

Prevalence and Correlates of Nomophobia, Anxiety and Depression Among University Undergraduates in Nigeria

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ABSTRACT

Nomophobia, anxiety and depression are related psychopathologies that affect individuals' mental health especially among youths. Studies linking these psychopathologies together are lacking especially in developing countries such as Nigeria. Therefore, this study examines the prevalence and correlates of nomophobia, anxiety and depression among undergraduates of the University of Ibadan, Nigeria. The study adopts correlational cross-sectional survey design and use purposive sampling technique to select the study population. Data were collected from 400 participants using validated scales and analyzed with descriptive and correlation statistics. Three research questions and three hypotheses tested were accepted at $p = .001$ level of significance. The result revealed 100% prevalence of nomophobia, 56% of anxiety and 29% of depression among study participants. In addition, the results indicated that nomophobia correlated with anxiety while anxiety correlated with depression. However, nomophobia did not correlate with depression. The study novelty comes as the first exploring prevalence and correlation of nomophobia, anxiety and depression among study population. The study recommended that parents and university management should create awareness on the adverse effects of smartphones in order to reduce nomophobia, anxiety and depression among undergraduates

INTRODUCTION

The rapid advancements in technology have resulted in significant changes in the way individuals live, work, communicate, and learn. Among the most pervasive of these technological innovations, is the development and use of the “smartphones” which has “emerged as a ubiquitous and indispensable tool for people of all ages” (Fakrogha, 2023). Smartphones are now indispensable part of individuals’ daily life, serving different of functions that cater for communication, entertainment and information needs. Globally, 90% of the population use phones with over 7.2 billion of smartphones (Statista.com, 2024). China has the highest users of smartphones (974.69 million), followed by India (659 million), and the United States (276.14 million). Nigeria has the highest number of phone owners in Africa (83.34 million). A further breakdown indicated that about 93% of Nigerians use phones of which 30 % who owned smartphones are between 18 and 35 years age brackets (Statista.com, 2024). Beside its primary function as communication devices, smartphones provide other functions such as enabling individuals to connect with others, it allows individuals to share experiences, and thus maintain virtual relationships with other people. Moreover, it acts as personal organizers, providing access to online shopping, mobile banking, e-learning platforms, among many others.

Even with all these functions, there has been emerging issue of over reliance on the use of these communication gadgets causing “behavioural addiction”. One of these behavioral addictions is nomophobia, a term coined from "NO MOBILE PHOne PhoBIA," which is “a psychological condition characterized by the fear of being disconnected from mobile phone networks” (Yildirim & Correia, 2015). It is the fear people showed when they are not using or when their electronic gadgets(e.g., smartphones) are not with them. Nomophobia individuals are characterized by behaviours such as frequent checking on the phones to read messages, charging the phone always to ensure that it’s never run down of battery, and feeling uneasy thinking of losing the phones at any point in time (Fakrogha, 2023).

Studies have reported the prevalence of nomophobia using different populations and across different samples in different countries. For example, Fakrogha (2023) found 100 percent of undergraduates to have experienced from mild to severe levels of nomophobia among Nigerian samples. Moreover, Batool and Zahid (2019) found 68% of university students experienced nomophobia indicating a high prevalence among their study participants. In addition, Sharma et al. (2019) found more adolescents to have experienced mild to severe levels of nomophobia with its negative consequences. Gender differences were found in a study by Gunes and Ozdemir (2021) such that male participants experienced higher levels of nomophobia and anxiety than their female counterparts.

Closely related to nomophobia are anxiety and depression. While anxiety is “an unpleasant sensation of fear and worry” (Gavin et al., 2015), depression, on the other hand, is “a persistent and chronic feeling of dejection, sadness and worthlessness”(Meier et al., 2016). Studies have confirmed the relationship between nomophobia and anxiety. For instance, Abukhanova et al. (2024) found nomophobia as the main cause of anxiety. In addition, Kara et al. (2021) found

that nomophobia to correlate with anxiety thus emphasizing the negative effects of over reliance on mobile phone use and the possible fear of losing them. Furthermore, Mir and Akhtar (2020) found undergraduates who reported moderate nomophobia to have experienced increased anxiety when separated from their mobile phones. Conclusively, Sharma et al. (2019) found a positive correlation between nomophobia and anxiety symptoms among adolescents where nomophobia were found to correlate with severe symptoms of anxiety, which indicates the negative effects of over reliance on smartphones and fear of losing the phones.

Also, studies have established the prevalence and correlation between nomophobia and depression across different populations and samples including undergraduates. For instance, Cakmak Tolan and Karahan (2022) found significant relationship between nomophobia and depression associating nomophobia to greater severity of depressive symptoms among study participants. Moreover, Kubrusly et al. (2021) found a positive correlation between nomophobia and depression among medical students in Brazil supporting other studies in the United States (Elhai et al., 2020) and India (Sagar, 2019). Finally, Yang et al. (2020) found in a meta-analysis of 13 studies significant correlation between smartphone users (nomophobia) and depression. Collectively, these findings demonstrated that over reliance on phones and the desire to be constantly connected contributed to high levels of depression among individuals experiencing nomophobia.

Furthermore, some studies on the correlation between anxiety and depression among different populations and samples. For example, Asif et al. (2020) found significant prevalence of 64.3% for anxiety and 60.8% for depression among their study participants. Besides, gender differences were found in the prevalence and correlation of anxiety and depression among their study samples. In another study, Al-Qaisy (2011) found female participants to score higher on anxiety scale compared to their male counterparts who scored higher in depression. Concluding, Ratnani et al. (2017) identified "gender-specific vulnerability of females to social anxiety disorder".

Studies investigating nomophobia and its associated psychopathologies of anxiety and depression are scarce in Nigeria especially among undergraduates leaving gaps in knowledge to be filled. Therefore, the purpose of this study was to explore the prevalence and correlates of nomophobia, anxiety and depression among undergraduates of the University of Ibadan, Nigeria. The study sought to answer the question: What are the prevalence and correlates of nomophobia, anxiety and depression among undergraduates of the University of Ibadan, Nigeria?

The findings of this study would create awareness on the part of the parents, guardians and the university authority on the prevalence of nomophobia, anxiety, and depression among their wards/children and students and implement policies and programmes to reduce its adverse effects on them. Moreover, mental health practitioners could use the study findings to develop evidence-based strategies and interventions to effectively manage fear, anxiety and depression among undergraduate populations.

LITERATURE REVIEW

Researches had established correlation among nomophobia, anxiety and depression. For example, Sureka et al. (2021) found 59% of their participants to score high in anxiety and depression. This was also associated with high scores in nomophobia. Furthermore, Elhai et al. (2020) reported anxiety and depression as correlates of nomophobia. Other studies have confirmed prevalence and correlation among nomophobia, anxiety and depression among different populations and samples including undergraduates (Alsubaie et al., 2019; Ratnani et al., 2017; Sharma et al., 2019).

METHODOLOGY

Research Design

The study adopted a descriptive correlation design to explore the relationships among nomophobia, anxiety and depression among undergraduates of the University of Ibadan.

The study took place at the University of Ibadan located in the Ibadan North Local Government Area (LGA) of Oyo State, Nigeria. All the undergraduates in the 16 faculties constituted the population of the study. The study adopted convenience sampling technique to select participants for data collection. Slovin's formula was used to compute sample size which was 400 with a mark-up of 10% to give 419 potential participants.

Sample Size was Calculated Using Participants

Descriptive statistics showed the gender distribution to be 186 (46%) males and 214 (54%) female participants. The age range of the participants was between 18 and 35 years (Mage =21.86, SD = 2.44). Participant's ethnic groups indicated that 322(81%) were Yoruba, 33(8%) were Igbo, 5(1%) were Hausa, and 40(10%) were from unclassified ethnic groups. In terms of their levels, 90(23%) were 100 level students, 94(23.5%) were 200 level students, 106(27%) were 300 level students, 93(23.3%) were 400 level students, while 17(4%) were 500 level students. Furthermore, the result revealed that 2% of the participants used less than 1-hour on their phones every day, 19% spend between 1 and 3 hours on their phones every day, 39% spent between 4 and 7 hours on their phones every day, while 44% of the participants spent more than 7 hours on their phones every day.

Data Collection Data Were Collected Using Validated Scales

Nomophobia Questionnaire (NMP-Q, Yildirimn & Correia, 2015) used to assess nomophobia among participants. NMP-Q is a 20-item questionnaire rated on a 7-point Likert's format that has strongly disagree to 7 strongly agree. Sample items include: "I would be annoyed if I could not look information up on my smartphone when I wanted to do so" and "Being unable to get the news (e.g. happenings, weather etc) on my smartphone would make me nervous". Scores was from 20 to 140 with higher scores implying higher level of Nomophobia. Authors' Cronbach's alpha was 0.95 and in the current study, obtained Cronbach's alpha was 0.92.

Hospital Anxiety and Depression Scale (HADS, Zigmond & Snaith, 1983) was used to assess the levels of anxiety and depression among study participants. There are two subscales in HADS with overall 14-item. The two subscales are depression with 7 items and anxiety with 7 items. The items are rated on a 4-response format from 0 to 3. The subscales were scored separately. Sample items include: "I look forward with enjoyment to things" and "I still enjoy the things I used to enjoy". Authors obtained Cronbach's alpha 0.93 for HADS for this study, obtained Cronbach's alpha was 0.89. Authors obtained 0.93 Cronbach's alpha for HADS-A and for the current study, 0.90 for HADS-D.

Procedure

Two methods were adopted for data collection. The first was an online method where a web-based questionnaire was designed using Google Forms and hoisted on the University of Ibadan undergraduates portal. The second method was direct contact with the potential participants asking them for their consent to participate in the study. The purpose of the study was briefly explained to them. They were told participation was voluntary. Moreover, they were assured of confidentiality of their responses. The researchers distributed 419 questionnaires for the duration of 25 days. During screening and coding, 19 questionnaires had more than 15% missing data and were removed leaving 400 questionnaires used for the final analysis.

Data Analysis

Data collected were analyzed using IBM SPSS version 23. Both descriptive and inferential statistics were computed. Research questions 1, 2 and 3 were assessed using frequency and percentages while hypotheses 1, 2 and 3 were tested using zero-order correlation statistics. Hypotheses tested were accepted at $p < .001$ level of significance.

RESULTS

The study first presents the result of the research questions:

- **RQ1:** What is the prevalence level of nomophobia among University of Ibadan undergraduates? This was analyzed with frequency and percentage and the results are shown in Table 1.

Table 1. Prevalence of Nomophobia Among Study Participants

Nomophobia	Male	Female	Total
Mild nomophobia	24(6%)	32 (8%)	56 (14%)
Moderate nomophobia	104 (26%)	104 (26%)	208 (52%)
Severe nomophobia	58 (14%)	78 (20%)	1 36(34%)
Total	186	214	400

Table 1 shows the percentage prevalence of nomophobia among undergraduates of the University of Ibadan. The result revealed that all the participants (100%) reported being nomophobic ranging from mild 56 (14%), moderate 208 (52%) to severe 136(34%). Overall, female participants 214 (53%) reported higher levels of nomophobia compared to their male counterparts 186 (47%).

- **RQ2:** What is the prevalence level of anxiety among University of Ibadan undergraduates? This was analyzed with frequency and percentage and the results are depicted in Table 2

Table 2: Prevalence of Anxiety Among Study Participants

Anxiety	Male	Female	Total
Normal	96(24%)	90(23%)	186(47%)
Borderline abnormal	40(10%)	73(18%)	113(28%)
Abnormal	50(12%)	51(13%)	101(25%)
Total	186	214	400

Table 2 shows the prevalence of anxiety among undergraduates of the University of Ibadan. The result revealed that 214 (54%) of the participants reported being anxious while 186 (46%) did not have anxiety. Further results indicated that more females 124 (31%) than their male counterparts 90 (22%) reported having anxiety among study participants.

- **RQ3:** What is the prevalence level of depression among University of Ibadan undergraduates? This was analyzed with frequency and percentage and the results are presented in Table 3.

Table 3. Prevalence of Depression Among Study Participants

Depression	Male	Female	Total
Normal	131(33%)	151(38%)	283(71%)
Borderline abnormal	42(11%)	49(12%)	90(22%)
Abnormal	13(3%)	14(4%)	27(7%)
Total	186	214	400

Table 3 shows the prevalence of depression among undergraduates of the University of Ibadan. The result indicated that only 117 (29%) of the participants reported being depressed compared to 283 (71%) of the participants who were not depressed. However, there were no significant gender differences in the levels of depression between the male 55(14%) and female 63 (14%) participants.

Testing the Hypotheses

- H1 : Nomophobia would correlate with anxiety among undergraduates of the University of Ibadan.
- H2 : Nomophobia would correlate with depression among undergraduates of the University of Ibadan.
- H3 : Anxiety would correlate with depression among undergraduates of the University of Ibadan.

The hypotheses were tested using zero-order correlation. These results are shown in Table 4.

Table 4. Zero-Order Correlation Statistics of Nomophobia, Anxiety and Depression

Variables	N	M	SD	1	2	3
1 Nomophobia	400	87.460	25.200	-		
2. Anxiety	400	7.900	4.038	.16*	-	
3. Depression	400	5.642	3.217	.04	.49*	-

*.Correlation is significant at the 0.001 level

Table 4 presents zero-order correlation results of the study variables. The result revealed that nomophobia correlated with anxiety among study participants ($r = .16, p = .001$). Moreover, anxiety significantly correlated with depression ($r = .49, p = .001$). However, the result indicated that nomophobia did not correlate with depression ($r = .04, > .05$).

DISCUSSION

The study explores prevalence and correlates of nomophobia, anxiety and depression among undergraduates of the University of Ibadan, Nigeria. The study answered three research questions and tested three hypotheses. The result revealed that all the study participants (100%) exhibited different levels of nomophobia. Specifically, more female than male participants suffered from nomophobia. The result supported previous findings by Batool and Zahid (2019) of a high prevalence of nomophobia among university students. In addition, the finding supported previous studies that females were more addicted to phones than their male counterparts (Arpaci, 2022)). However, the finding contradicted other findings that male counterparts were more into the use of phones than their female counterparts (Gunes & Ozdemir, 2021). Cultural relativity would not be ruled out on these findings. A very high percentage of Nigerian male undergraduates used their smartphones for several activities including fraud, cyberbullying, gambling, sexual trafficking businesses such that being disconnected from their phones look as if they would 'die' leading to high rates of nomophobia. Besides, the result corroborated Al-Qaisy (2011) finding that female participants experienced higher level of anxiety while male reported higher level of depression. Moreover, Ratnani et al. (2017) "gender-specific vulnerability of females to social anxiety disorder" was supported.

The research question that explores the prevalence of anxiety among undergraduates of the University of Ibadan found higher levels of anxiety among study participants. This means that anxiety was prevalent among study participants. This supported Kubrusly et al.'s (2021) study who found their participants to experience high levels of anxiety.

The research question on the prevalence of depression found 29.3% of the study participants reported being depressed compared to 70.8% of their counterparts who reported low levels of depression. This implies that a high proportion of the study participants were not depressed. Individuals can be nomophobic and anxious without being depressed. This finding corroborated Kubrusly et al. (2021) result who found low prevalence of depression among their university study participants. In sum, this study found a higher prevalence of nomophobia and anxiety and moderate level of depression among undergraduates of the University of Ibadan.

Furthermore, the study finding supported the hypothesis that nomophobia and anxiety would be positively correlated. This means that an increase in nomophobia would lead to an increase in anxiety among study participants. This finding supported previous results by Sharma et al. (2019) and Batool and Zahid (2019) that significant correlation existed between nomophobia and anxiety among youths and that higher levels of nomophobia correlated with anxiety. Specifically, Batool and Zahid (2019) confirmed that anxiety levels increased with duration of smartphone separation.

However, the hypothesis that nomophobia would correlate with depression among study participants was not confirmed. This means there was no correlation between nomophobia and depression among study participants. This finding contradicted the result by Kubrusly et al. (2021) that nomophobia and depressive symptoms correlated. This means that nomophobia did not correlate with depressive symptoms. One possible explanation for this difference is that of the type of population of study and the culture of the participants.

Finally, the hypothesis that anxiety would correlate with depression among undergraduates of the University of Ibadan was accepted. This indicates that undergraduates with higher levels of anxiety would experience increased levels of depression. This finding lent credence to Sharma et al. (2019) who found a higher level of correlation between anxiety and depression among their study participants.

CONCLUSIONS AND RECOMMENDATIONS

The study examines prevalence and correlate among nomophobia, anxiety and depression among undergraduates of the University of Ibadan. The results confirmed the prevalence of nomophobia, anxiety and depression among study participants. In addition, the results indicate a significant correlation between nomophobia and anxiety, anxiety and depression, while there was no correlation between nomophobia and depression.

Recommendations of the Study

The recommends the following based on the finding of this study:, the following recommendations are proffered. Since the study revealed correlation among nomophobia, anxiety and depression, it is recommended that the university authority should develop educational programs to sensitive the effects of nomophobia and its potential effects on anxiety and depression levels among undergraduates. In addition, there is a need for early detection of the symptoms of nomophobia, anxiety and depression using psychological assessment technique and provide necessary intervention as soon as possible. Furthermore, the university management should engage mental health professional routine screening of their students on nomophobia issue as reported.

Some limitations of this study need to be highlighted and addressed in further study. To begin with, the study collected data using self-reported questionnaires from both online and physical contacts which introduced self-response bias. Further study would benefit by using group discussion, documentary evidence from the University Clinic to triangulate data from self-reported questionnaires. The use of longitudinal studies to assess the stability of the results obtained in this study would be necessary. Besides, only one university in Oyo State was selected for this study with a sample size of 400 participants which affects the generalization of the study findings. Further study would benefit by increasing the number of universities both public and private and sample size to allow for the generalization of study findings. Finally, nomophobia, anxiety and depression are closely related constructs which would have influenced the results. Further study should examine learned helplessness, peer pressure and social support on their relationships especially among undergraduates across different institutions in Nigeria.

FURTHER STUDY

This study still has limitations so further research is needed on the topic of Prevalence and Correlates of Nomophobia, Anxiety and Depression Among University Undergraduates to perfect this study and increase insight for readers and writers.

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