

## Gender, Age and Anxiety as Predictors of Nomophobia in University Students\*

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**Abstract.** Mobile technologies have become one of the important parts of human life. Smartphones have become the most used technological devices of daily life, with newly added features every day. However, intense and non-functional use of these devices may cause problems. Nomophobia, which is defined as the fear of being without a mobile phone or being unable to be online, has begun to take place in literature as a current phenomenon. The present study discusses the variables of gender, age and anxiety as predictors of nomophobia in university students since the phenomenon is common especially in young people. The study group consists of 372 university students. Personal Information Form, Beck Anxiety Scale and Nomophobia scale were used as data collection tools in the study. Pearson correlational analysis and hierarchical regressions were conducted for data analysis. According to the results obtained from the study, anxiety total scale and subjective anxiety and somatic symptoms sub-dimensions were found to be positively associated with nomophobia. It was found that gender and subjective anxiety sub-dimension of anxiety scale significantly predicted nomophobia. On the other hand, it was found that the variable of age did not predict nomophobia significantly. The data obtained were discussed in the light of literature and suggestions were made to researchers.

**Keywords:** Nomophobia, Anxiety, University students, Gender.

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## 1. INTRODUCTION

Digital technologies make human life easier. Mobilization of digital technologies leads to these technologies' being available anytime and anywhere and therefore to their heavy use. Overuse of smartphones, which perform almost all functions of computers, can be problematic. One of these problems is nomophobia (King et al., 2013).

Mobile technology is an indispensable part of today's lifestyle (Adnan & Gezgin, 2016). Increasing use of new technologies and virtual communications, including personal computers, tablets and mobile phones, is causing changes in daily habits and behaviors of individuals (King et al., 2013). As the development of information and communication technologies continues to advance rapidly, the use of mobile phones and smartphones increases significantly (Pivetta, Harkin, Billieux, Kanjo & Kuss, 2019). "Anywhere and anytime" connection feature of mobile phones has eliminated the problem of distance between the individuals. In addition, smartphones which are used as mini computers have further increased the functionality of mobile phones (Kneidinger-Müller, 2019).

In recent years, lots of mobile applications have been developed and advanced features have been added to mobile phones. Smartphones which have these developed features and mobile applications facilitate the access to information and online services such as web browsing, access to social networks, entertainment, travel arrangements, e-commerce and banking (Gezgin, Hamutoğlu, Sezen-Gultekin & Gemikonakli, 2018). While the use of smartphones facilitates the lives of individuals, some negative situations may occur due to excessive and problematic use such as addiction, anxiety, fear or restlessness (Konan, Durmuş, Türkoğlu & Bakır, 2018). One of the disadvantages of the widespread use of smartphones is nomophobia (Gezgin, 2017).

Nomophobia was first described in 2008 as the fear of being separated from mobile phone (SecurEnvoy, 2012). Today, it is also called smartphone deprivation since smartphones have replaced traditional mobile phones (Gezgin et al., 2018). Nomophobia is considered a modern age phobia that has entered our lives as a by-product of the interaction between people, mobile information and communication technologies, especially smartphones (Yildirim & Corriea, 2015).

The fact that individuals have smartphones with them everywhere can cause problems such as compulsive and addictive usage habits as well as communication and information overload. On the other hand, being without smartphones leads to basic psychological and social problems such as fears, emotional stress and feelings of social isolation (Kneidinger-Müller, 2019). Common behaviors among nomophobic individuals may be listed as follows (Bragazzi & Del Puente, 2014): 1. Regular use of smartphone, spending too much time with the smartphone, having one or more smartphone, carrying a charger all the time, 2. Individual's feeling anxious and nervous at the thought of losing the smartphone, when the smartphone is no close or is out of the coverage area, when it cannot be used because of running out of charge or credit and avoiding places or situations where mobile phone use is prohibited, 3. Checking the phone screen to see whether messages or calls are taken or not, 4. Having the smartphone on throughout the

day, sleeping with the smartphone, 5. Having little face-to-face interaction with people who cause anxiety and stress and preferring communication using new technologies, 6. Large amount of expenditure due to smartphone use.

It has been found that nomophobic individuals have increased heart rate, blood pressure levels and anxiety when they are away from their smartphone (Clayton, Leshner & Almond, 2015). Nomophobia emerges as a threat to social and mental health as well as physical health. In this context, nomophobia is a kind of “over attachment syndrome” because excessive use of mobile phone decreases the amount of face-to-face communication and inhibits social and family interactions significantly (Bhattacharya, Bashar, Srivastava & Singh, 2019). If the frequency of an individual’s nomophobic behaviors increases, this affects the individual’s academic performance, level of motivation during the learning process and relationships with family and peers negatively (Durak, 2018).

Studies on nomophobia are increasing day by day in literature. According to studies, some of the variables associated with nomophobia can be listed as the frequency and duration of smartphone use (Bivin, Mathew, Thulasi & Philip, 2013; Gezgin, Şumer, Arslan & Yıldırım, 2017; Gezgin, Şahin & Yıldırım, 2017; Hoşgör, Tandoğan & Gündüz-Hoşgör, 2017), loneliness and shyness (Bian & Leung, 2014; Gezgin, Hamutoglu, Sezen-Gultekin & Ayas, 2018), social stress and lack of self-regulation (van Deursen, Bolle, Hegner & Kommers, 2015), personality characteristics (Öz & Tortop, 2018), social phobia (King et al., 2013; Uysal, Özen & Madenoğlu, 2016; Apak & Yaman, 2019), subjective well-being (Güllüce, Kaygın & Börekçi, 2019), fear of missing social developments (Gezgin et al., 2018; Yaman & Kavuncu, 2019) and social media addiction (Durak, 2018).

Anxiety is another variable nomophobia is associated with (Kara, Baytemir & Inceman-Kara, 2019). Anxiety is a general worry about a possible future danger (Butcher, Mineka & Hooley, 2013, p. 330) and the focus of anxiety is internal rather than external (Bourne, 2010, p. 6). Anxiety is defined as emotional reactions that are perceived as dangerous because they seem real, but are more likely to be at level of expectation because of their low probability of occurrence (Suadiye & Aydın, 2009).

Anxiety is considered as a reaction to uncertain, remote and even unidentified dangers. Anxiety affects the individual’s whole existence. Anxiety, which includes negative mood, feelings of inability to anticipate future danger or threats and inability to control these when they occur, chronic overstimulation and a tendency to avoid situations that may create danger, is also a physiological, behavioral and psychological reaction. At the physiological level, anxiety may include bodily reactions such as rapid heartbeat, muscle strain, nausea, sweating and dry mouth. At the behavioral level, anxiety may sabotage the individual’s ability to move and express himself/herself or to cope with daily life situations. Psychologically, anxiety is a state of subjective worry and restlessness. In its most extreme form, anxiety may cause the individual to feel detached and even to fear, die or go crazy (Bourne, 2010, p. 6; Butcher et al., 2013, p. 333).

Smartphone addiction, which was found to be associated with nomophobia (Yildiz-Durak, 2019), was found to be positively associated with anxiety (Demirci, Akgönül and Akpınar, 2015; Elhai, Levine, Dvorak and Hall, 2016; Veerapu, Philip, Vasireddy, Gurralla and Kanna, 2019). In a study conducted by Hwang, Yoo and Cho (2012), individuals who used smartphones excessively experienced increased state anxiety and trait anxiety. Bian and Leung (2014) stated that individuals may tend to use smartphone more to avoid the feeling of anxiety. It is seen that nomophobia increases as the duration of smartphone use increases (Pavithra and Madhukumar, 2015; Erdem, Kalkın, Türen and Deniz, 2016; Erdem, Türen and Kalkın, 2017; Kaplan-Akıllı and Gezgin, 2016; Sırakaya, 2018). Kara et al. (2019) found a significant relationship between nomophobia and anxiety and stated that anxiety increasing with smartphone use causes nomophobic behaviors. A positive relationship was found between nomophobia and trait anxiety in a study conducted by Sezer and Yıldırım (2020).

The increase in nomophobia with the widespread use of smartphones in recent years suggests that more studies will be conducted on this concept day by day. Considering that smartphone use is most common among young people, nomophobia is a major threat to this population. For this reason, it is important to examine the variables associated with nomophobia. Nomophobic behaviors cause individuals' daily habits to change. In addition, students' school life and academic achievement may also be influenced by negativities caused by nomophobia (Adnan and Gezgin, 2016). The fact that nomophobia is a current phenomenon and affects students' personal, social and academic lives makes the study important. Therefore, the aim of this study is to examine whether anxiety predicts nomophobia.

In line with this purpose, the following sub-problems were examined.

1. Do age and gender predict nomophobia significantly in university students?
2. Does anxiety predict nomophobia significantly in university students?

## **2. METHOD**

### **Study Design**

The study has a correlational research design. Correlational research is an analysis method conducted to determine the level and direction of the relationship between variables, regardless of whether they are dependent or independent (Durmuş, Yurtkoru & Çinko, 2011).

### **Study Group**

Study group consists of 372 university students. 157 (42.2%) of the participants are male, while 215 (57.8%) are female. Participants' ages range between 18 and 33 and mean age is 20.31.

## Data Collection Tools

### Nomophobia Scale

In the study, the updated version of Nomophobia Scale as a 5-Likert type scale by Erdem et al. (2017), which was originally developed by Yildirim and Correia (2015) and adapted to Turkish culture by Yildirim, Sumuer, Adnan and Yildirim (2016), was used. In this version, items 8 and 12 were excluded from the scale since they were in more than one factor and thus a structure consisting of 18 items and 4 sub-dimensions (not being able to access information, being without the device, losing connection and not being able to be online). In the exploratory factor analysis, the scale was found to be grouped in 4 sub-dimensions and it was found that the factors explained 67.79% of the total variance in university students and 60.27% of the total variance in civil servants. Fit indices of both samples obtained as a result of the exploratory factor analysis (NFI:.907-.903; NNFI: .948-.954; GFI:.905-.901; AGFI: .869-.850; RMSEA: .06-.06; CMIN/SD:2.152-1.725) showed that the scale had a good fit. Reliability coefficient of the scale was found to be .92. In the present study, Cronbach-alpha internal consistency coefficient was found as .90. This result shows that the scale was a reliable measurement instrument in this study (Kayış, 2014).

### Beck Anxiety Inventory

The inventory developed by Beck, Epstein, Brown and Steer (1988) was adapted to Turkish culture by Ulusoy, Şahin and Erkmen (1996). The scale consists of 21 items and two sub-dimensions (somatic symptoms and subjective anxiety). Construct validity of the inventory which is scored between 0 and 3, was tested with construct validity factor analysis. In the study conducted within the scope of criterion correlation validity, it was found to be associated with Automatic Thoughts Scale, Beck Depression Inventory, and State and Trait Anxiety Inventory. In the Cronbach alpha analysis conducted for scale reliability, internal consistency coefficient was found as .93, test-retest reliability was found as .57. Cronbach alpha internal consistency coefficient was found as .93 within the scope of this study (Kayış, 2014).

### Data Collection Analysis

The data were collected online between September and October 2020. The data were collected from students studying at private/foundation and state universities on the European side of İstanbul by using appropriate sampling method, which is functional in terms of time, workforce and accessibility. Data were collected from the students on a voluntary basis. The students were told that they could leave the study at any point they liked. Ethics committee permission was taken for the study (İstanbul Sebahattin Zaim University Ethics Committee Approval (04/09/2020 dated and 2020/08 numbered ethics committee decision). Normality assumptions were examined before the data were analyzed. It was found that Kurtosis and Skewness values of the variables ranged between-.075 and-.881 and the data were normally distributed (Büyüköztürk, 2014). Gender variable was converted into a dummy variable because it was categorical.

Female was coded as 1 and male was coded as 0 and the effect of being a female was analyzed. Next, the assumptions of multiple regression were tested. Multivariate normality and linearity scatter diagram matrix was examined and analyzed. The matrix was found to be distributed as an ellipsis. The fact that the matrix was in the shape of an ellipsis shows that the assumptions of normality and linearity were met (Çokluk, Şekercioğlu and Büyüköztürk, 2012). Multiple connection problem was examined by analyzing Variance Increase Factors (VIF) and it was found that these values were lower than 10 (1.018-2.863); therefore, no multiple connection problems were found (Çokluk et al., 2012). Durbin Watson statistics tests whether there is auto correlation, which is another assumption. Since the value obtained was between 1.5 and 2.5 (dw= 2.045), it can be said that there was no auto correlation (Küçükşille, 2014). After it was seen that the assumptions were met, first correlation analysis was conducted, followed by hierarchical regression analysis. The data were analyzed with SPSS 25 package program

### 3. FINDINGS

Descriptive statistics of the variables and correlation analysis were performed and the results obtained are shown in Table 1.

Table 1

Descriptive statistics and Pearson Correlation Analysis results

	M	Se	SD	S	K	NOMO	ANK	SS	SA
NOMO	66.11	.79	15.24	-.082	-.110	1			
ANT	25.90	.76	14.83	.240	-.770	.240**	1		
SS	9.83	.30	5.82	.148	-.748	.192**	.921**	1	
SA	16.06	.50	9.73	.284	-.881	.251**	.973**	.806**	1

\*\*p<.01

M: Mean; Se: Standard error; SD: Standard Deviation; K: Kurtosis, S: Skewness; NOMO: Nomophobia, ANT: Anxiety Total; SS: Somatic symptoms; SA: Subjective anxiety

When Table 1 is examined, it can be seen that nomophobia has a low positive significant correlation with anxiety ( $r=.240$ ,  $p<.01$ ) and anxiety sub-dimensions somatic symptoms ( $r=.192$ ,  $p<.01$ ) and subjective anxiety ( $r=.251$ ,  $p<.01$ ).

In the study, hierarchical regression analysis was conducted to find out whether nomophobia was predicted by age, gender and anxiety. Analysis results are shown in Table 2.

Table 2

Hierarchical regression analysis results regarding the prediction of nomophobia

Variable	B	Standard Error	$\beta$	<i>t</i>	<i>p</i>	Paired R	Partial R
<b>Constant</b>	<b>72.550</b>	<b>9.492</b>		<b>7.643</b>	<b>.000</b>		
Age	-.560	.458	-.061	-1.222	.222	-.098	-.064
Female	8.542	1.549	.277	5.516	.000	.285	.276
1 <sup>st</sup> Block: R=.292; R <sup>2</sup> = .085; $\Delta R^2$ = .085; $F_{(2, 369)} = 17.171$ ; $p < .001$							
<b>Constant</b>	<b>64.518</b>	<b>9.434</b>		<b>6.839</b>	<b>.000</b>		
Age	-.437	.446	-.049	-.980	.328	-.098	-.051
Female	8.323	1.506	.270	5.529	.000	.285	.277
SS	-.127	.214	-.049	-.594	.553	.192	-.031
SA	.431	.128	.275	3.371	.001	.251	.173
2 <sup>nd</sup> Block: R= .376; R <sup>2</sup> = .141; $\Delta R^2$ = .056; $F_{(2, 367)} = 12.042$ ; $p < .001$							

Table 2 shows to what extent age, gender and anxiety predict nomophobia. According to this table, the variables of age and gender analyzed in the first block predict nomophobia significantly ( $F_{(2, 369)} = 17.171$ ,  $p < .001$ ;  $R^2 = .085$ ). Of the variables in the first block, it can be seen that socio-demographic variable age does not predict nomophobia significantly, while gender predicts nomophobia significantly and both variables explain 8.5% of the variance regarding nomophobia. Anxiety sub-dimensions analyzed in the second block (somatic symptoms and subjective anxiety) predict nomophobia significantly ( $F_{(2, 367)} = 12.042$ ,  $p < .001$ ;  $R^2 = .141$ ;  $\Delta R^2 = .056$ ). When the contributions of the sub-dimensions of anxiety, which were included in the analysis in the second block, to the model are examined separately, it can be seen that subjective anxiety predicts nomophobia significantly, while somatic symptoms does not predict nomophobia significantly. It can be seen that both sub-dimensions explain 5.6% of the total variance regarding nomophobia. When the model created is evaluated as a whole, it can be seen that the variables in the model (gender, age, subjective anxiety and somatic symptoms) explain 14.1% of the total variance regarding nomophobia

#### 4. RESULTS, DISCUSSIONS AND SUGGESTIONS

Since nomophobia is one of the current problems brought by technology, it is a phenomenon that is emphasized. The fact that it is a relatively new problem causes a limitation in studies conducted on nomophobia. Investigation of these problems created

by smartphones that most people do not drop from their hands and the variables it is associated with is important in terms of understanding this new phenomenon. This study investigates whether sociodemographic variables such as age and gender and a mental health problem such as anxiety predict nomophobia. It was found that gender and subjective anxiety predicted nomophobia significantly.

The first research question of the study is whether age and gender predict nomophobia significantly. As a result of the regression analysis conducted, it was found that gender, in other words being a female, predicted nomophobia significantly, while age was not a significant predictor of nomophobia. When the literature is examined in terms of the variable of gender, it can be seen similar to the results of the study that nomophobia level is significantly higher in men when compared with women (Burucuoğlu, 2017; Erdem et al., 2017; Turan and İşçitürk, 2018). There are also studies in literature which show that nomophobia does not differ significantly in terms of gender (Adnan and Gezgin, 2016; Apak and Yaman, 2019). Studies (Aktaş and Yılmaz, 2017; Erdem et al., 2016) show that women spend more time than men with smartphones. It is seen in literature that nomophobia is positively correlated with daily phone use time (Yazıcı-Kabadayı and Kabadayı, 2020), checking the phone frequently and the rate of mobile internet use (Gezgin et al., 2017). When this result of the study is examined in the light of literature, it can be said that women's spending more time with their smartphones and their checking their phones frequently both for the purposes of using the internet and also for other purposes is more effective in the development of nomophobia in women when compared with men. When the literature is reviewed in terms of the variable of age, it can be seen similar to the results of this study that there are studies which show that nomophobia does not differ significantly in terms of the variable of age (Güllüce, Kaygın and Börekçi, 2019; Ramazanoğlu, 2020). On the other hand, there are also studies in literature which show that nomophobia differs significantly in terms of the variable of age (Arslan, Tozkoparan and Kurt, 2019; Yıldız, Çengel and Alkan, 2020). One of the reasons why the variable of age did not have a significant effect on the emergence of nomophobia in this study may be the fact that the ages of the participants in the study were close. In addition, the fact that young people of all ages have smartphone today, in other words, the fact that there is no age to have smartphone may have affected the variable of age not to have a significant effect.

The second sub-problem of the study is whether anxiety predicts nomophobia. It was found that subjective anxiety sub-dimension of the anxiety scale used in the study predicted nomophobia significantly positively, while somatic symptoms did not predict nomophobia significantly. In other words, it was found that subjective anxiety had a significant effect on the emergence of nomophobia. When the literature is reviewed, it can be seen that there are studies supporting the result of this study (Demirci et al., 2015; Elhai et al., 2016; Kara et al., 2019; Veerapu et al., 2019). Anxiety is defined as the state of a general concern felt for a possible future danger and may reveal the tendency of the individual to escape from the threatening situation (Butcher et al., 2013). Since

long-term anxiety creates negative effects on the mental health of the individual, the individual cannot stand this feeling for a long time and may turn to different areas to get rid of this anxiety. Smartphones, which are owned by almost all individuals and which attract individuals from all walks of life with their features, can be a safe haven to get rid of this intense anxiety. In this context, it can be said that anxiety has an impact on the development of nomophobia.

As a conclusion, nomophobia, which is one of the problems that emerged with the introduction of technology into the lives of human beings, is significantly predicted by gender and subjective anxiety, and both variables explain nomophobia significantly. On the other hand, it can be seen that the variable of age does not have a significant effect on the emergence of nomophobia.

The study has some limitations. It was conducted on university students. For this reason, the results of the study can only be generalized with similar samples. Some recommendations were made in the study for researchers. The results of the study can be tested by repeating the study on different samples (adolescents and adults). Since the ages of the sample were close to each other in the study, the effect of the variable of age may not have been fully determined. For this reason, the effect of age can be found by comparing the nomophobia levels of individuals with different ages. Experts in the field (psychological counsellor, psychologists and psychiatrists) may plan studies to decrease the level of anxiety by considering the effects of anxiety on nomophobia. Psychological counsellors working in schools can include this variable in the session by considering the effects of anxiety in psycho-education studies they will plan for decreasing nomophobia.

## References

- Adnan, M., & Gezgin, D. M. (2016). Modern çağın yeni fobisi: Üniversite öğrencileri arasında nomofobi prevalansı [A modern phobia: Prevalence of nomophobia among college students] *Journal of Faculty of Educational Sciences*, 49(1), 141-158.
- Aktaş, H., & Yılmaz, N. (2017). Üniversite gençlerinin yalnızlık ve utangaçlık unsurları açısından akıllı telefon bağımlılığı [Smartphone addiction in terms of the elements of loneliness and shyness of university youth]. *International Journal of Social Sciences and Education Research*, 3(1), 85-100.
- Apak, E., & Yaman, Ö. M. (2019). Üniversite öğrencilerinde nomofobi yaygınlığı ve nomofobi ile sosyal fobi arasındaki ilişki: Bingöl Üniversitesi örnekleme [The prevalence of nomophobia among university students and nomophobia's relationship with social phobia: The case of Bingöl University]. *Addicta: The Turkish Journal on Addictions*, 6, 609-627. doi:10.15805/addicta.2019.6.3.0078
- Arslan, H., Tozkoparan, S. B., & Kurt, A. A. (2019). Öğretmenlerde mobil telefon yoksunluğu korkusunun ve gelişmeleri kaçırma korkusunun incelenmesi [Examination of nomophobia and fear of missing out among teachers]. *Erzincan Üniversitesi Eğitim Fakültesi Dergisi*, 21(3), 237-256.

- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: Psychometric properties. *Journal of Consulting and Clinical Psychology, 56*, 893-897. doi: 10.1037/0022-006X.56.6.893
- Bhattacharya, S., Bashar, M. A., Srivastava, A., & Singh, A. (2019). NOMOPHOBIA: NO MOBILE PHONE PHOBIA. *Journal of Family Medicine and Primary Care, 8*(4), 1297-1300. [doi:10.4103/jfmprc.jfmprc.71.19](https://doi.org/10.4103/jfmprc.jfmprc.71.19)
- Bian, M., & Leung, L. (2014). Linking loneliness, shyness, smartphone addiction symptoms, and patterns of smartphone use to social capital. *Social Science Computer Review, 1*-19.
- Bivin, J. B., Mathew, P., Thulasi, P. C., & Philip, J. (2013). Nomophobia-do we really need to worry about? *Reviews of Progress, 1*(1), 1-5.
- Bourne, E. J. (2010). *The anxiety and phobia workbook*. (Fifth edition). New York: MJF Books.
- Bragazzi, N. L., & Del Puente, G. (2014). A proposal for including nomophobia in the new DSM-V. *Psychology Research and Behavior Management, 7*, 155. <https://doi.org/10.2147/prbm.s41386>.
- Burucuoğlu, M. (2017). Meslek yüksekokulu öğrencilerinin nomofobi düzeyleri üzerinde bir araştırma A [Research on nomophobia levels of vocational college students]. *Karabük Üniversitesi Sosyal Bilimler Enstitüsü Dergisi, 7*(2), 482-489.
- Butcher, J. N., Mineka, S., & Hooley, J. M. (2013). *Anormal psikoloji [Abnormal psychology]*. İstanbul: Kaknüs Pub.
- Büyüköztürk, Ş. (2014). *Sosyal bilimler için veri analizi el kitabı: İstatistik, araştırma deseni, SPSS uygulamaları ve yorum [Data analysis handbook for social sciences: Statistics, research design, SPSS applications and interpretation]*. Ankara: Pegem Akademi.
- Clayton, R. B., Leshner, G., & Almond, A. (2015). The extended iSelf: The impact of iPhone separation on cognition, emotion, and physiology. *Journal of Computer-Mediated Communication, 20*, 119-135.
- Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2012). *Sosyal bilimler için çok değişkenli istatistik: SPSS ve LISREL uygulamaları [Multivariate statistics for social sciences: SPSS and LISREL applications]*. Ankara: Pegem Akademi.
- Demirci, K., Akgönül, M., & Akpınar, A. (2015). Relationship of smartphone use severity with sleep quality, depression, and anxiety in university students. *Journal of Behavioral Addictions, 4*(2), 85-92.
- Durak, H. Y. (2018). What would you do without your smartphone? Adolescents' social media usage, locus of control, and loneliness as a predictor of nomophobia. *Addicta: The Turkish Journal on Addictions, 5*(2), 1-15.
- Durmuş, B., Yurtkoru, S., & Çinko, M. (2011). *Sosyal bilimlerde SPSS ile veri analizi [Data analysis with SPSS in social sciences]* (4. bs.). İstanbul: Beta Pub
- Elhai, J. D., Levine, J. C., Dvorak, R. D., & Hall, B. J. (2016). Fear of missing out, need for touch, anxiety and depression are related to problematic smartphone use. *Computers in Human Behavior, 63*, 509-516. doi:10.1016/j.chb.2016.05.079
- Erdem, H., Kalkın, G., Türen, U., & Deniz, M. (2016). Üniversite öğrencilerinde mobil telefon yoksunluğu korkusunun (nomofobi) akademik başarıya etkisi [The effects of no mobile phone phobia (nomofobi) on academic performance among undergraduate students]. *Süleyman Demirel Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi, 21*(3), 923-936.

- Erdem, H., Türen, U., & Kalkın, G. (2017). Mobil telefon yoksunluğu korkusu (nomofobi) yayılımı: Türkiye'den üniversite öğrencileri ve kamu çalışanları örnekleme [No mobile phone phobia (nomophobia) prevalence: samples of undergraduate students and public employees from Turkey]. *Bilişim Teknolojileri Dergisi*, 10(1), 1-12.
- Gezgin D. M., Şahin, Y. L., & Yıldırım, S. (2017). Sosyal ağ kullanıcıları arasında nomofobi yaygınlığının çeşitli faktörler açısından incelenmesi [The investigation of social network users' nomophobia levels regarding to various factors]. *Eğitim Teknolojisi Kuram ve Uygulama*, 7(1), 1-15.
- Gezgin, D. M. (2017). Exploring the influence of the patterns of mobile internet use on university students' nomophobia levels. *European Journal of Education Studies*, 3(6), 29-53. doi:10.5281/zenodo.572344
- Gezgin, D. M. Hamutoglu, N. B., Sezen-Gultekin, G., & Gemikonakli, O. (2018). Relationship between nomophobia and fear of missing out among Turkish university students. *Cypriot Journal of Educational Science*, 13(4), 549-561.
- Gezgin, D. M., Hamutoglu, N. B., Sezen-Gultekin, G., & Ayas, T. (2018). The relationship between nomophobia and loneliness among Turkish Adolescents. *International Journal of Research in Education and Science*, 4(2), 358-374.
- Gezgin, D. M., Şumuer, E., Arslan, O., & Yıldırım, S. (2017). Nomophobia prevalence among pre-service teachers: A case of Trakya University. *Trakya Üniversitesi Eğitim Fakültesi Dergisi*, 7(1), 86-95.
- Güllüce, A. Ç., Kaygın, E., & Börekçi, N. E. (2019). Üniversite öğrencilerinin nomofobi düzeyi ile öznel iyi olma durumları arasındaki ilişkinin belirlenmesi: Ardahan örneği [Determination of the relationship between the level of nomophobia and subjective well-being of university students: ardahan case]. *Hacettepe Üniversitesi İktisadi ve İdari Bilimler Fakültesi Dergisi*, 37(4), 651-673.
- Hoşgör, H., Tandoğan, Ö., & Gündüz-Hoşgör, D. (2017). Nomofobinin günlük akıllı telefon kullanım süresi ve okul başarısı üzerindeki etkisi: sağlık personeli adayları örneği [Effect of nomophobia on duration of daily smartphone usage and school success: the example of health personnel candidates]. *Akademik Sosyal Araştırmalar Dergisi*, 5(46), 573-595.
- Hwang, K. H, Yoo, Y. S., & Cho, O. H. (2012). Smartphone overuse and upper extremity pain, anxiety, depression, and interpersonal relationship among college students. *The Journal of the Korea Contents Association*, 12(10), 365-375.
- Kaplan-Akıllı, G., & Gezgin, D. M. (2016). Üniversite öğrencilerinin nomofobi düzeyleri ile farklı davranış örüntülerinin arasındaki ilişkilerin incelenmesi [Examination of relationship between university students' nomophobia levels and behavior patterns]. *Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi*, 40, 51-69.
- Kara, M., Baytemir, K., & Inceman-Kara, F. (2019). Duration of daily smartphone usage as an antecedent of nomophobia: exploring multiple mediation of loneliness and anxiety. *Behaviour & Information Technology*, 1-14. doi:10.1080/0144929X.2019.1673485.
- Kayış, A. (2014). Güvenirlilik analizi [Reliability analysis]. Ş. Kalaycı (ed.), *SPSS uygulamalı çok değişkenli istatistik teknikleri [SPSS applied multivariate statistical techniques]* (pp. 403-419). (6. Ed). Ankara: Asil Pub.

- King, A. L., Valena, A. M., Silva, A. C., 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.
- Kneidinger-Mueller, B. (2019). When the smartphone goes offline: A factorial survey of smartphone users' experiences of mobile unavailability. *Computers in Human Behavior*, 98, 1-10.
- Konan, N., Durmuş, E., Türkođlu, D., & Ađırođlu Bakır, A. (2018). How is smartphone addiction related to interaction anxiety of prospective teachers? *Education Sciences*, 8, 186. doi:10.3390/educsci8040186
- Küüksille, E. (2014). oklu dođrusal regresyon modeli [Multiple linear regression model]. Ş. Kalaycı (Ed), *SPSS uygulamalı ok deđişkenli istatistik teknikleri [SPSS applied multivariate statistical techniques]* (pp. 47-66) içinde. Ankara: Asil Yayıncılık.
- Lee, K. E., Kim, S. H., Ha, T. Y., Yoo, Y. M., Han, J. J., Jung, J. H., & Jang, J. Y. (2016). Dependency on smartphone use and its association with anxiety in Korea. *Public Health Reports*, 131, 411-419.
- Öz, H., & Tortop, H. S. (2018). Üniversite okuyan genç yetişkinlerin mobil telefon yoksunluđu korkusu (Nomofobi) ile kişilik tipleri arasındaki ilişkinin incelenmesi [Investigation of university students' nomophobia levels between personality types]. *e-Jurnal of New Media / Yeni Medya Elektronik Dergi – eJNM*, 2(3),146-159.
- 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.
- Pivetta, E., Harkin, L., Billieux, J., Kanjo, E., & Kuss, D. J. Problematic smartphone use: An empirically validated model. *Computers in Human Behavior*, 100, 105-117.
- Ramazanođlu, M. (2020). Öđretmen adaylarının nomofobi düzeylerinin belirlenmesi [Determining the nomophobia levels of teacher candidates]. *Ekev Akademi Dergisi*, 81, 247-264.
- SecurEnvoy, (2012). 66% of the population suffer from Nomophobia the fear of being without their phone. Retrieved from <https://www.securenvoy.com/en-gb/blog/66-population-suffer-nomophobia-fear-being-without-their-phone>.
- Sezer, Ö., & Yıldırım, O. (2020). The relationship between nomophobia and trait anxiety, basic psychological needs, happiness in adolescents. *International Journal of Human Sciences*, 17(2), 535-547.
- Sırakaya, M. (2018). Ön lisans öğrencilerinin nomofobi düzeylerinin akıllı telefon kullanım durumlarına göre incelenmesi [Examination of associate students' nomophobia levels according to smartphone use]. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 14(2), 714-727.
- Suadiye, Y., & Aydın, A. (2009). Anksiyete bozukluđu olan ergenlerde bilişsel hatalar [Cognitive errors in adolescents with anxiety disorders]. *Klinik Psikiyatri Dergisi*, 12(4), 172-179.
- Turan, E. Z., & İşçitürk, G. B. (2018). İlahiyat fakültesi öğrencilerinin nomofobi düzeylerinin çeşitli faktörler açısından incelenmesi [Examination of the nomophobia levels of the students of the Faculty of Theology in terms of various factors]. *OPUS Uluslararası Toplum Araştırmaları Dergisi*, 9(16), 1931-1950. doi:10.26466/opus.461523

- Türen, U., Erdem, H., & Kalkın, G. (2017). Mobil telefon yoksunluğu korkusu (nomofobi) yayılımı: Türkiye'den üniversite öğrencileri ve kamu çalışanları örnekleme [No mobile phone phobia (nomophobia) prevalence: samples of undergraduate students and public employees from Turkey]. *International Journal of Informatics Technologies*, 10(1), 1-12. doi: 10.17671/btd.30223
- Ulusoy, M., Şahin, N., & Erkmen, H. (1996). Turkish version of The Beck Anxiety Inventory: Psychometrik properties. *Journal of Cognitive Psychotherapy*, 12(2), 163-172.
- Uysal, Ş., 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.
- van Deursen, A. J., Bolle, C. L., Hegner, S. M., & Kommers, P. A. (2015). Modeling habitual and addictive smartphone behavior: The role of smartphone usage types, emotional intelligence, social stress, self-regulation, age, and gender. *Computers in Human Behavior*, 45, 411-420.
- Veerapu, N., Philip, R. K. B., Vasireddy, H., Gurralla, S., & Kanna, S. T. (2019). A study on nomophobia and its correlation with sleeping difficulty and anxiety among medical students in a medical college, Telangana. *International Journal of Community Medicine And Public Health*, 6(5), 2074-2076.
- Yaman, Z., & Kavuncu, B. (2019). Üniversite öğrencilerinin sosyal gelişmeleri kaçırma korkusunun ve sosyal ağ kullanım amacının nomofobi düzeyine etkisi [The effect of university students' fear of abduction of social developments and social networking purpose on nomophobia level]. *Sosyal Bilimler Araştırmaları Dergisi*, 14(2), 555-570.
- Yazıcı-Kabadayı, S., & Kabadayı, F. (2020). Nomofobiyi açıklamada psikolojik ihtiyaçlar ve günlük telefon kullanım süresinin rolü [The role of psychological needs and daily smartphone usage time to explain nomophobia]. *Online Journal of Technology Addiction and Cyberbullying*, 7(1), 1-20.
- Yildirim, C., & Correia A. P. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computers in Human Behavior*, 49, 130-137.
- Yildirim, C., Sumuer, E., Adnan, M., & Yildirim, S. (2016). A growing fear: Prevalence of nomophobia among Turkish college students. *Information Development*, 32(5), 1322-1331.
- Yıldız Durak, H. (2019). Investigation of nomophobia and smartphone addiction predictors among adolescents in Turkey: Demographic variables and academic performance. *The Social Science Journal*, 56(4), 492-517.
- Yıldız, E. P., Çengel, M., & Alkan, A. (2020). Öğretmenlerin nomofobi düzeylerinin demografik özelliklerine ve akıllı telefon kullanım alışkanlıklarına göre incelenmesi [Investigation of teachers' nomophobia levels according to demographic characteristics and smartphone use]. *OPUS Uluslararası Toplum Araştırmaları Dergisi*, 15(1), 5096-5120.

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