



“Prevalence Of Smartphone Addiction And Its Relation With Sleep Of Nursing Students Of A Selected Nursing Institution In Kolkata, West Bengal.”

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Abstract This study was conducted to identify the prevalence rate of smart phone addiction, to assess the sleep status and to find out the relationship between smart phone addiction and insomnia among nursing students. The study was conducted in a selected nursing Institution of Kolkata with sample size 110. Non probability consecutive sampling technique was used. The tools used were personal information, Smart phone addiction scale- SV, and Bergen insomnia scale (BIS) for data collection. The findings showed 30.90% participants addicted to smart phone; 90% participants were found to spend 0-5 hours daily on screens. 55.46% students admitted to using their smartphone for at least 30 minutes after the lights were turned off, and 56.63% kept their smartphone near their pillow while sleeping. The insomnia among nursing students revealed 60.91%. Smartphone addiction had significant positive correlation with insomnia ($r=0.32$). Awareness and precaution can enhance academic outcomes and student's health and balance in their life.

Index terms Smart phone addiction, sleep

Introduction:

Smartphones bring many benefits when used for the basic intended purposes, but excessive use of smartphones might turn problematic and consequently, impairs well-being, negatively impacts academic performance, and leads to various psychological and physical complications among adolescents. ¹

The sciences of Smartphone addiction are constantly checking the phone for no reason, feeling anxious, or restless without the phone, waking up in the middle of the night to check the mobile and communication update, delay in academic performance as a result of prolonged phone activities and distracted with smartphone applications.

Heavy smartphone use can often be symptomatic of other underlying problems, such as stress, anxiety, depression, or loneliness. At the same time, it can also exacerbate these problems. ²

Around the world, smartphones were used by 1.85 billion people in 2014 which is expected to be 2.32 billion in 2017 and 2.87 billion in 2020 (Cha and Seo, 2018). Such too much dependency makes us “Mobile addictive”. Mobile phones make our lives easier, but on the other hand, it ties us. Mobile addiction not only has physical effects but also psychological and academics effect at the same time. Sleep deficit, anxiety, stress,

and depression which are all associated with internet abuse, have been related to mobile phone usage too (De-Sola Gutiérrez et al., 2016).³

Excessive use of smartphone paired with negative attitude and feeling of anxiety and dependency on gadgets may increase the risk of anxiety and depression (Rosen et al., 2013, Thomée et al., 2011).⁴

A study was conducted by **Patel VA and et al** to assess Smartphone Addiction among Undergraduate Students of Sumandeep Vidyapeeth, Vadodara at the selected departments like nursing department, pharmacy department, physiotherapy department, dental department and MBBS department. The sample size is 200 undergraduate students, who fulfilled the inclusion criteria. Non probability, quota sampling technique was used. The research tool was developed in English. Modified Smartphone addiction scale (Self-structured checklist) was used for the assessment of smartphone addiction among Undergraduate Students. The finding showed that level of smart phone addiction among undergraduate students was 1.0% strongly addicted, 31.5% moderately addicted, and 61.0% less addicted, 6.5% had No addiction. The association between smart phone addictions and selected socio demographic variables was done by Chi Square formula. There was no significant association between smart phone addiction score and selected demographic variables with 0.05 level of significant except age in years.⁵

Long-term use of smartphones can cause physical, mental and behavioral problems such as eye problems, unhealthy eating habits, decrease in academic performance, decrease in attention and concentration, communication and adaptation problems, development of addictive behavior, low self-esteem and suicidal tendencies (Nayak, 2018, Wacks and Weinstein, 2021). In addition, smartphone overuse has been associated with sleep problems such as reduced sleep quality, daytime fatigue, delayed falling asleep and shorter sleep time (Ghosh et al., 2021, Rathakrishnan et al., 2021, Sohn et al., 2021).⁶

However, many people fail to realize that addiction to smartphone usage is a serious issue that can have a negative effect on the person's thoughts, behavior, tendencies, feelings, and sense of well-being. In particular, it can be a risk factor for depression, loneliness, anxiety and sleep disturbances.

Need:

Most of the global population, especially college and university students uses a Smartphone. Due to its wide range of applications, while beneficial in numerous ways, Smartphone has disadvantages such as a reduction in academic performance, psychological addiction.

Recent research shows that smartphone addiction has widespread adverse effects and females are more susceptible for addiction. Unrestricted late-night smartphone use has turned out to a major lifestyle problem these days, and can lead to stress, depression, anxiety.⁷

Smartphone overuse has been associated with sleep problems such as reduced sleep quality, daytime fatigue, delayed falling asleep and shorter sleep time (Ghosh et al., 2021, Rathakrishnan et al., 2021, Sohn et al., 2021).⁶

However, many people fail to realize that addiction to smartphone usage is a serious issue that can have a negative effect on the person's thoughts, behavior, tendencies, feelings, and sense of well-being. In particular, it can be a risk factor for depression, loneliness, anxiety and sleep disturbances.

Nursing is a profession that directly serves people and affects their health. Inappropriate and excessive use of the smartphone can lead to interruptions in the performance of basic nursing duties or a lack of patient care.

As future health professionals who will serve individuals and society, it is important for nursing students to acquire healthy habits in smartphone use and sleep (Osorio-Molina et al., 2021, Ramjan et al., 2021).

To create awareness about smart phone addiction among nursing students & to gather sufficient data in this area the researcher conducted the present study

Research problem statement:

“Prevalence of smartphone addiction and its relation with sleep of nursing students of a selected nursing institution in Kolkata, West Bengal.”

Objectives:

- To identify the prevalence rate of smart phone addiction among nursing students of a selected nursing institution
- To assess the sleep status of nursing students of a selected nursing institution
- To find out the relationship between smart phone addiction and insomnia among nursing students.

Research Variables: Smart phone addiction & sleep

Demographic variables: Age, Present residence, having any sibling, Monthly income of family, acquired % of marks, total duration of screen time per day

Hypothesis:

H₁: There is a significant relationship between smart phone addiction and insomnia among nursing students at 0.05 level of significance

Methodology:

Research approach: Non experimental survey research

Research design: Keeping the objectives in mind a descriptive survey approach is adopted for the study.

Setting: A selected Nursing Institution, Kolkata

Population: B. Sc. Nursing students of a nursing institution of Kolkata, West Bengal.

Sample: B. Sc. Nursing students of 4th and 6th semester of a selected Nursing Institution, Kolkata

Sample size: 110

Sampling technique: Non probability consecutive sampling technique

Sampling criteria:

Inclusion Criteria:

- Students who were available during the data collection period
- Those who were willing to participate in the study
- Students using smart phone and internet facility

Exclusion Criteria:

- Any diagnosed sleep disorder

Description of the tools

Tool 1: Personal information: It was constructed to collect data regarding the age, standard, present residence, having any sibling, family income, last academic result, no of subjects passed, total duration of screen time of smart phone per day

Tool 2: Smart phone addiction scale- Short Version: This standardised tool was chosen by the investigator to assess the prevalence of smart phone addiction after through literature review. This Smart phone addiction scale- Short Version was developed by Min Kown. It is a 6-point Likert scale. In this short version scale, it has total 10 items.

Tool 3: Assessment of sleep

Part A: It was consisted of two items to collect sleep disturbance related data

Part B: Bergen insomnia Scale. This standardised tool was selected by the investigator for the present study to assess the insomnia after reviewing many literatures. It has total 6 items to assess the sleep.

Data collection:

A written permission was obtained from head of the Institution before conducting the study. Data were collected through google form after introduction of the investigator and Informed written consent was obtained at the starting of data collection. Total 110 students responded during the data collection period.

Results: The data were organized & presented under the following sections:

Section 1:

Table 1: Frequency and percentage distribution of participants about demographic characteristics:

N= 110			
Variables	Categories	N	%
Age (in years)	19-23	17	98.32
	24-28	2	1.68
Present Residence	Home	32	26.89
	Hostel	43	36.13
	Relative's House	6	5.04

	Rent House	38	31.93
Having Sibling	No	36	30.25
	Yes	83	69.75
Monthly Family Income (in Rs.)	≥ 20,482	65	54.62
	10,241- 20,481	31	26.05
	7681- 10,240	8	6.72
	5120- 7680	5	4.20
	3072- 5119	7	5.88
	1034- 3071	1	0.84
	≤ 1033	2	1.68
Acquired percentage of Marks	50%-59%	26	21.85
	60%-69%	80	67.23
	70%-79%	11	9.24
	80%-89%	2	1.68

The above table presented the demographic characteristics and family income of 119 participants. Most participants were aged 19 to 23yrs (98.32%) and lived in hostels (36.13%), 31.9% lived in rented houses. A majority had siblings (69.7%), and over half of the participants (54.6%) had a monthly family income of more than Rs.20,482/-. The above findings shows that the majority (67.23%) participants scored between 60% and 69%.

Table 2: Findings related to Smart phone use

N= 110			
Variables	Categories	Frequency	Frequency %
Use of own smartphone	Yes	109	99
	No	1	1
Total Screentime/day (in hrs.)	0-5.0	99	90
	5.01-10.0	9	8.18
	10.1-15.0	1	0.91
	15.1-20.0	1	0.91

In the above table most participants used their own mobile (99%) and 90% participants were found to spend 0–5 hours daily on screens, while fewer spent 5–10 hours, and only a small percentage exceeded 10 hours.

Section 2:

Table 3: Findings of prevalence rate of smart phone addiction among nursing students

N= 110

Smart Phone Addiction	Frequency	Frequency %
Not addicted to Smart Phone	76	69.09
Addicted to Smart Phone	34	30.90

In the above table results indicated that 69.09% of the participants (n = 76) were not addicted to smartphones, while 30.90% (n = 34) participants were addicted to smartphone.

Section 3:

N= 110

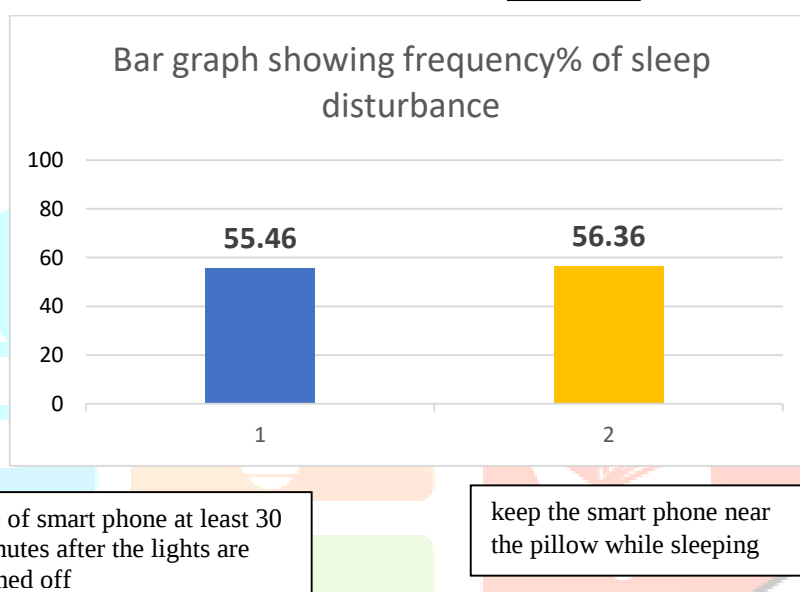


Figure 1: Bar graph showing frequency% of Sleep disturbance among participants

The bar graph showed that over half of the students (55.46%, n = 61) admitted to using their smartphone for at least 30 minutes after the lights were turned off, and 56.36% (n = 62) kept their smartphone near their pillow while sleeping.

Table 4: Findings of sleep status among nursing students

N= 110

Variables	Categories	Frequency	Frequency %
Sleep	Presence of insomnia	67	60.91
	No insomnia	43	39.09

The prevalence of insomnia among nursing students (N=110) revealed that 60.91% (n = 67) were classified as insomniac, while 39.09% (n = 43) were not. Thus, it is indicated that a majority of the nursing students in the sample reported experiencing insomnia.

Section 4:

Table: Correlation between smart phone addiction and insomnia

Variables	Frequency	r	t
Smart Phone Addiction and Insomnia	110	0.32	3.5*

* $p < 0.05$, $df = 108$

The above table showed that Smartphone addiction had significant and below average correlation with insomnia ($p < 0.05$). Therefore, the null hypothesis was rejected and research hypothesis was accepted. The correlation was also of positive directionality implying that with an increase in smartphone addiction insomnia also increases.

Discussion:

The present study found smart phone addiction 30.90% among nursing students, but in other study (by Machado J, 2023 in Udupi, Manipal) showed that 72.6% nursing students had smart phone addiction.⁸ In present study, there was a positive correlation between smartphone addiction and insomnia ($r = 0.32$), in other study by Ghosh T et al found significant association between smartphone addiction and sleep quality ($p = 0.025333$) among B.Sc. Nursing students.⁹

Implication:

The study has significant implications for nursing research, education, and practice. Here are some of the key implications:

1.Nursing Education:

The study findings suggests that there is a need for provide counselling and support services to help nursing students manage smartphone addiction and insomnia so that the students can maintain balance between their life style and smart phone use. The nurse educators should encourage the students to prioritize study and patient care and avoid distractions by using smart phone.

2.Mental health nursing:

The study findings aware that if students use smart phone excessively it affects their mental health due to lack of adequate sleep. Therefore, counselling services, stress management programs, and mindfulness-based interventions can be applied to reduce the smart phone addiction.

3.Nursing research:

Based on this study findings interventional studies can be done to reduce the smart phone addiction. Further research can find out the long-term effect of smart phone addiction.

Conclusion:

Future research can be built upon these findings and further investigation and intervention can be done. Addressing the problems proactively and awareness and precaution can enhance academic outcomes and student's health and balance in their life.

Conflict of interest: None

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