Investigation of Nomophobia Levels of Secondary School Students in terms of Some Variables*

Merve ÇOLAK[1]

Çanakkale Onsekiz Mart University

Eylem YALÇINKAYA-ÖNDER[2]

Çanakkale Onsekiz Mart University

Abstract

Nomophobia, a newborn concept that has become an important part of our lives in recent years due to effective use of smart phones in daily life, can be defined as "fear of staying away from smart phones". The aim of this study was to determine the nomophobia level of 8th grade students and to determine whether the nomophobia levels of the students differ according to the variables such as gender, overall grade point average, parental education status, parental profession, and monthly income of the family. In this quantitative research, cross-sectional survey research model was used. "Nomophobia Scale" developed by Yildirim and Correia (2015) and "The Demographic Information Form" were used as data collection tools. According to the findings; the nomophobia levels of 8th grade students did not differ by gender of the students, overall grade point average, educational status of the parents, profession of the parents and monthly financial amount of the family.

Keywords: Nomophobia, Gender, Secondary School Students, GPA, Mother Education Status, Father Education Status, Mother Profession, Father Profession, Family Income.

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[1]MS, Faculty of Education, Çanakkale Onsekiz Mart University, Turkey, ORCID: 0000-0002-1817-4899

Correspondence: merveyakut93@gmail.com

[2]Assist. Prof. Dr., Faculty of Education, Çanakkale Onsekiz Mart University, Turkey, ORCID: 0000-0003-1306-9931, E-mail: eylemyk@gmail.com

Introduction

We are living in the age of technology and parallel to the rapid development of science and technology, it is seen that technology affects the way of life of society. Researches indicated that the age of use of technological products has decreased until the primary school age (Şalcı, Karakaya, and Tatlıeşme, 2018). In particular, information technology has become an indispensable part of our lives. The best example of information technology is mobile phones. In recent years, mobile phones evolved as smart phones attract people of all ages and make people addicted to mobile phones. In recent years, the level of dependence has increased with the development of smart phones (Demirci, Orhan, Demirdas, Akpinar, and Sert, 2014). People spend most of their time talking and texting via smart phones and accessing the up to date information via their phones. While children use mobile phones to chat and follow the outside world, they become dependent on mobile phones (Aljomaa, Qudah, Albursan, Bakhiet, and Abduljabbar, 2016). Mobile phones, which are being used to follow the outside world, can cause children to break away from the outside world. Children's addiction to mobile telephones and spending most of their days using them can negatively affect their course success (Jacobsen and Forste, 2011). This addiction to mobile telephony can cause physical discomfort such as burning in the eyes, drowsiness in the eyes, pain in the neck muscles, as well as disruptions in academic achievement, sleep disturbances and disruptions in activities in the social field. Addiction to mobile phone leads to the problem of nomophobia. Nomophobia is a term used to describe people's anxiety about not using their phones at their fingertips (King, Valença, Silva, Sancassiani, Machado, and Nardi, 2014). The concept of nomophobia was first introduced in 2008 by a postal administration survey in the UK (Erdem et al. 2017). Nomophobia, the abbreviation of "no mobile phone phobia" nomophobia is the "fear of staying without a smart phone" (Dailymail.Co.uk, 2008; Erdem, Türen, and Ercil, 2017).

In the mobile era we are in, smart phones have become attractive. As the functions of smart phones increase, the time spent by people with smart phones increases. Deloitte (2017) showed that Turks' smartphone usage rates increased by 6% compared to 2015. There was also an increase in the amount of time people spend with a smartphone, and it was determined that people checked their phones before going to sleep and within the first 15 minutes after waking up (Bayram, Yilmaz, Sözen, and Bayer, 2019).

The addiction of people on their smartphones has revealed the concept of nomophobia that newly takes place in the literature (Büyükçolpan, 2019). In several studies on nomophobia, Erdem, Kalkın, Türen and Deniz (2016) studied the effects of nomophobia on academic success in university students, Gezgin, Hamutoğlu, Sezen-Gültekin and Yildirim (2019) investigated the prevalence of nomophobia among pre-service teachers, while Altan (2019) investigated the level of nomophobia of children between the ages of 15-18.

Using mobile phone makes the individual feel psychologically good (Park and Lee, 2012). İndividuals' use of mobile phones distanced them from bad thoughts for a while and this situation increased the level of nomophobia (Kim, Seob and David, 2015). These are all shows that the use of mobile phones can be addictive.

Using mobile phones can cause children to be disconnected from the outside world. Children who spend most of the day on the internet with their mobile phones, playing games via mobile phones and listening to music may neglect other responsibilities. Pavithra, Madhukumar and Mahadeva (2015) in a study on nomophobia found that the use of smartphones affects students' concentrations. When the studies are examined, it has been determined by the researchers that the nomophobia level of the students may have positive and negative results on their school success. In his study, Dirik (2016) found that there was no significant difference between students' perception of academic success and smartphone addiction levels. Erdem et al. (2016) investigated the effect of nomophobia on academic achievement and found that nomophobia posed an important problem on students' academic success. Hoşgör, Tandoğan and Gündüz-Hoşgör (2017) found that students have high levels of nomophobia and this affect their academic success. Using mobile phones can be addictive. If this situation is explained by behaviorist theory, if satisfaction is achieved after an act, if this behavior helps to save the person from negative situations, the person continues to continue that behavior (Cüceloğlu, 1993). From this point of view, the use of mobile phones may help people to get rid of negative situations by providing satisfaction.

Literature Review

Bianchi and Philips (2005) nomophobia is seen more frequently in young users, and people with high nomophobia experience self-distress and introversion. Chóliz (2012) studied with adolescents on mobile phone addiction and found that girls nomophobia level was higher than boys and this mobile phone addiction caused familial problems. According to Salehan and Negahban (2013), social media increased the use of smartphones. Şar (2013) examined the problematic mobile phone use of adolescents in terms of loneliness, gender and duration of mobile phone use. It was concluded that adolescents had a high level of nomophobia and male students were more problematic to use mobile phones than female students. Lepp, Barkley and Karpinski (2014) studied the effect of nomophobia on education life. They concluded that the increase in the level of nomophobia had an adverse effect on education life. Van Deursen, Bolle, Hegner and Kommers (2015) found that the type of smartphone use is related to the level of nomophobia. They concluded that the nomophobia level of women was higher than the nomophobia level of men. They also found that individuals under pressure and with low self-efficacy had high nomophobia. Similarly, Lee, Chang, Lin and Cheng (2014) found that women had higher levels of nomophobia than men. Yılmaz (2015) concluded that adolescents between the ages of 14-18 have a significant relationship between nomophobia and social anxiety

levels. Tavolacci, Meyrignac, Richard, Dechelotte and Ladner (2015) found that the level of nomophobia of university students varies according to gender and the time they use smart phones. Pavithra et al. (2015) examined the nomophobia levels of students in terms of various variables in their studies. They found that the use of smartphones affected the concentrations of the students. Ünal (2015) aimed to examine the relationship between the level of smartphone addiction of students studying in the medical school and the internet, social network usage, socio-demographic data and addictive substances. As a result of the study, it was determined that the addiction level of female students was higher than male students, but there was no statistically significant difference between them. It was concluded that the students used their mobile phones mostly for accessing social networks, surfing the internet and taking photographs. García-Oliva and Piqueras (2016) conducted a study with adolescent students between the ages of 12 and 18 and concluded that mobile phone addiction level of boys was higher than the girls. Erdem et al. (2016) aimed to reveal the effect of nomophobia on academic success. It was concluded that 55% of the students had high nomophobia and students spent 6.43 hours a day with a smartphone. Yücelten (2016) aimed to examine the effect of internet addiction among university students on the attachment styles of smartphone addiction. It was determined that there is no significant difference between internet addiction and attachment styles, but there is a significant difference between addiction to smartphone and attachment styles. In addition, it has been reported that students with smartphone addiction showed fearful attachment and dismissive avoidant styles. Akıllı and Gezgin's (2016) study with university students demonstrated that they were most affected by the nomophobia scale dimensions of "not being able to access information" and "not being able to communicate". In addition, it has been reported that students with high level of nomophobia constantly control their phones, carry a charger with them, do not turn off their phones at night and check their phones as soon as they wake up in the morning. Likewise, Kanmani, Bhavani and Maragatham (2017) reached the conclusion that the participants were worried about using their phones and staying away from the phone disturbed them and the level of women's nomophobia was higher than that of men. King, Guedes, Neto, Guimarães and Nardi (2017) investigated the effects of problematic smart phone, internet and technology use on psychology and nomophobia with adult volunteers. As a result of the research, they determined that problematic smartphone, internet and technology usage caused nomophobia. Çakır and Oğuz (2017) investigated the connection between smartphone addiction and loneliness levels of high school students. Their findings indicated that the level of smart phone addiction and loneliness of the students was medium. A positive and significant relationship was found between high school students' smartphone addictions and loneliness. As a result of the study conducted with high school students on the use of smartphones, Bayrak (2017) concluded that the nomophobia level of adolescents is related to behavioral and mental problems. It was also found that the nomophobia level of male students was higher than that of female students. Erdem et al. (2017) conducted a study with public employees in order to determine their

nomophobia levels and found that the nomophobia level of women was higher than that of men. Gezgin, Şahin and Yildirim (2017) aimed to examine the prevalence of nomophobia among pre-service teachers. Nomophobia levels of pre-service teachers were found to be above average. In addition, the most important sub-dimensions that challenge pre-service teachers were the "losing connectedness" and "not being able to access information" dimensions. Moreover, women were found more nomophobic than man and the level of nomophobia decreased with increasing age. Karaca (2017) examined the relationship between university students' smartphone usage habits and internet addiction. As a result of the research, it was determined that internet addiction varies according to the habit of using a smartphone and gender. Minaz and Bozkurt (2017) found that there was no significant difference between university students' smartphone addiction levels and gender, education and age variables. They also found that the time spent by students on a daily smartphone was 4 hours or more and that the students mostly used a smartphone to access social networks. Yılmaz, Çınar and Özyazıcıoğlu (2017) found that nursing students nomophobia levels were found above the average. They also reported that there was no significant difference between the nomophobia level and the gender variable. Kuyucu (2017) determined university students smartphone addiction level and found no significant difference between the gender, age and nomophobia level of university students. Similarly, Minaz and Bozkurt (2017) examined the university students' level of smartphone addiction and relations with other variables. No significant difference was found between education, age, gender factor and smartphone addictions. They found that students mostly use the smartphone to access social networks and that students spend 4 hours or more daily with their smartphones. Burucuoğlu (2017) determined the nomophobia levels of the vocational college students as above average and significant differences were found between the female and male students in terms of their nomophobia levels. Hoşgör et al. (2017) found that the students who were educated in health-related departments were above the average value of the nomophobia level and the "not being online" dimension affected their school success negatively. Yusufoğlu (2017) examined the effect of university students' smart phone use on their social life. It was determined that 39.2% of the students had an average of 4-6 hours of smart phone use per day and that the female students allocated more time to the smart phone than male students. Mendoza et al. (2018) examined the effect of mobile phone use of university students and found that the level of nomophobia had an effect on their learning. In a study conducted by Durak and Seferoğlu (2018) with 5th and 6th grade students, they concluded that the students had high nomophobia levels. In addition, when students' nomophobia levels were examined by gender, it was concluded that there was a significant difference between the genders. Çelikkaleli, Rıdvan and Avcı (2018) examined the problematic internet use in adolescent students in different regions of Turkey. Contrary to the studies of Altan (2019) and Çakır and Oğuz (2017), it was reported that students' addiction level was in favor of male students. In addition, Çelikkaleli et al. (2018) found that adolescents had a high level of nomophobia and used the smart phone to enter social networks mostly.

However, in this study, where the loneliness level of male students was higher than female students, a significant difference was found between the time spent with a smartphone and the addiction level of the students. It was determined that more than half of the students used more than four hours of telephone per day except for the hours they spent at school. In addition, they found that as the time spent with the smartphone increases, the level of loneliness decreases. Yılmaz, Köse and Doğru (2018) concluded that the nomophobia level of female students was higher than male students as a result of their study with university students. It was determined that students were most affected by "not being able to communicate" dimension of the nomophobia scale. Gezgin, Hamutoglu, Sezen-Gultekin and Ayas (2018) examined the smartphone addiction of the university students in terms of different variables. No significant difference was found between the students in terms of gender. However, it was found that university students had high nomophobia levels, as well as students with low academic success had high smartphone addiction. Şalcı et al. (2018) evaluated the opinions of preschool teachers to determine the effect of smartphone use on the development of preschool children. As a result of the research, they found that the use of smartphones could have both positive and negative results. Büyülkçolpan (2019) examined the nomophobia levels of university students in terms of gender, age, education status of parents, duration of smartphone use, average usage time and number checking the phone per day, attachment styles, depression level and perceived social support variables. It was determined that nomophobia levels of university students differed significantly according to gender, average usage times and number checking the phone per day. It was found that the levels of female students were higher than male students.

Problem Sentence

What is the level of mobile phone deprivation fear (nomophobia) of 8th grade students?

Sub-Problems

- Does the nomophobia level of the students change significantly by gender?
- Does the nomophobia level of the students change significantly by GPA?
- Does the nomophobia level of the students change significantly according to mother education status?
- Does the nomophobia level of the students change significantly according to father education status?
- Does the nomophobia level of the students change significantly according to their mothers' professions?
- Does the nomophobia level of the students change significantly according to their fathers' professions?
- Does the nomophobia level of the students change significantly according to their families' monthly income?

Purpose of the Study

The aim of this study was to determine the nomophobia level of 8th grade students and to determine whether the nomophobia levels of the students vary depending on the variables such as gender, overall grade point average, parents' educational level, parents' profession, and monthly income of the family. In addition, awareness of the problems that may arise due to the fact that mobile phones become an indispensable part of people's lives and the use of mobile phones rapidly increase among middle school children.

Significance of the Study

Studies on nomophobia focus on the impact of nomophobia on social life, internet addiction, individual behavior and school success. When the literature on nomophobia is examined, it was concluded that the studies conducted with secondary school students are limited (Pamuk and Kutlu, 2017). Therefore, it was thought that examining the nomophobia levels of secondary school students would contribute to the related literature and shed light on the studies to be carried out on this subject.

Method

Research Design

In this quantitative research, cross-sectional survey research model was conducted to investigate nomophobia levels of secondary school students. "Nomophobia Scale" developed by Yildirim and Correia (2015) and "Demographic Information Form" were used as data collection tools. In order to examine whether the nomophobia level of the students differed according to their school achievements, overall grade point averages of 8th grade students were used within the scope of the study by obtaining permission from the school authorities.

Study Group

The study group of the study consisted of 8th grade students in the secondary schools of a district in the Marmara Region in the spring semester of the 2017-2018 academic year. A total of 452 students, 228 females and 224 males, participated in the study. The reason for the selection of 8th grade students as the study group is that this age range constitutes the beginning of adolescence and that adolescence is a critical period in terms of dependence on internet and electronic devices. Another reason is that the number of studies conducted with secondary school students on this subject is few.

Data Collection Tools

The "Nomophobia Scale" used in this study was developed by Yildirim and Correia (2015) and adapted to Turkish by Yildirim, Sumuer, Adnan and Yildirim (2016). This 5-point Likert type scale consists of 20 items and 4 factors/sub-dimensions. The sub-dimensions of the scale were; not being able to access information (4 items), losing connectedness (5 items), not being able to

communicate (6 items) and giving up convenience (5 items). The Cronbach's alpha reliability coefficient of the nomophobia scale was reported by Yildirim et al. (2016) as 0.92. The reliability coefficients of the sub-dimensions of the scale were calculated as follows: 0.90, 0.74, 0.94, 0.91. In the present study, reliability tests were repeated and the Cronbach Alpha reliability coefficient value for the overall scale was found to be 0.88. The reliability coefficients for the sub-dimensions of the scale were calculated as 0.71, 0.70, 0.82 and 0.73, respectively. In addition to the nomophobia scale, students were informed about the demographic information form. The overall grade point averages of the students were taken from the school authorities and their relationship with the nomophobia levels were examined.

Data Analysis

SPSS 21 (Statistical Package for the Social Sciences) program was used by using the data obtained for the necessary analyzes. One-way analysis of variance (ANOVA) and independent sample t-test were performed.

Results

The findings of this study investigating the effect of variables such as gender, overall grade point average, parental education status, educational status of the parents, profession of the parents, monthly financial amount of the family on nomophobia prevalence were investigated. The findings were discussed and presented under the appropriate headings for the questions sought.

Findings about Demographic Characteristics of the Students

Demographic characteristics of the students participating in the study were given in Table 1.

Table 1. Demographic characteristics of the students

Independent Variables		Frequency	Percent (%)
Gender	Female	228	50.4
	Male	224	49.6
	Total	452	100
Overall grade point average	90-100	204	45.1
	80-90	93	20.6
	70-80	93	20.6
	60-70	51	11.3
	50-60	11	2.4
	Total	452	100
Mother Education Status	Illiterate and primary school	128	28.3
	Middle School	136	30.0
	High school	133	29.5
	University	55	12.2
	Total	452	100
Father Education Status	Illiterate and primary school	92	20.4

	Middle School	108	23.9
	High school	166	36.7
	University	86	19.0
	Total	452	100
Father profession	Worker	179	39.6
	Officer	77	17.0
	Self-employment	196	43.4
	Total	452	100
Mother Profession	Not working	288	63.7
	Working	164	36.3
	Total	452	100
Family Monthly Income	2500 and above	186	41.2
	2001-2500	141	31.2
	1601-2000	66	14.6
	0-1600	59	13.1
	Total	452	100

As seen in Table, approximately half of the students participating in the research were male and half of them were female students. When the overall grade point averages of the students were examined, it was found that the average of 204 students ranged between 90-100 (45.1%), the average of 93 students was between 80-90 (20.6%), and the average of 93 students was between 70-80% (%20.6). When the educational level of the mothers of the participants was examined, it was seen that the rate of the graduates of primary, secondary and high school was around 30% and the rate of university mothers was around 12.2%. When the education level of the fathers was examined, it was seen that the majority of the participants were high school graduates (36.7%). When the total monthly income of the family was examined, 41.2% of the students have a monthly income of 2500 and above, but the proportion of students with monthly income of 0-1600 TL is 13.1%. 39.6% of the respondents were workers, 63.7% were housewives.

Findings about Nomophobia Levels of Students

The Table 2 presented below presents the descriptive analysis of students' nomophobia levels.

Table 2. Descriptive analysis of students' nomophobia levels

Dependent Variable	N	Minimum	Maximum	$\overline{X}$	Standard Deviation
Nomophobia Scores	452	20	100	54.4	15.18

Table 2 shows the scores of the participants on the nomophobia scale. The mean score of the students on the nomophobia scale was 54.4.

Findings Related to First Sub-Problem: The Change of Nomophobia by Gender

Do students' nomophobia levels vary by gender?

Independent samples t-test was used to determine whether the nomophobia levels of the students differed according to gender. For conducting independent sample t-test, the independence of the observations, homogeneity of variances and normality assumptions were tested. Independent samples t-test results investigating whether the nomophobia levels of female and male students differ according to gender were presented in Table 3.

Table 3. Independent t-test analysis results of students' nomophobia levels according to gender

Independent Variable	Gender	N	$\overline{X}$	Standard Deviation	df	t	p
Nomophobia Scores	Female	228	55.37	15.17	77	1.31	0.19
	Male	224	53.50	15.16			

*p<.05

As seen in Table 3, nomophobia levels of the students did not differ according to gender ($t_{(77)}$ = 1.31; p≥.05). Although it was found that the nomophobia scores of female students ($\overline{X}$ = 55.37) were higher than the mean scores of male students ($\overline{X}$ = 53.50), it was observed that there was no significant difference between the nomophobia scores of male and female students. In this case, it can be said that gender has no significant effect on nomophobia.

Findings Related to Second Sub-Problem: The Change of Nomophobia by Overall Grade Point Average (GPA)

Do the nomophobia levels of the students change according to their GPA?

One-way analysis of variance was conducted to determine whether the nomophobia levels of the students differed according to their GPAs. Levene test showed that there was no statistically significant difference between the variances of the groups (p = 0.24). One-way analysis of variance was performed to determine whether the nomophobia levels of the students differed according to their GPAs. Table 4 indicated the descriptive analysis results according to the overall grade point average.

Table 4. Descriptive analysis results according to the overall grade point average

Independent Variable (GPA)	N	$\overline{X}$	Standard Deviation
90 - 100	204	52.84	14.00
80 - 90	93	53.02	16.03
70 - 80	93	57.08	15.36
60 – 70	51	57.74	17.31
50 – 60	11	58.45	13.08
Total	452	54.44	15.18

Table 5 showed the results of one-way analysis of variance to determine whether the nomophobia levels of the students differ according to their overall grade point averages.

Table 5. One-Way ANOVA results according to overall grade point average

	Sum of Squares	df	Mean Rank	F	p
Between Groups	2089.64	4	522.41	2.29	0.05
Within Groups	101851.97	447	227.85		
Total	103941.61	451			

*p<.05

As seen in Table 5, the nomophobia scores of the students do not differ according to the overall grade point average (F $_{(4-447)}$ = 2.29; p≥.05). That is, there is no significant difference between the averages of at least two of the five groups whose GPAs are compared.

Findings Related to the Third Sub-Problem: The Change of Nomophobia by Mother Education Status

Do the nomophobia scores of the students vary according to mother education status?

One-way analysis of variance was used to determine whether the nomophobia scores of the students changed according to mother education status. According to Levene Test, there was no statistically significant difference between the variances of the groups. In this case, the variances of the groups can be considered equal because there is no significant difference between them (p = 0.2).

Table 6 presents the descriptive analysis results according to the education level of the mother. Nomophobia scores of the mothers of university and high school graduates were found to be the lowest and the nomophobia scores of the mothers of secondary school graduates were the highest.

Table 6. Descriptive analysis results according to mother education status

Independent Variable (Mother Education Status)	N	$\overline{X}$	Standard Deviation
Illiterate and primary school	128	54.82	16.25
Middle School	136	56.21	13.96
High school	133	53.30	14.72
University	55	51.94	16.35
Total	452	54.44	15.18

Table 7 shows the one-way ANOVA test according to the education level of the mother.

Table 7. One-way ANOVA test results according to mother education status

	Sum of Squares	df	Mean Rank	F	p
Between Groups	958.73	3	319.57	1.39	0.24
Within Groups	102982.88	448	229.87		
Total	103941.61	451			

*p<.05

As seen in Table 7, the nomophobia scores of the students did not differ according to the education level of the mother (F $_{(3-448)}$ = 1.39; **p≥.05**). That is, there is no significant difference between the averages of at least two of the 4 education groups whose averages are compared.

Findings Related to Fourth Sub-Problem: The Change of Nomophobia by Father Education Status

Do the nomophobia scores of the students vary according to father education status?

One-way analysis of variance was used to determine whether the nomophobia scores of the students changed according to father education status. The assumption of equality of variance was tested and no significant difference was found between the variances of the groups (p=0.28).

Descriptive analysis results according to father education level were given in Table 8. Similar to the results of mothers' education status, the mean score of nomophobia scores of the children of the fathers of university graduates was found to be the lowest. The average score of nomophobia scores of the children of high school fathers was highest. Table 8 demonstrated the descriptive analysis results according to father education status.

Table 8. Descriptive analysis results according to father education status

Independent Variable (Father Education Status)	N	$\overline{X}$	Standard Deviation
Illiterate and primary school	92	54.95	14.00
Middle School	108	53.34	16.19
High school	166	55.63	14.50
University	86	52.98	16.35
Total	452	54.44	15.18

Table 9 presents one-way ANOVA test according to father education status.

Table 9. One-way ANOVA test results according to father education status

	Sum of Squares	df	Mean Rank	F	p
Between Groups	571.89	3	190.63	0.82	0.48
Within Groups	103369.72	448	230.73		
Total	103941.61	451			

*p<.05

As seen in Table 9, the nomophobia scores of the students did not differ according to the education level of the father (F $_{(3-448)}$ = 0.82; p≥.05). That is, there is no significant difference between the averages of at least two of the 4 education groups whose averages are compared.

Findings Related to Fifth Sub-Problem: The Change of Nomophobia by Mother Profession

Do the nomophobia scores of the students change according to mother profession?

Independent sample t-test was used to determine whether the nomophobia levels of the students changed according to the mother's status of working or not. The independence of the observations, homogeneity of variances and normality assumptions were provided for the independent sample t-test.

When the descriptive analysis results were examined according to the working status of the mother, it was seen that the mean scores of the children of working and non-working mothers were very close to each other. Descriptive analysis results according to mother's working status was presented in Table 10.

Table 10. Descriptive analysis results according to mother's working status

Independent Variable (Working Status of the Mother)	N	$\overline{X}$	Standard Deviation
Not working	288	54.53	15.57
Working	164	54.28	14.51
Total	452	54.44	15.18

Independent sample t-test results were conducted to determine whether the nomophobia levels of the students change according to the status of the mother's working status. The related results were presented in Table 11.

Table 11. Independent t-test analysis results of students' nomophobia levels according to mother's working status

Independent Variable (Working Status of the Mother)	N	$\overline{X}$	Standard Devaiation	S	t	p
Not working	288	54.53	15.57	450	0.17	0.86
Working	164	54.28	14.51			

*p<.05

As shown in Table 11, the nomophobia levels of the students did not differ according to working status of the mother (t $_{(450)}$ = 0.17; p≥.05). There was no significant difference between the mean scores of nomophobia of the students whose mothers were working and not working. In this case, it can be said that the working status of the mother does not have a significant effect on nomophobia.

Findings Related to the Sixth Sub-Problem: The Change of Nomophobia by Father's Profession

Do the nomophobia scores of the students vary according to father's profession?

One-way analysis of variance was used to determine whether the nomophobia scores of the students changed according to the profession of the father. There was no statistically significant difference between the variances of the groups and this assumption was provided (p = 0.47).

Table 12. Descriptive analysis results according to father's profession

Independent Variable (Father Prefession)	N	$\overline{X}$	Standard Deviation
Worker	179	54.82	14.98
Officer	77	52.54	15.97
Self-employment	196	54.84	15.06
Total	452	54.44	15.18

Table 12 shows the descriptive analysis results according to the profession of the father. Accordingly, it was seen that the average scores of the children of workers, civil servants and self-

employed fathers from the nomophobia scale was close to each other. Table 13 indicates the one-way ANOVA test results according to father's profession.

Table 13. One-way ANOVA test results according to father's profession

	Sum of Squares	df	Mean Rank	F	p
Between Groups	334.79	2	167.39	0.72	0.48
Within Groups	103606.81	449	230.75		
Total	103941.61	451			

*p<.05

As seen in Table 13, the nomophobia scores of the students did not differ according to the profession of the father (F $_{(2-449)}$ = 0.72; p≥.05). That is, there is no significant difference between the averages of at least two of the three occupational groups whose means are compared.

Findings Related to Seventh Sub-Problem: The Change of Nomophobia by Family Monthly Income

Do the nomophobia scores of the students change according to the monthly income level of the family?

One-way analysis of variance was used to determine whether the nomophobia scores of the students changed according to the monthly income level of the family. In Table 14, descriptive analyzes were given according to the family monthly income level. It has been determined that the monthly income of the families that have children with the lowest average nomophobia were between 1601 and 2000 TL, and those that have children with the highest average of nomophobia were between 2001 and 2500 TL. In Table 14, descriptive analysis results according to monthly financial income of family were presented.

Table 14. Descriptive analysis results according to monthly financial income of family

Independent Variable (Family Monthly Income Level)	N	$\overline{X}$	Standard Deviation
0 - 1600	59	55,22	14,69
1601 - 2000	66	52,81	15,90
2001- 2500	141	56,15	15,80
2500 and above	186	53,47	14,55
Total	452	54,44	15,18

Table 15 indicated One-way ANOVA test results according to monthly family income.

Table 15. One-way ANOVA test results according to monthly financial income of family

	Sum of Squares	df	Mean Rank	F	p
Between Groups	796.68	3	265.56	1.15	0.32
Within Groups	103144.93	448	230.23		
Total	103941.61	451			

*p<.05

As seen in Table 15, the nomophobia scores of the students did not differ according to the monthly financial income of the family (F $_{(3-448)}$ = 1.15; p≥.05).

Nomophobia Scale and Sub-dimensions

In this study, the nomophobia scale has 4 sub-dimensions. Descriptive data of these sub-dimensions were presented in the Table 16 below.

Table 16. Descriptive analysis results according to the sub-dimensions of the nomophobia scale

Sub-dimensions	$\overline{X}$	Standard Deviation
Not being able to access information	11.41	3.75
Losing connectedness	13.34	4.63
Not being able to communicate	18.19	5.82
Giving up convenience	11.49	4.84
Total	13.68	15.18

The average score obtained from the Nomophobia Scale was found to be 13.68. The mean subscales of the scale were as follows; "Not being able to communicate" ($\overline{x}$ = 18,19), "not being able to access information" ($\overline{x}$ = 11.41), "losing connectedness" ($\overline{x}$ = 13.34) and giving up convenience ($\overline{x}$ = 11.49). It was concluded that the most worrisome dimension was the "not being able to communicate" and the least worried dimension was the "not being able to access information".

Discussion, Conclusion and Recommendations

The aim of this study was to determine the nomophobia level of 8th grade students and to determine whether the nomophobia levels of the students vary depending on the variables such as gender, overall grade point average, parents' educational level, parents' profession, and monthly income of the family. As a result of this study, it was found that the nomophobia level of the students did not differ according to any of the variables mentioned above.

When the literature on nomophobia was examined, it was found that the number of studies for secondary school students was limited, but the number of studies conducted with university students, high school students, social network users and public employees was higher with respect to the others (Durak and Seferoğlu, 2018; Pamuk and Kutlu, 2017).

In the present study, it was examined whether the nomophobia levels of the students varied according to gender. It was found that the mean scores of nomophobia of female students were not significantly different from the mean of nomophobia scores of male students. Similar to the current study, Ünal (2015) found no statistically significant difference between male and female students in term of nomophobia scores, though nomophobia scores of female students were statistically higher than male students. Likewise, Kuyucu (2017) concluded that the level of smartphone addiction does not change according to the gender factor. In addition, Minaz and Bozkurt (2017) found that there was no significant difference between gender factor and smartphone addiction level in their studies. On the other hand, Durak and Seferoğlu (2018) determined that students nomophobia levels differ significantly from each other by gender in favor of males. Unlike to Durak and Seferoğlu's (2018)

study, there are some studies indicating that female students' nomophobia levels were higher than male ones (Altundağ and Bulut, 2017; Gezgin et al. 2017).

In this study, it was found that the nomophobia scores of the students did not differ according to their overall grade point average. Likewise, Dirik (2016) concluded that there was no statistically significant difference between students' academic achievement and smartphone addiction. However, Erdem et al. (2016) investigated the effect of nomophobia on academic achievement. They found that nomophobia was an important factor on the academic achievement of university students. Lepp, Barkley and Karpinski (2014) stated that the increase in the nomophobia level of the students negatively affects their educational lives.

In the present study, it was also determined that the nomophobia levels of the students did not change according to the profession of the mother or father. When the related literature was examined, similar results were found. For example, Büyükçolpan's (2019) study concluded that there was no significant difference between parents' educational backgrounds and nomophobia levels. Moreover, Durak and Seferoğlu (2018) found that there was no significant difference between nomophobia scale scores and parents' education levels, but the students having low literacy rate parents had higher levels of nomophobia than others.

In this study, it was concluded that the nomophobia scores of the students did not change according to the monthly income level of the family. When the related literature was examined, similar results were found. According to Dirik (2016), students' nomophobia level did not differ by average income of the family. Similarly, Atıcı (2017) found that there was no significant relationship between the mean scores of nomophobia level and adolescents' income level. However, Deniz (2014) concluded that adolescents with low family income had a high level of mobile phone dependency and shyness. Kuyucu (2017) found that there is a significant difference between family income level and addiction level.

In the present study, when the sub-dimensions of the scale were examined according to the mean score ($\bar{X}$ = 13.68) obtained from the nomophobia scale, it was found that; "inability to access information" ($\bar{X}$ = 11.41), "loss of connection" ($\bar{X}$ = 13.34) and "inability to feel comfortable" ($\bar{X}$ = 11.49) subscale scores were below average of the scale. When the related literature was examined, similar results were found. For instance, Yılmaz et al. (2018) found that the most important dimension by the students was the "inability to communicate" in the nomophobia scale. It is followed by the "inability to access information". The least supported dimension was the "not being online" dimension. In the study conducted by Erdem et al. (2016), it was determined that there was a relationship between the average scores of "not being able to communicate", "not being able to access information" and "not being online" dimensions and the level of nomophobia. It was also concluded that the least supported dimension of the sub-dimensions was the "not being online" and "not being

able to access information" dimension. Hoşgör et al. (2017) reached the conclusion that the factor of "not being online" has an effect on students' grade point average and telephone usage time.

This research can be repeated by applying different groups of students at the same level in different periods and in different schools. The nomophobia scale used in the study can be repeated with different scales without being limited to the overall grade point average. Studies on how nomophobia affects students' physical and cognitive development can also be conducted. The nomophobia levels of the students can be examined without limiting the research to only students in one region, and sample size can be expanded by selecting students from different regions. Students should be informed by teachers, the school guidance service, families and experts to ensure that the smartphone is not abused by students and does not reach the level that could harm students. The use of smartphones and proper social media should be included in classes in schools. Public spots can also be created on the subject.

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