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The Mediating Effect of Academic Procrastination on the Relationship Between Nomophobia and Netlessphobia in Nursing Students

Hemşirelik Öğrencilerinde Nomofobi ile Netlessfobi Arasındaki İlişkide Akademik Ertelemenin Aracılık Etkisi

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Abstract

This study investigated the effect of 'nomophobia level' on 'netlessphobia level' in nursing students and examined the mediating role of 'academic procrastination behaviour' in this effect. This study was planned with a descriptive and correlational design. The study was conducted on 316 nursing students studying at the Faculty of Nursing between November and December 2023. Personal Information Form, Fırat Nomophobia Scale, Fırat Netlessphobia Scale, and Academic Procrastination Scale were used as data collection tools. The study found a strong positive correlation between the nomophobia score and the netlessphobia score (r =.795; p<.001) and a moderate positive and significant correlation with the academic procrastination score (r =.316; p<.001). 64% of the change in netlessphobia (R2=.79) is due to the direct effect of nomophobia. Students with high levels of nomophobia and academic procrastination had higher levels of netlessphobia than other students. In the study, academic procrastination mediated the relationship between nomophobia and netlessphobia. This means that academic procrastination acts as a link between nomophobia and netlessphobia, suggesting that the fear of disconnection from phones or the internet leads to procrastination, which in turn reinforces both phobias. Educating students about digital illnesses and developing awareness-based interventions to address nomophobia and netlessphobia may help to reduce academic procrastination.

Keywords: Nursing Students, Netlessphobia, Nomophobia, Academic Procrastination

Özet

Bu çalışma, hemşirelik öğrencilerin "nomofobi düzeyi"nin "netlessfobi düzeyi" üzerindeki etkisini araştırmak ve bu etkide "akademik erteleme davranışı"nın aracılık rolünü incelemiştir. Bu çalışma tanımlayıcı ve ilişki arayıcı tasarımda planlanmıştır. Çalışmaya Kasım - Aralık 2023 tarihleri arasında hemşirelik fakültesinde öğrenim gören 316 hemşirelik öğrencisi üzerinde gerçekleştirilmiştir. Veri toplama aracı olarak "Kişisel Bilgi Formu", "Fırat Nomofobi Ölçeği", "Fırat Netlessfobi Ölçeği" ve "Akademik Erteleme Ölçeği" kullanılmıştır. Çalışmada nomofobi puanı ile netlessfobi puanı arasında yüksek düzeyde pozitif yönlü ilişki (r:.795; p< .001) ve akademik erteleme puanı ile de orta düzeyde pozitif yönlü ve anlamlı ilişki (r: .316; p< .001) bulunmuştur. Netlessfobideki değişimin %64'ü (R2=.79) nomofobinin direkt etkisinden kaynaklanmaktadır. Nomofobi düzeyi yüksek ve akademik erteleme davranışı gösteren öğrencilerin netlessfobi düzeyleri diğer öğrencilere göre daha yüksektir. Çalışmada akademik erteleme, nomofobi ile netlessfobi arasındaki ilişkiye aracılık etmektedir. Bu, akademik ertelemenin nomofobi ve netlessfobi arasında bir bağlantı görevi gördüğü, telefonlardan veya internetten bağlantının kesilmesi korkusunun ertelemeye yol açtığı ve bunun da her iki fobiyi güçlendirdiği anlamına gelir. Nomofobi ve netlessfobi ile başa çıkmak için öğrencilerin dijital hastalıklar konusunda eğitilmesi ve farkındalık temelli müdahalelerin geliştirilmesi, akademik ertelemeyi azaltmaya yardımcı olabilir.

Anahtar Kelimeler: Hemşirelik Öğrencileri, Nomofobi, Netlessfobi, Akademik Erteleme

Recently, there have been significant digital transformations at the societal level, especially in developed countries, and the development of information and communication technologies has been an important driver of these transformations (Perron et al., 2010). The fears of these new generations include the fear of being deprived of the Internet and smartphones or the thought of being deprived of them (Kanbay et al., 2022; Yildirim & Correia, 2015). These anxieties have been defined in the literature as new-age digital diseases, and there is a growing body of research aimed at better understanding the various aspects of the problem. These diseases have evolved and become closely linked due to the widespread use of communication technologies and the internet (Berdida & Grande, 2023; Kanbay et al., 2022).

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Addiction to smartphones or mobile devices can lead to nomophobia (Yildirim & Correia, 2015). Nomophobia is the fear of not being able to use a mobile phone (Kanbay et al., 2022). This phobia has recently become even more alarming in developed countries (Bragazzi & Del Puente, 2014). One of the most frequently cited consequences of nomophobia in the literature is the fear of not having a phone nearby (King et al., 2013; Sharma et al., 2019). This anxiety can cause constant distraction and negatively affect academic performance (Mir & Akhtar, 2020). It can lead to dysfunction due to procrastination caused by inappropriate smartphone use (Ramjan et al., 2021; Tárrega-Piquer et al., 2023).

Nomophobia and Academic Procrastination

Research indicates that nomophobia is particularly prevalent among women and young people under 24 years of age (Bragazzi & Del Puente, 2014; Gutiérrez-Puertas et al., 2019; Rodríguez-García et al., 2020), which aligns with the characteristics of nursing students (Chan et al., 2014). In studies conducted in Portugal and Spain, nursing students exhibited notably high levels of nomophobia (Gutiérrez-Puertas et al., 2019). This issue, along with smartphone addiction, has been shown to negatively impact academic performance and learning outcomes (Gutiérrez-Puertas et al., 2020; Ramjan et al., 2021). Furthermore, the misuse of mobile phones can adversely affect the academic environment for nursing students (Celikkalp et al., 2020; Gutiérrez-Puertas et al., 2020).

Intensive smartphone use has been linked to decreased concentration (Bacaksiz et al., 2022), which can contribute to increased academic procrastination (Aguilera-Manrique et al., 2018). Students with high levels of nomophobia often find themselves overly preoccupied with their devices, leading to distractions that hinder their focus on academic tasks. This anxiety stemming from the fear of being without their phone can divert attention from studying and completing assignments. Research suggests that elevated nomophobia is associated with greater distraction and procrastination, ultimately harming academic performance (Mir & Akhtar, 2020). For nursing students, these distractions can interfere with developing critical skills essential for patient care and clinical practice (Dasgupta et al., 2017; Rodríguez-García et al., 2020).

A study by Rosyanti (2021) found a significant positive relationship between academic procrastination and nomophobia among students. Additionally, Froese et al. (2012) reported that students who were preoccupied with their phones during class scored 30% lower on exams compared to those who were not. Numerous studies have demonstrated that technology use in the classroom can negatively affect interest, motivation, and attention (Çınar Özbay et al., 2024; Dietz & Henrich, 2014; Lee et al., 2014; Ward et al., 2017). Research consistently links nomophobia to increased levels of academic procrastination, demonstrating how the fear of disconnection can lead to dysfunctional behaviors that hinder academic success (Gutiérrez-Puertas et al., 2019; Hoşgör & Gündüz Hoşgör, 2019). Furthermore, distractions caused by smartphone use can exacerbate procrastination tendencies, reinforcing the cycle of dependency on mobile devices for academic and social needs.

Netlessphobia and Academic Procrastination

The fear of being deprived of internet access, an essential aspect of daily life, is known as netlessphobia. Although this is a relatively new concept and research directly addressing netlessphobia is limited, there are studies exploring internet and smartphone addiction that provide relevant insights (Ayar & Bektas, 2021; Kanbay et al., 2022). Some research has shown that academic procrastination is linked to problematic use of various technologies, including the internet (Davis et al., 2002; Önal et al., 2023a, 2023b; Reinecke et al., 2018; Özbay et al., 2025).

Netlessphobia can create anxiety about being disconnected, which may lead students to delay starting or completing academic tasks. Instead of fully engaging with their studies, they might frequently check their devices for connectivity or information. Additionally, this anxiety can intensify feelings of restlessness when students find themselves in environments without internet access, further hindering their ability to concentrate on learning activities (Güney, 2017).

Tárrega-Piquer et al. (2023) found a correlation between high smartphone usage and nomophobia, suggesting that extensive engagement with mobile devices may contribute to netlessphobia. The constant need to stay connected can foster procrastination, as students may be more inclined to check social media or respond to messages rather than focus on their academic responsibilities (Tárrega-Piquer et al., 2023).

Nomophobia and Netlessphobia

Understanding the relationship between nomophobia and netlessphobia is crucial, particularly in the context of nursing education, where digital technologies are integral to learning and communication. Both phobias stem from a fear of disconnection, but they manifest in different ways. Nomophobia refers specifically to the anxiety caused by being unable to access one's mobile phone, which is essential for communication, information retrieval, and educational activities (Yildirim & Correia, 2015). In contrast, netlessphobia involves a broader fear of losing internet access, leading to anxiety about being cut off from online resources crucial for academic and social engagement (Kanbay et al., 2021; Rozgonjuk et al., 2020).

For nursing students, who rely heavily on their devices for accessing educational materials, communicating with peers and instructors, and utilizing online healthcare

resources, these fears can be particularly intense. Both nomophobia and netlessphobia are linked to negative mental health outcomes, such as increased anxiety, stress, and lowered self-esteem (Billieux et al., 2015; Yildirim & Kişioğlu, 2018). These mental health challenges can, in turn, impact academic performance and overall well-being. The anxiety triggered by these phobias often leads to decreased concentration, making it harder for students to grasp complex clinical information vital to their training (Gutiérrez-Puertas et al., 2019).

In nursing education, where effective communication and focus are essential, understanding the interplay between these phobias is important. Research shows that both nomophobia and netlessphobia are prevalent among nursing students, contributing to distractions and increased academic procrastination (Karakurt et al., 2020; Özdemir et al., 2019).

Life satisfaction as a Mediator

Procrastination, a common behavior with affective, cognitive, and behavioral dimensions, is often characterized by a lack of self-regulation (Geng et al., 2018; Tuckman & Sexton, 1989). It is particularly prevalent in academic settings, where students with high levels of procrastination tend to experience poorer academic outcomes (Lay & Schouwenburg, 1993). Some researchers suggest that academic procrastination may be linked to problematic mobile phone use, as frequent engagement with devices can consume valuable study time and delay learning tasks (Cebi et al., 2019; Zhen et al., 2020). Both nomophobia and netlessphobia contribute to increased procrastination, which negatively impacts academic performance. Procrastination typically leads to last-minute efforts, lower-quality work, and increased stress, exacerbating the anxiety associated with these phobias.

Academic procrastination plays a critical role in this dynamic. Defined as the intentional delay in starting or completing academic tasks, it can serve as a coping mechanism for students struggling with the anxiety tied to nomophobia and netlessphobia, the fear of being disconnected from the internet. Nursing students, who must balance academic demands with the pressure to stay connected, may use procrastination as a way to manage the overwhelming fear of disconnection or fear of missing out. This is particularly concerning given the responsibilities nursing students face, where effective time management and focus are essential for providing quality patient care (Berdida et al., 2023; Gutiérrez-Puertas et al., 2019; Hoşgör & Gündüz Hoşgör, 2019). Research by Erdem et al. (2016) found that excessive smartphone use among university students decreased academic motivation and self-efficacy traits often seen in students experiencing both nomophobia and netlessphobia. The fear of losing access to phones or the internet may lead nursing students to avoid offline environments, further increasing their dependence on digital technologies.

The literature suggests that both nomophobia and netlessphobia are significant contributors to academic procrastination. Addressing these issues is critical for improving academic performance, university life, social relationships, and overall well-being. While studies have explored the effects of nomophobia on nursing students' academic performance (Tárrega-Piquer et al., 2023), the mediating role of academic procrastination between nomophobia and netlessphobia remains an underexplored area in nursing research.

Method

Research Model

The purpose of this study is to examine the effect of 'nomophobia level' on 'netlessphobia level' in nursing students and to examine the mediating role of 'academic procrastination behavior' in this effect. This study was planned with a descriptive and correlational design. The research hypotheses and theoretical model are shown in Figure 1.

H1: Nomophobia has an effect on academic procrastination.

H2: Academic procrastination has an effect on 'netlessphobia'.

H3: There is a relationship between nomophobia and netlessphobia.

H4: Academic procrastination is the mediating variable in the relationship between nomophobia and netlessphobia.

By investigating these relationships, we aim to shed light on how nomophobia and related fears impact nursing students' academic experiences and outcomes.

Participants

The study's population consisted of students actively pursuing their education at the Nursing Faculty of X University during the academic year 2022-2023. According to the 2023 data of the Higher Education Information System (YÖKSİS), the total number of nursing students enrolled in the faculty where the study was conducted was 412 (Yöksis, 2023). While the population of the study consisted of 412 nursing students, the method of sample calculation in populations with known populations (Baş, 2010) was used to calculate the minimum number of samples that could be taken in the study. As a result of the calculation, it was determined that the minimum sample number that could be taken with a 95% confidence interval and 5% margin of error in a population of 412 individuals was 200 individuals. A total of 316 people participated in the study on a voluntary basis. Convenience sampling was used to select the sample. 61.7% of the sample were female students. The age range was between 18 and 30 years, with a mean age of 20.7 + 1.82 and an overall mean of 2.94 +.41 (min: 1, max: 4). It was found that 62.0% of the students used information technology at an intermediate

level (Table 1). The inclusion criteria for the study are: being enrolled in a nursing bachelor's program, completing the research forms thoroughly, and signing the informed consent form. The exclusion criteria are: not completing the research data, withdrawing from the study, and not being willing to participate in the study.

Table 1
Students' demographics and information technology usage status

Variables		n	%
Gender			
	Female	195	61.7
	Male	121	38.3
Information technology usage level			
	Novice	17	5.4
	Moderate	196	62.0
	Advanced	103	32.6
		Mean ± SD	
Average age		20.7 + 1.82	
Academic average		2.94 + .41	

Variables of the study

Independent variable: Students' mean scores on the nomophobia scale

Dependent variable: Students' mean scores on the Netlessphobia scale

Mediating variable: Students' mean scores on the Academic Procrastination Scale

Data Collection Instruments

Personal Information Form

This is a questionnaire prepared by the researchers in the context of the literature on the subject. The variables asked are age, gender, grade, average daily use of smart devices, etc.

Fırat Nomophobia Scale

This scale was developed by Kanbay et al. (2022) to measure the level of nomophobia in individuals. The Nomophobia Scale consists of a single dimension and eight items and can explain 55.9% of the total variance related to nomophobia. The Cronbach alpha reliability coefficient of the scale was calculated to be 0.89. In our study, the Cronbach alpha value of the scale was found to be 0.90.

Fırat Netlessphobia Scale

This scale was developed by Kanbay et al. (2022). "The scale consists of a single dimension and 12 items and can explain 60.7% of the total variance for netlessphobia. The Cronbach alpha reliability coefficient of the scale was calculated to be.93. The lowest score that can be obtained from the scale is 12, and the highest score is 60. In our study, the Cronbach's alpha value of the scale was found to be 0.91.

Academic Procrastination Scale

The Academic Procrastination Scale was developed by Çakıcı (2003) to measure the level of academic procrastination behavior. The scale consists of two factors. The first factor is called "procrastination," and the second factor is called "regular study habits.".

The scale has a total of 19 items, and each item is answered with 5-point Likert-type options ranging from 'does not reflect me at all' to'reflects me completely'. A high total score on the scale indicates a high level of academic procrastination. However, a total of 7 items, including items 1, 4, 7, 9, 11, 13, and 17, have positive statements that are contrary to academic procrastination behavior. Therefore, these items are included in the evaluation after reverse coding in the analysis phase. The reliability of the APS was found to be α=0.92 using Cronbach's alpha analysis. In our study, the Cronbach alpha value of the scale was found to be 0.84.

Data Collection

This study was conducted between November and December 2023 with students studying at X University, Department of Nursing. Consent was obtained from students who volunteered to participate in the study by completing the Informed Voluntary Consent Form. At the end of the data collection process, the researchers thanked the participants for their cooperation. All students completed the questionnaires during the same lecture period.

Statistical Analysis

The data from the study were analyzed using the SPSS 26 package program. "Process Macro," developed by Hayes (2018), was used for the mediation effect, and the AMOS 23 package program was used for the construct validity of the measurement instruments. Descriptive statistics include counts, means, and percentages. Confirmatory factor analysis was used for validity, and Cronbach's alpha coefficient was analyzed for reliability. The mediation effect was carried out with Process Macro, and Model 4 was selected.

Ethical Considerations

Written approval was obtained from the ethics committee of the University of X (E-18457941-050.99-94638) and the institution (E-82587833-605.01-110955). Nursing students who participated in the study were informed of the purpose of the study, the voluntary nature and anonymity of the data, and their verbal and written consent was obtained.

Results

The average daily smartphone usage time of the nursing students participating in the study was 5.30 + 2.69 hours, and the average daily internet usage time was 4.81 + 3.11 hours. It was found that 79.7% of the students did not turn off their smartphones at night, 93.4% checked their phones before going to sleep, and 75.0% of them checked their phones first thing when they woke up.

Nursing students reported that 87.0% used smartphones for communication, 86.7% for social media, 81.0% for education, and 63.6% for entertainment. Students reported that the most common purposes for using the internet were social media (82.0%), distance learning (12.0%), homework (20.3%), and entertainment (24.7%).

The mean score of the nomophobia scale was 22.6 ± 6.97, the mean score of the netlessphobia scale was 34.2 ± 9.58, and the mean score of the academic procrastination scale was 53.0 ± 10.48 points. There was a strong positive and significant relationship between the nomophobia score and the netlessphobia score (r:.795; p<.001) and a moderate positive and significant relationship with the academic procrastination score (r:.316; p<.001). The relationship between netlessphobia and academic procrastination was found to be moderate, positive, and significant (r=.314; p<.001) (Table 2).

According to the results, the Netlessphobia (X2/df=2.876; p<.001), Nomophobia (X2/df=2.156; p<.05), and Academic Procrastination (X2/df=2.324; p<.001) scales were found to have sufficient goodness of fit for this study. The AGFI, CFA, GFI, and RMSA values obtained for all three scales are within the desired limits. When the t-values and significance levels of the items belonging to the scales were examined, it was found that all the items in the scales contributed significantly (p<.05) to the constructs (Gürbüz & Şahin, 2015; Ünüvar, 2021) (Fig. 1).

A regression analysis based on the bootstrap method was conducted to test whether academic procrastination has a mediating role in the effect of nomophobia on netlessness. According to the results, the effect of 'nomophobia (X)' on the mediating variable 'academic procrastination (M)' was positive and significant (β =.392; 95% CI [.230;.553]; t = 4.773; p<.001). According to these findings, as nomophobia levels increase, so does academic procrastination behavior. A one-unit increase in the nomophobia score results in a 3.92-unit increase in the academic procrastination variable. According to the data obtained, 26% of the change in academic procrastination scores (R2 =.26) is caused by the nomophobia variable. According to these results, hypothesis H1 is accepted (Fig. 2).

When the effect of the mediator variable 'academic procrastination' on the outcome variable 'netlessphobia' was examined, it was found that the path between these variables was statistically positive and significant (β =.041; 95% CI [.043;.168]; t = 3.223; p<.05). According to these results, an increase in the "academic procrastination" score is associated with an increase in the "netlessphobia" score. An increase of one unit in the variable "academic procrastination" causes an increase of 0.105 units in the variable "netlessphobia." According to the data obtained, 1% of the variance in the "netlessphobia" variable (R2 =.01) is caused by "academic procrastination." According to these results, hypothesis H2 is accepted.

Figure 1
Theoretical structure of the mediation model

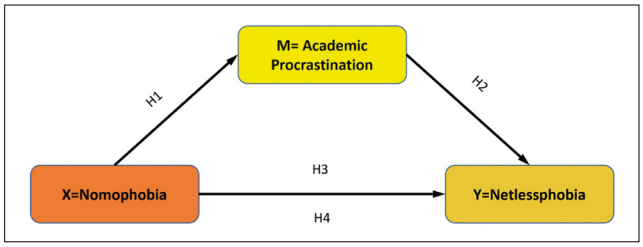


Figure 2
Findings regarding the mediating role

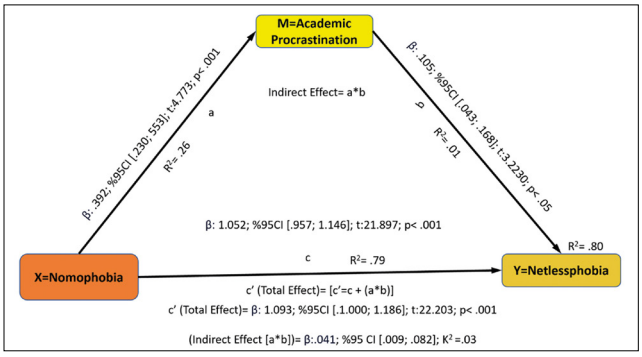
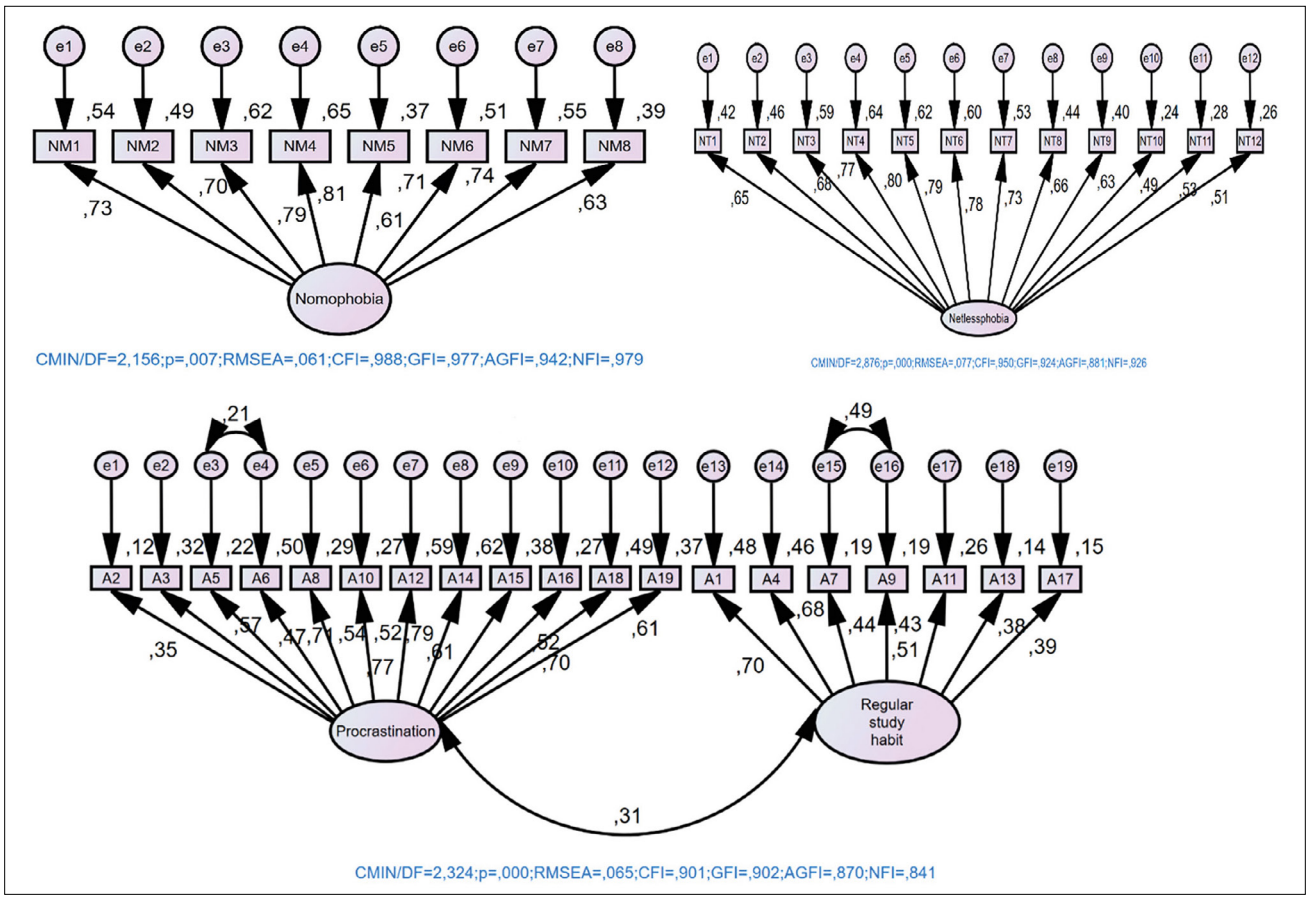


Table 2
Mean, normality, correlation and reliability analysis of measurement tools

Variable	X	S.D.	Skw.	Krt.	1	2	3	α
1. Nomophobia scale	22.6	6.97	.158	-.256	1	.795**	.316**	.90
2. Netlessphobia scale	34.2	9.58	.225	.021		1	.314**	.91
3. Academic procrastination scale	53.0	10.48	-.313	.619			1	.84

**p< .001; x: Mean; Sd: Standard deviation; Skw.: Skewness, Krt.: Kurtosis; α: Cronbachıs α reliability coefficient

Diagram 1
Validity findings regarding measurement tools



When analyzing the direct effect of the variable "Nomophobia (X)" on the outcome variable "netlessphobia," it was found that this effect was statistically positive and significant (β = 1.052; 95% CI [.957; 1.146]; t = 21.897; p<.001). According to these results, as the level of Nomophobia increases, so does the level of Nettlesphobia. A one-unit increase in the nomophobia variable causes a 1.052-unit increase in the netlessphobia variable. 64% of the change in netlessphobia (R2 =.79) is due to the direct effect of nomophobia. According to these results, hypothesis H3 is accepted.

According to the results, the indirect effect of 'academic procrastination' on 'netlessphobia' is significant, thus 'academic procrastination' mediates the relationship between 'nomophobia' and 'netlessphobia' (indirect effect [a*b]) = β:.285; 95% CI [.009;.082]; (K2 =.03). The fully standardized effect size of the mediation effect is K2 =.03, and this value indicates that the mediating role of 'academic procrastination' in the relationship between 'nomophobia' and 'netlessphobia' has a small effect size. Students with high levels of nomophobia and academic procrastination behavior have higher levels of netlessphobia than other individuals. Based on these results, hypothesis H4 is accepted.

Discussion

This study investigated the effect of 'nomophobia level' on 'netlessphobia level' in nursing students and the mediating role of this effect on 'academic procrastination behavior'. Understanding the relationship between nomophobia, netlessphobia, and academic procrastination is an important step in assessing the impact on students' digital illnesses and academic performance.

The results of this study reveal that nomophobia has a negative impact on academic procrastination, supporting Hypothesis 1. This aligns with previous research, which highlights that anxiety driven by digital dependence often results in avoidance behaviors like procrastination (Bacaksiz et al., 2022; Ramjan et al., 2021; Tuna et al., 2023). Nursing students, overwhelmed by the fear of being disconnected, may postpone engaging with their studies. This avoidance not only hinders their academic performance but also reinforces their nomophobia, creating a vicious cycle of anxiety and procrastination. Nomophobia can lead to dysfunctional study habits, where students prioritize smartphone use over academic responsibilities, further perpetuating this cycle (Tárrega-Piquer et al., 2023). Márquez-Hernández et al. (2020) found that nursing students with high levels

of nomophobia or problematic mobile phone use displayed more signs of procrastination and delayed decision-making. Additionally, Gutiérrez-Puertas et al. (2020) discovered that excessive smartphone use throughout the day, especially during class, diminished students' attention and increased their tendency to procrastinate, negatively affecting academic performance.

According to the model, netlessphobia has a negative effect on academic procrastination. Hypothesis 2 is therefore accepted. There are no studies in the literature that directly examine the relationship between netlessphobia and academic procrastination. However, as netlessphobia is a concept that arises as a result of internet addiction and is often associated with the use of smartphones to access the internet, the results have been interpreted in the context of internet and smartphone addiction. Some studies have suggested that procrastination is the main cause of problematic internet use (Davis et al., 2002; Uzun, 2014). Sermin and Zeren (2019) found that adolescents' academic procrastination behavior was related to their level of internet dependence and competence needs (Sermin & Zeren, 2019). Uzun et al. (2014) found that academic procrastination tendencies predicted internet addiction by 22% (Uzun, 2014). Wretschko (2006) states that problematic internet use can become a tool for procrastination, but the reason for procrastination may not be the internet, and procrastination behaviors may only make an individual's internet use more problematic (Wretschko, 2009). Educators and psychologists need to do more research on this issue and develop appropriate support systems for students. This can help students develop a healthy relationship with digital technologies and improve their academic performance.

The study found a strong positive correlation between nomophobia and netlessphobia scores. Similarly, Özbay et al. (2023) reported that netlessphobia significantly impacts nomophobia, accounting for 91% of its variance. Research also indicates that most nursing students identify as smartphone users and exhibit symptoms of both nomophobia and netlessphobia (Karakurt et al., 2020). Bacaksiz et al. (2022) found that the 44.4% explanatory power of netlessphobia over nomophobia suggests a substantial correlation, indicating that anxiety about internet access significantly contributes to the fear of being without a smartphone. This relationship highlights how deeply digital connectivity has become ingrained in students' daily lives, especially after the pandemic, which intensified the reliance on digital tools for education (Gunay et al., 2018). To address nomophobia and netlessphobia, it may be beneficial to educate students about digital illnesses and implement awareness-based interventions (Arpaci et al., 2019; Çınar et al., (2022).

In the study, academic procrastination is found to mediate the relationship between nomophobia and netlessphobia. Research suggests that prolonged use of smartphones and the internet often leads to academic issues, including procrastination, due to excessive or inappropriate use (Berdida & Grande, 2023; Tárrega-Piquer et al., 2023). Students experiencing anxiety about being disconnected may turn to procrastination as a coping strategy, shifting their focus away from their studies to alleviate stress related to smartphone use (Tárrega-Piquer et al., 2023). Among undergraduate students, digital addictions like nomophobia contribute to academic procrastination, low self-efficacy, and poor concentration (Berdida & Grande, 2023; Essel et al., 2021). The overlap between nomophobia and netlessphobia can have significant negative effects on academic performance. Nursing students with high levels of nomophobia are more prone to distractions that disrupt their learning (Gutiérrez-Puertas et al., 2019). The fear of being unable to check their devices can heighten anxiety and reduce focus during critical learning opportunities, ultimately affecting their preparedness for clinical practice.

In conclusion, as smartphones and the internet have become integral to nursing education at both clinical and academic levels, it is crucial to be mindful of digital illnesses and approach excessive use with caution. Encouraging students to participate in digital detox activities and organizing initiatives that emphasize the importance of such detoxes can help mitigate the negative effects of excessive digital use.

Limitations and Recommendations

The results of this study should be interpreted with several limitations in mind. First, the fact that the sample was a convenience sample from a single institution (response rate: 76.7%) makes it difficult to generalize the results. We recommend testing our model in more than one region with a larger sample size. Secondly, we tested our hypothesis model using a cross-sectional design, which cannot determine the causality of the study variables. Finally, the lack of previous studies on this topic makes it difficult for us to have an adequate discussion on this issue; on the other hand, it also highlights the interesting and novel nature of this study.

Conclusion

Our study found that academic procrastination mediated the relationship between nomophobia and netlessphobia in nursing students. Students with high levels of nomophobia and academic procrastination behaviors had higher levels of netlessphobia than other students. This study highlights three important points. First, nomophobia and netlessphobia need to be assessed for their negative impact on students' academic procrastination. Second, academic and healthcare institutions should develop policies to regulate the use of smartphones in educational and clinical contexts. The development of policies and standards for the appropriate use of smartphones in educational and clinical settings highlights an important need that can improve the academic performance of nursing students. Third, nursing students should be educated about identifying digital illnesses (e.g., netlessphobia, FoMO, smartphone, nomophobia, and internet addiction), digital literacy, accessing reliable online resources, and navigating misinformation.

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