



The Role of Demographic Factors in Predicting Nomophobia among University Students

Iram Naz¹, Tamkeen Fatima², Saima Riaz³

¹Assistant Professor, Department of Psychology, University of Gujrat,
Email: iram.naz@uog.edu.pk, ORCID: <https://orcid.org/0000-0003-4116-7619>

²PhD Scholar, Department of Psychology, University of Gujrat,
Email: tamkeensaqi31@gmail.com

³Assistant Professor, Department of Psychology, University of Gujrat
Email: saima.riaz@uog.edu.pk

ARTICLE INFO	ABSTRACT
<p>Keywords: Demographic Factors, Nomophobia, University Students, Family Income, Age</p> <p>Corresponding Author: Iram Naz, Assistant Professor, Department of Psychology, University of Gujrat, Email: iram.naz@uog.edu.pk, ORCID: https://orcid.org/0000-0003-4116-7619</p>	<p>Nomophobia, which is the fear or anxiety over not being able to access your smartphone, is rapidly growing among young adults, especially students in higher education who heavily use digital devices for both academic and social interactions. The current study was designed to investigate the normalized importance of key demographic factors (age, gender, family system, residential type, average internet use time and family income) on nomophobia in university students. A cross sectional research design was used while data was collected from undergraduate and graduate students with convenient sampling technique. A standardized self-report measure of nomophobia used. Descriptive statistics and neural network analyses were used to examine the more important demographic predictors. The results of the study indicated that family income and age was the more important predictors of nomophobia followed by all other factors. Overall, the findings for university mental health programs and suggestions for research was made.</p>

Introduction

Background of the study:

The fast evolution of digital technology has made smartphones an indispensable aspect of life in the modern world. Communication, education, entertainment, navigation and even emotional support are functions of smartphones that are used today. This growing reliance has rendered smartphones to be virtually undoable without in terms of everyday life, particularly among the younger generations (Kim et al., 2019). Consequently, there has been an issue over what will

happen in the event people cannot reach their phones. Nomophobia, which can be described as the fear or anxiety of lacking its mobile phone or not being able to remain connected, has become one of the issues that have emerged in this field (Yildirim and Correia, 2015). Nomophobia is a significant psychological and behavior issue in the world today due to the increase in technology.

It is revealed that young adults are the most susceptible to nomophobia due to their active use of smartphones, social networking platforms, and other digital learning platforms (Gezgin, 2017). The move of learning online, digital interaction and the growing use of mobile applications in academia has added to their dependence on phones. The university students were one of the most at risk categories of young adults as smartphones are the center of their learning, socialization, leisure activities, and day to day operations (Kwon et al., 2013). Smartphones are not only learning devices to many students but also a great source of emotional support, social approval, and self-expression. This widespread application may cause psychological addiction, which predisposes them to nomophobia (Farooqi et al., 2017).

To comprehend the issue of the development of higher levels of nomophobia among the students than among others it is necessary to consider the potential predictors of this phenomenon and demographics can be one of the most significant domains. It is argued that demographic factors (age, gender, socioeconomic status, academic discipline, and year of study) might be influential factors in terms of smartphone behavior and nomophobia (Ting et al., 2020). Indicatively, certain studies propose a possibility of higher levels of smartphone related anxiety among females because of higher tendencies towards communication based mobile activities, whereas younger students tend to be more dependent because they were raised with digital devices since childhood (Arpaci et al., 2017). Equally, students who have more access to technology or more important social media interactions can also be at risk.

Conceptualization of Nomophobia:

Nomophobia is a comparatively recent psychological phenomenon, and it explains why a person feels fear, apprehension, or discomfort when he or she cannot use the mobile phone or stay in touch with the digital communication networks. Nomophobia is a world-famous term based on no mobile phone phobia, and it has been used to describe the emotional and behavioral upsets that people experience when they are out of touch with their smartphones (Yildirim and Correia, 2015). It cannot be referred to as a clinical disorder, yet studies are showing that it is a kind of problematic technology use associated with dependency, behavioral addiction patterns, and digital anxiety.

Nomophobia will be measured with the help of the Nomophobia Questionnaire (NMP-Q), which measures four major dimensions:

- Lack of the power to speak.
- Losing connectedness.
- The inability to receive the information.
- Giving up convenience.

A better score on the NMP-Q means that a person is more nomophobic, meaning more psychologically and behaviorally addicted to mobile devices (Yildirim and Correia, 2015).

Among the most essential features of nomophobia is the existence of the major symptoms of psychological and behavioral dependency on the mobile phone. Such symptoms may also be anxiety, stress, irritability, and the incessant desire to check the phone despite a lack of notification (Gezgin et al., 2018). Higher nomophobes can have symptoms of panic when the battery is operating low or when they lose network connectivity or when their phone is not in

their presence. Moreover, compulsive checking (e.g., a person constantly refreshing the social media, messaging applications, etc) is an indication of a profound social addiction by someone who is afraid to miss some updates or messages or other interactions on the internet (King et al., 2013). Such symptoms point to the argument that smartphones are no longer communication devices but rather emotional control values, companions and reassurance.

Nomophobia has attracted the concern of the worldwide population due to its rapid rates of prevalence in various regions and age groups of people, especially adolescents and young adults. Research done in Europe, Asia, and Middle East also consistently reported the increase in the nomophobia levels since the ownership of smartphones has become almost commonplace (Bhattacharya et al., 2019). Namely, Yildirim (2014) concluded that a considerable percentage of college students were moderate to severe nomophobic. High prevalence of smartphone usage has been reported in other countries where its penetration is on the rise, such as India, Turkey, and Pakistan (Farooqi et al., 2017; Gezgin, 2017).

Nomophobia among the University students:

Students at universities are one of the most risk groups to become nomophobic because of their great exposure to online space and their lack of contact with the real world. Due to the growing use of technology in higher education, both academically and socially, the students have become more addicted to their smartphones, which makes them more vulnerable to anxiety in case they are out of reach (Gezgin, 2017).

To begin with, students at the university are more exposed to the digital worlds than the general population. Online classes, research, learning management systems, and communication with peers and teachers are some of the most common activities that they carry out using smartphones. This perpetuates the addiction to digital places, which commonly culminates into dependency and the fear of missing valuable academic or social updates (Kwon et al., 2013).

Second, learners are undergoing high academic requirements, which entail constant internet connectivity. Online courses, tasks, mailing, online libraries, and study teams all require the use of smartphones (Kim et al., 2019). This ongoing need to keep in touch makes them engage in their obsessive phone-checking habits and causes them to feel emotionally uncomfortable when they cannot be online (Samaha & Hawi, 2016).

Third, smartphones act as a significant emotional and social support to the students of the university. They use their phones to interact with others, have fun, relax, as well as sustain relationships using social media. Such emotional attachment makes dependency stronger and more anxious when the device is not available (King et al., 2013). Consequently, the nomophobia levels among the numerous students are very high, as they are unable to feel comfortable without phones.

Lastly, the past studies have noted that University students are always more nomophobic compared to the other ages. Research in Turkey, India, Pakistan, and Europe shows that most university students are at moderate and severe levels of nomophobia, which indicates the international character of the problem (Farooqi et al., 2017; Yildirim & Correia, 2015).

The Demographic Predictors of Nomophobia.

Not everyone becomes a nomophobic; some demographic factors determine the extent and manifestation of nomophobia. It has been demonstrated that gender, age, socioeconomic status, residence, family structure, and internet usage patterns are some of the characteristics that can influence the way students use smartphones and the degree to which they become addicted to these devices.

1. Gender Differences

Gender is a frequent nomophobia predictor that has not had homogenous results. Some studies indicate that women students are more likely to score higher in nomophobia due to the high rate of using smartphones to communicate socially, express emotions, and keep interpersonal relationships (Ting et al., 2020). The social networking applications which are more frequently used by females can create anxiety when they can no longer remain in touch.

Nevertheless, according to other studies, there are no prominent gender variations and both males and females can be equally susceptible on the basis of their smartphone use and psychological requirements (Gezgin et al., 2018). This contradiction implies that gender can only affect nomophobia in some situations.

The reasons may be psychological (such as the variations in social connectedness, patterns of communication, emotion sensitivity), social (such as expectations to and usage trends imposed by society) (King et al., 2013). Therefore, gender can be a factor, but it is seen to be dependent on the cultural, social, and technological environments.

2. Age

Another demographic factor that has a close connection with nomophobia is age. The studies always reveal that the level of smartphone dependence and nomophobia is higher among younger students than it is among older people (Arpaci et al., 2017). The younger generation of university students, who have been raised with digital devices, can be called digital natives, and thus display greater behavioral and emotional attachment to smartphones.

It is also noted that age is one of the predictor variables of several technology-related problems such as smartphone addiction, problematic internet use, and digital anxiety (Kwon et al., 2013). The increased knowledge of digital platforms among the younger individuals can also be the cause of compulsive usage that puts them at risk of nomophobia.

3. Family Income / Socioeconomic status (SES)

The socioeconomic level is a factor that might influence smartphone behaviors. Children with high-income tend to have a greater access to superior smartphones, high-speed internet, and digital services. Such availability can also raise the usage duration and addiction, which eventually influence the levels of nomophobia (Gezgin, 2017).

Certain researchers indicate that income is also one of the strongest predictors of smartphone addiction, where a higher SES correlates with an earlier smartphone purchase and increased exposure to digital environments (Bhattacharya et al., 2019). Economic reasons also affect the trends in the consumption of technology, including the nature of device, regular upgrades, and access to mobile data, which can aggravate nomophobia.

4. Residence Type (Hostel, Rented, or With Family)

Emotional and social needs are also affected by the type of residence, and they determine the use of a smartphone. Such students are the ones who live in hostels or rented accommodation and are thus not with their families; hence, they are more likely to be dependent on smartphones as a way to be emotionally connected, achieve social support, and alleviate stress (King et al., 2013). This may put them at risk of nomophobia.

Independent living can cause additional freedom in the use of technology, which results in students being more likely to spend more time on screens and less time monitored by a parent. Research has indicated that the environment of residence is associated with technology use, and hostel-based students indicated more problematic phone use than students living with their family (Samaha and Hawi, 2016).

5. Family System (Nuclear vs. Joint)

Nevertheless, the studies report a higher level of nomophobia in nuclear families because of the lack of emotional contact whereas others do not show any significant differences (Farooqi et al., 2017). The quality of interactions, cohesion, and parental involvement in the family seems to have more to do with it as opposed to the family type.

6. Average Internet Usage Time

One of the best predictors of nomophobia is the average time spent on the internet. Research always demonstrates comparable positive association between screen time and nomophobia as students who spend more time online also experience anxiety when they are offline (Gezgin et al., 2018).

The negative internet usage is linked to problematic smartphone habits, checking compulsively, and developing psychological dependency (Kwon et al., 2013). The earlier studies prove that students who spend significant time on the internet on a daily basis and particularly on social media platforms are at the risk of developing nomophobia (Samaha & Hawi, 2016).

Rationale of the study:

Nomophobia has become an increasing psychological and behavioral issue across the globe, but studies in Pakistan are scanty particularly in dissecting the demographic aspects that might cause the increasing problem. The literature analyzed in the study includes the results of most studies carried out in the international setting and analyzed how nomophobia can be predicted by general populations, yet very few studies examined the influences of specific demographic variables that could predict nomophobia, including gender, age, socioeconomic status, residence, and family system as factors in the Pakistani setting (Bhattacharya et al., 2019; Gezgin et al., 2018). Pakistani students can also have distinctive propensities of smartphone dependency due to cultural, social, and technological distinctions, and it is essential to carry out localized research.

The Pakistani university students are a very vulnerable and technologically active market. The use of smartphones is so high on academic matters, online education, communication, entertainment, and social media. Their daily usage of online resources causes them to become more anxious or uncomfortable when they do not have access to their mobile gadgets (Yildirim and Correia, 2015). Being under academic pressure and changing social conditions, particularly when moving out of home, are also prone to the effects of excessive reliance on mobile phones than other age categories.

It is essential to know the demographic predictors of nomophobia since various groups can have a different experience with smartphone dependence. As an example, phones can be used more by females as a means of communication, digital tools can be more important to young students, and students living in hostels can use phones to have emotional contact with their family and friends. Determining these demographic differences can make researchers and mental health practitioners come up with specific awareness, prevention, and intervention strategies (Farooqi et al., 2017).

In addition, establishing the demographic groups at the highest risk may assist in designing university-level policies and digital well-being programs. These measures can involve healthy mobile phone habits training, counseling help to students who feel anxious about technology and technology addiction education and training to foster technology balance. This is why the current study is significant, as it will contribute to bridging one of the major research gaps and will serve to provide Pakistani university students with improved psychological and academic performance.

Objectives of the Study: To decide which demographic factors significantly important in predicting the nomophobia among university students?

RESEARCH METHODOLOGY

Design

Cross-sectional research design was engaged in the study to investigate role of demographics on nomophobia among university students.

Population of the study

The study population was enrolled students of university in different undergraduate and graduate programs. The university students were selected as the target population due to their increased use of smartphones for academic and entertainment purpose. Thus, this diverse group experience nomophobia.

Inclusion/Exclusion criteria

The sample involved both undergraduate-level to graduate-level students who were actively enrolled students at University of Gujrat. In addition, participants needed to be smartphone users with ages between 18 and 25.

Consequently, the participants were dropped from the study if didn't give consent for the study for whatever reason and went unavailable when the data was collected. Other than University of Gujrat students were also excluded. Further, if students had any physical disabilities or mental health issue were also excluded from the sample.

Sampling technique

To select university students for the current research, a non-probability sampling technique was utilized. Here, the sampling frame of enrolled students can be obtained, which may allow a random sampling strategy but the non-probability sampling method was used. This method allows the researcher to obtain students that were easily available for data collection. Eventually, 700 students were selected to overcome the non-use of random sampling strategy across various departments and academic faculties.

Measures

Data were collected using the demographic form and nomophobia scale.

Demographic sheet

The demographic information included gender, age, teaching program, residence setting, family system, internet usage time, kind of smartphone, and number of social media platforms used.

Nomophobia Questionnaire (NMP-Q),

The Nomophobia Questionnaire (NMP-Q), (Yildirim & Correia, 2015), was used in the study. The scale had a total of 20 items and was scored on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). An interpretation of the NMP-Q scores ranged from 20 (no nomophobia) to 59 (low nomophobia), 60-99 (moderate nomophobia), and 100-140 (high nomophobia). The NMP-Q included a Cronbach's alpha for reliability of .95.

Procedure

The research utilized a non-probability convenient sampling technique to recruit students between the ages of 18 and 25 who owned smartphones and had no physical or mental limitations. After making participants aware of the purpose and procedures of the research, researchers received both oral and written consent from all participants before attempting to collect data. Additionally, researchers reassured participants that all data would be kept confidential and anonymous, and that they had the option to withdraw from the research study at any time. To create a comfortable environment with participants, the researcher developed rapport with participants and made them feel at ease before having them complete the measures. The students then proceeded to complete the Nomophobia Questionnaire (NMP-Q) and a collection of demographic information. Researchers also received permission via email from the

original authors for the use of the NMP-Q in the study. Once the students completed the measures, they were thanked for their time and cooperation.

Statistical Analysis

The formal data analysis was performed using SPSS (Statistical Package for Social Science) version 25. Descriptive frequencies was used to analyze the demographics information. A neural network analysis was used to check the normalized importance of different demographic constructs on nomophobia among university students.

Results

The present study aimed to determine which demographic variables strongly predict the nomophobia among university students. For this purpose, neural network analysis was used. The analysis provides the relative error of testing and training and normalized importance of each demographic variable on nomophobia among university students.

The demographic analysis suggests that of the 700 students more were female students in the study with the ages between 8-21 years. Most of the students were registered in BS programs. The number of students from urban and rural backgrounds was almost evenly distributed. More students resided in nuclear families and engaged online for 1-8 hours per day. More students had android smartphone with 1-4 social media applications usage. The monthly family income was 25,000 - 50,000 RS and mostly parent's education was at matriculation.

Table 1 Relative Error for Training and Testing

	Relative Error
Training	.897
Testing	.891

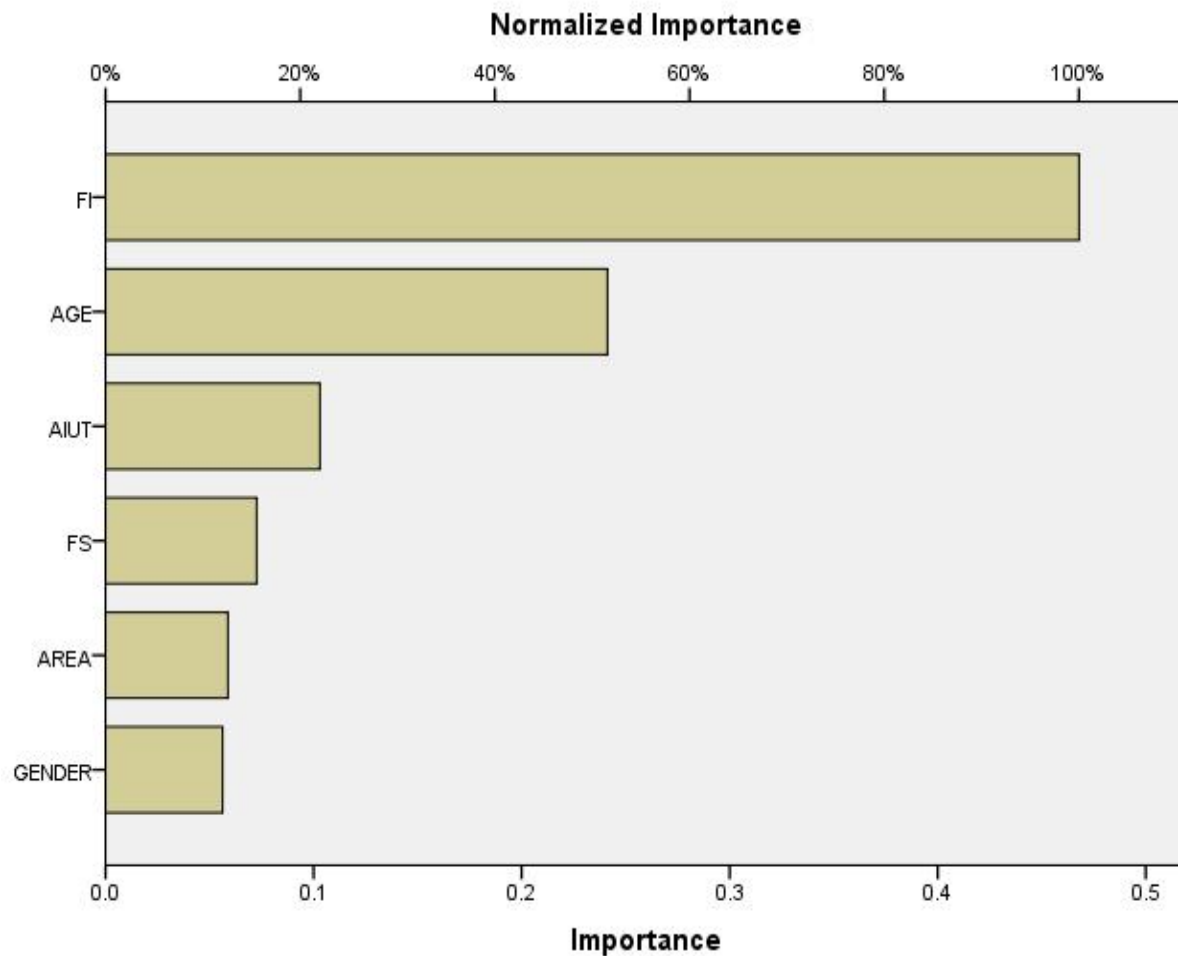
If the relative errors of testing (.891) and training (.897) were small, the predictive relationship between the demographics and nomophobia were established.

Table 2 Demographics Variables Normalized Importance of Predicting Nomophobia

Demographics Variables	Importance	Normalized Importance
Gender	.056	12.0%
Family Income	.468	100.0%
Residence Type	.059	12.6%
Family System	.073	15.5%
Age	.241	51.6%
Average Internet Usage Time	.103	22.0%

Table 2 indicates the normalized importance of different demographic constructs in foreseeing nomophobia among university students. The findings confirmed that family income was the most significant predictor of nomophobia (normalized importance 100%) followed by age (51.6%), average internet usage time (22.0%), family system (15.5%), residence type (12.6%) and gender

(12.0%). Generally, the demographic construct mutually explained the variations in nomophobia, but the normalized importance diverges noticeably.



Discussion

Although the topic is gaining more and more attention, a general research on the specificity of the relationship between demographics and the prediction of nomophobia in universities, especially in developing countries where the number of young people using smartphones is increasing exponentially, is still lacking. Learning about such demographic factors can assist universities to create specific awareness campaigns, facilitate the spirit of digital well-being, and aid students who might be vulnerable to problematic smartphone usage. These trends show that nomophobia is not a localized culture or location but instead a worldwide behavioral trend that has been fueled by digital lives, social media, academic addiction on smart phones and online connectivity necessities.

Combined, the nomophobia conceptualization brings to focus the fact that it is a contemporary psychological phenomenon that incorporates fear and anxiety, as well as, dependency on smartphones. Its signs are indicative of emotional dysregulation, digital overdependence, and compulsivity, whereas the pervasiveness patterns in the world highlight the increasing prominence of the issue as a social health- and education-related one. Thus, the current research is intended to also offer an in-depth examination of the role of demographic variables in promoting and predetermining the occurrence of nomophobia in university students. This

research should assist in creating effective prevention measures and enhance the general mental and academic state of students by identifying the more vulnerable groups.

The difference of relative error of training and testing shows that the model was significant. The normalized importance of different demographic factors explored with reference to nomophobia among university students. The findings confirmed that family income was the most significant predictor of nomophobia (normalized importance 100%) followed by age (51.6%). Literature also confirmed that these factors were triggering points in nomophobia. Family income or socio economic factor influence the smartphone related behaviors. Person with better income have more access to greater smartphones type, best-speed internet, and digital facilities. All these factors raise the use of smartphone and addictive behaviors, these ultimately impact the trends towards nomophobia (Gezgin, 2017 & Bhattacharya et al., 2019). Further, in younger age smartphone use was higher (Arpaci et al., 2017 & Kwon et al., 2013). Afterward, average internet usage time (Gezgin et al., 2018 & Kwon et al., 2013), family system (Farooqi et al., 2017), residence type (King et al., 2013 & Samaha & Hawi, 2016) and gender (Ting et al., 2020 & Gezgin et al., 2018) prompt nomophobia.

The results of this study emphasize the significance of dealing with nomophobia in because it may lead to a decrease in the mental health of students, their concentration and performance.

Combined, the greater digital exposure of university students, the academic stresses, emotional dependence on smartphones and the results of previous studies all suggest that they are at high risk of developing nomophobia. These risk factors are crucial to understand so as to create prevention initiatives, ensure a more healthy use of technology among students, and promote the digital well-being.

Conclusion

The findings indicate that a combination of socioeconomic, developmental, and behavioral factors influences nomophobia. The most important predictors are family income, age, and internet use time, suggesting that nomophobia is more likely among more affluent, younger, and/or high daily internet users. Gender, home domain type, and family system have less impact.

Reference

1. Arpacı, I., Baloğlu, M., Kozan, H. İ. Ö., & Kesici, Ş. (2017). Individual differences in nomophobia and smartphone addiction. *Journal of Behavioral Addictions*, 6(3), 364–375.
2. 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.
3. Farooqi, H., Patel, H., Aslam, H. M., Ansari, I. Q., Khan, M., Iqbal, N., & Rasheed, A. (2017). Gender differences in the prevalence of nomophobia among young adults. *Psychology and Behavioral Science*, 7(1), 21–27.
4. Gezgin, D. M. (2017). Exploring the influence of mobile internet use patterns on university students' nomophobia levels. *European Journal of Education Studies*, 3(6), 29–53.
5. Kim, S. E., Kim, J. W., & Jee, Y. S. (2019). Relationship between smartphone addiction and physical activity in Chinese international students in Korea. *Journal of Behavioral Addictions*, 8(1), 1–9.
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.
7. Kwon, M., Lee, J. Y., Won, W. Y., Park, J. W., Min, J. A., Hahn, C., ... & Kim, D. J. (2013). Development and validation of a smartphone addiction scale (SAS). *PLOS ONE*, 8(2), e56936.

8. Samaha, M., & Hawi, N. S. (2016). Smartphone addiction, stress, and academic performance. *Computers & Education*, 98, 81–89.
9. Ting, C. H., Chen, Y. C., & Lin, C. Y. (2020). Demographic predictors of nomophobia among Taiwanese college students. *Cyberpsychology, Behavior, and Social Networking*, 23(5), 314–320.
10. Yildirim, C. (2014). Exploring nomophobia: The mobile phone problem of the 21st century. *Journal of Technology in Behavioral Science*, 2(1), 20–35.
11. Yildirim, C., & Correia, A. (2015). Exploring the dimensions of nomophobia: Development and validation of a self-reported questionnaire. *Computer Human Behavior*, 49, 130–137.