
No	45(34-56)	0.189 <sup>5</sup>
<b>Democratic/participating paternal attitude</b>		
Yes	43(35-53.75)	
No	45(37-57)	0.114 <sup>5</sup>
<b>Oppressive, authoritarian maternal attitude</b>		
Yes	45(36.75-55.75)	
No	44(36-55)	0.739 <sup>5</sup>
<b>Supervisory maternal attitude</b>		
Yes	43.50(36.25-55)	
No	44.50(36-55)	0.657 <sup>5</sup>
<b>Comparative maternal attitude</b>		
Yes	45(37.50-59)	
No	44(36-55)	0.559 <sup>5</sup>
<b>Inconsistent/hesitant maternal attitude</b>		
Yes	47.50(40-56.75)	
No	44(36-55)	0.166 <sup>5</sup>
<b>Democratic/participating maternal attitude</b>		
Yes	43(35-52)	
No	45(37-57)	0.290 <sup>5</sup>
<b>Participation in social activity</b>		
Yes	44(37-55.75)	
No	44(36-55)	0.853 <sup>5</sup>
<b>Status of feeling happy</b>		
Yes	43(35-55)	
No	48(39-59.50)	0.071 <sup>5</sup>
<b>Status of realizing life expectations</b>		
Yes	40(32.50-48.50)	
No	47(39-59)	<b>0.020<sup>5</sup></b>
<b>Duration of internet connection/day</b>		
0-3 hours	40.37±12.39	
1-3 hours	47.22±12.20	
More than 5 hours	54.17±14.35	<b>&lt;0.050<sup>5</sup></b>
<b>Status of affecting social life</b>		
No	47(40-58)	
Yes	40(33.25-49)	0.425 <sup>5</sup>
<b>Internet use for Aimless web search (Websurf)</b>		
Yes	46(39-57)	
No	42(35-54)	<b>&lt;0.050<sup>5</sup></b>
<b>Internet use for video-film-MP3</b>		
Yes	44(36.54)	
No	43(36-58)	0.922 <sup>5</sup>
<b>Internet use for online shopping</b>		
Yes	44(38-55)	
No	44(35-56)	0.584 <sup>5</sup>
<b>Internet use for social share</b>		
Yes	44(36-55)	
No	48.50(35.75-62.25)	0.155 <sup>5</sup>
<b>Internet use for online news, magazines</b>		
Yes	43(35-53)	
No	46(37.75-58)	0.332 <sup>5</sup>
<b>Internet use for internet games</b>		
Yes	49(40-60.25)	
No	44(36-55)	<b>0.006<sup>5</sup></b>
<b>Internet use for doing homework</b>		
Yes	42(35.51)	
No	41(40-60)	<b>&lt;0.050<sup>5</sup></b>
	<b>r values</b>	<b>p values</b>
Age	-0.046	0.340 <sup>1</sup>

SD: Standard Deviation.

Statistically significant scores for (<sup>1</sup> Independent-Samples T test, <sup>2</sup> One-Way Anova, <sup>3</sup> Mann Whitney U test, <sup>4</sup> Pearson Correlation analysis).  $p < 0.050$ .

IAS, PRS, and IFS Correlation Analysis Results are given in Table 3. A statistically significant relationship was found between the IAS mean scores and the PRS and IFS mean scores. There was a weak, negative correlation between IAS score averages and PRS sub-dimensions ( $r=-0.220$ ,  $p<0.050$ ;  $r=-0.130$ ,  $p=0.003$ ;  $r=-0.150$ ,  $p=0.003$ ) and total score averages ( $r=-0.150$ ,  $p<0.050$ ). As IAS score averages increased, PRS averages decreased, and IFS averages increased. In addition, a statistically significant negative correlation was determined between PRS score averages and IFS score averages.

In the multiple logistic regression analysis, variables affecting the symptomatic status of nursing students and their IAS mean scores were compared based on their symptomatic status. It was found that having a supervisory father, realizing life expectations, and doing homework on the internet had a reducing effect on the symptomatic status of the IAS (OR=1.670,  $p=0.032$ ; OR=0.750,  $p=0.020$ ; OR=1.330,  $p=0.002$ ). On the other hand, duration of daily internet connection, aimless web search on the internet (Websurf), and playing games had an enhancing effect on symptomatic status of the IAS (OR=1.520,  $p=0.003$ ; OR=0.480,  $p=0.009$ ; OR=1.140,  $p=0.010$ ). It was determined that the mean score of the PRS subscales (self-dedication and control) had a reducing effect on the symptomatic status of the IAS (OR=0.110,  $p=0.007$ ; OR=0.150,  $p=0.040$ ). Moreover, the mean scores of the IFS subscales

(discouragement, denial of self-worth, and superiority useless effort) had an increasing effect on the symptomatic status of the IAS (OR=0.200,  $p<0.050$ ; OR=0.140,  $p<0.050$ ; OR=0.110,  $p<0.050$ ). Student's Challenge subscales of the PRS were not predictive factors for the symptomatic status of the IAS ( $p>0.050$ ).

#### 4. Discussion

This study was conducted to determine the levels of internet addiction, psychological resilience, and inadequacy feelings of nursing students and to examine whether there was a relationship between them. In this study, many of the nursing students were asymptomatic internet users, whereas the rate of the moderately symptomatic ones was 6.9% and that of the pathological internet users was 0.6%. When other studies using the same scale in Turkey were examined, similar findings were seen (8,24,25). In our study, the presence of asymptomatic internet users on a high level suggested that they were responsible and sensitive about their health since they were studying at a nursing department, and they could cope with stress more effectively. Unlike our study, it was reported in some other studies that the rate of using the internet was higher among nursing students (26-28). This phenomenon may be derived from the presence of different stressors due to cultural differences, as well as the differences in the measurement instruments, samples, and methodologies that were used.

Table 3. Correlation Analysis Results of IAS, PES, and IFS

Scales	(1)		(2)		(3)		(4)		(5)		(6)	
	r	p	r	p	r	p	r	p	r	p	r	p
(1) PRS-Self-dedication	-	-	-	-	-	-	-	-	-	-	-	-
(2) PRS-Control	0.500	<0.050*	-	-	-	-	-	-	-	-	-	-
(3) PRS-Challenge	0.490	<0.050*	0.560	<0.050*	-	-	-	-	-	-	-	-
(4) IFS-Discouragement	-0.350	<0.050*	-0.300	<0.050*	-0.220	<0.050*	-	-	-	-	-	-
(5) IFS-Denial of Self-Worth	-0.300	<0.050*	-0.250	<0.050*	-0.210	<0.050*	0.850	<0.050*	-	-	-	-
(6) IFS-Superiority Useless Effort	-0.130	<0.050*	-0.190	<0.050*	-0.150	<0.050*	0.680	<0.050*	0.440	<0.050*	-	-
(7) IAS	-0.220	<0.005*	-0.200	<0.050*	-0.130	<0.050*	0.330	<0.050*	0.320	<0.050*	0.270	<0.050*

IAS: Internet Addiction Scale, PES: Psychological Resilience Scale, IFS: Inadequacy Feeling Scale.

\* Statistically significant scores for (Pearson Correlation analysis)  $p<0.050$ .

Table 4. Multiple Logistic Regression Model of Variables Affecting Symptomatic Status of Nursing Students

Independent variables	B	S.E.	Sig	Exp (β) (reference)	Lower	Upper
Constant	-2.600	1.750	<0.050	0.070		
Supervisory paternal attitude	-1.670	0.780	0.032	0.180	0.040	0.860
Status of realizing life expectations	-0.750	0.490	0.021	0.460	0.180	1.220
Duration of internet connection/day	1.520	0.520	0.003	4.570	1.650	12.600*
Internet use for Aimless web search (Websurf)	0.480	0.420	0.009	1.610	0.710	3.650
Internet use for internet games	1.140	0.470	0.015	3.130	1.250	7.850
Internet use for doing homework	-1.330	0.430	0.002	0.260	0.110	0.600
PRS Self-dedication	-0.100	0.060	0.007	0.900	0.800	1.010
PRS Control	-0.140	0.070	0.040	0.950	0.900	1.340
IFS Discouragement	0.200	0.050	<0.050	1.000	0.900	1.100
IFS Denial of Self-Worth	0.140	0.050	<0.050	1.040	0.940	1.160
IFS Superiority Useless Effort	0.1100	0.050	<0.050	1.010	0.900	1.130

Dependent variable: Internet Addiction Scale (Those who score 0-69 do not show symptoms, those who score 70-120 show symptoms).

Independent variables: Sociodemographic Characteristics, Psychological Resilience Scale (PRS); Inadequacy Feeling Scale (IFS). B: Parameter value of independent variable; S.E.: Standard error; Wald: Testing coefficients; Sig: p value; Exp (β): ODDS ratio (impact factor); Lower: Lowest value; Upper: Highest value. Cox & Snell  $R^2=0.120$ , Nagelkerke  $R^2=0.290$ , -2 Log likelihood=208.40, statistically significant scores for (multiple logistic regression)  $p<0.050$ .

In our study, it was determined that most of the students did not participate in any social activities, but they considered themselves happy, although they could not realize their life expectations. In Turkey, nursing students participate in social activities less often due to their longer lecture hours and intensive clinical practices. In this context, they cannot realize their life expectations as they wish. Nevertheless, there is help in this occupation, and it is thought that nurses, who consider that they provide help, consider themselves happy. Moreover, the psychological resilience levels of the students in this group were found to be a bit better than the moderate level, i.e., they were psychologically durable, and this was thought to derive from the fact that their feelings of inadequacy were not very high.

It was observed that almost all students included in the study were using the internet to provide access to social media (such as Facebook, Instagram, and WhatsApp). In a study, it was reported that 71.2% connected to the internet for social media (29). According to the data from the Turkish Statistical Institute, 82.4% of internet users shared content such as creating profiles on social media, sending messages, or sharing photos (7). The findings in the literature also supported our result. It has been stated in the literature that students with less social activity use social media (such as Facebook, Instagram, and WhatsApp) more (17,18). Since the majority of students in our study did not have social activities, they may have spent their free time using social media more actively.

In our study, the sex of the students was not found to be a predictor of internet addiction. There are some studies supporting our results in the literature (25,30). However, it was also reported that internet addiction was more frequent among males in comparison to females, and the difference was reported to be statistically significant (8,31-33). The reason for our result may be the fact that our sample included mostly female students. In our study, the symptomatic status of internet addiction was not found to show a significant difference based on the class levels of the students. There are studies in the literature reporting similar results that there is no difference in internet addiction levels according to the class variable (3,17, 34). The reason why internet addiction does not differ according to grade level may be due to the fact that individuals are introduced to the internet at a younger age today. It is thought that there is no difference between grade levels, as individuals are introduced to the internet in childhood or adolescence and can make it a part of their lives.

The parental attitudes in our study were described as oppressive and authoritarian, supervisory, comparative, inconsistent, and democratic. While the maternal attitudes were not significantly effective on the internet addiction levels of the students, the attitudes of the fathers were found to reduce internet addiction significantly. It has been reported in the literature that parents' ability to control their child's behavior has a protective effect against internet addiction (35,36). A supervisory attitude refers to controlling and limiting the individual and, thus, their consciousness and appreciation. Young (2004) stated that among the factors causing negative use of the internet, the family's ability to allow the young person to spend time on the internet without any control or supervision is an

important factor (10). Furthermore, there is a tradition of patriarchal society in Turkey, and the figure of authority is mostly the father. An individual who is supervised, limited, and followed by a father will become a person who has a self-limiting capability. For this reason, those who were supervised by their fathers in the study may have used the internet in a more limited way.

In our study, the status of the students in realizing their life expectations was found to decrease their symptoms of internet addiction. It is known that individuals who cannot meet their expectations from life have destructive thoughts and are vulnerable to stressors (37,38). Such maladaptive cognitions can cause excessive use of social networking sites as environments where the individual can feel good about himself and the world (39). On the other hand, students who realize their life expectations will feel psychologically strong (3,40). Thus, they will try to advance in the direction of their ideals and goals instead of using the internet in an aimless and uncontrolled way. In this study, the status of the students doing homework on the internet was found to decrease their symptoms of internet addiction. Use of the internet for a goal, e.g., especially for doing homework, will make them feel psychologically strong and competent and cause an increase in their academic success. It is evident that all the students included in our study were using the internet for an average of 3-5 hours a day. It may be stated that this result was not so surprising since they had free access to the internet almost everywhere. On the other hand, it was found that the duration of their internet use, aimless surfing on the internet (Websurf), and playing games increased their symptoms of internet addiction. In a study, playing internet games had an increasing effect on internet addiction (12). In another study, the mean IAS scores of the ones who used the internet the most frequently among others were found to be significantly higher (18). The results of our study were found to be similar to those in the relevant literature. It seems inevitable to stay on the internet longer for applications that require continuity, are easy to access, and are often supported by a reward system.

In our study, it was found that the self-dedication and control subscales decreased the symptoms of internet addiction. In order for an individual to cope with stressful life conditions, a tendency to devote himself to life areas such as his social environment, work, family, and interpersonal relationships may be necessary (41). In this context, individuals with high levels of devotion may have lower tendencies and interest in the internet because they see themselves and their environment as worth spending time with. On the other hand, the fact that students with high levels of control can see in themselves the power to manage stressful events or difficulties in life (42) may reduce their thoughts of seeing the internet as an element of entertainment and an alternative to spending free time. Furthermore, it was observed that the IAS scores were lower among the students with high PRS scores, and they were using the internet actively in our study. In a study, the psychological resilience of students was reported to be a predictor of internet addiction (43). An individual with high psychological resilience will feel adequate. They will tend to deal with all areas of life sufficiently and may seek effective solutions to problems. This situation will decrease the individual's risk of internet addiction.

In our study, the subscales of IFS (discouragement, denial of self-worth, and superiority useless effort) were found to enhance the symptoms of internet addiction. A study found a negative relationship between internet addiction and self-efficacy (14). Individuals who experience intense feelings of inadequacy deny their own values and inadequacies or make themselves unworthy. This phenomenon causes discouragement in the individual against life, thus, leading them to experience problems in fulfilling their duties in life. Individuals cannot bear intense feelings of inadequacy for a long time. For this reason, individuals make a superior effort to get rid of the negative mood created by intense feelings of inadequacy. This effort will lead the individual to assert superiority against the people around them. The only way of for these individuals to feel adequate is through their perception of themselves as superior to others and their behavior in this way. These attitudes and behaviors of the individual may make them put themselves on the useless side of life (21). This will cause individuals to use methods that are directed by their own commands, such as the internet, to get rid of the feeling of inadequacy.

#### 4.1. Limitations

While addressing the findings obtained from this study, several limitations should be considered. Firstly, the sample of the study consisted of only 1st, 2nd, 3rd, and 4th year nursing students who were registered at the Faculty of Health Sciences during the academic year 2017-2018. Therefore, the results cannot be generalized to nursing students in other regions of the country.

#### 5. Conclusion and Recommendations

It was concluded that the psychological resilience and inadequacy feelings of the students had a profound effect on their internet addiction levels. The results obtained from this study appear to be important for supporting students in participating in social activities besides their academic education, planning psychosocial education (such as effective coping methods, self-efficacy, self-esteem, communication skills, and self-recognition), and organizing audiovisual trainings for students about internet addiction. It may be recommended to conduct similar studies with larger samples, including nursing students studying in different regions and students from other departments and fields, and compare the outcomes. Moreover, educational studies may be carried out with different samples at lower education levels to resolve problems before reaching the university level.

#### 6. Contribution to the Field

This study was conducted to obtain information about the internet addiction levels and its predictors among nursing students. The psychological evaluation and improvement of nursing students will significantly contribute to their professional development and, thus, to the quality of care. Besides, they will improve themselves by using the internet accurately and effectively. Enhancement of the adequacy feelings of students will provide convenience for practicing professional skills and, thus, make them successful nurses who are healthier, happier, and can manage problems.

#### Ethical Aspects of the Research

The study was carried out in accordance with the principles of the Declaration of Helsinki. Ethical approval was obtained

from the Pamukkale University Non-Interventional Research Ethics Committee (date: January 30, 2018; decision no: 60116787-020/8331). Written permissions were obtained from the faculty and the authors of the scales that were used in the study. The students who were included in the study provided verbal consent.

#### Conflict of Interest

This article did not receive any financial fund. There is no conflict of interest regarding any person and/or institution.

#### Authorship Contribution

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#### References

- Akdağ M, Şahan-Yılmaz B, Özhan U, Şan İ. Üniversite öğrencilerinin internet bağımlılıklarının çeşitli değişkenler açısından incelenmesi (İnönü Üniversitesi örneği). *Inonu Univ J Fac Educ.* 2014;15(1):73-96.
- Ruiz-Frutos C, Ortega-Moreno M, Allande-Cussó R, Domínguez-Salas S, Dias A, Gómez-Salgado J. Health-related factors of psychological distress during the COVID-19 pandemic among non-health workers in Spain. *Saf Sci.* 2021;133:104996.
- Büyüklüz B. 18-25 yaş arası genç yetişkinlerde problemlerli internet kullanımı ve iletişim becerileri arasındaki ilişki (Yüksek Lisans tezi). [master's thesis]. [İstanbul]: Üsküdar Üniversitesi; 2016. 158 p.
- Hasan AAH, Jaber AA. Prevalence of internet addiction, its association with psychological distress, coping strategies among undergraduate students. *Nurse Educ Today.* 2019;81:78-82.
- Gümüş AB, Şipkin S, Tuna A. Üniversite öğrencilerinde problemlerli internet kullanımı, şiddet eğilimi ve bazı demografik değişkenler arasındaki ilişki. *TAF Prev Med Bull.* 2015;14(6):460-7.
- Internet World Stats. Internet World penetration rates by geographic regions. [homepage on the Internet]. [updated 2022 Aug 26; cited 2023 Jun 27]. Available from <https://www.internetworldstats.com/stats.htm>
- Turkey Statistical Institute. Household information technologies usage research. [updated 2023 Jun 21; cited 2023 May 9]. Available from [https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-\(BT\)-Kullanim-Arastirmasi-2022-45587](https://data.tuik.gov.tr/Bulten/Index?p=Hanehalki-Bilisim-Teknolojileri-(BT)-Kullanim-Arastirmasi-2022-45587)
- Kır İ, Sulak S. Eğitim fakültesi öğrencilerinin internet bağımlılık düzeylerinin incelenmesi. *Electron J Soc Sci.* 2014;13(51):150-67.
- Benzi IMA, Carone N, Fontana A, Barone L. Problematic internet use in emerging adulthood: The interplay between narcissistic vulnerability and environmental sensitivity. *J Media Psychol.* 2023;35(5):316-24.
- Young KS. Internet addiction: A new clinical phenomenon and its consequences. *Am Behav Sci.* 2004;48(2):402-15.
- Bozkurt H, Şahin S, Zoroğlu S. İnternet bağımlılığı: Güncel bir gözden geçirme. *J Contemp Med.* 2016;6(3):235-47.
- McNicol ML, Thorsteinsson EB. Internet addiction, psychological distress, and coping responses among adolescents and adults. *Cyberpsychology Behav Soc.* 2017;20(5):296-304.
- Odacı H, Çelik ÇB. İnternet dependance in an undergraduate population: the roles of coping with stress, self-efficacy beliefs, and sex role orientation. *J Educ Comput Res.* 2017;55(3):395-409.
- Stephens TM. Nursing student resilience: A concept clarification. *Nurs Forum.* 2013;48(2):125-33.
- Cao Q, An J, Yang Y, Peng P, Xu S, Xu X, et al. Correlation among

- psychological resilience, loneliness, and internet addiction among left-behind children in China: A cross-sectional study. *Curr Psychol*. 2020;41:4566-73.
16. Sert Agir M. A model proposal regarding the effect of adolescents' psychological endurance on internet addiction and intermediary role of self-esteem among related variables. *Turkish Online J Educ Technol*. 2019;18(1):1-14.
17. Chang FC, Chiu CH, Miao NF, Chen PH, Lee CM, Chiang JT, et al. The relationship between parental mediation and Internet addiction among adolescents, and the association with cyber bullying and depression. *Compr Psychiatry*. 2015;57:21-8.
18. Kocaman O, Aktepe E, Sönmez Y. Isparta il merkezi lise öğrencilerinde olası internet bağımlılığı ile saldırganlık ve empati düzeyleri arasındaki ilişkinin incelenmesi. *Anadolu Psikiyatri Derg*. 2017;18(6):602-10.
19. Bayraktar F, Gün Z. Incidence and correlates of internet usage among adolescents in North Cyprus. *Cyberpsychol Behav*. 2007;10(2):191-7.
20. Işık Ş. Psikolojik dayanıklılık ölçeği'nin geliştirilmesi: Geçerlik ve güvenirlik çalışması. *JHWB*. 2016;4(2):165-82.
21. Akdoğan R, Ceyhan E. of the inadequacy feelings scale for university students: Validity and reliability analysis. *Turk Psychol Couns Guid J*. 2014;5(41):117-28.
22. Aksakoğlu G. Health research and analysis. Izmir: D.E.U. Rectorate Printing House; 2006. 283 p.
23. Hayran M, Hayran M. Sağlık araştırmaları için temel istatistik. Ankara: Art Ofset; 2011. 153 p.
24. Ertekin YH, Ertekin H, Uludağ A, Tekin M. Internet addiction among eighth grade students: Çanakkale sample. *Türk Aile Hek Derg*. 2016;20(2):72-6.
25. Yılmazsoy B, Kahraman M. Examining internet addiction levels of distance education students. *AUAd*. 2017;3(4):9-29.
26. Alacam H, Atesci FC, Sengul AC, Tümkiye S. Üniversite öğrencilerinde internet bağımlılığının sigara ve alkol kullanımı ile ilişkisi. *Anadolu Psikiyatri Derg*. 2015;16(6):383-9.
27. Bahrainian SA, Alizadeh KH, Raeisoon MR, Gorji OH, Khazae A. (2014) Relationship of internet addiction with self-esteem and depression in university students. *J Prev Med Hyg*. 2014;55(3):86-9.
28. Rinu JG, Rachitha A, Divya L. A cross-sectional study on prevalence of internet addiction among nursing students of selected nursing college at Bhilai, Chhattisgarh. *JoNSP*. 2013;8(1):20-5.
29. Karasu F, Bayir B, Cam HH. Üniversite öğrencilerinin internet bağımlılığı ile sosyal destek arasındaki ilişkinin incelenmesi. *J Soc Sci*. 2017;7(14):374-88.
30. Dufour M, Brunelle N, Tremblay J, Cousineau, M. M., Khazaal Y, Andrée-Anne Légaré AA, Rousseau M, Berbiche D. Gender difference in internet use and internet problems among Quebec high school students. *Can J Psychiatry*. 2016;61(10):663-8.
31. Adiele I, Olatokun W. Prevalence and determinants of Internet addiction among adolescents. *Comput Human Behav*. 2014;31:100-10.
32. Ganesh A., Pragyakumari, D, Ramsudarsan N, Rajkumar M, Shyam S, Balaji SK. Self-reported behaviour about internet addiction among medical and paramedical students. *J Clin Diagn Res*. 2017;11(10):10-3.
33. Gorgich EAC, Moftakhar L, Barfroshan S, Arbabisarjou A. Evaluation of internet addiction and mental health among medical sciences students in the southeast of Iran. *Shiraz Med J*. 2018;19(1):e55561.
34. Demir S, Buğa A. The relationship between loneliness and internet addiction in university students: The mediating role of cognitive distortions. *Inonu Univ J Fac. Educ*. 2019;20(3):859-75.
35. Cetinkaya L. The relationship between perceived parental control and internet addiction: A cross-sectional study among adolescents. *Contemp Educ Technol*. 2019;10(1):55-74.
36. Shek DT, Zhu X, Dou D. Influence of family processes on internet addiction among late adolescents in Hong Kong. *Front Psychiatry*. 2019;10:113.
37. Huen JM, Ip BY, Ho SM, Yip PS. Hope and hopelessness: The role of hope in buffering the impact of hopelessness on suicidal ideation. *PLoS One*. 2015;10(6):e0130073.
38. Sarı SV, Aydın B, Şahin M, Oktan V. Facebook bağımlılığının açıklanması: Ruh sağlığı sürekliliği ve sürekli umudun rolü. *Kastamonu Educ J*. 2019;27(4):1799-809.
39. İnce M, Yılmaz M. Ergenlik çağındaki çocukların sosyal medya kullanım alışkanlıklarının yalnızlaşmaya etkisi. *Gümüşhane Üniv İletişim Fak Derg*. 2020;8(2):1111-44.
40. Leung L, Lee PS. Impact of internet literacy, internet addiction symptoms, and internet activities on academic performance. *Soc Sci Comput Rev*. 2012;30(4):403-18.
41. Aşçı Ö, Hazar G, Kılıç E, Korkmaz A. Üniversite öğrencilerinde stres nedenlerinin ve strese başa çıkma biçimlerinin belirlenmesi. *Uşak Üniv Sosyal Bilim Derg*. 2015;8(4):213-232.
42. Sagone E, De Caroli ME. A correlational study on dispositional resilience, psychological well-being, and coping strategies in university students. *Am J Educ Res*. 2014;2(7):463-71.
43. Bilgin O, Tas I. Effects of perceived social support and psychological resilience on social media addiction among university students. *Univers J Educ Res*. 2018;6(4):751-8.