

EFFECT OF NOMOPHOBIA ON ACADEMIC STRESS AND ACADEMIC PERFORMANCE AMONG STUDENTS

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Abstract

This study explores the intricate relationships between nomophobia, academic stress, and academic performance among a diverse group of (N=200) students in Pakistan. Using a cross-sectional survey methodology, data were collected through well validated instruments: the Nomophobia Questionnaire (NMPQ), Academic Performance Scale (APS), and Academic Stress Scale (ASS). The analysis revealed that students experiencing higher levels of nomophobia also reported increased academic stress. Conversely, students with higher academic stress tended to exhibit slightly lower academic performance. Interestingly, although a negative relationship was observed between nomophobia and academic performance, this correlation was not statistically significant, suggesting that the connection between excessive mobile phone use and academic outcomes is complex and may be influenced by various personal and contextual factors. The demographic profile of the sample included a predominance of female participants and a range of educational backgrounds, offering a comprehensive view of the student population. The findings highlight the potential impact of nomophobia on students' academic stress and performance, emphasizing the need for targeted interventions to manage mobile phone dependence and its related stress. These interventions could help mitigate academic stress and support better academic outcomes. Future research should aim to establish causal relationships through longitudinal

studies and consider additional factors that might influence these dynamics, providing a more complete understanding of how nomophobia affects academic life.

Keywords: *Nomophobia, Academic Stress, Academic Performance, mobile phone addiction, adults.*

INTRODUCTION

In our digitally connected world, smartphones have become an indispensable part of everyday life, especially among the younger generation. With the convenience of instant communication, access to vast information, and a myriad of entertainment options, smartphones have revolutionized how we interact with the world. However, this technological boon comes with its own set of challenges, one of the most prominent being nomophobia. The mobile invention is not just a tool of communication it has many other features including entertainment such as taking pictures, listening to music, gaming, and social media usage besides academic purposes, and data storage (Nikolopoulou, 2022).

Nomophobia

Nomophobia a term derived from the phrase "no-mobile phone phobia," refers to the fear or anxiety associated with the thought of being without one's mobile phone. In recent years, this phenomenon has garnered significant attention, especially as mobile phones have become integral to daily life. Adolescents, in particular, are increasingly susceptible to nomophobia due to their high engagement with smart phones for both social interaction and entertainment (Robertsetal. 2024). Recent studies have demonstrated that nomophobia is not merely a passing trend but growing psychological issues. A study by Hossain et al., (2023) found that adolescents who reported high levels of mobile phone use also exhibited elevated levels of anxiety and stress when their dives were unavailable. These findings suggest that nomophobia may be more than just a habit; it may be indicative of a deeper psychological dependency on digital connections. Adolescents, in particular, often experience increased reliance on their smartphones for social validation and peer interaction, making disconnection a significant source of distress (Kuss & Griffiths, 2025).

When asked why they never turn off their phones, 55% cited a need to keep in touch with family and friends, 10% said they needed to be contactable for work reasons, and 9% reported that turning off their phones made them anxious. The fear of missing out on something is perhaps what leads so many people to report that they would respond to a call or text even if they are in the middle of something else. The study revealed that people were often willing to interrupt life activities in order to respond to a call. The majority of people (80%) were willing to answer a call while watching television, 40% would respond to a call while eating a meal, and 18% would be willing 5 to answer the phone when they were in bed with another person. While the research on the phenomenon is still limited, the available findings suggest that nomophobia is quite common. One study of students in India found that more than 22% of participants showed signs of severe nomophobia. Around 60% of those who took part in the study had moderate signs of the condition (Farooqui et al., 2018).

Effects of Nomophobia

The effects of nomophobia extend beyond anxiety and stress. It has been linked to various negative outcomes, including impaired mental health, reduced social engagement, and diminished academic performance. According to Cakir et al., (2023), individual with higher levels of nomophobia tend to demonstrate tower levels of academic motivation and engagement, as they are preoccupied with their mobile phones rather than focusing on tasks

such as studying or socializing in person. This dependency can lead to a decrease in productivity and hinder overall well-being. Furthermore; the constant availability of digital distractions can disrupt sleep patterns, leading to issues such as sleep deprivation and its subsequent effects on cognitive functioning (Lepp et al., 2024).

The use of the internet and gadgets for information, socialization, and gaming increases the usage of mobile phones causing an increased level of nomophobia and addiction in students (Naik et al., 2023) which negatively influences academic performance (Prasad et al., 2017), increase the level of anxiety, sleep problem (Veerapuet et al., 2019), depression (Korat. 2020). According to Vagka et al. (2023), there is a positive association between low self-esteem and nomophobia. A greater number of hours spent on smartphones are found to be positively associated with nomophobia among university students (Soleymani et al., 2019). Moreover, social media usage and nomophobia negatively influence students' focus, concentration towards studies, motivation, and academic performance (Barton et al., 2021; Berdida & Grande, 2023 and Gutiérrez-Puertas et al., 2019). Nomophobia among young adults increases feelings of inadequacy, inferiority, obsessive-compulsive use of mobile phones, and time spent on mobile phones (Goncalves et al., 2020).

Academic Stress

Gupta (2020) described academic stress as “a term associated with the ineffective and unhealthy reaction to the demands of the changes in the task and process of learning”. Academic stress among students can have various negative effects on their well being and academic performance. A study by Hamaideh (2021) found that high levels of academic stress were significantly associated with symptoms of anxiety and depression among university students. This stress can also lead to poor sleep quality, decreased motivation, and impaired cognitive functioning.

Research by Richardson et al. (2022) explored the multifaceted nature of academic performance among university students, highlighting the importance of various factors such as prior academic achievement, motivation, engagement, study habits, and socio-economic background. The study found that students' academic performance is influenced by a complex interplay of individual characteristics, learning environments, and external support systems. Furthermore, a meta-analysis conducted by Robbins et al. (2024) revealed that academic performance among university students is significantly associated with factors such as study skills, time management, goal-setting, and self-regulated learning strategies. These findings underscore the importance of adopting effective learning strategies and academic behaviors to enhance academic performance in higher education.

The relationship between nomophobia, academic stress, and academic performance is cyclical. Nomophobia increases academic stress by causing frequent distractions and interruptions, which in turn hampers academic performance. Poor academic performance can then exacerbate stress, creating a feedback loop that further entrenches Nomo-phobic behaviors (Securio et al., 2020). Addressing nomophobia through behavioral interventions and promoting healthy mobile phone use habits can help reduce academic stress and improve academic outcomes.

Academic Performance

Academic performance/ achievement is defined as the extent to which a student has achieved knowledge assessed by their academic scores or grades awarded by teachers

or institutions through continuous assessment or cumulative grade point average procedures (Narad & Abdulla, 2016). Perceived Academic Performance is students' perceptions regarding their grades and attitude toward studies (Fuente et al., 2017). It is the outcome of students' personal features such as motivation and skills as well as environmental factors (Dennis et al. 2005). Academic motivation towards studies is linked with higher levels of academic achievement among students (Gupta & Mili, 2017). On the contrary higher levels of nomophobia are linked with higher levels of stress and anxiety, which are associated with lower academic performance among students (Kubrusly, et al., 2021). Similarly, a study conducted on students of four different universities in southern Jordan revealed that more than half students reported symptoms of nomophobia at a severe level and the students who showed poor academic performance in terms of lower grades, more absenteeism, or had used their mobile phone daily for longer periods showed higher levels of nomophobia (Kraishan et al., 2024).

Al Husaini and Shukor (2022) have revealed that the factors that influence student's academic achievement consist of their previous academic performance, GPA, students' internal assessment of their grades, gender, accommodation, and family support. Another research was conducted on senior high school students to measure the factors that have an impact on the performance level of students are absenteeism, parental education level, and income level (Brew, Nketiah, & Koranteng, 2021). Students' usage of social media is associated with poor academic performance (Chowdhury, 2024) in general; however, females perform better in academics as compared to males (Workman & Hyder, 2020).

LITERATURE REVIEW

Nomophobia and Academic Performance

The latest study by Lee and Kim (2023) explored the psychological mechanisms behind nomophobia and academic performance. They found that anxiety and poor time management skills mediated the relationship between nomophobia and lower academic achievement. The study recommended cognitive-behavioral strategies to manage anxiety and improve time management among students to counteract the effects of nomophobia. Research on nomophobia often intersects with broader studies on smartphone addiction and problematic internet use, but the uniqueness of nomophobia lies in its specific focus on the emotional and psychological dependency on mobile phones rather than on the content accessed via these devices (Hussien, 2022).

A meta-analysis by Rahman et al. (2022) reviewed multiple studies on nomophobia and academic performance, concluding that there is a consistent negative relationship between the two. The analysis also suggested that interventions focusing on mobile phone use management could help mitigate the adverse effects. Mobile phones, when overused, can be significant sources of distraction, leading to reduced concentration in academic settings. In 2021, a study by Mayo et al. assessed the impact of nomophobia on attention span and academic procrastination. They found that students with higher levels of nomophobia tended to procrastinate more, which in turn affected their academic performance negatively. Samaha and Hawi (2020) indicated that the COVID-19 pandemic exacerbated nomophobia among students due to increased reliance on mobile phones for online learning. The study reported that excessive use of mobile phones for non-academic purposes during online classes negatively affected students' academic outcomes.

Academic Performance and Academic Stress

Wang et al. (2022) explored the impact of the COVID-19 pandemic on academic stress and performance. They found that remote learning and pandemic related uncertainties significantly increased stress levels, which negatively affected students' academic achievements. Psychological variables, including self-efficacy, motivation, and coping strategies, play crucial roles in mediating the relationship between academic stress and performance.

Nomophobia and Academic Stress

Educating students about healthy mobile phone use and time management can help reduce dependency and improve academic outcomes (Alsalman, 2020). Nomophobia is associated with higher levels of anxiety and stress, which can exacerbate academic stress. The fear of missing out (FOMO) on social interactions and information can cause students to prioritize mobile phone use over academic responsibilities, leading to procrastination and subsequent academic pressure (Elhai et al., 2017).

The overuse of mobile phones, particularly before bedtime, is linked to poor sleep quality, which can further contribute to academic stress. Insufficient sleep impairs cognitive function and academic performance, creating a cycle of stress and poor academic outcomes (Demirci et al., 2015). Dempsey et al. (2019) found that students with high levels of nomophobia had difficulty regulating their emotions, leading to higher stress levels. This dysregulation can cause students to feel overwhelmed by academic pressures, further heightening their stress. Hadlington (2015) found that excessive mobile phone use, characteristic of nomophobia, is linked to reduced attention spans and an increase in attention-deficit symptoms among students. This reduction in cognitive function directly impacts their ability to focus on academic tasks, leading to increased stress when attempting to meet academic requirements.

Gender Differences in Nomophobia

Another aspect of the literature that remains underexplored is the gender differences in nomophobia. Some studies have hinted at the possibility that women may experience higher levels of nomophobia due to different patterns of mobile phone usage, particularly in relation to social media engagement (Moreno-Guerrero et al., 2020). However, these findings are inconclusive, and there is a need for more comprehensive studies that examine how gender influences the experience of nomophobia, particularly among student populations. Additionally, while the psychological effects of nomophobia, such as anxiety and stress, are well-documented in the literature, fewer studies have examined its impact on students' physical health, such as sleep disturbances, eye strain, and the potential long-term effects of excessive mobile phone use on physical well-being (Oyola et al., 2022).

According to Khan et al. (2021), smartphone addiction is related to the development of nomophobia and social anxiety. A cross-sectional study was conducted by Farooq et al. (2022) in which students of age between 15-25 years participated. Findings revealed 40.88% of students had severe, 48.77% moderate and 10.55% had mild nomophobia. According to another research finding (Nisar, 2018) about 10 % of students spent less than 1 hour on mobile phones, 50% used 1-2 hrs, 20% spent up to 4 hours, and 20% more than 5 hours. Similarly, according to Nawaz et al. (2017), the probability of nomophobia increases with longer hours of smartphone usage and is positively related to poor decision- making among students (Niazi et al., 2021). Another study conducted on private and public colleges in Pakistan showed that nomophobia among students was positively associated with insomnia and negatively with academic performance (Awan et

al., 2022). From the research evidence stated above, this study assumes a positive relationship between academic motivation and academic performance and a negative relationship with nomophobia which has been evidenced by Abukhanova et al.,(2024). Academic motivation can influence the relationship between nomophobia and academic performance. Similarly, motivation increases productivity (Brenner, 2022) but nomophobia negatively influences productivity (Mamun et al., 2023) which means that an increase in motivation may increase productivity thus reduce the effect of nomophobia. The current study intends to examine effect of nomophobia with students' academic stress and academic performance among students.

Rationale

In the digital age, smartphones are integral to students' lives, serving as tools for communication, information, and entertainment. The increasing prevalence of mobile phone use among students has led to a rise in nomophobia, characterized by anxiety and stress from being without a mobile phone, which can significantly impact their academic lives. However, excessive dependence on these devices can lead to nomophobia, which in turn might impact students' mental health and academic functioning. This study is timely and relevant, addressing a phenomenon that affects a significant portion of the student population. By investigating the effect of nomophobia on academic stress and performance, the study aims to elucidate the potential negative consequences of smartphone dependence. Understanding these impacts is crucial for developing strategies to mitigate stress and improve academic outcomes. The findings of this study can inform the development of interventions aimed at reducing nomophobia and its associated stress. Educational institutions can use these insights to create supportive environments that promote healthy smartphone use and enhance academic performance.

Objectives

1. To examine the relationship between nomophobia and academic stress among students.
2. To examine the relationship between academic stress and academic performance.
3. To examine the relationship between nomophobia and academic performance.

Hypotheses

It was hypothesized that:

H₁: There were positive correlation between nomophobia and academic stress.

H₂: There were negative correlation between academic stress and academic performance.

H₃: There was negative correlation between nomophobia and academic performance.

Method

Research Design: Cross-sectional research design was used in the present study to ensure the predictable and generalizable outcomes by targeting the general population of Pakistan.

Sampling Strategy: A Convenient sampling technique was used in the present study by considering the availability and responsiveness of participants. Data was collected by using a Google Form created by different university groups for academic purposes.

Sample Size: Approximately (N=200) students were selected as a sample from different universities of Pakistan based on a convenience sampling technique. Sample characteristics considered in this study include age, gender, education level, family structure, socio-economic status.

Assessment Measures

i. Nomophobia Questionnaire (NMP-Q)

The NMP-Q is a 20-item scale developed by Yildirim and Correia (2015) through a thorough procedure including qualitative and quantitative phases. NMP-Q is a standard instrument to measure the severity of nomophobia. Each item is rated on a 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating great nomophobia tendencies. The instrument is composed of 20 items that assess four dimensions: Inability to communicate (6 items), Loss of connectivity (5 items), Not being able to access information (4 items), and Giving up comfort (5 items). The Cronbach alpha scale given by the original author was 0.95 and a study in Pakistan on students showed a good internal consistency of 0.91 (Schwaiger & Tahir, 2020).

ii. Academic Performance Scale (APS)

The Academic Performance Scale (APS) developed by Birchmeier et al. (2015), consists of 8 items with a 5-point Likert type scale where 1 indicates Strongly Disagree, 2 Disagree, 3 Neutral, 4 Agree and 5 Strongly Agree response format. The scores on the scale ranges from 0 to 40, categorizing students into five performance levels: failing, poor, moderate, good, and excellent. A score between 0-8 indicates failing performance, and 9 to 16 represents poor performance. A score between 17-24 shows an average level of academic performance. Those scoring between 25 to 33 exhibit good performance and finally, 33 to 40 scores reflect excellent performance. The author provided an internal consistency of score as $\alpha=0.89$.

iii. Academic Stress Scale

Academic stress scale is a 40-item rating scale. It was originally developed by Kim in 1970 and adopted to Indian conditions by Rajendran and Kaliappan in 1990 by administering the adapted version of the Students' Academic Stress Scale. These scales typically consist of statements about academic situations, workload, examinations, time management, or interpersonal issues, which students rate on a Likert scale (e.g., 1 to 5) to indicate the degree of stress they feel from each item. Higher total scores indicate higher levels of perceived academic stress. The scale measures the efficiency of behavioral strategies in managing academic stress in improving academic performance.

Procedure

After seeking approval from the Institutional Review Board of the University for conducting this study, permission for the use of the measures was obtained from their respective authors. Once the process of selecting the scales and questionnaire was done, the participants were approached and briefed about the purpose of the research and were asked to participate in the research. Questionnaires were then given to the participants and they were assured that the confidentiality of data will surely be maintained. The participants were given the opportunity of withdrawal from the research at any given time according to their free will. Further they were briefed about how to respond on each scale as well as on demographic form. Respondents completed all questionnaires in the supervision of researcher. It took 10-15 minutes to fill the research form. After the data collection process, the next phase was to analyze data on SPSS in order to get results followed by discussion.

Results

The present study examined the effect of nomophobia with students' academic stress and academic performance among students.

Psychometric Properties of Nomophobia Questionnaire, Academic Stress Scale, and Academic Performance Scale

Before carrying out statistic analyses, suitability of the data was checked. The mean(M), standard deviation (SD), skewness, and kurtosis, were calculated for the Nomophobia Questionnaire (NMP-Q), Academic Stress Scale, and Academic Performance Scale.

Table 1: Frequencies and percentages of demographic variables of Study (N = 200)

Variables	<i>f</i>	%
Gender		
Male	73	36.5
Female	121	60.5
Prefer not to answer	6	3.0
Education		
Primary	14	7.0
Inter	74	37.0
Undergraduate	96	48.0
Graduate	16	8.0
Family Structure		
Nuclear	72	36.0
Extended	65	32.0
Joint	63	31.0
Socio-economic Status		
Lower	2	1.0
Lower-middle	9	4.5
Middle	128	65.5
Upper-middle	57	28.5
Upper	4	2.0

Note. *f*= Frequency of the participants; %=Percentage

Table 1 provides a comprehensive overview of the demographic variables for the study's 200 participants. The gender distribution reveals a predominance of females at 60.5% (121 participants), compared to males at 36.5% (73 participants), with a small fraction of 3.0% (6 participants) opting not to disclose their gender. In terms of educational background, nearly half of the participants (48.0%) have an undergraduate degree, 37.0% have completed intermediate education, 8.0% hold graduate degrees, and 7.0% have primary education. Family structure among participants is fairly balanced, with 36.0% (72 participants) living in nuclear families, 32.5% (65 participants) in extended families, and 31.5% (63 participants) in joint families. Socioeconomic status shows that the majority are middle class (64.5%), followed by 28.5% in the upper-middle class, 4.5% in the lower-middle class, 2.0% in the upper class, and a minimal 1.0% in the lower class.

Table 2: Psychometric Properties of the Major Study Measures (n = 200)

Scale	K	M	SD	α	Range		Skew.
					Potential	Actual	
NMPQ	20	80.45	27.25	.94	20-140	20-140	.066
APS	8	33.23	4.33	.86	8-40	11-40	.277
ASS	40	33.23	4.33	.97	0-160	0-160	-.273

Note. k = no of items, M= Mean; SD= Standard Deviation, α =Alpha coefficient; NMPQ = Nomophobia questionnaire; APS = Academic Performance Scale; ASS = Academic Stress Scale

The Nomophobia Questionnaire (NMPQ) showed excellent reliability with an alpha coefficient (α) of .94, a mean score (M) of 80.45, and a standard deviation (SD) of 27.25, with scores ranging from 20 to 140. The Academic Performance Scale (APS) also demonstrated good reliability (α = .86) and had a mean of 33.23 with an SD of 4.33, with scores ranging from 11 to 40. Similarly, the Academic Stress Scale (ASS) exhibited outstanding reliability (α = .97), with a mean score of 33.23 and an SD of 4.33, and scores ranging from 0 to 160.

Table 3 Correlation of Study Variables (N=200)

Variables	1	2	3
1. NMPQ	-	-.087	.430**
2. APS		-	-.164*
3. ASS			-

Note. ***p < .001, **p < .01, *p < .05

Table 3 shows the correlation coefficients among the study variables for the Nomophobia Questionnaire (NMPQ) was significantly positively correlated with the Academic Stress Scale (ASS), indicating a moderate positive relationship (r = .430, p < .01), suggesting that higher levels of nomophobia are associated with higher academic stress. Conversely, the NMPQ showed a weak and insignificant negative correlation with the Academic Performance Scale (APS) (r = .087, p > .05*), indicating no meaningful relationship between nomophobia and academic performance. The APS, however, had a significant negative correlation with the ASS (r = -.164, p < .05*), implying that better academic performance is associated with slightly lower academic stress. These findings highlight a nuanced interplay between nomophobia, academic performance, and academic stress among the participants.

DISCUSSION

The purpose of this study was to investigate the relationships between nomophobia, academic performance, and academic stress. By examining these variables, the study aimed to understand how excessive reliance on mobile phones (nomophobia) might affect students' academic outcomes and stress levels. The scales used in this study, including the Nomophobia Questionnaire (NMP-Q), academic stress and the Academic performance Scale (APS), demonstrated high reliability, ensuring the accuracy of the findings. The psychometric properties of the scales used in the study (NMPQ) Nomophobia questionnaire, (APS)Academic Performance Scale, (ASS)Academic Stress Scale were evaluated, and the correlation between nomophobia, academic performance, and academic stress was analyzed.

Firstly, it is hypothesized that there exists a positive correlation between nomophobia and academic stress, suggesting that individuals experiencing higher levels of nomophobia are also likely to report increased levels of academic stress. Correlation analysis revealed compelling insights, notably a significant positive correlation between nomophobia and academic stress, indicating that heightened nomophobia corresponds with

increased academic stress levels. Similar findings have been reported in previous studies such as Elhai et al. (2019) conducted research demonstrating a positive association between nomophobia and academic stress among college students, highlighting the detrimental impact of excessive smartphone use on psychological well-being and academic functioning.

Secondly, the hypothesis posits a negative correlation between academic stress and academic performance, implying that elevated stress levels are associated with slightly diminished academic performance. Correlation analysis revealed a noteworthy negative correlation emerged between academic stress and performance, suggesting that elevated stress levels coincide with slightly diminished academic performance. For example, Chen et al. (2021) investigated the intricate relationship between academic stress, perceived social support, and academic performance among college students. The study revealed a negative correlation between academic stress and academic performance. Specifically, higher levels of academic stress were associated with lower academic performance outcomes.

Lastly, the hypothesis proposes a negative correlation between nomophobia and academic performance, suggesting that heightened nomophobia may be linked to marginally poorer academic performance, while the correlation analysis revealed insignificantly negative correlation between nomophobia and academic performance, hinting at a nuanced relationship between excessive mobile phone usage and academic achievement. Same as the study by Khan et al. (2018) which explored the relationship between nomophobia and academic performance among medical students, aligning with the hypothesis proposing a negative correlation between these variables. While the researchers observed a negative correlation between nomophobia and academic performance, the correlation did not reach statistical significance. This lack of significance may be attributed to the small sample size of the study, which could have limited the statistical power to detect significant relationships. Additionally, individual differences in coping strategies and resilience levels among students may have influenced the observed relationship, contributing to the insignificance of the correlation. Despite the lack of statistical significance, the study sheds light on the potential impact of nomophobia on academic performance among medical students, highlighting the need for further research with larger sample sizes to better understand this relationship.

Conclusion

In conclusion, the study highlights significant relationships between nomophobia, academic performance, and academic stress. Higher levels of nomophobia are associated with increased academic stress, and higher academic stress is linked to slightly lower academic performance. These findings suggest that addressing nomophobia could play a role in reducing academic stress and supporting better academic outcomes for students. Future research should explore causal pathways and consider a broader range of factors influencing these relationships, potentially leading to more comprehensive strategies for managing nomophobia and its impacts on student life.

Implications

The significant correlations found in the study have several implications. Educational institutions and mental health practitioners should be aware that nomophobia can contribute to higher academic stress, which might indirectly affect academic performance. Interventions designed to manage mobile phone usage and reduce

nomophobia could be beneficial in lowering academic stress and supporting better academic outcomes. Programs that promote digital well-being, time management skills, and stress reduction techniques could help students balance their mobile phone use with academic responsibilities, thereby enhancing their overall well-being and performance.

Limitations

This study has several limitations. The cross-sectional design limits the ability to establish causal relationships among the variables. Self-reported measures might introduce response biases, as participants might not accurately report their levels of nomophobia, academic performance, or stress. The sample predominantly consists of female and undergraduate participants, which may limit the generalizability of the findings to other demographics or educational levels. Additionally, the study does not account for other factors such as personality traits, mental health issues, or external stressors, which might influence the observed relationships.

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