A Study on the Relationship between Nomophobia and Quality of Sleep among Nursing Students in a Selected Nursing Institution at Mangaluru

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Abstract

Introduction   Nursing students with long-term usage of mobile phones may end up with more attachment or addiction to the gadget. Addiction to mobile phones is called nomophobia. It affects the entire life of students both physically and mentally. It may also disturb the sleep pattern. Irregular sleep patterns impact nursing students' practical and academic proficiency. Many psychological issues, including low self-esteem and an extroverted personality, are involved with excessive phone use. This problem (nomophobia) is currently expanding globally. Anxiety, social phobia, panic disorder, and other mental conditions may possibly make nomophobia symptoms worse.

Materials and Methods   A descriptive correlational research design was used to assess the correlation between nomophobia and quality of sleep, and a purposive sampling method was used to collect data from 163 nursing students from the selected institution. Baseline proforma, Nomophobia Questionnaire (NMP-Q) Likert scale, and Pittsburgh Sleep Quality Index were used to collect data.

Results and Conclusion   Both descriptive and inferential statistics were used to analyze the data. A statistically negligible correlation between nomophobia and quality of sleep ($r = 0.103$, $p = 0.190$) was found. There was a significant association between nomophobia and baseline variables such as hours of using a smartphone per day and the purpose of using smartphone per day, and there was a significant association between quality of sleep and selected baseline variables such as gender (0.009) ($p < 0.05$) and level of significance.

Keywords
► nomophobia
► quality of sleep
► mobile addiction
► nursing students

Introduction

In general, the term nomophobia is an individual having fear or worry of not having their mobile or being unable to use them.[1] The smartphone, which is used to contact people or conduct research is one of the most popular networked devices in the world. The usage of smartphones is becoming increasingly widespread and fundamental to daily life as manufacturers of smartphones continue to combine new capabilities.[2] Apart from this, smartphones seriously affect humans in many views of life such as to start with a new procedure of accomplish tasks, and offer new modes of sharing, collecting, and refining data into information.[3] Kurnia et al conducted a study to determine the link between nomophobia and poor sleep

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among college students. A total of 292 students from the University of Indonesia were asked to understand the scenario, with 229 female students and 63 male students. The study findings concluded that nomophobia and poor sleep have a positive significant relationship. The outcome of the data analysis of participants using the Spearman correlation technique between nomophobia and poorer sleep was r $(292) = 0.145$ and p-value $= 0.013$, indicating that nomophobia is associated with poorer sleep. Nomophobia and poor sleep had a positive and significant link, according to the correlation between these two variables.[4]

At the same time, the importance of smartphone in studies plays a major role too. Smartphones are useful for taking notes, connecting with the learning management system, reading e-books, online tests, and assignments to conduct.[5] If a smartphone is used excessively, it can alter a person's daily routine and negatively impact their sleep and health. It is well recognized that sleep enables people to physically and emotionally recover and that sleep before learning something helps the brain retain what is learnt.[6] The objectives of the study were to study the quality of sleep and nomophobia among nursing students and the association between quality of sleep and nomophobia and selected baseline variables.

Materials and Methods

The relationship between nursing students' quality of sleep and nomophobia was investigated using a quantitative research design in a selected nursing institution. A correlational descriptive design was adopted for the study. A purposive sampling technique was used to select 163 BSc students from second, third, and fourth years at a selected nursing college. The sample size was calculated based on a study conducted in Qazvin[7] with a power of 80%, a 95% confidence level, and an α error of 0.05. First-year BSc(N) students were not available during the data collection.

The inclusion criteria of the study were students in the age group of 17 to 24 years and students who were using smartphones for a minimum period of 6 months. The exclusion criteria of the study were students who are under treatment for sleep disturbances/disorders as well as students who are taking any medications with a sedative effect.

Tools Used for Data Collection

Baseline Proforma
The baseline proforma consists of eight items of baseline variables such as age, gender, family status, present residence, duration of using smartphone, hours of using smartphone per day, purpose of using smartphone, and hours of using smartphone from 8 p.m. to 6 a.m. in a weekend (Saturday and Sunday). Eight experts were consulted to determine the content validity of the baseline proforma tool and found it to be valid and reliable.

Nomophobia Questionnaire
Nomophobia Questionnaire (NMP-Q) is a standardized tool by Yildirim and Correia. Each of the 20 questions on the

NMP-Q is graded on a seven-point Likert scale. At its lowest point (20×1), the NMP-Q total score is 20, and at its highest point (7×20), it is 140. The following scoring system is used to interpret the results: 0 to 20 for the absence of nomophobia, 21 to 59 for the mild level, 60 to 99 for the moderate level, and 100 to 140 for the severe level.[8] The reliability of NMP-Q is $r = 0.93$.

Pittsburgh Sleep Quality Index
Buysse et al developed the standardized tool, the Pittsburgh Sleep Quality Index (PSQI). Seven component scores, ranging from 0 (no difficulty) to 3 (severe difficulty), are obtained while assessing the PSQI. The global score, which ranges from 0 to 21, is calculated by adding the component scores. Poorer sleep quality is indicated by higher scores. The following is how the global scoring is interpreted: 0 for no sleep difficulty, 1 to 7 for mild sleep difficulty, 8 to 14 for moderate sleep difficulty, and 15 to 21 for severe sleep difficulty.[9] The reliability of this tool is 7.6.

Pilot Study
A pilot study was conducted on April 24, 2023. Using the purposive sampling technique, ~16 subjects were selected considering 10% of the total sample size. The tools were administered in the form of Google Forms. The participants had taken 10 to 20 minutes to complete the responses. The study was found to be feasible based on the pilot study.

Data Collection Methods and Statistical Analysis
The data collection was scheduled from May 29, 2023, to June 24, 2023. The selected participants were given an introduction to the research and an explanation of the study goals. The investigator collected the data using baseline proforma, NMP-Q, and PSQI by using Google Forms.

SPSS Statistics version 16 was used to analyze the data. Both inferential (chi-square and Karl Pearson) and descriptive (frequency, percentage, mean, and standard deviation [SD]) statistics were used in the data analysis.

Results

Among 163 participants, majority of the subjects, that is, 55.2% belonged to the age group of 21 to 23 years, most of the subjects (87.1%) were female. With regard to family status, 92.6% of the participants belong to nuclear family. About present residence, 71.8% were staying in hostel. Regarding duration of using smartphones, 50.9% subjects were using smartphone for a period of 1 to 4 years; 46.6% were using the mobile phones for more than 4 years. Majority of the participants (81.0%) were using smartphones ~2 to 6 hours; 86.5% of participants were using smartphone for education, entertainment, and communication such as chat and call.

The mean and SD of nomophobia score are 71.96 ± 19.4 with a mean percentage of 62.03. The mean $\pm$ SD of sleep quality score is 3.56 ± 2.41 with the mean percentage of 32.36.

There was a statistically negligible correlation between nomophobia and quality of sleep ($r = 0.103$, $p = 0.190$).

Hence, the research hypothesis was rejected, and the null hypothesis was accepted.

There was a significant association between nomophobia and baseline variables such as hours of using smartphone per day (0.008) and purpose of using smartphone per day (0.003) as the p-value <0.05 level of significance. However, there was no significant association with other baseline variables such as age, gender, present residence, duration of using smartphone, and hours of mobile usage after 8 p.m. to 6 a.m. on a weekend (Saturday and Sunday) for 0.05 level of significance. Therefore, the null hypothesis was accepted, and the research hypothesis was rejected.

There was a significant association between quality of sleep and selected baseline variables such as gender (0.009) as the p-value <0.05 level of significance. However, there was no significant association with other baseline variables such as age, family status, present residence, duration of using smartphone, hours of using smartphone per day, purpose of using smartphone per day, and hours of mobile usage after 8 p.m. to 6 a.m. in a weekend (Saturday and Sunday) for 0.05 level of significance. Hence, the research hypothesis was rejected, and the null hypothesis was accepted.

Discussion

In this current study, the majority of the students (55.2%) were in the age group between 21 and 23 years. About 87.1% were female, 92.6% of them belonged to nuclear family, and 71.8% were staying in the hostel. Duration of using smartphone was 50.95% in the period of 1 to 4 years; 81.0% of subjects were using smartphone 2 to 6 hours per day. The purpose of using smartphone for education, entertainment, and communication such as chat, call (above all) per day was 86.5%. Regarding weekend smartphone use, 81.0% use it for 2 to 6 hours.

A study conducted in West Jakarta, Indonesia, revealed that seven (8.4%) of subjects were female, and the majority of the participants were between 21 and 23 years old.[10]

In a study conducted in North India on smartphone addiction and sleep quality, 36.86% of Indian medical students reported using their phones for 3 to 5 years. Students use their smartphones for an average of 4.62 ± 2.03 hours every day. Out of 124 participants, 55.60% reported they used their smartphones for 3 to 5 hours every day. The findings supported the present study.

The present study shows that 77.3% of the subjects had moderate level of nomophobia, 16.6% had mild level, 3.7% had severe level, and 2.5% had no nomophobia. A cross-sectional survey among college students, Punjab, India found that 99.7% of subjects had nomophobia. Of these, 32.7% had severe level, 59.9% had moderate level, and 7.1% had mild level of nomophobia.[11]

The present study revealed that there was a statistically negligible correlation between nomophobia and sleep difficulty ($r = 0.103$, $p = 0.190$). University students' academic performance was investigated in relation to smartphone addiction and sleep quality. Research indicated a positive correlation ($r = 0.49$, $p < 0.05$) between smartphone addiction and sleep quality. According to the data, respondents' sleep quality decreased and their global PSQI increased as smartphone addiction increased.[6]

There was a significant association between nomophobia and baseline variables such as hours of using smartphone per day (0.008) and purpose of using smartphone per day (0.003). In a study among 150 medical students, 67 (44.7%) were addicted to smartphone usage. Despite the preponderance of male students, that is, 31 (50%), being addicted, there was no statistically significant gender difference in smartphone addiction ($p = 0.270$). The PSQI revealed poor sleep quality in 77 (51.3%) participants. Smartphone addiction was found to be statistically significantly associated with poor sleep quality (odds ratio: 2.34 with $p < 0.046$).[7]

Limitations

The study is limited to the nursing students studying in a selected nursing institution at Mangaluru. So, the results cannot be generalized to other populations.

Conclusion

There was a statistically negligible correlation between Nomophobia and Quality of Sleep. It suggests that Nomophobia Doesn't really affect the response of the subject in terms of sleep difficulty. The quality of sleep is likely to be negatively impacted by smartphone addiction, particularly late-night smartphone use. Complicating matters is the possibility of increased anxiety, depression, stress, and other mental health issues.

Ethical Approval

The Institutional Review Committee (IRC no. IRC/FMCON/2022MS-01) and the Institutional Ethics Committee (FMIEC/CCM/278/2022) granted the clearances. The principal of the nursing college granted permission. Participants used a Google Form to provide their informed consent, and confidentiality was ensured.

Conflict of Interest
None declared.

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