Araştırma Makalesi – Original Article

The Effect of Nomophobic Behavior of Student Nurses Using Smartphones on Social Phobia*

Akıllı Telefon Kullanan Öğrenci Hemşirelerin Nomofobik Davranışlarının Sosyal Fobi Üzerine Etkisi

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ABSTRACT

Aim: This study was carried out to determine the effects of the nomophobic behaviors of student nurses using smartphones on their social phobia levels.

Methods: This cross-sectional and correlational study was carried out between 1 March and 30 September 2019 with the participation of nursing students (N=409) enrolled at a state university in Turkey.

Results: A significant relationship was determined between nomophobic behavior and social phobia according to the results of the regression and correlation analyses carried out between the scale scores of the participants ($p<0.05$).

Conclusion: It is highly important to raise awareness on the time spent with smartphones by nursing students and the harms of this issue. Additionally, countries need to take social and political precautions to protect individuals from nomophobia and social phobia. Considering the time that nursing students spend on the phone, the use of smartphones can be turned into a positive direction (educational, online course, personal development). This way, nursing students who experience social phobia might be supported.

Keywords: Nursing, Nomophobia, Student Nurse, Social Phobia

ÖZ

Amaç: Bu araştırma, akıllı telefon kullanan öğrenci hemşirelerin nomofobik davranışlarının sosyal fobi üzerine etkisini belirlemek amacıyla yapıldı.

Yöntem: Kesitsel tipteki ve ilişki arayıcı bu çalışma, Türkiye'de bir devlet üniversitesine kayıtlı hemşirelik öğrencilerinin (N=409) katılımıyla 1 Mart-30 Eylül 2019 tarihleri arasında gerçekleştirildi.

Bulgular: Yapılan regresyon ve korelasyon analizleri sonuçlarına göre nomofobik davranışlar ve sosyal fobi arasında anlamlı bir ilişkinin olduğu tespit edildi. ($p<0.05$).

Sonuç: Hemşirelik öğrencilerinin akıllı telefonlarla geçirdikleri süre ve bu konunun zararları bakımından farkındalık yaratılması oldukça önemlidir. Ayrıca ülkelerin bireyleri nomofobi ve sosyal fobiden korumak için sosyal ve politik önlemler almaları gerekmektedir. Hemşirelik öğrencilerinin telefona harcadıkları zaman göz önüne alındığında akıllı telefon kullanımı olumlu bir yöne çevrilebilir (eğitim, online kurs, kişisel gelişim). Bu sayede sosyal fobi yaşayan hemşirelik öğrencilerine destek olunabilir.

Anahtar Kelimeler: Hemşirelik, Nomofobi, Öğrenci Hemşire, Sosyal Fobi

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Introduction

The concept of nomophobia that has emerged with the excessive and problematic use of smartphones comes from the English phrase 'no mobile phobia', and in terminology, it is defined as the fear experienced by the individual when they cannot access their mobile phone or cannot communicate via it.[1–3]

Through their smartphones, individuals are constantly in communication over the internet via social media and other applications. In the case of not being able to use these applications (forgetting one's phone, out of charge, no coverage), individuals start to experience anxiety and anger, and their focus on daily activities is negatively affected as a result of this.[1,2,4,5] In individuals who feel nomophobia, anxiety, emotional imbalance, aggression, lack of concentration, withdrawal from social environments and emotional detachment may start.[1,6–8] In the literature, it is stated that there is an increase in experiencing emotional detachment in parallel with technological developments. In this context, it was reported that the number of individuals with access to social networks with their cell phones worldwide reached 5.15 billion in 2019 (67%). It was determined that the rate of cell phone ownership is 98%, and the rate of smartphone usage is 77% in Turkey, and individuals spend 7 hours and 15 minutes on average on the internet per day.[9] The transformation of mobile phone usage into a constant and compelling habit increases nomophobia levels, and for this reason, a sense of withdrawal, dissatisfaction, major depression, harmed family relationships and social phobia are seen in individuals.[10,11]

Social phobia is an anxiety disorder where the individual avoids social environments as much as possible due to thinking that they will be criticized or humiliated in front of others and having a constant fear on this issue.[1] In the literature, it was reported that individuals who experience social phobia state that using the internet carries less risk than face-to-face communication while they are meeting their daily needs, they feel more comfortable, and internet usage is higher as they think dealing with things over the internet is easier.[12] In other words, social phobia was defined as a persistent fear caused by the negative perception created by being in a social environment where one constantly feels the looks of others on themselves or merely meeting unknown individuals, and it was proposed that it usually starts in adolescence and reduces socializing.[13,14]

Consequently, social phobia affects the psychological status of individuals negatively, prevents the participation of individuals in a social environment and their interpersonal relationships and communication and reduces their quality of life. A previous study revealed that the internet helps people in dealing with stress caused by social phobia.[13,14]

In a previous study, it was reported that 66% of participants struggle with nomophobia, and youths in the age group of 18-24 have a higher tendency to have nomophobia.[15] Another study determined the rate of encountering nomophobia in university students as 42.6%.[16]

The detection of nomophobia and social phobia, determination of the affecting factors and relationships between these and development of preventive strategies carry great importance in the diagnosis and treatment process. This study was carried out to determine the effects of the nomophobic behaviors of student nurses using smartphones on their social phobia levels.

Materials and Methods

Participants

This study was planned as a cross-sectional and correlational study. In the study, 450 nursing students enrolled at the Department of Nursing at the Faculty of Health Sciences at a university in Turkey were invited to participate.

Inclusion criteria:

*Being a student at the Department of Nursing at a university in Turkey,

*Being a smartphone owner,

*Being able to access the internet by smartphone,

*Voluntarily agreeing to participate in the study and providing verbal consent.

The study was conducted with N=409 (90.1%) students satisfying the inclusion criteria. The data were collected between 1 March and 30 September 2019.

Data Collection Instruments

As the data collection instruments, the study utilized a "Personal Information Form" to collect the sociodemographic data of the participants, the "Nomophobia Questionnaire" to determine their nomophobia status and the "Dysfunctional Attitude Scale – Short Form" (DAS-R-TR)" to determine their social phobia statuses. The scales are explained below.

Personal Information Form

The form was created by the researcher through literature review.[16–18] The form had 10 questions about the participants' characteristics including age, gender, place of living, class year, history of using a smartphone, status of carrying a power bank, time spent on the phone before going to sleep, checking the phone as soon as waking up, turning off the phone at night, seeing themselves as a smartphone addict. The form included queries of 4 ways of communication in which the individual feels good and safe, including texting, using Facebook-Instagram, meeting face to face, and talking on the phone. There was 1 question on whether the individual was suitable for the profession of nursing.

Nomophobia Questionnaire

In the study, to measure the nomophobic behaviors of the participants, the 20-item Nomophobia Questionnaire (NMP-Q) that was developed by Yildirim and Correia (2015) as a 7-point Likert-type scale was used.[2] In the study by Yildirim and Correia, it was stated that there are 4 dimensions of the nomophobic statuses of people.[2] These were expressed as (i) Losing connectedness, (ii) Not being able to communicate, (iii) Giving up convenience, (iv) Not being able to access information. The questionnaire, with the minimum and maximum scores of 20 and 140, has 4 score levels. A score means the absence of nomophobia, scores of 21-60 indicate mild, 60-100 indicate moderate and 100-140 indicate severe nomophobia. The Turkish adaptation of the questionnaire was performed by Yildirim, Sumuer, Adnan and Yildirim (2016).[16] In their study, the Cronbach's Alpha internal consistency coefficient of the scale was found as 0.92, while those of its subscales were found as 0.90 (i), 0.74 (ii), 0.94 (iii) and 0.91 (iv). In our study, the Cronbach's Alpha coefficient of the overall scale was calculated as 0.92, while those of its subscales were found as 0.85 (i), 0.87 (ii), 0.87 (iii) and 0.77 (iv).

Dysfunctional Attitude Scale – Short Form (DAS-R-TR)

The Dysfunctional Attitude Scale (DAS) that was used to define the social phobia levels of the nursing students who were included in this study was developed by Weissman and Beck to measure dysfunctional attitudes, and it has the DAS-A and DAS-B forms consisting of 40 items each. This scale can examine dysfunctional attitudes in two groups as perfectionism/aptitude (P) and need for approval/dependence (NFA).[19] The Turkish version of DAS was determined to have four dimensions as opposed to two, but it does not allow analysis on what factors other than P and NFA represent in comparative studies. Moreover, as shortened

scales are more acceptable for both the implementers and those who fill out the scale, the validity and reliability study of DAS' shortened form (DAS-R) was carried out by Batmaz and Özdel.[20]

DAS-R consists of two factors as "perfectionism/aptitude (P/A)" and "need for approval /dependence (NFA/D)". The scale has a total of 13 items including the first 8 items in the dimension "P/A" and the last 5 items in the dimension "NFA/D".[20] It is a 7-point Likert-type scale. It does not have a certain cutoff point, and higher total scores indicate more dysfunctional attitudes. The Cronbach's Alpha reliability coefficients for the scale were found as 0.84 for "P/A", 0.75 for "NFA/D" and 0.84 for the entire scale.[20] In our study, these values were calculated respectively as 0.82, 0.75 and 0.90.

Statistical Analysis

After coding by the researcher, the data were analyzed by using the SPSS (Statistical Package for the Social Sciences) 25.0 software. Mean, standard deviation, frequency and percentage as descriptive statistics were used to analyze the descriptive data. Pearson's correlation analyses for determining the relationship between the scales and simple linear regression analyses for determining the effects of nomophobia on social phobia levels were carried out. The results were interpreted in a 95% confidence interval and on a significance level of $p<0.05$.

Ethical Considerations

Ethical approval for the study was granted from Inönü University Health Sciences Non-Interventional Clinical Research Ethics Committee (Reference Number: 2019/3-23 and date 05.02.2019). Before starting the study, written permission was received from the Dean of the Faculty of Health Sciences of the university where the study took place. To obtain personal approval, the aims and procedures of the study were clearly explained to the participants. The informed consent form was presented to the participants, and it was stated that they could leave the study whenever they wanted.

Results

The sociodemographic characteristics of the participants are shown in Table 1. 62.8% of the participants were at the ages of 21-23, 69.4% were female, 47.9% lived in cities, and 27.4% were 2nd-year students. Additionally, 44.5% had been using smartphones for 4-5 years, 72.4% did not use power banks, 74.8% checked their phones as soon as they woke up, 88.3% spent time on their phones before they slept, 83.9% did not turn off their phone at night, 47.9% thought they could be smartphone addicts, and 44.7% felt suitable for the profession of nursing ***(Table 1).*** The ways of communication used by the participants to feel good and safe are shown in ***Table 2.*** 66.7% of the participants felt safe when they communicated face-to-face with people.

Table 1. Distribution of the Participants Based on Their Sociodemographic Characteristics (N=409)

Descriptive Characteristics	Frequency	%
Age		
18-20	138	33.7
21-23	257	62.8
24-26	9	2.2
27-29	1	0.2
30 or older	4	1.0
Gender		
Female	284	69.4
Male	125	30.6
Place of living		
Village	78	19.1

Town	44	10.8
City	196	47.9
Metropolitan city	91	22.2
Class		
1st year	103	25.2
2nd year	112	27.4
3rd year	87	21.3
4th year	107	26.2
History of Using Smartphones		
0-1 Years	8	2.0
2-3 Years	52	12.7
4-5 Years	182	44.5
6-7 Years	101	24.7
8 Years or longer	66	16.1
Carrying a Power Bank		
Yes	113	27.6
No	296	72.4
Spending Time with Phone before Sleep		
Yes	361	88.3
No	48	11.7
Checking Phone Right after Waking Up		
Yes	306	74.8
No	103	25.2
Turning off Phone at Night		
Yes	66	16.1
No	343	83.9
Seeing Oneself as a Smartphone Addict		
I am not an addict	103	25.2
Maybe	196	47.9
No opinion	30	7.3
I am an addict	80	19.6
Feeling Suitable for the Profession of Nursing		
Yes	183	44.7
No	98	24.0
Undecided	128	31.3

Table 2. Ways of Communication Used by the Participants to Feel Good and Safe (N=409)

Descriptive Characteristics	Frequency	%
Speaking on the phone		
Yes	51	12.5
No	358	87.5
Messaging		
Yes	135	33.0
No	274	67.0
Facebook/Instagram		
Yes	62	15.2
No	347	84.4
Meeting face to face		
Yes	273	66.7
No	136	33.3
Speaking on the phone		
Yes	51	12.5
No	358	87.5

The minimum and maximum scores of the participants in the Nomophobia Questionnaire are shown in ***Table 3.*** The maximum score from the scale was 97, while the mean score was 64.34 (SD=16.80). The maximum score of the participants in the Dysfunctional Attitude Scale was 83, while their mean score was 37.37 (SD=17.44).

Table 3. Mean and Standard Deviation Values of Scale Scores

Dimensions	Min	Max	Mean	SD
a. Nomophobia Scale and Dimensions and Standard Deviations				
Losing connectedness	4.00	20.00	13.72	4.25
Not being able to communicate	5.00	35.00	13.78	7.68
Giving up convenience	6.00	30.00	20.90	5.97
Not being able to access information	5.00	25.00	13.73	4.52
Total	25.0	97.00	64.34	16.8
b. Social Phobia Scale and Dimensions and Standard Deviations				
Need for approval/dependence	8.00	56.00	23.71	11.87
Perfectionism/aptitude	5.00	32.00	13.66	6.55
Total	13.0	83.00	37.37	17.44

The results of the correlation and regression analyses are shown in Tables 4 and 5. There was a positive and strong correlation between the total social phobia score of the participants and the dimension of not being able to communicate (R=0.923; p<0.05, ***Table 4).*** The effect size of the nomophobia scale on social phobia was determined as 0.86 ***Table 5.*** The dimension of not being able to communicate had a positive and significant effect on social phobia (β=0.900, p<0.05).

Table 4. Correlation Analysis between Nomophobia and Social Phobia Variables

Correlation Matrix									
Variables	**Mean**	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1.Need for approval/dependence	23.71	11.87	1						
2. Aptitude	13.66	6.55	.772**	1					
3. Social phobia total	37.37	17.44	.971**	.902**	1				
4. Losing connectedness	13.72	4.25	.429**	.298**	.404**	1			
5. Not being able to communicate	13.78	7.68	.919**	.791**	.923**	.430**	1		
6. Giving up convenience	20.90	5.97	.210**	.153**	.200**	.446**	.255**	1	
7. Not being able to access information	13.73	4.52	.402**	.340**	.402**	.586**	.389**	.470**	1
8. Nomophobia total	64.34	16.80	.442**	.346**	.431**	.796**	.456**	.804**	.792**

Pearson's Correlation,*p<0.05,**p<0.01

Table 5. Regression Analysis on the Effects of Nomophobia Variables on Social Phobia

Variables	B	S. Error	β	*t*	*p*
Constant	9.434	1.367		6.90	0.000*
Losing Connectedness	-0.380	0.172	0.093	-2.206	0.028*
Not Being Able to Communicate	2.042	0.049	0.900	41.909	0.000*
Giving Up Convenience	-0.520	0.141	-0.178	-3.688	0.000*
Not Being Able to Access Information	0.011	0.152	0.003	0.073	0.942
Nomophobia Total	0.245	0.95	0.236	2.560	0.011*

R=0.927, R^2=0.860, F(494.199)=11.882, p=0.000, *p<0.05

Discussion

The mean total score in the nomophobia scale was 64 (max 97, min 25), and the maximum score that was obtained from the dimension of giving up convenience was 20 (max 30, min 6). In this study, 62.8% of the participants were at the ages of 21-23, 69.4% were female, 27.4% were 2nd-year students, 44.5% had been using smartphones for 4-5 years, 74.8% checked their phones as soon as they woke up, 83.9% did not turn off their smartphones at night, 47.9% thought they could be smartphone addicts, and 66.7% felt safe when

they had their smartphones with them. According to a previous study, 66% of smartphone users suffer from nomophobia, youths in the age group of 18-24 have a higher tendency to have nomophobia, and it is seen more frequently in women in comparison to men in the age group of 25-34.[15] Another study determined the rate of nomophobia in university students as 42.6%.[16] Moreover, a similar study reported the rate of smartphone addiction as 46% among their participants.[21]

In this study, the mean total score of the participants in the social phobia scale was 37 (max 83, min 13), while the highest score was obtained in the dimension of need for approval/dependency as 23 (max 56, min 8). The mean score of the participants in the dimension of feeling lonely was 4.94 points (max 10, min 1), and their mean score in the dimension of feeling popular was 6 points (max 10, min 1). A similar study reported that 54% of participants experienced worry when they were withdrawn from a device.[4]

In the literature review, it was found that high levels of nomophobia are seen among university students,[22,23] and it is seen more in women than in men.[21–23] In this context, it is noteworthy that regardless of the factor of age, individuals are constantly in communication and interaction with mobile phones in public and private spaces.[24] A previous study reported that the highest usage of the internet takes place on Facebook, Instagram and other social networks via mobile phones.[25] In this context, it may be stated that nomophobia is a part of dependence on social networks.

In this study, a positive and strong relationship was determined between the total social phobia scores of the participants and their scores in the dimension of not being able to communicate ($R=0.923$, $p<0.05$). The effect size of nomophobia on social phobia was 0.86 (Table 4). The dimension of not being able to communicate had a positive and significant effect on social phobia ($\beta=0.900$, $p<0.05$).

In terms of the increased usage frequency and time of mobile phones in recent years, it is seen that the internet is used as a method of obtaining information that is resorted to in difficult situations. A study on nursing students determined that internet usage contributes to students' feelings of being safe.[26]

Information and communication technologies constitute a significant part of our lives. Many people, especially the young generations, use new technologies for working, in addition to several other activities.[27] Information and communication technologies allow experiencing different methods for relationships. This way, a form of socializing takes place.[28] However, the misuse of information and communication technologies paves the way for the emergence of negative effects. For example, internet addiction among university students is a good example of the misuse of information and communication technologies.[21,22,24] Nowadays, in daily life, private life and among the public, significant numbers of children, adolescents, youths and adults display behaviors that could be defined as internet addiction.[24]

Conclusion

As a result, evidence was obtained that the nursing students experienced high levels of nomophobia and social phobia. There are two main parameters for the prevention of nomophobia and social phobia and management of these behavioral problems among people who suffer from these. The first one of these is the acceptance of the reality that smartphones "occupy time". The second is the development of awareness on what their benefits and harms are.

It is possible to express nomophobia and social phobia as a behavioral problem that has more harm than benefits. The vast majority of youths experience this problem, awareness on this as a problem has not yet developed completely, state institutions do not develop policies to fight against this issue, and preventive initiatives and management strategies have not been determined yet, which poses a huge risk. Solution

approaches may involve detailing the factors that direct students towards nomophobia, developing awareness on the problem and supporting self-control.

Implications for Nursing Management

Students of today (generation Z students) spend an average of more than 7 hours in front of a screen (phone, tablet, computer). The time spent in front of a screen reduces face-to-face interaction, causing the person to become lonely and experience social phobia. From this point of view, nursing instructors should remember once again that the students who are studying are members of the Generation Z and contribute to the socializing of the students and group work in this direction. Additionally, considering the time that nursing students spend on the phone, the use of smartphones by nursing instructors can be transformed into a positive direction (education, online course, personal development). This way, nursing students who experience social phobia can be supported.

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Author contributions

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