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Relationship Between Nomophobia Levels and Personality Traits of Nursing Students: A Multicenter Study

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Abstract

Background: Nomophobia, short for no mobile phobia, is the fear of being without a smartphone. Nomophobia is common, especially in the young population, with an increase in the use of technology in society.
Objectives: This study aimed to determine the nomophobia levels of nursing students and the relationship between nomophobia and personality traits.
Methods: This multicenter, descriptive, and relational study was carried out in three different universities. The students were reached via the Web-Anket application within June to July 2021. The nursing department students in Turkey (n = 818) constituted the research population. No sample selection was performed in the study, and all students who accepted to participate and met the inclusion criteria were included in the study. The study was conducted on 424 nursing students. The data were collected via an online personal information form, Nomophobia Questionnaire, and 10-Item Personality Inventory (TIPI). Percentage, mean ± standard deviation, analysis of variance, and Pearson correlation coefficient tests were used to analyze the data.
Results: The mean age of the participants was 20.5 ± 1.8 years. Moreover, 84.7% of the participants were female. Additionally, 93.2% of the subjects lived with their parents, and 63.0% reported that the monthly income of the family was equal to monthly expenditures. It was shown that 31.1% of the students had mild nomophobia; nevertheless, 52.6% and 16.3% of the students had moderate and severe nomophobia, respectively. The total nomophobia score was observed to be 74.17 ± 25.53. The TIPI subdimensions' mean scores were 9.87 ± 2.29, 8.83 ± 2.33, 8.66 ± 2.82, 10.66 ± 2.65, and 9.34 ± 3.04 for openness to experience, agreeableness, emotional stability, conscientiousness, and extroversion, respectively. This study revealed that students' smartphone usage purposes and personality traits were related to their nomophobia levels.
Conclusions: More than half of the nursing students had a moderate level of nomophobia. There is a relationship between the purpose of smartphone use and students' personality traits with their nomophobia levels.

Keywords: Nomophobia, Nursing Students, Personality Traits, Smartphone

1. Background

The integration of information and communication technologies into our lives has caused the smartphone to become an important device in individuals' daily lives, and its use has increased exponentially. Smartphones are used for social networking, sending and receiving e-mail, messaging, calling, playing digital games, and shopping online (1). According to the 2021 Turkish Statistical Institute data, 95.3% of the population had mobile phones in 2020. Young adults are reported to have a higher rate of smartphone use (2). The number of problems caused by the common and frequent use of smartphones is relatively high. In addition to studies citing the advantages of smartphones, there are also studies reporting that smartphones are potentially addictive, cause antisocial behaviors, and harm the family and professional life of individuals, which are the effects that can be described as dangerous (3-6).

A new pathology called nomophobia has emerged due to the excessive use of smartphones and the addiction caused by this technology (7-10). Nomophobia, or no mobile phobia, is defined as the fear of being without a smartphone (1, 11-13) and includes discomfort, anxiety, nervousness, and distress when one does not have his/her smartphone readily available (14, 15). It is acknowledged as the virtual disease of contemporary and digital society.

Individuals who develop nomophobia show the symptoms of spending a considerable amount of time using their mobile phone, carrying one or more devices and a

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charger, feeling anxious and nervous when unable to use the smartphone for a reason, avoiding places and situations where smartphone use is not allowed (e.g., driving, public transportation, and theater) as much as possible, continuously checking for incoming messages and calls, not turning off the phone day and night, and preferring online communication to face-to-face communication (14). Nomophobia is common, especially in the young population, with the increased use of technology in society (1, 11, 12). It can cause low self-esteem, loneliness and unhappiness, and a strong addiction to mobile technology. Relationships and interactions between individuals decrease, leading to some problems, such as depression, anxiety, anger, aggression, social isolation, and sleep disorders (1, 13, 16, 17).

In studies conducted on university students, Apak and Yaman (11) and Erdem et al. (12) showed that 41% and 54% of the participants were nomophobic, respectively. Among university students, higher rates of nomophobia have been reported in females than in males (1, 18). A study conducted on nursing students reported high levels of nomophobia (1), and a study conducted in Turkey reported that 78.7% of nursing and medical school students had moderate levels of nomophobia (19). Nomophobia was observed to adversely influence nursing students' academic achievement and learning levels (1). However, it is important to increase the awareness and attention of nurses, whose duty is to protect and improve the health of society and provide holistic care to patients (20).

By causing distraction in healthcare personnel, nomophobia reduces the quality of care and poses a risk to patient safety (1). In addition to the nomophobia levels, there are also studies examining the factors affecting nomophobia. Sociodemographic characteristics, such as age, gender, ethnicity, and marital status (1, 18-21), variables of emotions, thoughts and behaviors (22-25), and comorbid psychiatric diagnoses (26), have an effect on nomophobia. In addition, it is known that personality traits influence the smartphone usage behaviors of individuals. For example, smartphone usage habits in extroverted individuals differ from those in introverted individuals (27). Although individuals have numerous different personality traits, the Big Five Personality Theory or the Five Factor Personality Model is the most cited theory in the literature. The model consists of five subdimensions, namely extroversion-introversion, agreeableness-aggressiveness, conscientiousness-carelessness, neuroticism (emotional stability)-instability, and openness to experience/intelligence-preference for routine (28).

The effect of nomophobia is thought to be related to the personality traits of individuals; however, there are not enough studies on this subject (15, 29); however, studies (1, 23) have been conducted to show the level of nomophobia in nursing students. In addition, there are several studies analyzing the relationship between the levels of nomophobia in varied populations and smartphone addiction and digitalization (30) with self-esteem and obesity (31), anxiety (32), and fear of missing out on developments in social environments (33) with the concepts of job performance (34). Nevertheless, while there is a study examining the relationship between the personality traits and nomophobia levels of the nurses working in a hospital (35), there is no study examining the relationship between the nomophobia levels and personality traits of nursing students in a more risky period in terms of nomophobia due to their adolescence characteristics. Moreover, there might be regional and cultural differences; therefore, it was decided to carry out this study.

2. Objectives

The study was conducted to determine both the nomophobia levels of nursing students and the relationship between nomophobia and personality traits.

3. Methods

3.1. Research Type

This was a multicenter, descriptive, and correlational study.

3.2. Target Population and Sample

The students studying at the nursing departments of Necmettin Erbakan University (Faculty of Nursing), Yüksek Ihtisas University (Faculty of Health Sciences), and Gaziantep Islam Science and Technology University (Faculty of Health Sciences) (n = 818), Turkey, were the target population of the research. No sample selection was performed. The purpose of the study was explained to all the students, and data collection forms were sent to mobile applications. Forms were sent all the students who met the inclusion criteria were recruited. The status of meeting the inclusion criteria of the students who accepted to participate in the study (marking yes on the consent form) was determined. The inclusion criteria were reading and understanding Turkish, not having any physical disability, and being over the age of 18 years. All the students who gave consent to participate were included in the study. The exclusion criterion was determined as incomplete filling in the questionnaires and unwillingness to cooperate in filling out the questionnaires. The study was completed with 424 students (i.e., 51.8% of the target population).

3.3. Data Collection

The students were reached via the Web-Anket application within June to July 2021. Data collection forms used in the study were created from google forms. The link to the created form was shared in the school communication groups of the students, and they were provided to fill it out based on a self-report manner.

3.4. Data Collection Tool

Personal Information Form: The form includes 11 items on the students' sociodemographic characteristics (e.g., age, gender, year of study, marital status, region of residence, whether their parents are alive, whether they live with parents, parents' educational level, and monthly income of the family) and their purpose of using a smartphone.

3.4.1. Nomophobia Questionnaire (NMP-Q)

The 20-item questionnaire, developed by Yıldırım and Correira (36), is used to determine the nomophobia levels of individuals. It was adapted to Turkish by Yıldırım et al. (37). The items are scored on a seven-point Likert scale. The questionnaire has four subdimensions, namely not being able to have access to information (items 1 - 4), giving up convenience (items 5 - 9), not being able to communicate (items 10 - 15), and losing connectedness (items 16 - 20). The minimum and maximum total scores of the questionnaire are 20 and 140, respectively. A score within the range of 0 - 20 indicates no nomophobia; however, scores within the ranges of 21 - 59, 60 - 99, and 100 - 140 indicate mild, moderate, and severe levels of nomophobia, respectively. A confirmatory factor analysis (CFA) was performed to confirm the underlying structure of the items using AMOS statistics software (version 22). The CFA results of relationships were valid between factors and items (χ^2[164] = 469.90, normal χ^2 = 2.86, comparative fit index [CFI] = 0.92, root mean square error of approximation [RMSEA] = 0.08). It is stated that the nomophobia scale developed by Yıldırım and Correira is a valid and reliable scale adapted to Turkish by Yıldırım et al. (37). In the present study, the Cronbach's alpha of the questionnaire was calculated at 0.80, 0.82, 0.92, and 0.93 for the subdimensions, respectively. The Cronbach's alpha was 0.94 for the total scale.

3.4.2. 10-Item Personality Inventory (TIPI)

The inventory was developed by Gosling et al. (38) and was adapted to Turkish by Atak. The items in the inventory are scored on a seven-point Likert-type scale. The inventory has five subdimensions, namely openness to experience, conscientiousness, extroversion, agreeableness, and emotional stability. Atak (28) reported the Cronbach's Alpha coefficients for the subdimensions as 0.83, 0.81, 0.83, 0.84, and 0.86 for openness to experience, agreeableness, emotional stability, conscientiousness, and extroversion, respectively. Calculated by the Confirmatory Factor Analysis (CFA) (X^2/sd) ratio is 2.20 ($P < 0.001$), and this value is equivalent to the proposed factor model. This value showed that the proposed factor model was highly compatible with the data. Additionally, good of fit index, incremental fit index, comparative fit index (CFI), adjusted goodness of fit index, non-normed fit index, Root Mean Square Residual (RMR), root mean square error of approximation (RMSEA) were reported as 0.95, 0.93, 0.93, 0.92, 0.91, 0.042, and 0.037, respectively. According to the CFA results, the five-factor structure of the scale was reported to be a valid and reliable scale (28). In the present study, Cronbach's alpha values were within the range of 0.52 - 0.76.

3.5. Ethical Considerations

Ethics committee approval (dated 06/07/2021 and protocol numbered 2021/23) was obtained from the Non-interventional Clinical Research Ethics Committee of Gaziantep Islam Science and Technology University. Written permission was obtained from the institutions where the study was conducted.

3.6. Data Analysis

The data were analyzed in the SPSS software (version 21). The reliability of the scales was tested with Cronbach's Alpha, and percentage and mean ± standard deviation were used to evaluate the findings related to the sociodemographic characteristics of the individuals. While testing the normality assumption, skewness and kurtosis values were taken into account. Since the skewness and kurtosis values were within 1.96 to -1.96, it was assumed that the normal distribution conditions were met. Analysis of variance (ANOVA) and Pearson correlation analyses were performed to address the research questions. The effect size for the independent *t*-test was calculated based on Cohen's d (Arslan, 2019). According to Cohen's d, the effect size levels were related to the difference between the two means, classified as small (< 0.4), moderate (0.41 - 0.70), and large (> 0.70). The level of significance was set at less than 0.05.

4. Results

The mean age of the participants was 20.5 ± 1.8 years. In this study, 84.7% of the participants were female. Furthermore, 51.4% of the participants lived in the Central Anatolian Region, and 53.1% of the participants studied at Faculty of Nursing, Necmettin Erbakan University. Moreover, 52.6%

of the participants were first-year students, and 93.2% of the participants lived with their parents. Moreover, 61.6% and 34.0% of the participants had mothers and fathers whose educational level was primary school level/below, respectively, and 63.0% of the participants reported that the monthly income of the family was equal to monthly expenditures. The data regarding smartphone usage showed that 78.3% of the students used social media, and 82.8% used their phones to search for information; nevertheless, 39.2%, 66%, 74.5%, and 78.5% of the students used their phones for playing games, shopping, video shooting, and photography, respectively.

It was shown that 31.1% of the students had mild nomophobia; however, 52.6% and 16.3% of the students had moderate and severe nomophobia, respectively. There were no students with a total nomophobia score within the range of 0 - 20 (Table 1).

Table 1. Comparison of Nursing Students' Nomophobia Levels and Personality Inventory Subdimensions (n = 424)

Nomophobia Level	No. (%)
No ($0 \leq$ NMP-Q score ≤ 20)	0
Mild ($21 \leq$ NMP-Q score < 60)	132 (31.1)
Moderate ($60 \leq$ NMP-Q score < 100)	223 (52.6)
Severe ($100 \leq$ NMP-Q score ≤ 140)	69 (16.3)

Abbreviation: NMP-Q, Nomophobia Questionnaire.

The mean scores of the students for the subdimensions of the NMP-Q were 16.74 ± 6.03, 18.07 ± 7.50, 25.23 ± 9.26, and 14.12 ± 7.93 for being able to have access to information, giving up convenience, not being able to communicate, and loss of connectedness, respectively. The total mean nomophobia score was observed to be 74.17 ± 25.53. The TIPI subdimensions' mean scores were 9.87 ± 2.29, 8.83 ± 2.33, 8.66 ± 2.82, 10.66 ± 2.65, and 9.34 ± 3.04 for openness to experience, agreeableness, emotional stability, conscientiousness, and extroversion, respectively (Table 2).

Pearson correlation analysis was performed to determine the relationship between students' personality traits and nomophobia subdimension and total scores. According to the analysis results, it was determined that there was a weak negative correlation between openness to experience and the subdimensions of giving up convenience and losing connectedness and between emotional stability and nomophobia's all subdimensions and total scores. In addition, it was determined that there was a weak negative correlation between the TIPI's responsibility subdimension and the nomophobia subdimensions, giving up convenience, losing connectedness, and nomophobia total score (Table 3). In addition, according to ANOVA, the students with mild nomophobia had higher emotional stability and conscientiousness score averages than students with moderate and severe nomophobia (Table 4).

The tests regarding the difference between the sociodemographic characteristics of the students and the mean nomophobia scores revealed a difference between the year of study and the subdimensions of giving up convenience and openness to experience, between the mother's educational status and not being able to communicate and the total nomophobia score, between the use of social media as one purpose of using smartphones and giving up convenience (small effect size), and between playing games, shopping on the phone, and losing connectedness and the nomophobia mean scores (small effect size) ($P < 0.005$) (Table 5).

5. Discussion

Nomophobia causes disorders in individuals' emotions, thoughts, behaviors, and attitudes. Nomophobia levels in individuals are affected by numerous factors (1, 13, 16, 17). This study was conducted to reveal the nomophobia levels of nursing students and the relationship between nomophobia and personality traits. Although there were no non-nomophobic students in this study, it was shown that 31.1%, 52.6%, and 16.3% of the students had mild, moderate, and severe levels of nomophobia, respectively. The total nomophobia mean score was also observed to be 74.17 ± 25.53 (Tables 1 and 2). In line with the results of the current study, the nomophobia levels of the university students (11, 12, 18) and nursing and medical faculty students were observed to be moderate and high in the literature (1, 19, 22, 23).

Nomophobia, which is common, especially among the young population, causes distraction in nursing students due to the misuse of smartphones in clinical practice, the decrease in the quality of care given to patients, the risk to patient safety, and the decrease in students' academic performance and decision-making skills (1, 22, 39). In addition, it has been reported that nursing students are unaware that smartphone use causes distraction. On the contrary, they believe they need their phones more to obtain information and ask for support in the clinic and feel safe when they have their phones with them (40). This might lead to increasing phone usage, becoming more dependent on phones day by day, and encountering many problems (30). For this reason, it is believed that nomophobia levels of nursing students are significant for the institution, the patient, and the student. Including the topic of behavioral addictions in nursing curricula and organizing activities aimed at preventing technology addiction can be effective in reducing nomophobia levels. In addition,

Table 2. Total and Subdimension Scores of the Nomophobia Questionnaire and the Subdimension Scores of Personality Inventory (n = 424)

Variables	Mean ± Standard Deviation	Median	Min	Max
Nomophobia scale subdimension and total scores				
Not being able to have access to information	16.74 ± 6.03	17.00	4.00	28.00
Giving up convenience	18.07 ± 7.50	18.00	5.00	35.00
Not being able to communicate	25.23 ± 9.26	26.00	6.00	42.00
Loss of connectedness	14.12 ± 7.93	12.00	5.00	35.00
Total nomophobia	74.17 ± 25.53	72.00	21.00	140.00
Personality inventory subdimensions				
Openness to experience	9.87 ± 2.29	10.00	2.00	14.00
Agreeableness	8.83 ± 2.33	9.00	2.00	14.00
Emotional stability	8.66 ± 2.82	8.00	2.00	14.00
Conscientiousness	10.66 ± 2.65	11.00	2.00	14.00
Extroversion	9.34 ± 3.04	9.00	2.00	14.00

Table 3. Relationship Between the Total and Subdimension Scores of the Nomophobia Questionnaire and the Subdimension Scores of the Personality Inventory

Variables	Not Being Able to Have Access to Information	Giving Up Convenience	Not Being Able to Communicate	Loss of Connectedness	Total Nomophobia
Openness to experience					
r	-0.039	-0.120 [a]	0.056	-0.111 [a]	-0.059
P	0.420	0.013	0.253	0.023	0.227
Agreeableness					
r	0.021	0.049	0.068	0.037	0.056
P	0.665	0.316	0.163	0.444	0.254
Emotional stability					
r	-0.147 [b]	-0.290 [b]	-0.193 [b]	-0.200 [b]	-0.252 [b]
P	0.002	<0.001	<0.001	<0.001	<0.001
Conscientiousness					
r	-0.005	-0.241 [b]	-0.057	-0.258 [b]	-0.173 [b]
P	0.920	<0.001	0.239	<0.001	<0.001
Extroversion					
r	-0.078	0-.152 [b]	-0.005	-0.082	-0.091
P	0.109	0.002	0.912	0.091	0.062

[a] Significance level: 0.05
[b] Significance level: 0.01

it will be important for nurses, who show a holistic approach with their protective, preventive, therapeutic, and rehabilitative roles, to direct nursing students to health-promoting behaviors, such as healthy eating, doing sports, and regular sleep, in order to reduce their nomophobia levels.

Nomophobia is affected by numerous factors. In the current study, it was observed that the variables with a significant difference between the nomophobia total score and subdimension score averages had a small effect size. Even if the effect size was at a low level, it was noticed that the variables did not cause a random difference. According to the results of the *t*-test in independent groups analysis, the total nomophobia mean score was higher in students

Table 4. Average Score and Comparison of Subdimension Scores of Personality Inventory According to Nomophobia Levels [a]

Nomophobia Levels	No.	Openness to Experience	Agreeableness	Emotional Stability	Conscientiousness	Extroversion
Mild (1)	132	10.10 ± 2.22	8.68 ± 2.18	9.53 ± 2.80	11.38 ± 2.31	9.84 ± 2.88
Moderate (2)	223	9.75 ± 2.296	8.89 ± 2.38	8.47 ± 2.76	10.44 ± 2.84	9.18 ± 3.10
Severe (3)	69	9.82 ± 2.43	8.94 ± 2.47	7.59 ± 2.60	10.01 ± 2.37	8.89 ± 3.03
		F = 0.972; P = 0.379	F = 0.394; P = 0.674	F = 12.252; P < 0.001*; (1) > (2) > (3)	F = 7.914; P < 0.001*; (1) > (2), (1) > (3)	F = 2.833; P = 0.060
Total	424	9.87 ± 2.29	8.83 ± 2.33	8.66 ± 2.82	10.66 ± 2.65	9.34 ± 3.04

[a] F: Analysis of variance, *posthoc test performed to decipher between which groups the difference is: Games-Howell test, P < 0.05.

who play games and shop on the phone (Table 5).

Using social media, playing games, shopping, having access to information, and communicating are reported as the most common reasons for nursing students to use smartphones (23). The constant use of smartphone applications and activities that cause one to spend much time on the phone, such as playing games and shopping, increases phone addiction. As in other behavioral addictions, tolerance develops for the situation that causes addiction (15, 27). The development of tolerance is the continuation of the behavior due to the loss of control over the behavior, as in substance addiction. In behavioral addictions, although it is aimed to avoid addictive behaviors or to have them at a moderate level, longer uncontrolled permanent behavior experiences occur with loss of control (41-43). This, in turn, causes problems in interpersonal relationships and social life (41, 42), sleep disorders, stress, anxiety, a decline in academic performance, and nomophobia (27). The present study also suggests that playing games and shopping with a smartphone increase the level of nomophobia due to the development of tolerance. Moreover, individuals checking their mobile phones for 15 minutes or more frequently and spending a long time on the phone have a high level of nomophobia (44). It can be said that the time spent on the phone poses a risk for nomophobia.

Placing a device in the center of life affects human relationships and social life. Individuals with different personalities have different smartphone usage habits, which affect their life choices (15, 29, 35, 45). According to Pearson correlation analysis, a weak negative connection was shown between emotional stability and conscientiousness personality traits and nomophobia total score (Table 3). Nursing students with mild nomophobia were observed to have higher emotional stability and conscientiousness personality traits' scores than students with moderate and severe nomophobia. In addition, a weak link was observed between the traits of extroversion, agreeableness, and discipline with the nomophobia levels of nurses and a strong relationship between neuroticism and nomophobia levels (35). Nomophobia level is reported to be high in reward addiction (15), neuroticism (46), and low agreeableness (42) dimensions of personality trait models; nevertheless, the level of nomophobia is low in the cooperation dimension (15) of the personality trait models.

There is a positive correlation between the nomophobic status of university students with their extraversion, compliance, responsibility, and openness to development personality scores and a negative relationship between emotional balance personality scores (47). Individuals with low emotional balance personality traits give extreme emotional reactions in stressful environments. They may prefer to stay away from people to stay away from stressful environments. For this reason, they might prefer to use mobile phones and spend more time on them instead of face-to-face contact. There is a negative correlation between nomophobia and basic psychological needs. There is also a negative correlation between the personality trait open to experience and the subdimensions of giving up comfort and loss of connection of nomophobia. This result is compatible with the results in the literature (46). The fact that those who would not like to experience new experiences use their mobile phones more instead of preferring social environments has an impact on this result.

It is argued that personality traits known to be effective in the initiation and maintenance of behaviors also affect nomophobia levels, and positive personality traits, such as emotional stability and conscientiousness, play a role in controlling behaviors. For this reason, it is important for psychiatric nurses to evaluate the personality traits that are effective on nomophobia, which is known as the common disease of the digital age, and to take appropriate initiatives to cope with it. Psychiatric nurses need planning, implementation, and evaluation skills to reduce the cognitive and behavioral addiction levels of nursing students.

5.1. Conclusions and Recommendations

The current study showed that most of the students had a moderate level of nomophobia, and the purpose of using the mobile phone and the students' personality

Table 5. Comparison of Smartphone Usage Area and Mean Scores of Nomophobia Total, Subdimension, and Personality Traits (n = 424) [a]

Variables	No. (%)	Not Being Able to Have Access to Information	Giving Up Convenience	Not Being Able to Communicate	Loss of Connectedness	Total Nomophobia	Openness to Experience	Agreeableness	Emotional Stability	Conscientiousness	Extroversion
					Data on Smartphone Usage Area						
Social media											
Yes	332 (78.3)	16.83 ± 6.18	18.49 ± 7.66	25.67 ± 9.28	14.26 ± 8.14	75.26 ± 26.29	9.88 ± 2.33	8.92 ± 2.34	8.56 ± 2.85	10.59 ± 2.68	9.42 ± 3.10
No	92 (21.7)	16.40 ± 5.47	16.56 ± 6.73	23.67 ± 9.08	13.60 ± 7.14	70.25 ± 22.28	9.84 ± 2.18	8.52 ± 2.89	8.98 ± 2.71	10.94 ± 2.55	9.05 ± 2.78
Test value; significance level		$t = 0.60$; P = 0.516	$t = 2.19$; P = 0.029	$t = 1.83$; P = 0.067	$t = 0.70$; P = 0.481	$t = 1.67$; P = 0.095	$t = 0.13$; P = 0.889	$t = 1.46$; P = 0.144	$t = -1.26$; P = 0.208	$t = -1.12$; P = 0.261	$t = 1.02$; P = 0.306
Effect size		0.185	0.267	0.217	0.086	0.205	0.017	0.152	0.151	0.133	0.125
Playing games											
Yes	166 (39.2)	16.99 ± 5.95	19.50 ± 7.17	26.22 ± 9.04	14.50 ± 8.34	77.65 ± 25.86	9.90 ± 2.62	9.10 ± 2.50	8.04 ± 2.95	10.48 ± 2.80	9.16 ± 3.17
No	258 (60.8)	16.57 ± 6.09	17.15 ± 7.58	24.60 ± 9.36	13.38 ± 7.02	71.94 ± 25.12	9.85 ± 2.06	8.66 ± 2.20	9.05 ± 2.67	10.79 ± 2.56	9.45 ± 2.95
Test value; Significance level		$t = 0.69$; P = 0.489	$t = 3.16$; P = 0.002	$t = 1.77$; P = 0.77	$t = 1.67$; P = 0.095	$t = 2.25$; P = 0.025	$t = 0.22$; P = 0.826	$t = 1.87$; P = 0.062	$t = -3.62$; P < 0.001	$t = -1.16$; P = 0.244	$t = -0.973$; P = 0.331
Effect size	0.069	0.318	0.176	0.145	0.223	0.021	0.186	0.358	0.115	0.094	
Shopping											
Yes	280 (66.0)	16.99 ± 6.10	18.62 ± 7.54	26.04 ± 9.32	14.92 ± 8.37	76.17 ± 26.39	9.94 ± 2.38	8.91 ± 2.37	8.52 ± 2.90	10.71 ± 2.61	9.42 ± 3.01
No	144 (34.0)	16.25 ± 5.90	17.00 ± 7.32	23.60 ± 8.97	13.60 ± 7.60	70.30 ± 23.39	9.75 ± 2.12	8.68 ± 2.25	8.93 ± 2.65	10.58 ± 2.73	9.17 ± 3.03
Test value; Significance level		$t = 1.20$; P = 0.231	$t = 2.12$; P = 0.034	$t = 2.50$; P = 0.012	$t = 1.38$; P = 0.167	$t = 2.25$; P = 0.025	$t = 0.81$; P = 0.414	$t = 0.99$; P = 0.323	$t = -1.41$; P = 0.158	$t = 0.48$; P = 0.632	$t = 0.87$; P = 0.414
Effect size		0.123	0.218	0.266	0.165	0.223	0.084	0.099	0.014	0.048	0.082

[a] *t*; *t*-test in independent groups; P < 0.05; Effect size: Cohen's d.

traits were related to students' nomophobia levels. It is suggested to perform further studies to evaluate the effect of nomophobia on nursing students in terms of students themselves and clinics to introduce smartphone usage regulations in clinics, determine the effects of these regulations on nurses and students both in the educational environment and in clinics, and plan nomophobia prevention or treatment initiatives in accordance with the personality characteristics of individuals.

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Footnotes

Authors' Contribution: N.G.M. created the work design, wrote the original draft, collected the data, and wrote, edited, and revised the final draft. S.İ. collected the data, made the formal analysis, selected the sample, and conducted the interviews. A.A. collected the data, interpreted the data, and edited the final manuscript.

Conflict of Interests: The authors declare no conflict of interest.

Data Reproducibility: All the data generated or analyzed in this study are included in this article. The dataset is available on request from the corresponding author. The data are not made publicly available due to the privacy of the participants. Further questions can be directed to the corresponding author.

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