Clinical Research

Evaluation of Nomophobia in Medical Secretaries Working in a University Hospital in Turkey

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ABSTRACT

Objective: This study aimed to determine the prevalence of nomophobia and influencing factors in medical secretaries who are health professionals.
Material and Method: A cross-sectional study was carried out between May and June 2022. The sociodemographic information form and Nomophobia Scale (NMP-Q) were used to collect data in the study. SPSS 22.0 software was used for statistical analysis. Mann Whitney U, Kruskall Wallis test, and Spearman correlation analysis were performed.
Results: Of 293 medical secretaries, 59.0% (n =173) of the participants were female, with a mean age of 36.5±6.9. According to NMP-Q, 0.6% of the participants were healthy, 32.8% mild, 48.5% moderate, and 18.1% severe nomophobia. The NMP-Q scores were significantly higher among participants who are single, use social media, and use mobile phones at work ($p < 0.05$). A positive and significant correlation was found between daily mobile phone use and NMP-Q scores ($p < 0.01$).
Conclusion: The study revealed that most participants experienced varying degrees of nomophobia. The presence of individuals experiencing nomophobia among healthcare professionals and the lack of awareness that this is a problem pose a great risk. It is recommended to address this issue by conducting in-house training programs within the hospital.

Keywords: *Addiction, Health Professionals, Phobia, Nomophobia, Mobile Phone.*

ÖZ

Türkiye'de Bir Üniversite Hastanesinde Çalışan Tıbbi Sekreterlerde Nomofobinin Değerlendirilmesi
Amaç: Bu çalışmada sağlık çalışanı olan tıbbi sekreterlerde nomofobi sıklığını ve etkileyen faktörlerin belirlenmesi amaçlandı.
Gereç ve Yöntem: Kesitsel tipteki bu çalışma Mayıs-Haziran 2022 tarihleri arasında gerçekleştirilmiştir. Araştırmada veri toplamak amacıyla sosyodemografik bilgi formu ve Nomofobi Ölçeği (NMP-Q) kullanılmıştır. İstatistiksel analiz için SPSS 22.0 yazılımı kullanılmıştır. Mann Whitney U, Kruskall Wallis testi ve Spearman korelasyon analizi yapılmıştır.
Bulgular: Araştırmaya katılan 293 tıbbi sekreterin %59,0'ı (n =173) kadın olup, katılımcıların yaş ortalaması 36,5±6,9'du. NMP-Q'ya göre bireylerin %0,6'sı sağlıklı, %32,8'i hafif, %48,5'i orta ve %18,1'i şiddetli nomofobiktir. NMP-Q puanları; bekarlarda, sosyal medya kullananlarda, işyerinde cep telefonu kullananlarda daha yüksektir ($p < 0,05$). Günlük cep telefonu kullanımı ile NMP-Q puanları arasında pozitif ve anlamlı bir ilişki bulunmuştur ($p < 0,01$).
Sonuç: Bu çalışma, katılımcıların çoğunun değişen derecelerde nomofobi yaşadığını ortaya çıkarmıştır. Sağlık çalışanları arasında nomofobi yaşayan bireylerin varlığı ve bunun bir sorun olduğuna dair farkındalık eksikliği büyük bir risk oluşturmaktadır. Hastane içerisinde kurum içi eğitim programları düzenlenerek bu konunun ele alınması önerilebilir.

Anahtar Sözcükler: *Bağımlılık, Sağlık Çalışanları, Fobi, Nomofobi, Cep Telefonu.*

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Parallel to the widespread use of mobile phones different problems related to mobile phones, have emerged in the last decade. One popular problem involves using the phone too much, which can eventually lead to addiction (1). Considering that 5.4 billion (68.0% of the world's population) in the world and 81.6 million (95.4%) people in Turkey have mobile phones, this problem can lead to serious consequences (2).

Nomophobia, the fear experienced when a mobile device cannot be accessed or communicated, is the new phobia of the modern age (1). The term nomophobia was first used in a study conducted in England in 2008 (3). People with nomophobia are afraid, unhappy, stressed, and anxious when they are away from their phones, out of battery, or out of range (3-5). Nomophobic people usually suffer from physical problems such as headaches, eye problems, radiation exposure, numbness in fingers, and musculoskeletal pain (5, 6). The excessive use of mobile phones can lead to withdrawal from the social environment, depression, loneliness, low self-esteem, negative communication with the environment, and sometimes even suicide

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attempts (7, 8). This disorder has become so common that 86% of participants had mild or moderate nomophobia while 13.2% had severe nomophobia, leaving only 0.8% of participants labeled as not having this disorder in a large-scale study with 2838 participants (9). Similarly, in Turkey, 8.5% of the youth had severe, 71.5% moderate, and 20.0% mild nomophobia (10).

The problem of nomophobia is also apparent to health professionals, as health professionals were found to have moderate nomophobia (11). One type of health professional, medical secretaries, is responsible for filing and archiving patient correspondences, as well as the reports of physicians and administrators working in health institutions. Compared to other health professionals, medical secretaries spend more time in front of computers and the internet (12). As nomophobia can cause people to neglect their work, a high level of nomophobia in medical secretaries can lead to many problems, including forgetting patient data, making careless mistakes, sacrificing professional patient dialogue, and causing quality degradation. Such problems can endanger patients' health, as it may cause neglect of patients for reasons (13).

Although there are studies evaluating nomophobia in health professionals in the literature (5, 13), no study has evaluated nomophobia in medical secretaries. The fact that this study was conducted with a sample of medical secretaries in the health sector is valuable in revealing how common nomophobia is in this line of work, as high percentages of nomophobia can lead to severe consequences. This study aimed to determine the prevalence of nomophobia and influencing factors in medical secretaries who are health professionals.

MATERIAL AND METHOD

Participants

This study was conducted on medical secretaries at Firat University Hospital, which is a large hospital with 1200 beds located in eastern Turkey. The hospital employed a total of 301 medical secretaries in the year 2022. The objective was to encompass the entirety of the universe without any form of sampling or selection. Eight medical secretaries were eliminated from this study due to their non-willingness. The research was carried out from May 2022 to June 2022, involving 293 medical secretaries, resulting in a participation percentage of 98.3%. The questionnaire was administered in person.

Ethical Approval

Ethical permission (15.04.2022-7985) was given from the Firat University Non-Interventional Research Ethics Committee, and official permission from the hospital was obtained before the research. Each participants gave their written informed consent to participate in the study, and the study was carried out in accordance with the principles of the Declaration of Helsinki.

Data Collection

The questionnaire form consisted of two sections: sociodemographic characteristics and Nomophobia Scale (NMP-Q). Independent variables in this study; sociodemographic characteristics were characteristics related to occupation and mobile phone use. The dependent variable of the study was the NMP-Q scores of the individuals.

Sociodemographic Data Form

The questionnaire consisted of 33 questions, and the names of the participants were not included in the questionnaire. There were 21 questions on sociodemographic characteristics such as gender, age, marital status, level of education, smoking and alcohol consumption. There were 6 questions on occupational characteristics such as type of work, years worked and work unit. There were 6 questions about the reason for using mobile phones and social media applications. The average time for completion of the questionnaire was 20 minutes per participant.

Nomophobia Scale (NMP-Q)

The nomophobia scale developed by Yıldırım and Correira (1) was adapted into Turkish by Yıldırım et al (14). The scale is in 7-point Likert type and consists of 20 questions. The questions were divided into four subdimensions: Giving up Convenience (N-GC), Losing Connectedness (N-LC), Not Being Able to Access Information (N-NBI), Not Being Able to Communicate (N-NBC). The sum of these four sub-dimensions scores gives the NMP-Q score. This score can be interpreted as follows: =20 scores no-nomophobia, 21≤scores<60 mild nomophobia, 60≤ scores <100 moderate nomophobia, 100≤ scores ≤140 severe nomophobia.

Data Analysis

All the analyses were carried out by the IBM Statistical Package for the Social Sciences (SPSS) 22.0. The data was not normal according to the Kolmogrov-Smirnov test; therefore, non-parametric tests were used (Mann Whitney U, Kruskall Wallis test, Bonferroni test, Spearman correlation, Binary logistic regression). The thresold for statistical significance was taken as $p < 0.05$.

RESULTS

A total of 293 medical secretaries were participated in the study, 59.0% were female; mean age was 36.5±6.9 (ranging from 21 to 54). The mean working year of medical secretaries was 11.0±6.1 (ranging from 1 to 31) years. 48.1% of the participants were smoking, and 6.5% were using alcohol. When the participants' health status was examined, 41.0% perceived it as good, 57.7% as moderate, and 1.4% as bad. The habits of doing sports and eating regularly were reported by 26.6% and 51.5% of the participants, respectively. Of the medical secretaries, 53.6% worked in the clinic, 30.0% in the polyclinic, 11.6% in the administrative unit, and 4.8% in the laboratory. In addition, 71.3% of

the participants worked in the appropriate unit for their expertise, and 14.0% of them worked in shifts. Table 1 shows the distribution of the medical secretaries according to sociodemographic characteristics.

Table 1. *Distribution of medical secretaries according to descriptive statistics.*

Descriptive statistics (n =293)	n	%
Gender		
Female	173	59.0
Male	120	41.0
Age		
21-29	56	19.1
30-39	128	43.7
40-54	109	37.2
Marital status		
Married	214	73.0
Single	79	27.0
Status of having children		
Yes	200	68.3
No	93	31.7
Educational status		
High school	73	24.9
Associate degree	137	46.8
Bachelor degree	71	24.2
Master/PhD	12	4.1
Perception of socioeconomic level		
Good	40	13.7
Moderate	222	75.8
Bad	31	10.6
Chronic disease status		
Yes	55	18.8
No	238	81.2
Type of chronic disease (n =55)		
Circulatory system diseases	21	38.1
Neurological system diseases	12	21.8
Respiratory system diseases	10	18.2
Endocrine system diseases	7	12.7
Musculoskeletal diseases	5	9.1
Medication		
Yes	39	13.3
No	254	86.7
Work type		
Fixed-term contract	111	37.9
Permanent employment	182	62.1
Family type		
Nuclear	270	92.2
Extended	23	7.8
Working year		
5 years or fewer	44	15.0
6-10 years	128	43.7
11-15 years	57	19.5
16 years or more	64	21.8

When the mobile phone usage characteristics of medical secretaries were examined, it was found that 97.3% of them had a mobile phone, and 64.5% used their mobile phones during working hours. The average use of mobile phones by the participants in a day were 3.5±2.2 hours. More than one tenth of the participants (13.3%) thought they were mobile phone addicts, and 54.6% thought they were partially mobile phone addicts. The most used social media applications were Instagram, YouTube, and Facebook, respectively. The distribution of medical secretaries according to their mobile phone usage characteristics is given in table 2.

Table 2. *Distribution of medical secretaries by mobile phone usage characteristics.*

Smartphone usage characteristics (n =293)	n	%
Reason to use mobile phone*		
Making a call	211	72.0
Social media	168	57.3
Communication with family	168	57.3
Communication with friends	139	47.4
Reading news	108	36.9
Education and research	102	34.8
Banking	93	31.7
Sending message	90	30.7
Listening to music	83	28.3
Shopping	74	25.2
Playing games	35	11.9
Navigation	20	6.8
Social media apps*		
Instagram	212	72.3
YouTube	134	45.7
Facebook	130	44.4
Google	116	39.1
Twitter	74	25.3
Tiktok	37	12.6
Whatsapp	36	12.3
Snapchat	20	6.8
Pinterest	11	3.7
How long after you wake up in the morning do you use a smartphone?		
When I wake up	51	17.4
In five minutes	52	17.7
In half an hour	41	14.0
In an hour	50	17.1
Before leaving home	17	5.8
On the way to work	82	27.9
Time to use smartphone before bedtime		
Just before bed	76	25.9
Five minutes ago	35	11.9
Half an hour ago	87	29.7
A few hours ago	95	32.4

**More than one answer possible.*

Nomophobia scale scores of the medical secretaries were as follows: NMP-Q 72.9±26.4, N-NBI 14.3±6.3, N-GC 18.3±2.6, N-NBC 25.5±10.0, and N-LC was 14.7±8.7. According to NMP-Q, 32.8% of the participants had mild nomophobia, 48.5% moderate nomophobia, and 18.1% severe nomophobia, while only 0.6% of them were labelled as normal. A statistically significant difference was found between NMP-Q scores and marital status, chronic illness, family type, and mobile phone use while at work ($p < 0.05$). The NMP-Q scores were higher for the participants who were single, did not have a chronic disease, thought that they were addicted to a mobile phone, the participants who used mobile phones during work ($p < 0.05$). NMP-Q scores did not change according to gender, age, smoking-alcohol use, educational status, regular eating habits ($p > 0.05$, Table 3).

Table 3. *Distribution of participants' NMP-Q scores according to sociodemographic variables.*

Variables (n =293)	n	Mean±SD	NMP-Q scores median (min-maks)	Statistics
Gender				
Female	173	74.1±1.9	75.0 (20-140)	9671.000[b]
Male	120	71.1±2.4	71.5 (20-131)	p =0.320
Age				
21-29	56	74.4±3.5	72.5 (31-140)	0.176[a]
30-39	128	72.9±2.3	76.5 (20-126)	p =0.916
40-54	109	72.0±2.5	71.0 (20-134)	
Marital status				
Married	214	70.7±1.7	71.0 (20-134)	6997.000[b]
Single	79	78.7±3.0	80.0 (21-140)	**p =0.024**
Educational status				
High school	73	72.9±2.9	74.0 (20-126)	
Associate degree	137	73.0±2.3	73.0 (20-140)	3.089[a]
Bachelor degree	71	74.6±2.9	75.0 (29-123)	p =0.378
Master/PhD	12	61.3±6.3	62.0 (34-111)	
Perception of socioeconomic level				
Good	40	66.1±5.5	63.0 (20-126)	2.481[a]
Moderate	222	73.8±1.7	75.5 (20-140)	p =0.289
Bad	31	73.1±3.3	73.5 (34-114)	
Chronic disease status				
Yes	55	66.4±3.9	59.0 (22-134)	5321.000[b]
No	238	74.4±1.6	76.0 (20-140)	**p =0.031**
Family type				
Nuclear	270	71.7±1.5	73.0 (20-134)	2277.500[b]
Extended	23	86.1±7.0	82.0 (21-140)	**p =0.034**
Perception of health status				
Good	120	71.6±2.4	71.5 (21-140)	2.665[a]
Moderate	169	74.1±1.9	77.0 (20-134)	p =0.264
Bad	4	57.2±9.5	64.5 (29-71)	

[a] *Kruskall Wallis test,* [b] *Mann Whitney U test, * Groups that make the difference with the Bonferroni test.*

The distribution of participants' NMP-Q scores according to various variables is given in table 4.

Table 4. *Distribution of participants' NMP-Q scores according to various variables.*

Variables (n =293)	n	Mean±SD	NMP-Q scores median (min-maks)	Statistics
Work in the appropriate unit for their profession				
Yes	209	74.7±1.7	78.0 (20-131)	7299.000[b]
No	84	68.2±2.9	65.5 (28-140)	**p =0.024**
Working unit				
Clinic	157	73.9±2.3	77.0 (20-134)	
Policlinic	88	70.6±2.6	71.0 (20-122)	1.378[a]
Laboratory	14	78.9±6.1	78.0 (46-140)	p =0.711
Administrative unit	34	71.5±4.1	70.0 (25-121)	
Using mobile phone during working hours				
Yes	189	78.2±1.8	79.0 (20-140)	6616.500[b]
No	104	63.1±2.3	61.0 (20-115)	**p <0.001**
The state of thinking that you are a mobile phone addict				
Yes	39	84.0±4.7	85.00 (32-140)*	17.428[a]
No	160	66.9±2.0	67.5 (20-134)*	**p <0.001**
Partially	94	78.3±2.4	78.5 (29-131)	
Social media use				
Yes	168	77.8±1.9	78.5 (27-140)	7866.000[b]
No	125	66.3±2.3	66.0 (20-134)	**p <0.001**
How long after you wake up in the morning do you use a mobile phone?				
When I wake up	51	80.1±3.7	79.0 (27-140)*	
In five minutes	52	79.4±3.0	77.5 (38-124)*	
In half an hour	41	73.6±4.4	69.0 (25-126)	
In an hour	50	69.7±3.8	67.50 (20-134)*	11.606[a]
Before leaving home	17	66.2±5.6	72.0 (22-103)	**p =0.041**
On the way to work	82	67.1±2.8	70.0 (20-116)*	
Time to use mobile phone before bedtime				
Just before bed	76	77.8±2.8	77.5 (30-140)	
Five minutes ago	35	76.5±4.5	75.0 (32-126)	5.501[a]
Half an hour ago	87	72.0±2.6	74.0 (20-131)	p =0.139
A few hours ago	95	68.3±2.9	66.0 (20-134)	

[a] *Kruskall Wallis test,* [b] *Mann Whitney U test, * Groups that make the difference with the Bonferroni test.*

Participants who were using social media, used mobile phones at work, and used mobile phones immediately upon waking up in the morning had significantly higher NMP-Q scores ($p < 0.05$).

A positive, significant correlation was found between the daily use of mobile phones and the NMP-Q scores ($p < 0.01$, Table 5).

Table 5. *Correlation of medical secretaries' NMP-Q scores with various variables.*

Variables	NMP-Q scores
Age	r =-0.050, p =0.393
Height	r =-0.051, p =0.382
Weight	r =-0.061, p =0.297
Body mass index	r =-0.045, p =0.443
Working year	r =0.011, p =0.855
Number of people living in the house	r =-0.051, p =0.382
Number of children	r =0.134, **p =0.021**
Daily use of mobile phones	r =0.219, **p <0.001**

**Spearman correlation analysis.*

No correlation was found between age, height, weight, BMI, years of work in the profession, and NMP-Q scores (p >0.05).

Binary logistic regression analysis of various characteristics with nomophobia as the outcome variable is shown in table 6. It was found that using a smartphone during working hours could increase the risk of nomophobia by 0.4 times (p <0.05, Table 6).

Table 6. *Binary logistic regression analysis of characteristics with nomophobia* as the outcome variable.*

Factor	Odds ratio	95% Confidence Interval	p
Marital status			
Single	1		
Married	0.813	0.383-1.726	0.589
Family type			
Nuclear	1		
Extented	0.497	0.172-1.437	0.197
Eating regularly			
No	1		
Yes	0.535	0.274-1.043	0.066
Using instagram			
No	1		
Yes	0.519	0.210-1.280	0.155
Using snapchat			
No	1		
Yes	0.338	0.114-1.001	0.050
Using youtube			
No	1		
Yes	0.683	0.344-1.357	0.277
Using tiktok			
No	1		
Yes	0.629	0.268-1.477	0.287
Using mobile phone during working hours			
No	1		
Yes	0.392	0.179-0.862	**0.020**
The state of thinking that you are a mobile phone addict			
No	1		
Yes-partially	0.572	0.284-1.154	0.119

**Normal, mild and moderate individuals were defined as no risk, and severe nomophobic participants were defined as at risk.*

DISCUSSION

In our study, 32.8% of the participants, were mild, 48.5% moderate, and 18.1% severe nomophobia. In a study conducted with health professionals, 34.5% of the participants were mild, 45.5% moderate, and 20.0% severe nomophobia (11). In a study of nurses, 28.1% mild, 37.6% moderate, and 30.4% severe nomophobia were found (15). Of university students, 25.0% were mild, 55.9% moderate, and 18.2% had severe nomophobia (16). In a study of nurses in Italy, 66.2% were mild, 21.0% moderate, and 6.9% severe nomophobia (8). In our study, nomophobia in medical secretaries was quite high. The presence of nomophobia in health professionals can cause distraction, communication disorder, and service disruption.

In our study, the mean score of the NMP-Q of the participants was found to be 72.9±26.4. Similar to our findings, it was found to be 77.6±25.7 in Demirel et al. (17), 72.7±28.8 in Al et al. (11), 60.0±15.0 in Bulbuloglu et al. (18), 50.3±29.0 in Lupo et al. (8). The difference in the sample and the places where the studies were conducted may affect the nomophobia scores.

N-NBC was the highest of the NMP-Q sub-dimension scores. Studies conducted on nurses, university students, and young people also parallel to our study. (16-19). However, in another study conducted with nurses, the mean score of N-GC was high (5). This finding may be because health professionals are a professional group that uses communication at a high level.

Female participants had high nomophobia scores, but it was not significant. In the literature, besides the studies in which the scores of women were found to be significantly higher (5, 17), some studies found no relationship between gender and nomophobia (11, 20, 21). In-depth studies are needed in this regard.

In this study, NMP-Q scores decreased as the age of the participants increased, but it was not statistically significant. There were studies in the literature that found a negative correlation between age and NMP-Q scores (5, 11, 15, 18). Yildiz et al. found that individuals in the Z generation had higher nomophobia scores than those in the X and Y generations (22). On the other hand, there were also studies reporting that the

age of individuals did not make a significant difference in their nomophobia scores (14, 17). These results were consistent with our study. This may be because young people are more familiar with technologies and use social networks more (23).

Single participants in this study had significantly higher scores. In Demirel (17) et al.'s study, singles' scores were high but not significant. In the study of Uguz (5) et al., there was no relationship between marital status and nomophobia. The fact that single participants have more free time and fewer domestic responsibilities may cause them to spend more time with their mobile phones.

Nomophobia scores were not changed according to the education level of the participants. The literature was also parallel to our study (5, 17). This is because the sample group is from the same profession.

The nomophobia scores of the participants who used mobile phones during the task were significantly higher. The study of Bulbuloglu (18) et al. was similar to our study. In a study conducted with Italian nurses, it was shown that the use of personal digital technologies in the workplace negatively affects work performance and may cause errors during clinical applications (8). In the literature, it has been stated that nomophobia causes distraction (24, 25).

The NMP-Q scores of the participants who thought they were addicted to mobile phones were found to be significantly higher. The literature was also similar to our study (5). This shows that medical secretaries are aware of their dependence on their mobile phones.

The NMP-Q scores of the participants who used mobile phones when they woke up in the morning were significantly higher. The literature was also consistent with our study (1, 5, 17). Spending time on a mobile phone right after waking up can be considered a risky behavior regarding nomophobia. The fact that individuals want to check their mobile phones so often can be interpreted as giving importance to the notifications they may receive.

A positive, significant correlation was found between the daily use of mobile phones and the NMP-Q scores. In the literature, NMP-Q scores increase significantly as the daily mobile phone usage time increases (5, 11, 13, 17, 18, 21).

The scope of the research is limited to medical secretaries, so it cannot be generalized to all health professionals in a university hospital. Due to the cross-sectional design of the study, it may not be possible to establish definite cause-and-effect findings. However, the findings of this study are important as they reveal the nomophobia status of health professionals in Turkey.

Conclusion

As a result, it was determined that the nomophobia scores of individuals who use mobile phones during work, think that they are addicted to mobile phones, use mobile phones as soon as they wake up in the morning, and have more daily mobile phone usage time was found to be higher. The study revealed that a majority of participants experienced varying degrees of nomophobia. It is recommended to address this issue by conducting in-house training programs within the hospital. These programs can focus on raising awareness about the adverse effects of excessive mobile phone usage and the implications of nomophobia, particularly among health professionals.

Individuals with severe nomophobia can be directed to addiction treatment. The presence of individuals experiencing nomophobia among healthcare professionals and the lack of awareness that this is a problem pose a great risk. In light of these results, it is essential to increase awareness and education about the optimal use of these devices. Large-scale studies are needed on this subject.

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Conflict of Interests

The authors declare that there are no conflicts of interest.

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Availability of data and materials

Data will be shared with individuals upon request.

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