

RELATIONSHIP BETWEEN ANXIETY AND NOMOPHOBIA AMONG STUDENTS AT MUHAMMADIYAH UNIVERSITY PONTIANAK

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Abstrak

Nomophobia merupakan rasa takut kehilangan kontak dengan telepon genggam, yang dapat menimbulkan rasa takut dan frustrasi bila tidak memegang atau bersamanya. Penelitian ini bertujuan untuk mengetahui hubungan antara kecemasan dengan *nomophobia* pada mahasiswa Universitas Muhammadiyah Pontianak. Metode penelitian yang digunakan adalah kuantitatif korelasional dengan populasi seluruh mahasiswa Universitas Muhammadiyah Pontianak. Sampel penelitian diambil menggunakan teknik *purposive sampling* dengan jumlah responden sebanyak 106 orang. Instrumen penelitian berupa skala kecemasan dan skala *nomophobia* yang telah diuji validitas dan reliabilitasnya. Hasil analisis data menunjukkan bahwa terdapat hubungan positif yang signifikan antara kecemasan dengan *nomophobia* pada mahasiswa ($r = 0,646$, $p < 0,05$). Hal ini menunjukkan bahwa semakin tinggi tingkat kecemasan mahasiswa, maka semakin tinggi pula tingkat *nomophobia* yang dialaminya. Implikasi praktis bagi mahasiswa meliputi mengatur mandiri penggunaan smartphone dan penguatan konsep diri positif untuk mengurangi dampak *nomophobia* dan kecemasan yang diakibatkannya.

Kata kunci: hubungan; kecemasan; mahasiswa; *nomophobia*

Abstract

Nomophobia is the fear of losing contact with a mobile phone, which can cause anxiety and frustration when it is not held or within reach. This study aims to examine the relationship between anxiety and nomophobia among students at Universitas Muhammadiyah Pontianak. The research method employed was a quantitative correlational design, with the population consisting of all students at Universitas Muhammadiyah Pontianak. The sample was selected using a purposive sampling technique, involving 106 respondents. The research instruments consisted of an anxiety scale and a nomophobia scale, both of which had been tested for validity and reliability. Data analysis revealed a significant positive relationship between anxiety and nomophobia among students ($r = 0.646$; $p < 0.05$). These findings indicate that the higher the students' anxiety levels, the higher their level of nomophobia. Practical implications for students include managing smartphone use independently and strengthening positive self-concept to reduce the impact of nomophobia and the anxiety it causes.

Keywords: relationship; anxiety; students; nomophobia

INTRODUCTION

The development of technology, particularly smartphones or mobile phones, has led to a new phenomenon in society known as nomophobia. Nomophobia or no mobile phone phobia is a feeling of anxiety or discomfort that comes from being away from smartphone (Matsum et al., 2022). This phenomenon has grown following the development of technology and communication. According to Enez (2021) mobile phone users worldwide increased from 3.668 billion in 2016 to 6.055 billion in 2020. In Indonesia, based on data from the Central Statistics Agency using the National Socioeconomic Survey (Susenas) it was revealed that in 2022, 66.48% of the population in Indonesia had access to the internet and 67.88% of the population owned a mobile phone.

Developments in mobile phone or smartphone technology have created a situation where many users are permanently connected to the internet and connected to other people. According to the Indonesian Internet Service Providers Association (APJII) in 2022, 73.70% of smartphone users use their devices to access the internet without time restrictions. This unrestricted use of smartphones makes users dependent and causes them to experience symptoms of nomophobia, which is in line with research by Ramaita et al. (2019) which found that there is a positive and significant influence between smartphone dependence and nomophobia.

Anxiety is a response to threats, which are both real and perception-based. Individuals experience anxiety due to uncertainty about future situations. For example, someone facing a critical situation and unable to find a definite solution may experience symptoms of anxiety. Then, anxiety can develop into a psychological disorder if it causes intense fear that persists chronically in individuals (Lubis, 2009). Zebua (2022) expressed that anxiety is a feeling of insecurity caused by clear, branching thoughts about threats or dangers, characterized by nervousness, excessive restlessness, worry, depression, and even guilt. There are several aspects to assessing anxiety, such as those described by Calhoun and Acocella (in Fitrotus, 2016), which consist of emotional aspects that include an individual's perception of their psychological abilities, cognitive aspects where individuals feel excessive fear and worry, preventing them from thinking logically to solve the problem, and physiological aspects, which are related to the individual's nervous system, causing reactions in the form of a faster heartbeat.

Stuart states theories about the factors that cause anxiety. Psychoanalytic theory explains the emotional conflict that occurs between two elements of personality, namely the Id (instinct) and the Ego, which reflects the conscience controlled by a person's cultural norms. The interpersonal theory posits that anxiety is a manifestation of individual rejection that causes feelings of fear related to traumatic experiences such as separation and loss. Furthermore, behavioral theory states that anxiety arises from specific environmental stimuli that form incorrect thought patterns and cause maladaptive behavior. Lastly, biological theory shows that the brain contains special receptors that can increase neuroregulatory inhibition (GABA), which plays an important role in the biological mechanisms related to anxiety. Physical disorders and a decrease in an individual's ability to cope with stressors are accompanying factors of anxiety (Budi, 2020).

Based on initial interviews conducted on November 15, 2024, and February 5, 2025, with 14 respondents from various study programs such as Psychology, Management, Law, Information Technology, and Public Health at Muhammadiyah University Pontianak, it was found that most respondents experienced anxiety symptoms related to nomophobia. The interview results showed that 12 respondents reported feelings of panic when unable to use their smartphones, particularly in situations such as when the device ran out of battery, loss of connectivity with others, lack of internet access for navigation or information, concerns about running out of data packages, and anxiety when applications experienced disruptions. These symptoms fulfilled the diagnostic criteria for nomophobia based on the indicators that had been established.

Respondents who experience nomophobia manifest anxiety in many aspects. Emotionally, they admit to feeling anxious, restless, and overly worried when they do not have access to their smartphones. Cognitively, they have negative thoughts such as fear of losing connectivity or feeling unable to carry out daily activities without the device. Physiologically, respondents experience symptoms such as cold hands, a faster heartbeat, and muscle tension when their smartphone is not nearby or cannot be used. In contrast, two respondents showed a different profile, experiencing no anxiety related to nomophobia. They remain calm without a

smartphone, are not worried about losing connectivity, and are able to carry out activities without technological dependence. These findings indicate that most respondents have a significant level of anxiety about smartphone dependence, while a minority show better psychological resilience to technological dependence. The overall interview results highlight the impact of nomophobia on individuals' daily lives.

There are several aspects and factors that can cause behavior indicating that an individual is experiencing symptoms of nomophobia. Based on the conceptualization of aspects of nomophobia by Yildirim and Correia (2015), such as an inability to communicate, characterized by feelings of loss when communication with others is interrupted, a loss of connection to social networks on smartphones, an inability to access information, and an inability to use smartphone services. The factors that influence nomophobia are explained by Vijnanamaya and Ambarini (2023), among other things, self-esteem, where low self-esteem is more prone to nomophobia due to dissatisfaction with oneself, which can be exacerbated when not connected to a smartphone, an extroverted personality that tends to be impulsive in seeking excitement, age, where individuals aged 19 to 24 are more vulnerable, and the intensity of smartphone use.

The convenience provided by smartphones causes high dependency because users can make calls, send information, browse the internet, or contact other people via their mobile phones, leading to higher levels of anxiety when their smartphones are not nearby and possibly causing other psychological and physiological effects (Nuraini, 2021). Research by Fadhilah et al. (2021) has revealed that high dependence on smartphones also causes negative effects beyond nomophobia, such as a decline in an individual's communication skills and an increase in apathy and individualism.

Based on research conducted using a cross-sectional method by Haryati et al. (2020), it was found that most respondents, or 63.5%, experienced medium levels of nomophobia, 27.6% experienced severe nomophobia, and only 9% of respondents experienced mild nomophobia. Research by Denprechavong et al. (2022) also shows that 76.1% of participating students experienced symptoms of nomophobia, 59.6% of whom were categorized as medium level, followed by anxiety experienced by 14.3% of participants, and 6.6% who experienced depression. In Tolan and Karahan (2022) also found that nomophobia had a positive and significant effect of 43.2% on anxiety. And based on research by Tuco et al. (2023), it was found that among students, nomophobia was commonly found in the study results, with 56% of participants experiencing moderate nomophobia symptoms, followed by 24% with mild symptoms and 17% with severe symptoms. Participants with heavy nomophobia stated that they often felt anxious when they could not access their smartphones, including feelings of fear of losing communication with others.

The difference in this study lies in the sample subjects selected based on the purposive sampling method, where the subjects were selected to use mobile phones for more than 8 hours a day. This is a continuing study from a previous study that examined the intensity of mobile phone use and nomophobia and found that mobile phones are mostly used for social media such as Instagram, Facebook, WhatsApp, and other communication applications with a frequency of use of 5-7 hours a day. The high frequency of mobile phone use is consistent with a decrease in students' academic performance, thus requiring further research with specific frequencies in sample populations with different characteristics. The research was conducted at Muhammadiyah University Pontianak, taking into consideration several factors such as data availability with a heterogeneous sample population so that the research sample could be

fulfilled, and in the substantial aspect, the research location had not been studied much in similar research.

Based on the findings of preliminary interviews, it was identified that most subjects experienced anxiety symptoms in response to being away from their smartphones. This study specifically focused on the analysis the dynamics of anxiety and nomophobia among university students by identifying the dominant aspects contributing to this phenomenon and testing the significance of the relationship between the two variables. The hypotheses proposed in this study consist of an alternative hypothesis (H_a) which states that there is a significant relationship between anxiety and nomophobia, and a null hypothesis (H_0) which states that there is no relationship between the two variables.

METHOD

The sample population used in this study consisted of 4,752 active students in 2024 at Muhammadiyah University Pontianak. After screening the population to determine the sample used in this study using purposive sampling by Periantalo (2016) subjects who met specific criteria relevant to the research objectives. Then, 106 students with the specified characteristics were selected as subjects for the analysis. The minimum sample amount was determined using the principle by Azwar (2017) that if the sample amount reached 100, the research would be considered to meet the feasibility criteria. The characteristics of the research subjects included active students at Muhammadiyah University Pontianak aged 18–24 years old who used their mobile phones for more than eight hours a day. The selection of the age range of the subjects refers to the findings in Karyani (2021) and Ramaita et al. (2019) research, which shows that this age group has a high dependence on mobile phone use, also due to its use in lecture activities.

The data collection method in this study used a Likert scale model with four answer choices divided into 'favorable' and 'unfavorable' statements. The nomophobia variable was measured using a scale compiled based on aspects by Yildirim and Correia (2015) such as inability to communicate, loss of connection, inability to access information, and inability to use smartphone services. Meanwhile, the anxiety variable will be measured using a scale compiled based on aspects according to Calhoun and Acocella (in Junaidin, 2013), which are emotional aspects, cognitive aspects, and physiological aspects.

The validity test for this study uses content validity through professional assessment by the supervising lecturer of the psychological scale that has been designed based on a clear measurement scale. The reliability coefficient will be measured using the Cronbach's Alpha model, assisted by the SPSS version 24.0 for Windows program, to determine whether the measuring instrument used is reliable. Data analysis in this study uses simple linear regression analysis, which aims to test the significance or otherwise of the relationship between two variables through Pearson's product-moment correlation.

RESULT AND DISCUSSION

Before conducting the research, a try out was conducted to test the reliability of the measuring instruments used so that they could be scientifically justified. The data from the trial run was analyzed using IBM SPSS 24.0 for Windows software to evaluate the validity of the items on the anxiety and nomophobia scales based on Periantalo's (2016) item discrimination method. The results of the analysis showed that 34 items were valid on the anxiety scale and 35 items

were valid on the nomophobia scale. Furthermore, content validity testing was conducted involving expert assessment, in this case the Supervising Lecturer, to ensure that each item in the scale represented aspects relevant to the construct being measured. In addition, reliability testing was also conducted with the results presented in Table 1.

Table1.
Reliability Test of Anxiety Scale and Nomophobia

Variable	Cronbach's Alpha Value
Anxiety	0,875
Nomophobia	0,922

The Cronbach's Alpha value for the anxiety variable was 0.925 and for the nomophobia variable was 0.934, indicating that the corrected items were reliable and could be used as research measurement tools. The research was then conducted by having students fill out a questionnaire via Google Forms using a Likert scale. A normality test was performed using the Kolmogorov Smirnov method on the variables of nomophobia and anxiety to assess whether the distribution of variable scores was normal. The distribution of normality test data can be seen in Table 2 as follows.

Table2.
Normality Test of Anxiety and Nomophobia Data Distribution

Variable	Kolmogorov Smirnov	p	Result
Anxiety	0,060	0,200	Normal
Nomophobia	0,084	0,061	Normal

Linearity testing was conducted to determine the relationship between anxiety and nomophobia, whether linear or not. The test results can be seen in Table 3.

Table3.
Linearity Test of Anxiety and Nomophobia Data

Components tested	F Value	Sig.	Decision
Deviation from linearity	1,006	0,486	> 0,050
Linearity	74,749	0,000	< 0,000

The normality test shows that the anxiety variable gets a Kolmogorov Smirnov value of 0.060 with a significance of 0.200 ($p > 0.05$), while the normality test results for the nomophobia variable get a value of 0.084 with a significance of 0.061 ($p > 0.05$). Both test results indicate that the two variables are normally distributed. Meanwhile, the linearity test results show that the relationship between the anxiety variable and nomophobia produces an F value of 74.749 with a significance value of $p = 0.000$. This indicates that the two research variables are linear. Based on the results of the normality and linearity tests, which were normally distributed and also had a linear relationship, the hypothesis test in this study used the Product Moment correlation analysis technique with a decision-making basis of $p < 0.05$ indicating a correlation between variables and $p > 0.05$ indicating no correlation.

Table4.

Categorization of Anxiety

Categories	Formula	Raw Score	Number of Respondents	Percentage
High	$X > M + SD$	>104	5	5%
Mid	$M - SD \leq X \leq M + SD$	70-104	74	69.8%
Low	$X < M - SD$	70	27	27%
Total			106	100%

Description :

X : Total score for each individual

Mean: Mean of Anxiety (Hypothetical)

SD: Standard deviation of Anxiety (Hypothetical)

Based on Table 4, there were 5 subjects with high anxiety, accounting for 5% of the total; 74 subjects with moderate anxiety, accounting for 69,8%; and 27 subjects with low anxiety, accounting for 27%. This shows that only a small proportion of participants or students experienced high anxiety.

Table 5.

Categorization of Nomophobia

Categories	Formula	Raw Score	Number of Respondents	Percentage
High	$X > M + SD$	>105	8	8.5%
Mid	$M - SD \leq X \leq M + SD$	70-105	89	84%
Low	$X < M - SD$	70	9	7.5%
Total			106	100%

Description :

X : Total score for each individual

Mean: Mean of Nomophobia (Hypothetical)

SD: Standard deviation of Nomophobia (Hypothetical)

Based on Table 5, there were 8 subjects with high-level nomophobia, accounting for 8.5% of the total; 89 subjects with a medium level, accounting for 84%; and 9 subjects with a low level, accounting for 7.5%. It can be concluded that the majority of subjects have nomophobia with a medium level. This indicates that, in general, students experience nomophobia with a medium level.

Table 6.

Research Scale Hypothesis Test Results

Variable	Correlation	Sig.	Decision
Anxiety	0,646	0,000	Ha accepted
Nomophobia			

Based on Table 6, the Sig. value is $p < 0.05$, so hypothesis H_0 is rejected and H_a is accepted, meaning that there is a relationship between anxiety and nomophobia. In addition, there is also a strong relationship between the two variables based on the correlation (r) between the two variables = 0.646. The higher the anxiety, the higher the nomophobia experienced by students.

Internet addiction is the inability of individuals to control their internet use, resulting in psychological problems such as nomophobia and anxiety. Based on initial observations, it was found that most of the respondents, namely 12 out of 14, experienced nomophobia, where respondents admitted to feeling uncomfortable and anxious when they could not access the internet. This was also found in the research results, where most respondents experienced moderate nomophobia at a rate of 84% or 89 people. The anxiety that arises is the body's response to situations that are considered threatening to the individual. This is in accordance with the behavioral theory proposed by Stuart (in Budi, 2020), which states that feelings of anxiety are the result of an exaggerated assessment of danger in certain situations and a low perception of one's ability to overcome these threats.

The results of the item analysis in this study show that the aspect of nomophobia that contributes the most is the inability to communicate, as the indicator of fear of losing and being cut off from communication with others. This was also found in a study by Haryati et al. (2020), whose results also showed that the highest aspect was the inability to communicate. This was supported by the fact that most of the respondents were students who were far from their parents, so they felt very worried and anxious when they could not communicate with their families. On the other hand, in the anxiety variable, the highest contribution was found in the emotional aspect with indicators of anxiety related to individual perceptions of psychological abilities and anxiety. According to Hasanah et al. (2023), individual perceptions of psychological abilities, this is a form of self-esteem that every individual has. This supports the results of the study, where individuals with low self-esteem often feel anxiety in their daily lives. Based on the above discussion, it can be concluded that the results of this study show that there is a high and positive correlation between anxiety and nomophobia among students at Muhammadiyah University Pontianak.

Although this study was optimally designed, it still has several methodological limitations. First, the correlational quantitative approach used does not support causal inferences between anxiety and nomophobia. Second, the selection of subjects limited to one university limits the generalization of findings, so that the results of the study only represent the specific environment of Muhammadiyah University Pontianak. Third, although the research instruments met the criteria for validity and reliability, the use of self-report methods has the potential to introduce social bias, whereby respondents tend to give answers that are considered socially acceptable. These limitations need to be considered in interpreting the research results.

CONCLUSION

The results of this study confirm the positive relationship between anxiety and nomophobia among students at Muhammadiyah University Pontianak. The analysis shows that the two variables have a medium and unidirectional correlation, where an increase in anxiety levels will be followed by an increase in nomophobia levels, and the other way around. The most dominant aspect contributing to nomophobia is the inability to communicate, particularly the fear of losing connection and severing ties with others. Meanwhile, in the anxiety variable, the emotional aspect is the main contributor, as reflected in individuals' perceptions of their psychological capacity and accompanying anxiety responses. These findings support the acceptance of the alternative hypothesis (H_a), which states that there is a significant relationship between the two variables.

The practical implications of this study include multidimensional interventions. At the individual level, students can implement smartphone usage self-management through limiting

social media access time and digital detoxification programs, as well as developing a positive self-concept. At the institutional level, universities need to provide specialized counseling services and establish digital-free zones on campus. Therefore, it is hoped that these findings will enrich the study of the relationship between anxiety and nomophobia in the student population. For further research, it is recommended to add moderator variables in order to obtain more comprehensive findings, while encouraging the development of students' emotional resilience in facing the challenges of the digital age.

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