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Primary School Teacher Candidates and Nomophobia[1]

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SUMMARY

Smartphones have become an integral part of modern life in a technological age, and likewise stirs mixed emotions among people. However, technology's influence is only increasing as it becomes evermore advanced, and has youth in particular wrapped around its finger. One such consequence of this is nomophobia. Nomophobia can be defined as the irrational fear of being without your mobile phone or being unable to use your phone for any given reason. This fear of the absence of one's phone can cause numerous physical and psychological issues. This study aims to examine nomophobia among primary school teacher candidates in terms of different factors. It was looked at whether or not the severity/degree of this condition differed by gender, academic year, grade point average, how long students had a mobile phone, how long students talked over phone and how long students used the internet for 260 teacher candidates an anonymous state university participated as the sample in the study, which was performed based on the general survey model. Data was collected using the Nomophobia Scale (NMP-Q) developed by Yildirim and Correia (2015), and adapted into Turkish by Yildirim, Sumuer, Adnan, and Yildirim (2016). The scale contains 20 items, each of which were scaled between 1 and 7, 1 being "I strongly disagree" and 7 being "I strongly agree". SPSS was used to analyze the data with the goal of seeing whether or not there was any marked statistical significance between the variables.

Keywords: Nomophobia, smart phone, primary school teacher, teacher candidate

INTRODUCTION

Spanning carrier pigeons and letters to Morse code, telegraphs, and telephones, the role of communication in human life is indispensable. As the world digitalizes, it now interacts through wireless communication (Kanmani, 2017). New communication technologies, the Internet, and social media, not only provide important facilities for individuals and societies, but also have negative consequences as well. One of these such consequences, and which can be considered one of many problems associated with the use of new communication technology, is nomophobia (Eşitti, 2015). Nomophobia is the fear of being deprived of a cell phone (Shar and Isiklar, 2012). With the onset of new technologies, a disorder such as nomophobia in human behavior is now prevalent (King, Valença, Silva, Baczynski, Carvalho, and Nardi, 2013).

Many people display compulsive or addictive behavior due to the temporary climatic satisfaction that they get from instant communication (Tran, 2016). Nomophobia is a type of pathological fear that occurs in the absence of interaction with technology in general in a digital society, and is accompanied by discomfort, anxiety, nervousness, and even sadness when one is not interacting with their smart phone (Bragazzi and Puente, 2014). Diker and Taşdelen (2017) found that social media addicts are likely to develop emotional and behavioral disorders such as anxiety, anxiety, depression, loneliness, and antisocial behavior when deprived of their smartphones and the Internet. Another study that was conducted involving university students found smartphone addiction had a direct impact upon students' sense of social self-efficacy, their academic stress levels, and their interpersonal interactions. In this context, the high level of stress associated not only with school but also with interacting with people, together with low social self-efficacy, leads university students to become vulnerable to smartphone addiction (Chiu, 2014). Moreover, it has also been put forth that low self-confidence a social skills problems arise as a result of Internet and cell phone addiction (Kring, Davidson, Neale and Johnson, 2007). From this angle, it is possible to say that smartphone addiction can cause major social issues among individuals that are namely tied to self-confidence and self-efficacy.

[1] The study was presented as an oral presentation at the 3rd International Symposium of Limitless Education and Research (ISLER 2019) on April 24-27, 2019, Bodrum, Turkey.

This especially holds true when we observe how young people suffering from smartphone addiction behave across different countries. One Indian study involving students found that the majority of the participants could not tolerate being left without a phone call even at night, and that they carried their mobile devices with them. Likewise, the same study also found that 20% were unable to concentrate without their cell phones on hand or when their phones were not charged (Bindal, Goyal, Zaidi, and Shrivastava, 2010). Another study, this time involving Taiwanese students, revealed that they pervasively used their smart phones after school, between classes, while riding and waiting public transport, at lunch, and in the classroom. The same study also found that those same students suffered from a host of neck, shoulder, back, elbow, and wrist problems as well (Yang, Chen, Huang, Lin and Chang, 2017). In addition to the physical and psychological effects of nomophobia, King, Valença and Nardi (2010) have also reported that smartphones provide individuals with a sense of false secutiry, citing that smartphones enable many to feel that they can reach everyone unconditionally on demand.

All of this therefore has a negative impact on people both physically and psychologically. Looking nomophobia more closely in terms of how it manifests itself (e.g. social phobia, anxiety, mental health issue) as well as moreover exploring the causes behind it will ultimately enable people to interact more effectively with smart devices. In particular, it is necessary to ensure that young individuals alongside teachers are able to benefit from smart phones without suffering from any form of psychological harm or nomophobia. It therefore is important that smart devices be used more effectively and without harming the physical and psychological health of individuals, and that teachers pass that on to children and their parents. In this context, this study was conducted to look more closely at nomophobia levels among student teachers in Turkey in order to better raise awareness about this issue.

Research Objective

This study aimed to put forth the extent of nomophobia among student teachers and to analyze that through the lens of numerous variables.

Accordingly, we posed the following questions:

- To what degree are student teachers nomophobic?
- Moreover, does this vary according to:
    - Gender?
    - Year of study?
    - Grade point average?
    - How long the subject has owned a smartphone for?
    - How much time the subject spends talking on their smartphone?
    - How much time the subject spends surfing the Internet on their smartphone?

METHOD

This study is quantitative in nature.

Research Model

This study employed a screening model. Screening surveys can either reveal the how participants view a given topic or event, or can reveal what their interests, skills, abilities, and attitudes are on a larger scale. Fraenkel and Wallen (2006) indicate that when it comes to screening surveys, researchers are interested more in how opinions and characteristics are individually distributed rather than their origin (Büyüköztürk, Kılıç-Çakmak, Akgün, Karadeniz and Demirel, 2008). In this respect, this is a screening study in that it examines thow nomophobic student teachers and in what ways their nomophobia manifests itself.

Study Group

The participants were selected using random sampling. Random sampling is frequently used both in screening as well as non-experimental studies, whereby surveys and interviews are used to collect and understand the characteristics of the population in question (Johnson & Christensen, 2012). While 260 student teachers enrolled at a state university in Turkey participated in the study, the answers of only 252 of those were included in our research. Detailed information about the subjects is given in Table 1.

Table 1. Information about the Student Teachers

		n	%
Gender	Female	169	67.1
	Male	83	32.9
	Total	252	100
Year	1	66	26.2
	2	65	25.8
	3	67	26.6
	4	54	21.4
	Total	252	100.0
Grade point average	Under 3	166	65.9
	3 and above	84	33.3
	Total	250	99.2
Length of time the subject has owned a smartphone for	6 years or less	149	59.1
	7 years and above	102	40.5
	Total	251	99.6
Amount of time the subject spends talking on the phone	Under 1 hour	80	31.7
	1 hour	69	27.4
	Over 1 hour	100	39.7
	Total	249	98.8
Amount of time subject spends surfing the Internet	4 hours or less	143	56.7
	Over 4 hours	109	43.3
	Total	252	100.0

When we took a more in depth look at Table 1, we saw the female participants mostly had a grade point average of less than 3, that they had owed a smart phone for 6 years or less, that they spoke for more than 1 hour on their smart phones, and that they surfed the Internet for less than 4 hours per day.

Data Collection Tools

The data was collected using the Nomophobia Scale (NMP-Q) developed by Yıldırım and Correia (2015) and adapted into Turkish by Yıldırım, Sumuer, Adnan, and Yıldırım (2016). The scale consists of 20 items and is divided into 4 factors: including (1) not being able to information, (2) losing connectedness, (3) not being able to communicate, and (4) giving up convenience. It moreover employs a 7-point Likert-type scale that is graded from 'I strongly disagree' to 'I strongly agree'. The total score was accepted as the sole criterion for evaluation. A score of 0 to 20 indicated there being no nomophobia, 21-60 points indicated mild nomophobia, 60 to 100 points indicated moderate nomophobia, and 100 plus points indicated there being extreme nomophobia, respectfully.

While Cronbach's Alpha reliability coefficient of the original scale was 95, the reliability coefficients on the other hand were 94, 87, 83, and 81, respectively. Similarly, the Cronbach's Alpha reliability coefficients of the Turkish version of scale were 92, whereas the reliability coefficients were 90, 74, 94, and 91, respectively. Likewise, the Cronbach's Alpha reliability coefficient of the Turkish scale featured in this study was 94, whereas the factor reliability coefficients were 88, 81, 93, and 89, respectively.

The information form of the scale used in this study featured questions asking the students about their gender, academic year, and grade point average, as well as the number of years they had owned a smart phone for, and the number of hours they spent both talking on their phones and surfing the Internet.

Data Analysis

All of the data was fed through SPSS 22.0 (The Statistical Package for Social Sciences), and analyzed using the Independent Samples t-test and One Way Variance Analysis (ANOVA). During parametric testing, we made use of the flatness-skewness values in order to convey normal distribution. Therefore, we looked at Skewness (-0.131) and Kurtosis (-0.564). Moreover, we assumed that -1.00 to +1.00 meets the normality requirement

(Morgan et al, 2004; ct. Can, 2017). Accordingly, the data related to academic year and time spent talking was analyzed using ANOVA, whereas the Independent Samples t-test was used for the other variables. When performing our statistical analysis, we considered 0.05 to be the base level of significance.

FINDINGS

We examined our findings within the framework of the objectives of our study. Our first objective, respectively, was to find out how nomophobic the subjects (i.e. student teachers) were. In line with this, the average point scores of the responses are given in Table 1.

Table 1. Degree of Nomophobia Among Student Teachers

Factor	$\bar{x}$	**SD**
Not being able to access information	4,69	1.49
Losing connectedness	4.16	1.47
Not being able to communicate	4.53	1.60
Giving up convenience	3.40	1.62
Total Scale Score	4.19	1.28

What Table 1 shows us is that the level of nomophobia levels among student teachers is above average ($\bar{x}$ = 4.19). When the average values of the factors are taken into consideration, we found that highest average ($\bar{x}$ = 4,69) was tied to not being able to access information, whereas the average score for giving up convenience was ($\bar{x}$ = 3.40) below the average (= 3.40). Therefore, we can deduce that the level of nomophobia in the scope of giving up convenience is lower than the other three factors among the subjects. The averages of the subjects' responses to each item in the scale is given in Table 2.

Table 2. The mean and standard deviation values of the subjects' responses to each scale item

Items		$\bar{x}$	**SD**
Factor 1: Not Being Able to Access Information			
1.	I would feel uncomfortable without constant access to information through my smartphone.	4.62	1.71
2.	I would be annoyed if I could not look information up on my smartphone when I wanted to do so.	**4.84**	1.71
3.	Being unable to get the news (e.g. events, weather, etc.) on my smartphone would make me nervous.	4.66	1.78
4.	I would be annoyed if I could not use my smartphone and/or its capabilities when I wanted to do so.	4.67	1.75
Factor 2: Losing Connectedness			
5.	Running out of battery in my smartphone would scare me.	4.62	1.97
6.	If I were to run out of credits or hit my monthly data limit, I would panic.	4.09	2.08
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.	4.39	1.93
8.	If I could not use my smartphone, I would be afraid of getting stranded somewhere	**3,46**	1.92
9.	If I could not check my smartphone for a while, I would feel a desire to check it.	4.27	1.85
Factor 3: Not Being Able to Communicate			
10.	If I didn’t have my smartphone with me, I would feel anxious because I could not instantly communicate with my family and/or friends.	4.57	1.89

11.	I would be worried because my family and/or friends could not reach me.	4.67	1.81
12.	I would feel nervous because I would not be able to receive text messages and calls.	4.52	1.78
13.	I would be anxious because I could not keep in touch with my family and/or friends	4.52	1.83
14.	I would be nervous because I could not know if someone had tried to get a hold of me.	4.41	1.88
15.	I would feel anxious because my constant connection to my family and friends would be broken.	4.51	1.87
Factor 4: Giving Up Convenience			
16.	I would be nervous because I would be disconnected from my online identity.	3.36	1.94
17.	I would be uncomfortable because I could not stay up-to-date with social media and online networks.	3.42	1.96
18.	I would feel awkward because I could not check my notifications for updates from my connections and online networks.	3.45	1.91
19.	I would feel anxious because I could not check my email messages.	**3.23**	1.91
20.	I would feel weird because I would not know what to do.	**3.54**	1.91

Based on the findings above, we discovered that the item with the highest average ($\overline{X}$ = 4.84) was the one indicating that the subjects felt uncomfortable when they were unable to continuously look at their phones. Likewise, the average of the factor that dealt with that subjects fearing that they would be stranded if they found themselves somewhere where they could not use their smart phones was well below the others ($\overline{X}$ = 3.46). On the other hand, all of items that fell within the giving up convenience factor, and likewise the nomophobia levels associated with that were also well below average. We moreover found that there was a link between the lowest average ($\overline{X}$ =3.23) and the subjects feeling uneasy when they could not check their e-mails when their smartphones were not on hand. Only the final item within this factor appeared to be slightly above average ($\overline{X}$ = 3.54). Accordingly, many of the subjects indicated that they do not know how to react when their smartphones were not present, and that they consequently felt uncomfortable as a result. When we look at the averages of all subjects' responses to the times, we see that those associated with not being able to reach information, losing connectedness, and not being able to communicate all were tied in with above average nomophobia levels.

The second aim of the study was to examine nomophobia levels among the student teachers through the lens of a number of variables. First, we looked to see whether or not the subjects differed according to gender. The results of Independent Samples t-test are shown in Table 3.

Table 3. Independent Sample T-test Results (According to Gender)

Factor	**Groups**	**n**	$\overline{X}$	**SD**	**t**	**df**	**p**
Not being able to access information	Female	169	4.70	1.49	.072	250	.943
	Male	83	4.68	1.51			
Losing connectedness	Female	169	4.29	1.50	2.023	250	.044
	Male	83	3.89	1.38			
Not being able to communicate	Female	169	4.77	1.53	3.413	250	.001
	Male	83	4.05	1.64			
Giving up convenience	Female	169	3.49	1.62	1.358	250	.176
	Male	83	3.20	1.61			

When Table 3 was examined, we see that the nomophobia levels of the subjects according to gender were meaningfully tied to losing connectedness and not being able to communicate ($p < 0.05$). When we examined the arithmetic means of these differences, we discovered that the female subjects were more nomophobic than their male counterparts.

One-way analysis of variance (ANOVA) was used to find out whether or not the subjects' responses differed in any way according the academic year that they were in. The results of this are shown in Table 4.

Table 4. One-Way ANOVA Results (According to Academic Year)

Factor		Sum of Squares	df	Mean Square	F	p	Difference
Not being able to access information	Between Groups	7.832	3	2.611	1.165	.324	-
	Within Groups	555.570	248	2.240			
	Total	563.402	251				
Losing connectedness	Between Groups	1.098	3	366	.166	.919	-
	Within Groups	547.734	248	2.209			
	Total	548.832	251				
Not being able to communicate	Between Groups	4.110	3	1.370	.529	.663	-
	Within Groups	642.458	248	2.591			
	Total	646.567	251				
Giving up convenience	Between Groups	8.573	3	2.858	1.087	.355	-
	Within Groups	651.667	248	2.628			
	Total	660.240	251				

A closer look at Table 4 reveals to us that there is no significant difference between any the subjects' scores according their academic year.

Similarly, the Independent samples t-test was used to find out whether or not the subjects responses differed in any way according to their grade point averages. The results of this are shown in Table 5.

Table 5. Independent Sample t-test Results (According to Grade Point Average)

Factor	Groups	n	$\overline{x}$	SD	t	df	p
Not being able to access information	Under 3	166	4.66	1.49	-.511	248	.609
	3 and above	84	4.76	1.48			
Losing connectedness	Under 3	166	4.23	1.46	1.034	248	.302
	3 and above	84	4.02	1.46			
Not being able to communicate	Under 3	166	4.54	1.63	.105	248	.916
	3 and above	84	4.51	1.52			
Giving up convenience	Under 3	166	3.43	1.63	.433	248	.665
	3 and above	84	3.33	1.61			

Table 5 shows us there was no significant difference between the any of the subjects' scores according to their grade point averages.

When it came to looking to see whether or not the averages of the subjects' answers differed in any way according how long they had owned a smart phone for, the results are shown in Table 6.

Table 6. Independent T-test Results (According to How Long the Subjects had Owned Their Smartphones For)

Factor	Groups	n	$\overline{x}$	SD	t	df	p
Not being able to access information	6 years and under	149	4.72	1.46	.450	249	.653
	7 years and above	102	4.63	1.55			
Losing connectedness	6 years and under	149	4.11	1.46	-.601	249	.548

	7 years and above	102	4.22	1.50			
Not being able to communicate	6 years and under	149	4.44	1.61	-1.008	249	.314
	7 years and above	102	4.65	1.59			
Giving up convenience	6 years and under	149	3.29	1.57	-1.158	249	2.48
	7 years and above	102	3.53	1.67			

Upon looking at Table 6, we cannot see there being any meaningful connection between the subjects' responses and the number of years they have each owned a smart phone for ($p < 05$).

Additionally, one-way variance analysis (ANOVA) was used to determine whether the subjects' responses (and therefore their nomophobia levels) differed in any way according to how much time they spent talking on the phone in a given day. The results of this are shown in Table 7.

Table 7. One-Way ANOVA Results (According to the Amount of Time Subjects Spent Talking On the Phone)

Factor		**Sum of Squares**	**df**	**Mean Square**	**F**	**p**	**Difference**
Not being able to access information	Between Groups	0.464	2	232	.102	.903	-
	Within Groups	558.696	246	2.271			
	Total	559.160	248				
Losing connectedness	Between Groups	3.363	2	1.681	.765	.466	-
	Within Groups	540.638	246	2.198			
	Total	544.001	248				
Not being able to communicate	Between Groups	9.751	2	4.875	1.911	.150	-
	Within Groups	627.504	246	2.551			
	Total	637.255	248				
Giving up convenience	Between Groups	6,502	2	3.251	1.226	.295	-
	Within Groups	652.535	246	2.653			
	Total	659.037	248				

According to Table 7, there appears to be no significant difference between the subjects' responses and likewise their nomophobia levels according to the amount of they spend talking on the phone.

Finally, one-way variance analysis (ANOVA) was also used to determine whether the subjects' responses (and therefore their nomophobia levels) differed in any way according to how much time per day they spent surfing the Internet. The results of this are provided in Table 8.

Table 8. Independent Samples t-test Results (According to the Amount of Time Subjects Spent Surfing the Internet on their Smartphones)

Factor	**Groups**	**n**	$\overline{X}$	**SD**	**t**	**df**	**p**
Not being able to access information	4 hours or less	143	4.62	1.47	-.856	250	.393
	Over 4 hours	109	4.78	1.52			
Losing connectedness	4 hours or less	143	3.92	1.38	-3.000	250	.003

	Over 4 hours	109	4.48	1.54			
Not being able to communicate	4 hours or less	143	4.47	1.56	-.678	250	.498
	Over 4 hours	109	4.61	1.66			
Giving up convenience	4 hours or less	143	3.21	1.61	-2.035	250	.043
	Over 4 hours	109	3.63	1.61			

In stark contrast, Table 8 shows us that there is a meaningful difference among the subjects in terms of how nomophobic they are when we look at how much time they spend surfing the Internet during a given day, especially when we focus on two factors in particular: loosing connectedness and giving up convenience ($p< 0.05$). Where this holds especially true is when we look at subjects who spend more than 4 hours per day surfing the Internet on their phones. We can therefore infer that they are much more nomophobic than their counterparts.

CONCLUSION AND DISCUSSION

What our findings show us is tht the rate of nomophobia among student teachers is seemingly above average. Nomophobia was found to be much more strongly associated with not being able to reach information, whereas it seemed to be less associated with giving up convenience. Similarly, Adnan & Gezgin (2016) had also found that nomophobia levels of university students were well above average compared to the rest of the population.

According to the results our study within the framework of gender, we found that our female subjects were much more nomophobic than their male counter parts when it came to both losing connectedness and not being able to communicate. Other Turkish studies focusing on undergraduate students majoring in other subjects also seem to support our results as well, particularly in terms of female students being considerably more nomophobic than their male equals (Yıldırım et al, 2016; Akman, 2019; Büyükçolpan, 2019). Comparably, Tavolacci, Meyrignac, Richard, Dechelotte, and Ladner (2015) had found that female students who used cell phones suffered more from Internet addiction and sleeping problems than their male cohorts did. In a study involving high school students, Altan (2019) too had discovered that female students were significantly more nomophobic than male students were. In sharp contrast, Equals (2015) found that male students were much more affected by the negative aspects of use than female students were. Nevertheless, there also are studies which show that gender bears no impact whatsoever on who does versus who does not develop nomophobia (Adnan and Gezgin, 2016; Dixit et al, 2010).

Additionally, our findings also show us that there was no meaningful link between nomophobia and either which year the students were in or their grade point averages. On the contrary, Akman (2019) found that the longer university students spend surfing the Internet, the more it negatively impacted their overall scholastic performance.

In this study, we were able to establish a meaningful link between the amount of time students surfing the Internet and how nomophobic they were. In this context, we found that those who spent large quantities of time on the Internet were much more nomophobic than average. Comparably, Büyükçolpan (2019) had also found that there was significant link the amount of time university students spent on the Internet and how nomophobic they were. Likewise, Gezgin, Şahin and Yıldırım (2017) put forth that occurrences of nomophobia were high among individuals who spent an overwhelming amount of time surfing the Internet.

To conclude, it is safe to infer that nomophobia does, in fact, have a negative impact on the lives of young people in particular. Therefore, it is very important we make all attempts to not only prevent this, but to also ensure the youth use both smart phones as well as other technological tools in an effective manner. Moreover, it is up to both family members and teachers alike to steer children in the right direction. In this context, we wish to see more research published that not only looks at relationship between nomophobia and different variables, but that is also oriented at those suffering from nomophobia as well.

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