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Behavioral Patterns of the Modern Age Addiction: Nomophobia of Future Managers*

Modern Çağ Bağımlılığının Davranışsal Örüntüleri: Geleceğin Yöneticilerinin Nomofobisi

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ÖZ

Nomophobia, is one of the most recent phobias of the 21st century emerged due to the improvement of communication technologies and changing expectance of people in communicating. This study aims to explore the level of nomophobia based on some of the major demographic factors such as age, gender and monthly income. Furthermore, it looks into the relationship between variables of phone use, such as frequency of checking the phone and time of phone ownership, and the four dimensions of nomophobia. As the instruments of the study, a demographic questionnaire and the Nomophobia Questionnaire designed by Yıldırım and Correia (2015) were administered to 242 Business and Administration students at a Turkish university. The findings revealed that the level of nomophobia did not differ based on the demographic variables. It found that the more frequent the participants checked their phone the lower their level of nomophobia was. In a similar vein, participants who checked their phone in the morning and night have indicated to be less nomophobic. The results were discussed and implications suggested.

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ABSTRACT

Nomofobi; insanların iletişim kurmadaki beklenti değişikliklerinden ve iletişim teknolojilerindeki gelişmelerden dolayı ortaya çıkan en güncel 21. yüzyıl fobilerinden birisidir. Bu çalışma yaş, cinsiyet ve aylık gelir gibi ana demografik faktörleri baz alarak nomofobinin seviyesini ölçmeyi amaçlar. Buna ek olarak telefonu kontrol etme sıklığı ve telefona sahiplik süresi gibi telefon kullanım değişkenleri ve nomofobinin dört boyutu arasındaki ilişkiyi inceler. Bu çalışmada; ölçek olarak demografik bir anket ve Yıldırım ve Correia tarafından (2015) geliştirilmiş "Nomofobi Ölçeği" Türkiye'deki bir devlet üniversitesinde eğitim gören 242 işletme bölümü öğrencisine uygulanmıştır. Araştırmanın bulguları; nomofobi seviyesinin demografik değişkenlere göre değişmediğini göstermiştir. Katılımcılar telefonlarını ne kadar sıklıkla kontrol etmişlerse nomofobi seviyeleri bir o kadar düşük çıkmıştır. Benzer bir şekilde sabah ve gece telefonuu control eden katılımcıların daha az nomfobik olduğu gözlemlenmiştir. Araştırma sonuçları tartışılmış ve öneriler sunulmuştur.

1. Introduction

The 21st century has entrusted us with many innovations in the fields of education, science, medicine and communication. One of the fastest and most remarkable developments was theinvention of the smartphone. The opportunity for faster interactions among users through the connection to the internet turned this device into a must-have for young and old (Hussain & Adeeb, 2009).This innovation and many others are products of the historical period the information age which is highlighted by the presence of particular technical devices that allow rapid information and knowledge exchanges (Stehr, 2010). Comunities and individuals inevitably were influenced which announced a new society which was defined as the information society by the Critical theorists. The most

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prominent figure of this group was Herbert Schiller who stated the main concern of this society as the increase of domination and subordination due to the "production, processing, and transmission of a very large amount of data about all sorts of matter--individual and national, social and commercial, economic and military" (1981, p.25). Furthermore, the theorists warned that a new order "is being forced upon an unsuspecting world by advances in telecommunications" (Angell, 1996, p.81), and feared that individuals of this society would be paralyzed by the overload of knowledge and information or raged by the inequality of access to information.

On the other hand, Castells (1966) proposed the theory of network society on the basis of the innovations during the information age which represent change in all aspects of life such as the social structure, forces of production and culture of society. He argued that this society came into being due to the dynamic process that is pushed by information processing and informationism (Van Dijk, 1999). He added that the "society is charachterized by the power embedded in information technology" (2004, p. 7)and that this aspect altered the main characteristics of a society to linking people, companies and countries through networks. One of the fundamental points highlighted by Cattels is the restriction of not being a part of the network society if the individual is not on the network (Castells, 2005). In a similar vein, his theory suggests that inclusion in the network society is bound up to the embrace of the digital potentials and tools (Castells, 2005). Individuals who were born into and grown up with digital technologies and make use of the Internet in all parts of their lives are called digital natives (Tapscott, 2009). They are surrounded by digital technologies which have become their norm and expectation of daily learning experience (Thomas, 2011), one of which is the smartphone. It is seen by digital natives and the youth as the key to the world of digitalization and the society.

Apart from the great conveniences provided by this simple but high-tech device, the use of smartphones also uncovered serious consequences such as the need to be approved by the society on the internet, liked by their followers and be up to date in all matters and happenings around the world (Hong et al., 2012; Netburn, 2012). In order to learn more about the negative effects, researchers examined problems caused by smart phone use such as dependence of smart phones (Toda et al., 2006), excessive use of smart phones (Pourrazavi et al., 2006; Özdemir, Çakır, Hussain, 2018) and smart phone addiction (King et al., 2013; Yıldırım et al., 2016). The excessive use leads to not only physical problems, but also psychological and social issues of the user (Chòliz, 2012, Hussain, Çakir, Özdemir & Tahirkheli, 2017). The definition of the psychological problems caused by addictive and excessive use of smartphones was proposed as nomophobia; in other words, the fear of being unable to use one's mobile phone or being unreachable. King, Valenca, Silva, Baczynski, Carvalho and Nardi (2013) defined nomophobia as the feeling of discomfort or anxiety of individuals when being unable to use their mobile phones. A more comprehensive definition was asserted by Yıldırım (2014) stating that nomophobia is a "fear of not being able to use a smartphone or a mobile phone and/ or the services it offers. It refers to the fear of not being able to communicate, losing the connectedness that smartphones allow, not being able to access information through smartphones, and giving up convenience that smartphones provide" (p.74).

The spreading of nomophobia was classified as a 21st century disorder which lead to the emergence of studies exploring the reasons and factors affecting the level of nomophobia. In 2012, it was reported that 66% of smartphone users in the United Kingdom suffered from nomophobia, which was higher amongst female (70%) users than male (61%) (SecurEnvoy, 2012). On the other hand, the study of Dixit, Shukla, Bhagwat, Bindal, Goyal, Zaidi and Shrivastava (2010) concluded that nomophobia is equally prevalent irrespective of gender. Similarly, Perry and Lee (2007) who examined mobile phone text messaging overuse of university students revealed no gender difference for addiction measures.

In terms of age, the age group 18-24 years had the highest number of nomophobic individuals (77%), followed by the age group 25-34 years (SecurEnvoy, 2012). In a similar vein, other studies declare that the group which is affected the most by mobile phone addiction and problems associated with is the young adults (Guzeller & Cosguner, 2012; Cheever et al., 2014) the situation of nomophobia is alarming in the USA with 40% of American users facing the fear of not being reachable. In order to be up to date and available at all times, 95% of American users use their smartphone to text, watch television or browse before going to sleep (AddictionTips, 2015).

The literature yields a considerable scope of studies on nomophobia of university students. One of the first studies on nomophobia was conducted by King et al. (2010) who set the general borders of the disorder by stating that it is a "discomfort or anxiety when out of mobile phone or computer contact" (p.52). The next step taken was the search for similarities and common ground, which was filled with the Master's Thesis of Yıldırım (2014). This mixed method study not only identified four dimensions of nomohobia (1.Not being able to communicate, 2. Losing connectedness, 3. Not being able to access information and 4. Giving up convenience), but also laid the foundation for the widely used Nomophobia Questionnaire used by a large number of the quantitative studies on nomophobia.

One of these studies was conducted by Uysal, Özen and Madenoğlu (2016) who administered the Nomophobia Questionnaire of Yıldırım and Correia (2015) to 265 university students in Turkey. Their aim was to analyze the level of nomophobic and sociophobic behaviors. The study was concluded with the findings that nomophobia and socialphobia are significantly correlated and that the female participants had a higher level of nomophobia than the male participants. Additionally, they explored the effect of class level and found that the senior classes had the highest level of nomophobia, followed by the sophomores and freshmen. Lastly, the researchers stated that the family income was a significant factor in the determination of nomophobia and added that the greater the income was the higher the nomophobia ratio got.

Upon the increase of studies on nomophobia Nishad and Rana (2016) conducted a meta-analysis to analyze whether general conclusions can be drawn. They described that the smart phone has a key role in human's daily life and added

that the studies done on nomophobia showed an effect of socio-economic status on mobile phone use.

Apart from the relationship between descriptive variables and nomophobia, behaviors related to the phobia, such as not turning off their phone, frequent checking of their phone, carrying a charger and checking their phone in the morning, were explored. A study conducted in India with university students showed that 74% of the students had and frequently used their phone. Furthermore, 80% stated that they left their phone on at night, and 66% reported that they hardly ever turn their phone off or set it to silent mode, including during class (Kaur & Sharma, 2015). In a similar vein, Singh and Yadav (2015) found that nine out of ten people face insomnia due to their late night chats and browsing and added that 78% of their participants check their phone before going to sleep. This number rises to 91% for adults between the age 18-24.

Although a good number of studies have been conducted on the nomophobia behaviors of Turkish university students, the sample of the previous studies were mostly students of a large variety of departments of top universities. On the other hand, the present study focused on solely the Business and Administration Program due to their career path being entrepreneurs shaping future companies and industry. Furthermore, the setting of the study was purposely selected to be a university which required a lower amount of points of the university entrance exam. This was required in order to examine the nomophobic behaviors of the middle class students who are not as successful and hardworking as the students in the previous studies.

2. Purpose and Aim

The aim of the study is to explore the level of nomophobia of Business and Administration students. Furthermore, demographic variables, such as gender, educational level, age and monthly income, were analyzed to reveal any possible differences. This study was conducted for a predictive purpose of the future entrepreneurs in the field. Looking into the level of excessive usage of smart phones may uncover the issues the future businessmen have. Different from other studies, the present study particularly aimed to explore nomophobic behaviors of students with a low monthly income, because owning a mobile phone can be a financial concern.

3. Method

The study focuses on the exploration of nomophobic behaviors of Turkish college students in the department of business and administration through the employment of a quantitative research design. In addition, it looks into possible factors prompting these addictive behaviors and differences in descriptive variables between students who have a high and low level of nomophobia.

4. Research Questions

1. Is there a significant difference in the level of nomophobia based on the descriptive variables gender, age, education, class and monthly income?

2. Is there a significant difference in the level of nomophobia and charger ownership and time of phone ownership?

3. Is there a significant relationship between the level of nomophobia and the variables related to checking the phone?

5. Setting and Participants

The study was conducted at a fairly young state university in Turkey in which approximately 20.000 students and 700 academicians are enrolled. It consists of eight faculties, five colleges of higher education and seven vocational schools of higher education. According to the URAP Center (2018), this university has a point range of 300-350 of 800 points making it a university with a moderate success rate. Compared to other universities in the same area, the majority of students of this university not only enter with a considerably lower number of points in the university entrance exam, but also face financial difficulties in the family. In order to explore the level of phone dependence of students whose family has a below average monthly income, this setting was purposively selected. Additionally, students of the 2-year (associate degree) and 4-year (bachelor degree) program in the department of Business were reached so as to analyze differences in the level of school success.

The Nomophobia Questionnaire (NMP-Q) used to measure the level of nomophobia was administered after consent was granted. The participants were ensured that their identity and responses would be kept confidential and anonymous. 400 copies of the questionnaire were distributed to the participants between October and November 2017, and 250 copies were returned after being filled in. Three of the copies had to be eliminated due to non-answered question items. Furthermore, the filled-in questionnaires of six participants who reported not having a smartphone were disregarded from the data because having a phone is the most crucial factor of nomophobia. In the end, the data consisted of 242 business students studying at a central anatolian university in Turkey.

Of the 242 smart phone users, more than two third of the users (67%, *N*=163) were female and the age of the participants was stated based on five options: 20 and below (33%, *N*=79), 21 (43%, *N*=103), 22 (14%, *N*=33), 23 (7%, *N*=17) and 24 (4%, *N*=10). The study was limited to two degrees: associate degree (49%, *N*=118) and bachelor's degree (51%, *N*=124). While 43 freshmen and 75 sophomores of the 2-year program took part in the study, 6 freshmen, 88 sophomores, 22 juniors and 8 seniors of the 4-year program participated. Another fundamental descriptive variable and aim of the study was the monthly income of the participants. The majority of participants reported that their families received a monthly income of 1.000 or below (79%, *N*=190), while 44 family households earn 1.001 to 2.000 Turkish Liras (18%, *N*=44) and only 8 received between 2.001 to 3.000 Turkish Liras a month (3%, *N*=8).

In the demographic information questionnaire nine items were included to obtain information related to the participants' smartphone use. While 25 participants (10%) reported to have possessed a smartphone for less than a year, 59 (24%), 86 (35%) and 72 (30%) participants stated to be in possession of a phone for 1-2, 3-4, and more than four years, respectively. The frequency of daily checking the smartphones was divided into four categories whose distribution was found to be fairly even: 1-16 times (26%,

N=64), 17-32 times (26%, N=64), 33-48 times (18%, *N*=44) and 49 and more (29%, *N*=70). Upon asking what the participants used their phones mostly for, 178 participants stated that they most frequently used their phone to keep updated in the social media, such as WhatsApp (*N*=68), Facebook (*N*=63), Instagram (*N*=31) and Twitter (*N*=16), or to read the news (*N*=19). 25 participants explained their frequent phone use as research for homework, while 20 participants use their phone to play games.

Despite their extended use of their smartphones, less than half of the participants stated to carry a phone charger (36%, *N*=88). The analysis of the data revealed that the majority of participants check their phone both the moment they wake up in the morning (79%, *N*=192) and at night before going to sleep (88%, *N*=213). Furthermore, only 42 participants (17%) reported that they turn off their phone at night. Upon these high frequencies of use, the questions whether the participants could give up their phones and if smartphones make people antisocial were addressed. The results indicated that more two thirds of the participants (71%, *N*=171) will not stop using their phones even though almost the same number of participants (74%, *N*=180) agreed that the ownership of smartphones has an impact on antisocial behaviors.

6. Instruments and Data Analysis

A quantitative research method was employed to gain more detailed data and provide greater insight on the participants' level of nomophobia. The instruments consist of a demographic information questionnaire (Appendix A) and the Nomophobia Questionnaire (NMP-Q) (Table 1).

The demographic information questionnaire consists of 13 questions to generate participants' general information such as gender, educational background, age, monthly income of family and smartphone ownership.

To measure the level of nomophobia, the Nomophobia Questionnaire (NMP-Q) (Yıldırım and Correia, 2015) was used. This questionnaire measures the level of phone dependence of and was specifically designed for the analysis of students' nomophobic behaviors. The questionnaire consists of 20 question items designed using a 7-point Likert scale; however, for the present study it was adopted to a 5-point Likert scale (1 = never to 5 = always). The NMP-Q is divided into four dimensions of nomophobia: (1) not being able to access information, (2) losing connectedness, (3) not being able to communicate, (4) giving up convenience. The Turkish version of the questionnaire was administered, which was designed and translated by Yıldırım & Correia (2015). Not only did they translate the NMP-Q, but also indicated that both the questionnaire and its four dimensions have a high Cronbach's alpha coefficient. The Cronbach's alpha of the NMP-Q was determined to be .95 being a high coefficient, and so were the four dimensions being .94, .87, .83, and .81, respectively. Cronbach's alpha coefficient for this study was calculated and was found to be .84, which is accepted as a high coefficient.

The data was collected using convenience sampling to reach student participants. Convenience sampling is within the non-probability sampling design which is widely accepted in sociological research when the primarily aim of the study is to analyzed the sample explorative or descriptively (Atkinson & Flint, 2001). In this type of sampling data is collected from members of the population who are conveniently available in the research setting (Sekaran & Bougie, 2010). The gathered data was computed and analyzed via Statistical Package for Social Sciences (SPSS) 23.0. The descriptive statistics were used to organize and summarize participants' demographic variables on the questionnaire. All data were quantifiable because they were coded using numerical values. After the analysis of the descriptive data, the data of the questionnaire were examined in terms of distribution of normality to determine the set of tests to be used. In order to test the assumption of normality, the Shapiro-Wilk test was used because it provides a clearer power than the Kolmogorow-Smirnov test and is recommended as the better choice for testing the normality of data (see Thode, 2002; Steinskog, 2007). A Shapiro-Wilk test for normality of the dependent variable Nomophobia was not found to be normal. Due to this non-normal distribution, non-parametric statistics were employed.

7. Results

Before answering the research questions the responses of the participants were analyzed, as summarized in Table 1.

Table 1. Dimension and Item Analysis of the NMP-Q

		M	SD
Dimension 1: Not being able to access information		2.95	1.08
1.	I would feel uncomfortable without constant access to information through my smartphone	3.07	1.34
2.	I would be annoyed if I could not look information up on my smartphone when I wanted to do so.	2.93	1.29
3.	Being unable to get the news (e.g. happenings, weather, etc.) on my smartphone would make me nervous.	2.93	1.33
4.	I would be annoyed if I could not use my smartphone and/or its capabilities when I wanted to do so.	2.88	1.37
Dimension 2: Losing Connectedness		3.22	1.02
5.	Running out of battery in my smartphone would scare me.	2.82	1.47
6.	If I were to run out of credits or hit the monthly data limit, I would panic.	3.41	1.42
7.	If I did not have a data signal or could not connect to Wi-Fi, then I would constantly check to see if I had a signal or could find a Wi-Fi network.	3.74	1.36
8.	If I could not use my smartphone, I would be afraid of getting stranded somewhere.	3.12	1.29
9.	If I could not check my smartphone for a while, I would feel a desire to check it.	2.99	1.29
Dimension 3: Not being able to communicate		2.85	1.03
10.	I would feel anxious because I could not instantly communicate with my family and/or friends.	2.70	1.26
11.	I would be worried because my family and/or friends could not reach me.	2.67	1.24
12.	I would be nervous because I would not be able to receive text messages and calls.	2.89	1.25
13.	I would be anxious because I could not keep in touch with my family and/or friends.	2.76	1.30
14.	I would be nervous because I could not know if someone had tried to get a hold of me.	3.06	1.35
15.	I would feel anxious because my constant connection to my family and friends would be broken.	3.01	1.33
Dimension 4: Giving Up Convenience		3.87	1.00
16.	I would be nervous because I would be disconnected from my online identity.	3.82	1.34
17.	I would be uncomfortable because I could not	3.77	1.25

	stay up-to-date with social media and online networks.		
18.	I would feel awkward because I could not check my notifications for updates from my connections and online networks.	3.84	1.23
19.	I would feel anxious because I could not check my email messages.	3.91	1.18
20.	I would feel weird because I would not know what to do.	3.98	1.22

Examining the results of the NMP-Q of all students, it is noted that Giving Up Convenience (4th dimension) had the highest mean (*M*=3.87; *SD*=1.00), followed by Losing Connectedness (2nd dimension) (*M*=3.22; *SD*=1.02), Not being able to access information (1st dimension) (*M*=2.95; *SD*=1.08) and Not being able to communicate (3rd dimension) (*M*=2.85; *SD*=1.03). The question item with the highest mean was found to be 20th item stating that participant would not know what to do without a smart phone (*M*=3.98; *SD*=1.22), while the lowest mean was obtained by the 11th question item stating that the participant would worry if not being reached (*M*=2.67; *SD*=1.24).

The NMP-Q is divided into 4 levels of nomophobia based on the severity of the addiction: absence, mild, moderate and severe. The participants were analyzed in terms of the severity of nomophobia and the descriptive variables as presented in Table 2. It is noted that the majority of participants had a moderate level of nomophobia (*N*=171) followed by the severe level (*N*=51) and mild level (*N*=20).

Table 2. Descriptive Statistics of Variables by Nomophobia Severity

		NMP-Q					
Variable		**Mild**		**Moderate**		**Severe**	
		N	***%***	***N***	***%***	***N***	***%***
Gender	**Male**	6	7.6	51	64.6	22	27.8
	Female	14	8.6	120	73.6	29	17.8
Age	**20 and below**	5	6.3	58	73.4	16	20.3
	21	13	12.6	72	69.9	18	17.5
	22	1	3	25	75.8	7	21.2
	23	0	0	9	52.9	8	47.1
	24	1	10.0	7	70.0	2	20.0
Education	**Associate Degree**	11	9.3	86	72.9	21	17.8
	Bachelor Degree	9	7.3	85	68.5	30	24.2
Monthly Income	**1000 and below**	15	7.9	140	73.7	35	18.4
	1001-2000	4	9.1	26	59.1	14	31.8
	2001 and above	1	12.5	5	62.5	2	25.0
	Total	**20**	**8.3**	**171**	**70.6**	**51**	**21.1**

Research Question 1

The first research question (Is there a significant difference in the level of nomophobia based on the descriptive variables gender, age, education, class and monthly income?) was analyzed through descriptive statistics and non-parametric statistics between the level of nomophobia and gender, age, education, class and monthly income. The descriptive statistics revealed that male students have a higher level of nomophobia (*M*=3.35; *SD*=.87) than the female participants (*M*=3.15; *SD*=.82); moreover, the 23 year-old participants were noted to have the highest level (*M*=3.61; *SD*=.66). In terms of the level of education, bachelor's degree students had a higher level of nomophobia (*M*=3.30; *SD*=.82) than the associate degree students (*M*=3.12; *SD*=.85). The descriptive statistics of class revealed that the sophomores of the bachelor degree had the highest mean in nomophobia (*M*=3.38; *SD*=.79); furthermore, the lowest was found to be the freshmen in the bachelor program (*M*=2.69; *SD*=.81). The last descriptive variable was the monthly income, in which it was noted that the highest level of nomophobia was experienced by the participants with the highest monthly income (*M*=3.58; *SD*=.75). In addition to the results, it was observed that the 4th dimension had the highest mean among all of the descriptive variables.

In order to explore possible significant difference between variables, the Mann-Whitney test for gender and education, the Kruskal-Wallis test for age, class and monthly income was administered. The Mann-Whitney U test showed that there was no statistically significant difference in Nomophobia between gender (U = 5499.5, p> .05) and education (U = 6441.5, p> .05).While no significant difference was found in educational level between the four dimensions, a statistically significant difference was found between the second and third dimension based on gender (2. Dimension: U = 5136.5, p< .05; 3. Dimension: U = 5124.5, p< .05). The Kruskal-Wallis H test forage showed no significant difference in Nomophobia between age (H(4) = 5.500, p> .05); however, a significant difference was found for the 4th dimension (H(4) = 10.833, p< .05). The post-hoc test revealed that there was a significant difference between all age level and 23 for the fourth dimension. No significance was found between the level of Nomophobia and dimensions in terms of class and monthly income.

Research Question 2

The second research question (Is there a significant difference between the level of nomophobia and charger ownership and time of phone ownership?) was explored through the use of Mann-Whitney *U* tests. The analysis of the descriptive statistics indicated that participants who carry a phone charger with them obtained a lower mean in all dimensions of Nomophobia (see Table 3). This observation lead to the assumptions that significance was to be found, which was confirmed with a Mann-Whitney *U* test (U = 5145, p< .05). Additionally, significance was found in the 2nd (Losing Connectedness) and 3rd dimension (Not being able to Communicate) based the carriage of a charger (2. Dimension: U = 4511.5, p< .05; 3. Dimension: U = 5247, p< .05).

The difference between the level of nomophobia and time of smart phone ownership was examined through a Mann-Whitney U test. The results showed no significant difference in the level of nomophobia and the length of smart phone ownership age (H(3) = 1.096, p> .05).

Table 3. Means and Standard Deviations of Nomophobia Scores by Carrying a Charger

Variable		NMP-Q		Dim 1		Dim 2		Dim 3		Dim 4	
		M	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***	***M***	***SD***
Charger	**Yes**	2.96	.94	2.79	1.13	2.81	1.09	2.60	1.06	3.69	1.18
	No	3.36	.74	3.04	1.05	3.45	.91	2.99	.98	3.97	.87

Research Question 3

The third research question (Is there a significant relationship between the level of nomophobia and the variables related to checking the phone?) was analyzed through the investigation of difference between the level of nomophobia and frequency of checking the phone, checking in the morning, checking at night and whether the phone is turned off at night. The first variable was the frequency of checking the phone which ranged from 1-16 times to 49 times and more. The descriptive statistics revealed that 29% of the participants checked their phone 49 and more times (*N*=70), followed by 1-16 (26%; *N*=64) and 17-32 times (26%; *N*=64). The total NMP-Q and all dimensions were observed to be the lowest for the highest frequency of checking and that the means gradually decrease the more frequent the participant check the phone, except for the 4th dimension. Both in the variables of checking in the morning and at night, participants who answered no were found to have a higher mean in the total NMP-Q and all dimensions. Lastly, the variable of turning off the smart phone at night was explored, and it was found that participants who turn their phone off have a higher mean in NMP-Q and all dimensions (see Table 4).

The statistical tests revealed that significant difference between the level of nomophobia and the frequency of checking the smart phone ($H(3) = 29.245$, $p < .05$); furthermore, significance was found in all dimensions (1st dimension: $H(3) = 10.417$, $p < .05$; 2nd dimension: $H(3) = 31.926$, $p < .05$; 3rd dimension: $H(3) = 19.635$, $p < .05$; 4th dimension: $H(3) = 18.098$, $p < .05$). Following Mann-Whitney *U* tests revealed that all frequencies (1-16 times, 17-32 times and 33-48 times) were significantly different from the highest frequency of checking (49 times and more).

Table 4. Means and Standard Deviations of Nomophobia Scores by Checking of the Smartphone

Variable		NMP-Q		Dim 1		Dim 2		Dim 3		Dim 4	
		M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Frequency of Checking	**1-16**	3.49	.81	3.21	1.07	3.62	.97	3.11	1.03	4.06	.81
	17-32	3.42	.73	3.06	.98	3.42	.86	3.04	1.02	4.15	.84
	33-48	3.23	.75	2.94	.99	3.22	.94	2.91	.96	3.88	.93
	49 and more	2.77	.87	2.63	1.18	2.67	1.03	2.40	.95	3.42	1.17
Checking in the Morning	**Yes**	3.09	.81	2.82	1.06	3.05	1.00	2.74	.99	3.76	1.04
	No	3.70	.76	3.45	1.03	3.85	.85	3.27	1.08	4.26	.71
Checking at Night	**Yes**	3.17	.83	2.92	1.08	3.16	1.00	2.78	1.01	3.82	1.02
	No	3.58	.85	3.16	1.12	3.64	1.06	3.30	1.08	4.19	.82
Turning off at Night	**Yes**	3.39	.87	3.13	1.10	3.37	1.06	3.09	1.05	3.96	.99
	No	3.18	.83	2.92	1.08	3.18	1.01	2.80	1.02	3.85	1.00

The results of the second variable showed that participants who checked their phone in the morning were significantly different from the participants who do not check their phone in the level of nomophobia ($U = 2843$, $p < .05$) and all dimensions (1st dimension: $U = 3194.5$, $p < .05$; 2nd dimension: $U = 2618.5$, $p < .05$; 3rd dimension: $U = 3371.5$, $p < .05$; 4th dimension: $U = 3471.5$, $p < .05$). In a similar vein, participants who did not spend time on their phone at night were found to have a significantly higher level of nomophobia than the participants who did ($U = 2249$, $p < .05$). Moreover, significance was found in the 2nd dimension (Losing Connectedness) ($U = 2280$, $p < .05$) and 3rd dimension (Not being able to Communicate) ($U = 2254.5$, $p < .05$).

After the analysis of the last variable it was noted that the participants who turned off their phone at night were not significantly different in the level of nomophobia ($U = 3702.5$, $p > .05$) and all dimensions from the participants who did.

8. Discussion and Conclusion

The main goal of the study was to explore the relations between nomophobia and certain demographic variables of university students studying at the Business and Administration Department in a Central Anatolian university. Furthermore, the level of nomophobia was analyzed based on smart phone ownership and checking frequency. To achieve this goal, the Nomophobia Questionnaire (NMP-Q) and a demographic information questionnaire was administered. The findings of the study revealed that the two-thirds of the sample had a moderate level of nomophobia, followed by the severe level. This may be an indication that university students are strongly connected to their smartphones. The result can be supported by the findings of the demographic information question items displaying that students have a fear of being out of battery and unable to check their phones for notifications or news. Based on this, it was no surprise to discover that a large part of the students did not know how to stay

connected and entertained without a phone. This shows that this sample of Business and Administration students faces difficulties in finding a way to spend their spare time well without having a phone close at hand. It should be added that the students were not found to be concerned about not being reached; rather it is a much more weighty matter not being about to follow the happenings around the world. This result is in accordance with the study of Yıldırım et al. (2015) who found that 43% of their Turkish university students have nomophobia. Similarly, Gezgin, Çakir and Yıldırım (2017) administered a study examining the level of nomophoba in a Turkish university setting, and revealed the increase of prevalence of nomophobia among the youth.

Looking at the demographic variables it was found that the level of nomophobia of male and female participants did not differ; neither did education, age, class and monthly income. It was found that the male participants had a higher nomophobia level; however, it was not considerably higher than the level of the female participants. This result is in line with that of Dixit et al. (2010) who reported that gender does not have a noticeably large effect on nomophobia.

Additionally, the age 23 was revealed to have significance in one of the dimensions, but apart from this solemn significance it can be stated that nomophobia does not affect people of a certain age. This result is in accordance with the studies on Turkish university students of Yıldırım et al. (2016) and Çağan et al. (2014). Nevertheless, the literature on nomophobia is more inclined to the claim that the rate of nomophobia is high for the age range of 18-24 (Belwal & Belwal, 2009; Buckner et al., 2012; Cheever et al., 2014; Güzeller & Coşguner, 2012; Sanchez-Martinez & Otero, 2009; SecurEnvoy, 2012; Singh & Yadav, 2015), which can also be supported by the preset study. For example, the study of Shin (2014) revealed that students and younger generations are more prone to the dependency of mobile internet.

This study also rejected the hypothesis that students with a low monthly income have a lower level of nomophobia because they cannot afford a smartphone. This result is different from most of the studies in the literature (Nishad & Rana, 2016; Uysal, Özen and Madenoğlu, 2016), which declared that the socio-economic status affect mobile phone addiction. One of the reasons may be listed as the specification of income. As the participants of the present study were university students and were financially bound to their parents, the present study asked the socio-economic status of their parents instead of their own status. Still, further studies investigating the effect of descriptive variable on students' tendency to nomophobia are urgent.

The research revealed that students who carry their charger with them have a lower level of nomophobia than the students who did not. This finding may lead to the interpretation that students with chargers have a sense of trust of their phone not running out of battery. In a similar vein, the research unveiled that students who check their phones in the morning and at night were less nomophobic. According to Pavithra and Madhukumar (2015) 23% of the participants experienced stress caused by the fear of being out of battery or phone credits. In order to allay the fear, carrying a charger has become one of the main objects carried during the day.

Moreover, the findings of the present study revealed that the majority of the students check their phones 49 and more times a day. This result is similar to the results obtained by Pavithra and Madhukumar (2015) who found that 49% of their participants check their phone 2-3 times every hour to look for new messages and emails. They added that this behavior is typical of nomophobes (a person with nomophobia). Likewise, Singh, Gupta and Garg (2013) documented that 76% of their participants acquired a habit of monitoring the smartphone for new calls or messages.

The present study also revealed that the more frequently a student checks his phone the less nomophobic behaviors he displays. One of the reasons for these findings may be that they suffer from a less severe anxiety of missing out owing to the fact that they checked their phone. Akıllı and Gezgin (2016) suggested a different result indicating a significant relationship between the frequency of checking and the level of nomophobia; in other words, the higher the frequency the higher the level of nomophobia. Their study was set in a Turkish university setting with 683 students from 19 different universities. The departments and success rate of the universities were not taken into consideration. However, the present study had a more controlled process during the data collection solemnly fixating on Business and Administration students and a university with a moderate success rate. The difference of sample and setting may have led to the difference of results.

When interpreting the results of the present study, some limitations should be taken into consideration. Firstly, the sample of the study was limited to university students in the program of Business and Administration. Second, the participants of the study may have answered the questionnaire based on their momentary mood which may have hindered to obtainment of general results. To obtain more generalizable conclusions on the nomophobic behaviors of young adults in Turkey, it is suggested that future studies include a larger and heterogonous sample.

Despite the growing academic interest in exploring the problems caused by excessive smartphone use, applied practice in this field has been scare. As the future entrepreneurs of our country, the students of Business and Administration need to be aware of the risks and danger of nomphobia, which can be provided through seminars and workshops on the efficient use of smartphones without being addictive. Furthermore, software and operating systems should be developed, particularly for students of economics and administrative sciences, which filters and orders news and emails based on their urgency to help managers and directors manage their time. Lastly, a health center like the internet addiction polyclinic at the Bakırköy psychiatric hospital should be opened for the general community to identify risk groups and lessen nomophobic behaviors.

References

AddictionTips (2015). *25 Surprising Facts about Phone Addiction*. Retrieved on February 14, 2018 from http://www.addictiontips.net/phone-addiction/phone-addiction-facts/

Akıllı, G.K. & Gezgin, D.M. (2016). Examination of Relationship between university Students' Nomophobia Levels and Behavior Patterns. *Mehmet Akif Ersoy Üniversitesi Eğiti Fakültesi Dergisi, 40*, 51-69.

Angell, I. (1996). Winners and losers in the information age. *Society, 34*, 81-85.

Belwal, R.,& Belwal, S. (2009). Mobile phone usage behavior of university students in Oman. In New Trends in Information and Service Science, June 30, 2009. *NISS'09. International Conference on* (pp. 954-962). IEEE. June.

Buckner, J.E., Castille, C.M., & Sheets, T. (2012). The Five Factor Model of personality and employees' excessive use of technology. *Computers in Human Behavior 28*(5), 1947–1953.

Castells, M. (1996). *The Rise of the Network Society*. Oxford: Basil Blackwell.

Castells, M. (2004).*The Network Society: A Cross-Cultural Perspective.* UK:Edward Elgar.

Castells, M. (2005). The Message Is the Medium: An Interview with Manuel Castells (conducted by Terhi Rantanen). *Global Media and Communication, 1* (2): 135–47.

Cheever, N.A., Rosen, L.D., Carrier L.M., & Chavez, A. (2014) Out of sight is not out of mind: The impact of restricting wireless mobile device use on anxiety levels among low, moderate and high users. *Computers in Human Behavior 37*, 290–297.

Chóliz, M. (2012). Mobile-phone addiction in adolescence: the test of mobile phone dependence (TMD). *Prog Health Sci, 2*(1), 33-44.

Çağan, Ö., Ünsal, A. & Çelik, N. (2014). Evaluation of college students' the level of addiction to cellular phone and investigation on the relationship between the addiction and the level of depression. *Procedia - Social and Behavioral Sciences, 114*, 831–839.

Dixit, S., Shukla, H., Bhagwat, A., Bindal, A., Goyal, A., Zaidi, A.K. & Shrivastava, A. (2010). A study to evaluate mobile phone dependence among students of a medical college and associated hospital of central India. Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine, 35(2), 339-341. doi:10.4103/0970-0218.66878

Gezgin, D.M., Şahin Y.L. & Yıldırım, S. (2017). Sosyal Ağ Kullanıcıları Arasında Nomofobi Yaygınlığının Çeşitli Faktörler Açısından İncelenmesi. *Eğitim Teknolojisi Kuram ve Uygulama. 7*. 10.17943/etku.288485.

Güzeller, C.O. & Coşguner, T. (2012). Development of a problematic mobile phone use scale for Turkish adolescents. *Cyberpsychology & Behavior, 15*(6), 205–211.

Hong, F-Y., Chiu, S-I., & Huang, D-H., (2012). A model of the relationship between psychological characteristics, mobile phone addiction and use of mobile phones by Taiwanese university female students. *Computers in Human Behavior,28*(6), 2152–2159.

Hussain, I.,& Adeeb, M. A. (2009). Role of Mobile Technology in Promoting Campus-Wide Learning Environment. *Turkish Online Journal of Educational Technology (TOJET), 8*(3), 48-57.

Hussain, I. Çakır, O., Özdemir, B., & Tahirkheli, S. A. (2017). Getting closer being apart: living in the age of information and communication technologies. *New Horizons, 11*(1), 145-160.

Kaur, A.,& Sharma, P. (2015). A Descriptive Study to Assess the Risk of Developing Nomophobia among Students of Selected Nursing Colleges Ludhiana, Punjab. *International Journal of Psychiatric Nursing, 1*(2), 1-6.

King, A. L. S., Valença, A. M., Silva, A. C. O., Baczynski, T., Carvalho, M. R., & Nardi, A. E. (2013). Nomophobia: Dependency on virtual environments or social phobia? *Computers in Human Behavior, 29*(1), 140-144. https://doi.org/10.1016/j.chb.2012.07.025

Netburn, D. (2012). Nomophobia –fear of being without your phone is on the rise. Los Angeles Times. Retrieved on February 14, 2018 from http://articles.latimes.com/2012/feb/17/business/la-fi-tn-nomophobia-on-the-rise-20120216

Nishad, P.,& Rana, A. S. (2016). Impact of mobile phone addiction among college going students. *Advance Research Journal of Social Science, 7*(1), 111-115. https://doi.org/10.15740/HAS/ARJSS/7.1/111-115

Özdemir, B., Çakır, O., & Hussain, I. (2018). Prevalence of Nomophobia among University Students: A comparative Study of Pakistani and Turkish Undergraduate Students. *Eurasia Journal of Mathematics, Science and Technology Education, 14(*4), 1519-1532.

Pavithra, M.B.,& Madhukumar, S. (2015). A Study on Nomophobia-Mobile Phone Dependence, Among Students of a Medical College in Bangalore. *National Journal of Community Medicine, 6*(3), 340-344.

Perry, S.,& Lee, K. (2007). Mobile phone text messaging overuse among developing world university students. *Communication, 33*(2), 63-79.

Pourrazavi, S., Allahverdipour, H., Jafarabadi, MA., & Matlabi, H. (2014). A socio-cognitive inquiry of excessive mobile phone use. *Asian Journal of Psychiatry 10*: 84–89.

Uysal, S., Özen, H., & Madenoğlu, C. (2016). Social phobia in higher education: the influence of nomophobia on social phobia. *The Global Elearning Journal, 5*(2), 1-8.

Sanchez-Martinez, M. & Otero, A. (2009). Factors associated with cell phone use in adolescents in the community of Madrid (Spain). *Cyberpsychology & Behavior 12*(2), 131–137.

Schiller, H.I.(1981). *Who Knows: Information in the Age of the Fortune 500*. Norwood, New Jersey: Ablex.

SecurEnvoy. (2012). *Newsroom: 66% of the population suffers from Nomophobia the fear of being without the phone*. Retrieved on February 14, 2018 from

http://www.securenvoy.com/blog/2012/02/16/66-of-the-population-suffer-fromnomophobia-the-fear-of-being-without-their-phone/

Sekaran, U.,& Bougie, R. (2010). *Research methods for business: A skill-building approach* (5th ed.). Haddington: John Wiley & Sons.

Singh, B., Gupta, R. & Garg, R. (2013). Mobile Phones; A Boon or Bane for Mankind?-Behavior of Medical Students. *International Journal of Innovative Research and Development, 2*(4), 196-205.

Singh, J. D. & Yadav, R. A. (2015). Health complications caused by excessive use of smartphones. *Global Journal of Multidisciplinary Studies, 4*(2).

Stehr, N. (2010). Theories of the Information Age. In C. Crothers (Eds.), *Historical Developments and Theoretical Approaches in Sociology Volume II*, (pp. 375-395). UK: Eolss Publishers.

Tapscott, D. (2009). *Grown up digital: How the net generation is changing your world.* New York: McGraw-Hill.

Thomas, M. (2011). Digital education: Opportunities for social collaboration. London & New York: Palgrave Macmillian.

URAP Center. (2018). 2017-2018- Devlet Üniversiteleri Genel Sıralaması. Retrieved on July 27, 2018 from http://tr.urapcenter.org/2017/2017_t5.php

Van Dijk, J. A.G.M. (1999). The one-dimensional network society of Manuel Castells. *New Media & Society, 1*(1), 127-138.

Yıldırım, Ç. (2014). *Exploring the dimensions of nomophobia: developing and validating a questionnaire using mixed methods research* (Unpublished Master Thesis). Ames, Iowa State University.

Yıldırım, Ç.,& Correia, A.-P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior, 49*, 130-137. https://doi.org/10.1016/j.chb.2015.02.059

Yıldırım, Ç., Sumuer, E., Adnan, M., & Yıldırım, S. (2016). A growing fear: Prevalence of nomophobia among Turkish college students. *Information Development, 32*(5), 1322-1331

Appendix

Appendix A. Demographic Information Questionnaire

1. Gender : ( ) Male ( ) Female

2. Age : ( ) 20 and below ( ) 21 ( ) 22 ( ) 23 ( ) 24

3. Level of Education : ( ) Associate Degree ( ) Bachelor's Degree

4. Class: ( ) 1 (freshman) ( ) 2 (sophomore) ( ) 3 (junior) ( ) 4 (senior)

5. Monthly Income of the Family: ( ) 1000 TL and below ( ) 1001-2000 TL ( ) 2001-3000 TL

6. Do you have a smartphone? : ( ) Yes ( ) No

5. How long have you been using your smartphone? : ( ) less than 1 year ( ) 1-2 years ( ) 3-4 years ( ) more than 4 years

6. What is the frequency of checking your phone?: ( ) 1-16 times ( ) 17-32 times ( ) 33-48 times ( ) 49 and more times

7. Do you carry a charger with you? : ( ) Yes ( ) No

8. Do you check your phone as soon as you wake up in the morning? : ( ) Yes ( ) No

9. Do you check your phone right before you go to sleep at night? : ( ) Yes ( ) No

10. Do you turn off your phone at night? : ( ) Yes ( ) No

11. Can you give up using your phone? : ( ) Yes ( ) No

12. Do you think smartphones lead to people being antisocial? : ( ) Yes ( ) No

13. What do you use your smartphone most frequently for?: