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A Descriptive Study To Assess The Correlation Between Nomophobia, Insomnia And Self-Esteem On Smartphone Addiction Among Students Of Selected Nursing College In Cuttack, Odisha

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ABSTRACT

Background*:* Smartphones have become an integral part of the human race, enhancing various aspects of life. However, disconnecting from smartphone may lead to psychological distress, a condition called nomophobia. Lack of concern on problematic smartphone use always had a detrimental influence on mental health.

Objective*:* The objective was to assess the prevalence and explore correlation between nomophobia, insomnia, self esteem and smartphone addiction among nursing students.

Method*:* A structured e-survey collected data from 350 students in a population of 510, and a sample size (N=220) with an age range of 17-25 years; 86.4% female was considered using systematic random sampling. Nomophobia Questionnaire (NMPQ), Insomnia Severity Index (ISI), Rosenberg Self Esteem Scale (RSES), and Smartphone Addiction Scale-short version (SAS-SV) following standardized questionnaire tools based on Likert scale were introduced to participants to investigate the prevalence.

Results*:* The results indicate moderate nomophobia as measured as NMPQ (75.04), sub-threshold insomnia levels based on ISI (8.04), normal self-esteem assessed using RSES (20.49), and moderately risky smartphone addiction determined by SAS-SV (29.14) among nursing students. Notably, females aged 17-22 years were more affected by these conditions. About 61% students in total were found with smartphone addiction. Furthermore, the study predicted the prevalence of high-risk categories among students: 20.9% for nomophobia, 4.1% for insomnia, and 13.6% for smartphone addiction. Additionally, 48.6% of students exhibited high self-esteem. Pearson correlation analysis revealed moderate and low positive statistically significant correlations between SAS-SV and both, NMPQ ($r = .560$, $p < .001$) and ISI ($r = .363$, $p < .001$). However, there was no significant correlation found between SAS-SV and RSES.

Conclusion*:* Most students use smart phones for learning, entertainment, and social media browsing, but overuse is a concern. The results supported the assumptions that nomophobia is caused by smartphone addiction, and it has a mediated association with insomnia. This is related to mood disturbances and unusual lifestyle. However, no significant association with self-esteem was established. To recommend, we suggested "nomophobia mediation controller framework" as a prevention model.

Keywords: *smartphone addiction; nomophobia; effects of nomophobia; nomophobia mediation controller framework; correlation between nomophobia, insomnia and self esteem; problematic smartphone use*

1. INTRODUCTION

A potential new clinical disorder is being reported due to the addiction to smartphones called ***nomophobia*** or feelings of discomfort or anxiety experienced by individuals when they are disconnected from their mobile phones or unable to utilize the conveniences these devices provide.**(1)** Studies suggest technological milestone have the potential for long-term consequences influencing ***personality disorders*** (e.g., obsessiveness) that emerge from smartphones overuse and nomophobia and may even exacerbate existing personality disorders.**(1, 2)** A descriptive study in **Turkey** determined that the rate of using smartphones is higher when students get bored and found to have moderate nomophobia with no significant relationship between nomophobia, obesity and self-esteem.**(3)** An analytical cross sectional study on nomophobia on university students of **Peru** discovered it as a frequent and emerging problem, present mainly at younger ages and associated with symptoms of ***anxiety*** or ***depression*** as confirmed by ***Hopkins Symptom Checklist-25*** **(HSCL-25).(4)**

2. NEED OF THE STUDY

Advances in technology exert dynamic effects on people's lifestyle, former cause of a wide spectrum of emerging mental illness. Frequent usage reinforces habitual checking of texts and social media outlets. This pattern of excessive smartphone use has potential short-term negative consequences such as distraction in the classroom and increased levels of anxiety. In addition to phobic symptoms, excessive smartphone use has been closely associated with the non–isomeric notions of addiction, compulsiveness, and anxiety. Often, some theorists argue nomophobia as a type of *anxiety, addiction,* or *behavioural disorder* rather than a fear. Despite of such multi-dimensionality nomophobia is just noted as a ***"situational phobia".*** However, because the term nomophobia is relatively new to the field of ***Clinical Psychology*** a fewer studies have examined the relationship between nomophobia and other types of mental disorders.**(2)**

The ***Diagnostic and Statistical Manual of Mental Disorders*** **(DSM)** is considered as the gold standard manual for assessing the psychiatric diseases and currently in its fifth **(DSM-V)** released in **May 2013** and a ***latest text revision*** **(DSM-5-TR)** updated in **2022.** Even though ***nomophobia*** has not been included in the **DSM-V,** much more attention is paid to the psychopathological effects of the new media, and the interest in this topic will increase in the near future, together with the attention and caution not to hyper codify as pathological normal behaviours.**(5)**

Due to increasing smartphone penetration, ***smartphone addiction*** has become substantial worldwide social issues. The most well-known behaviour addiction, gambling disorder, has been categorized to ***"substance related and addictive disorders"*** **(DSM-5)** because of the similar symptomatology, biological dysfunction, genetic liability, and treatment approach. Another similar behaviour pattern, ***Internet gaming disorder,*** has also been listed in the research criteria of **DSM-5.** Compared with computer use, the high accessibility of smartphone has led to overwhelming smartphone penetration. The diagnostic criteria of ***smartphone addiction*** demonstrated the core symptoms ***"impaired control"*** paralleled with substance related and addictive disorders.**(6)**

However, before being able to officially classify this disorder as clinically relevant, more research needs to be conducted to determine how ***nomophobia*** relates to existing disorders.**(1)** This study seeks to be useful in the identification to disorders that are comorbid.

3. PROBLEM STATEMENT

A descriptive study to assess the correlation between nomophobia, insomnia and self-esteem on smartphone addiction among students of selected nursing college in Cuttack, Odisha

4. AIMS AND OBJECTIVES

Aim: This study aims to explore the dimensions of smartphone addiction.

Objectives:

I. To assess the prevalence of nomophobia and insomnia among students
II. To assess the prevalence of smartphone addiction
III. To assess the levels of self esteem of student nurses
IV. To explore the correlation among NMP-Q, ISI, RSES and SAS-SV scales

5. DELIMITATIONS

The investigators have considered standardized scales to interpret the characteristics of population and point prevalence of smartphone addiction. The study outlines the strength of relationship among the research variables and is limited to intrinsic factors influencing smartphone addiction, further not exploring all symptoms for generalization. This approach is limited to check the strength of possible correlations.

6. OPERATIONAL DEFINITIONS

***Nomophobia* (NMP):** The fear of being detached from smartphone and virtual connects or a situational phobia.

***Insomnia* (IS):** Term related to as a symptom appropriate to sleep disturbances and abnormal sleep pattern.

***Self esteem* (SE):** The confidence level of individual or readiness to perform an activity.

***Smartphone addiction* (SA):** The substance related addictive disorder caused due to over use of smartphone, often referred as ***problematic smartphone use* (PSU)** which is linked with behavioural disorders and unhealthy lifestyle.

7. CONCEPTUAL FRAMEWORK

The **Nomophobia Mediation Controller Framework** has been developed to suggest control measures for smartphone addiction, considering **Dorothea E. Orem's Self Care Theory (1971)** that elaborates *"the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health, and well being"*.**(7)** This commands the students should adopt **self control** on phone usage and self consciousness on mental health with high efficacy in routine.

Further the **self-care deficit theory** states that *"the act of assisting others in provision and management of self care to maintain or improve human functioning at home level of effectiveness"*.**(7)** In this context students are ***self care deficit*** in terms of smartphone addiction, compromising health which is mediated by nomophobia and insomnia, as we have discussed.

This can be resolved by nursing agent, knowing the self care demands and self care agencies. ***Self care demands*** are the factors that individual lacks and fulfillment would meet desired outcomes. Here, we want to ligate the gap of self control deficit due to the crisis mediated by nomophobia. ***Self care agencies*** are the required factors to implement self care. Self control, motivation, self actualization, and individual's interest are the agents here.

Nursing agent is required if the individual is unable to cope by itself, crisis intervention should be planned after assessment of degree of smartphone addiction. The client could cope up with adequate education and counseling session in case of PSU-I. For PSU-II and PSU-III may require alternative therapies, supportive management and counseling.

A non-RCT trail (2015) demonstrated cognitive-behavioural models stating cognitive arousal, unhelpful beliefs about sleep and maladaptive sleep behaviours act as mediators in the treatment of insomnia.**(8) Cognitive Behavioral Therapy (CBT)** can be useful to reduce insomnia, stress and anxiety, simultaneously reducing nomophobia and grip control over smartphone addiction. Further researches are recommended to extend validity and effectiveness. Expertise of councilor, self actualization, limiting environment and follow up are influential factors contributing self care development process.

Self care requisitions like good sleep and regular exercise, self actualization, proper parenting, social communication, assistance in withdrawal could prevent and suppress smartphone addiction.

The model suggests further for implications on treating smartphone addiction with a deliberate and holistic approach promoting self care for sound mental health.

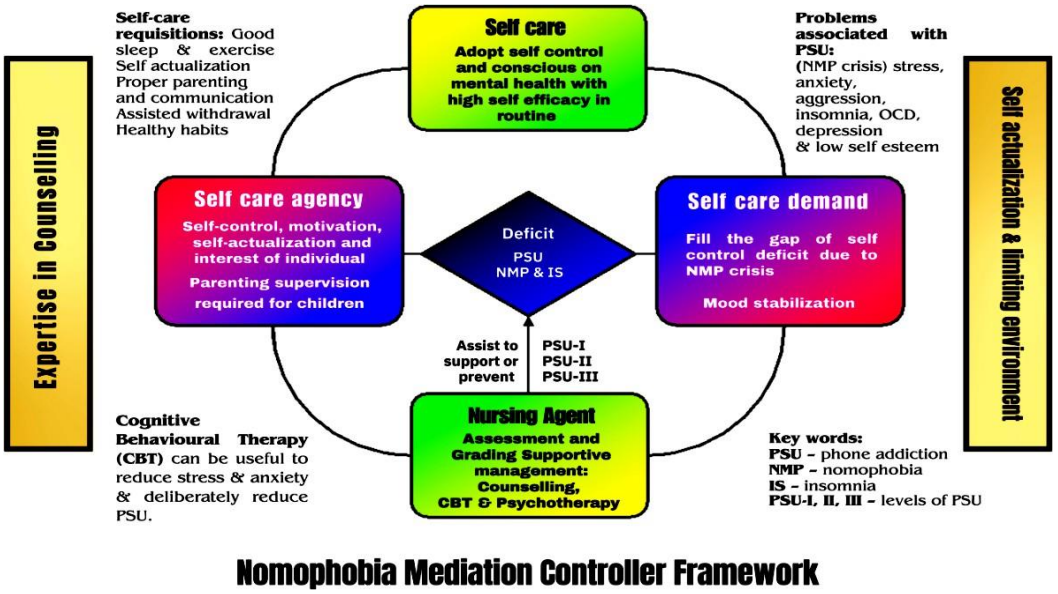


Figure 1: NMP Mediation Controller Framework

8. REVIEW OF LITERATURE

Nomophobia

A **Systematic Literature Review** suggests that ***nomophobia*** negatively affects personality, self-esteem, anxiety, stress, academic performance and other physical and mental health problems**(9)** and also associated with depression and poor quality of life among adolescents.**(10)**

Smartphone Addiction

Studies in **Korea** have illustrated children's lack of social networks may inhibit comfortable social interactions and feelings of support in the offline environment, which can heighten their desire to escape through smartphones.**(11)** Loneliness and depression mediate the relationship between attachment anxiety and smartphone addiction.**(12)** Studies in **2021** confirmed a correlation between smartphone usage, loneliness, anxiety, and nomophobia.**(13)**

Insomnia

Insomnia, a highly prevalent disorder with direct and indirect economic and professional consequences, affects daytime functioning, behaviour, and quality of life. Several studies revealed its contour impact on workforce, even associated with an increased risk of accidents. Insomnia has socio-professional consequences correlated with lower medical status.**(14)**

According to a prospective study in **Norway** observed ***insomnia*** and predicted cumulative incidence of several clinical conditions including depression, anxiety, fibromyalgia, rheumatoid arthritis, whiplash, arthrosis, osteoporosis, headache, asthma and myocardial infarction.**(15)**

Self Esteem

A **cross sectional survey (2022)** revealed ***lower self-esteem*** was associated with higher ***nomophobia*** and **PSU,** and that higher self-esteem may be a protective factor in those lower in social anxiety, such that they are not prone to excessive smartphone use.**(16)**

9. METHODOLOGY

Research Design: Multivariate Descriptive Research Design

Research Setting: School of Nursing, DRIEMS University, Cuttack, Odisha, India

Target Population: Under-Graduate Nursing Students (BSN & GNM)

Sampling Method: Systematic Random Sampling

Inclusion and Exclusion Criteria:

The study includes Under Graduate students of nursing consisting **4:1, BSN** to **GNM** ratio, **male** to **female** ratio is **1:6** and age group between **(17 – 25) years** of **School of Nursing, DRIEMS University, Cuttack, Odisha.** The total population was approx. 510, out of which 350 students participated in the survey and sample of **220** at **95% level of confidence** has been systematically random sampled. Students of ANM, 3rd year GNM and 4th year B.Sc. (N) were excluded following bias and ethical criteria.

Sample Size: 220

Tool Description and Validation:

An online questionnaire form consisted socio-demographics, Nomophobia Lifestyle Index (NLI), Nomophobia Questionnaire (NMPQ), Insomnia Severity Index (ISI), Rosenberg Self Esteem Scale (RSES) and Smartphone Addiction Scale – short version (SAS-SV) following standardized tools based on Likert scale were introduced to participants.

Kwon et al. (2013) created the **Smartphone Addiction Scale Short Version (SAS-SV)** to assess adolescent smartphone addiction having 10-items reliable with internal validity, (α=0.91) has been used to scale prevalence of smartphone addiction among students.**(2)**

A 20-item **nomophobia questionnaire (NMP-Q)** with four identifiable dimensions of nomophobia: not being able to communicate, losing connectedness, not being able to access information and giving up convenience with total score 140, high reliability (α=0.92) has been used to assess nomophobia.**(17)**

A 5-point Likert scale with 7-items, **insomnia severity index (ISI)** with Cronbach's alpha (α=0.90) with total score 28 has been used to determine the prevalence and levels of insomnia.

A 10-item **Rosenberg Self Esteem Scale (RSES)** that measures self-worth by measuring both positive and negative feelings about the self on a 4-point Likert scale with Cronbach coff (α=0.84) has been used to measure the levels of self esteem among students.**(18)**

Method and Procedure of Data Collection:

A **cross sectional** online **survey** using **Google forms** collected data from under graduate nursing students. Instructions were provided in classroom, prior to link was then shared via **Whatsapp group.** The survey collected responses from **27th Sept, 2023 – 2nd Oct, 2023** to which total **350 students** responded. The most probable sample size was estimated **N=220** using **Raosoft,** and a **systematic random sampling** was followed in **SPSS 20** to generate random table and sort required cases.

Ethical Consideration:

Prior to the research study permission has been obtained from **Dean, School of Nursing, DRIEMS University** followed by the ethics committee. A **declaimer** was provided to respondents with objectives seeking consent. The study was conducted following ethical research guidelines. The responses remained confidential with the investigators.

Plan for Data Analysis: The data were coded in **MS Excel** datasheet and were compared in contrast using **SPSS version 20** and **AMOS version 26.**

10. RESULTS

Descriptive Data Analysis Report

Demographic Index

The online survey was conducted on **27th Sept, 2023** at **School of Nursing, DRIEMS University, Cuttack, Odisha** and **350 respondents**, students of **B.Sc. (N)** participated. Further **N=220 samples** were selected through **systematic random sampling** fit for analysis. **174 B.Sc. (N)** and **46 GNM students** belonging to age group between 17 and 25 year age were sampled in which 86.4% females and 13.6% males were involved.

The Residency topology accounted for 55.5% rural and 44.5% urban having a standard family income status reported 76.4% APL and 23.6% BPL background. 86% students are native to **Odisha** whereas 14% students belong to **West Bengal,** majority Hindu. 90.5% students are unmarried and not in a relationship.

Prevalence Index

The descriptive **(Table 1)** showed there was a **moderate** level of nomophobia NMPQ (score 75.04/140) among students. The insomnia was filtered out to be at a **sub-threshold** level ISI (score 8.04/28). Students had a **normal self esteem** of RSES (score 20.49/30) but are in a level of **moderate risk** with smartphone addiction SAS-SV (score 29.14/60).

Female are more affected than male with nomophobia. Nomophobia, insomnia & PSU more common in (a & b) age group as compared to (c) age group as found from cross tab analysis.

Table1: Descriptive statistical summary of scales – Central Tendencies

	Mean Score	Mean (%)	SD	Remark
NMPQ	75.04	53.56 ± 1.11	.170	Moderate
ISI	08.04	28.73 ± 1.13	.203	Sub-threshold
RSES	20.49	68.30 ± 0.91	.135	Normal
SAS-SV	29.14	48.57 ± 1.18	.176	Moderate Risk

Severity Index (N=220)

On account of nomophobia about 20.3% cases are severe and 38.2% moderate. The severity of insomnia was found low 4.1% in total population. Most 48.6% students had a high self esteem; contrast 8.2% students are in a border of moderate to high risk of having an extremely low self esteem is a concern. It was found 13.6% severe and 38.2% moderate cases of smartphone addiction. **(Table 2)**

Table2: Prevalence and severity of cases

Variables	Moderate cases	High risk cases	Moderate index (%)	Severity index (%)
NMPQ	**84**	**46**	**38.2**	**20.9**
ISI	**24**	**9**	**10.9**	**4.1**

RSES	**16**	**2**	**7.3**	**0.9**
SAS-SV	**84**	**30**	**38.2**	**13.6**

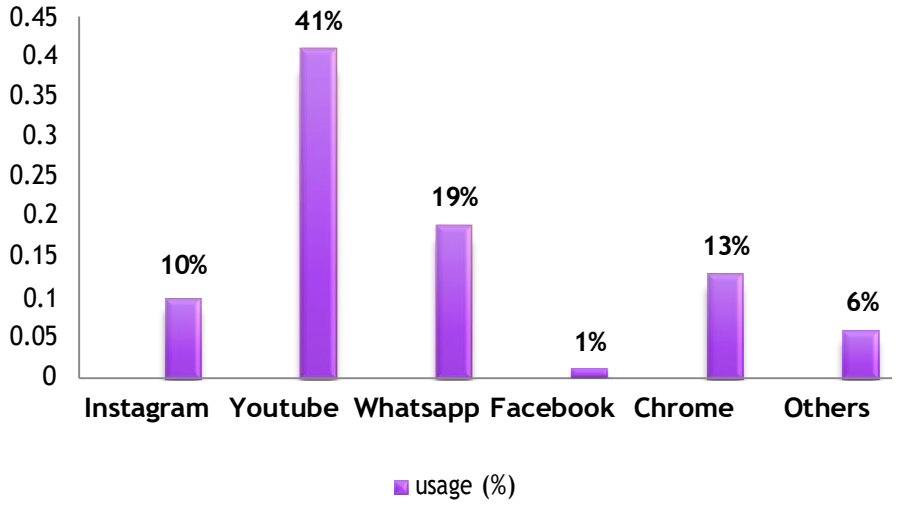
Nomophobia Lifestyle Index

This scale is a ***self inventory questionnaire*** used to deter associated problems with severe nomophobia influenced by lifestyle and daily experience. The data collected could elaborate past fortnight experience of students. 60% students account for eye related risk issues, while 10% with high severity. Impaired sleep pattern was observed in 17% in the total population. 20% severity of GI related and 30% at risk, 84% students do not exercise, 42% procrastinate, 24% skin related, 42% photophobic, 23% hearing related, 40% social disconnect, 38% anger and anxiety risks prevailed. 34% students get affected in academics.

Moreover 94% student rated digital dependency, still 99% of them agreed for blended learning as necessary for good academic understanding. Most of the students (52%) have average screen time of 3-5 hrs a day, while 6% students were severe with more than 5 hrs.

Students often use their smartphones for learning (50%), entertainment (42%) and social media (38%) as responded. There is a persistent use of YouTube (41%) that demonstrates the academic and entertainment engagement of the students. Followed by social media usage like, whatsapp (19%), instagram (10%) and facebook (1%) and internet browsing through chrome (13%) and 6% other applications are used among the students as surveyed. **(Figure 2)**

Figure2: Preference report on smart phone application usage



Inferential Data Analysis Report

The **inferential statistics** checked the relationship among the research variables and drew meaningful inferences. ***Correlation, Regression, CFA and Structured Equation Modelling (SEM)*** following analysis were performed. The **Shapiro–Wilk Test** confirmed data was normally distributed and affirmed parametric tests.

Karl-Pearson Correlation Analysis

H_0 There is no significant correlation of nomophobia, insomnia, self esteem and smartphone addiction.

H_1 There is a significant correlation of nomophobia, insomnia, self esteem and smartphone addiction.

Pearson correlation of SAS-SV with NMPQ & ISI was found to be moderate & low positive and statistically significant ($r = .560, .363$; $p < .001$) respectively. This shows that an increase in SAS-SV would lead to higher NMPQ & ISI levels in the students.

Pearson correlation of RSES with NMPQ, ISI & SAS-SV was found to have statistically not significant ($r = .038, -.059, -.127$; $p > .001$). This shows that there will be no such impact on levels of self esteem on change of other research variables.

Hence, this rejected the null hypothesis and **H_1** was ***partially supported*** as there is a significant correlation of nomophobia, insomnia and smartphone addiction, excluding an insignificant correlation with self esteem. **(Table 3)**

Table3: Report on findings of Pearson Correlation

	NMPQ	ISI	RSES	SAS-SV
NMPQ	1			
ISI	.363**	1		
RSES	.038	-.059	1	
SAS-SV	.460**	.536**	-.127	1

**Correlation is significant at the 0.01 level (2-tailed).

Regression Analysis

H_2 There is a positive impact of nomophobia, insomnia and negative impact of self esteem on smartphone addiction.

H_3 There is a positive impact of nomophobia, insomnia and no significance of self esteem on smartphone addiction.

The hypothesis tests if nomophobia, insomnia and self esteem carry any significant effect on ***problematic smartphone use*** or ***smartphone addiction.*** The dependent variable SAS-SV was regressed on predicting variable **NMPQ-ISI-RSES** to test the hypothesis H_2 and H_3. **NMPQ** and **ISI *significantly predicted* SAS-SV, F (3, 216) = 44.470, p<0.001,** which indicates that **NMPQ** and **ISI** have ***positive association*** as denoted **SAS-SV (b = 0.324, 0.360; p<0.001)** respectively. Whereas, **RSES** has ***no significant*** association as **p-value** is not <0.001, denoted **SAS-SV (b = -0.149, p>0.001).** The model is well regressed for NMPQ and ISI on SAS-SV and no statistical significance for RSES in this model. Further there are no multivariate collinearity effects as observed. Moreover, **R^2 = 0.382** depicts that the model explains **38.2%** of the variance in SAS-SV. This hence accepted the **H_3** hypothesis while rejecting the **H_2** hypothesis. **(Table 4)**

Table4: Statistical findings report on regression analysis

Hypothesis	Regression weights	Beta coff.	R^2	F	t-value	p-value	Hypothesis Supported
H3	**NMPQ, ISI, RSES→SAS-SV**	**.324**	**0.382**	**44.470**	**5.461**	**0.000**	**Yes**
		.360			**7.213**	**0.000**	**Yes**
		-.149			**-2.133**	**0.034**	**No**

*p<0.01, NMPQ: Nomophobia, ISI: Insomnia, RSES: Self esteem, SAS-SV: Problematic Smartphone Use (PSU)

11. DISCUSSION

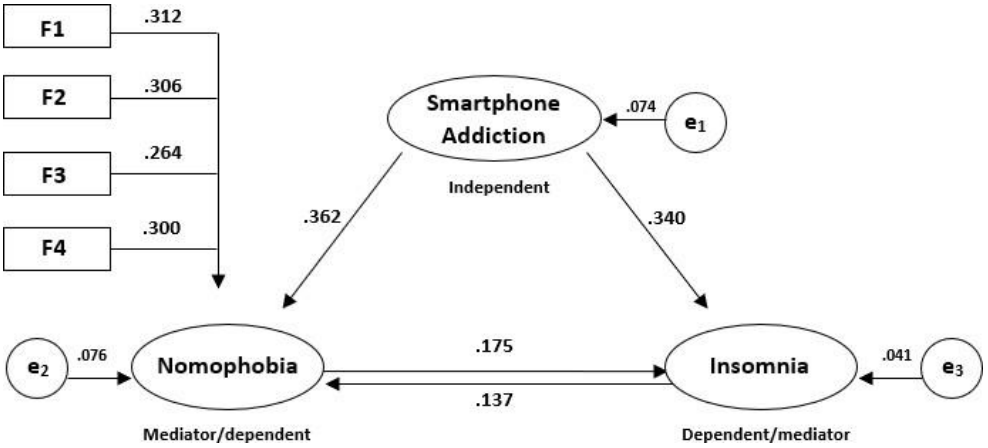
There was a significant relation established among nomophobia, insomnia and smartphone addiction. Also we found a negative association of nomophobia and insomnia with smartphone addiction. Further we need to check the association strength among the construct variables using SEM. There is a need of staging and classification of dimensions of smartphone addiction.

Nomophobia Mediation Model Using SEM

Structural equation modelling (SEM) was performed using **AMOS 26** that confirmed the path regression and factors influencing the model suggesting the interaction of scales involved while studying nomophobia, insomnia and smart phone addiction. ***Confirmatory factor analysis*** **(CFA)** and regression or ***path analysis*** **(PA)** justified the significance and fitness of the model using **SEM.**

The research variables were positively correlated and regression was followed, smart phone addiction **(SA)** as assumed as independent variable and other variables, nomophobia **(NMP)** and insomnia **(IS)** were regarded as interacting mediators, as well as dependent variables. The **NMPQ scale** has been referred for **NMP** which has ***four factors*** (dimensions) **F1:** *"not being able to communicate"*; **F2:** *"losing connectedness"*; **F3:** *"not being able to access information"*; **F4:** *"giving up conveniences"* that has been included. The SEM confirmed a good fit and reliability of the nomophobia mediation model, given below. **(Figure 3)**

Figure3: Structural Equation Modelling for Nomophobia Mediation Interaction Model



The **Nomophobia Mediation Interaction Model** suggested smartphone addiction was the cause for nomophobia and insomnia. SA is caused due to etiological factors like, overtime phone use, loneliness, and introvert personality. Ranging outcome as mental health issues related to low self esteem and confidence, isolation, impulsiveness, narcissism, distraction, OCD, addiction, stress, depression and anxiety along with nomophobia and insomnia, as manifested. Here, SA has been hence considered as an independent variable associated with phone usage and that is the term identifying core factor responsible for NMP and ISI.

NMP has four factors that concerns with anxiety, loneliness, stress and altered behaviour due to emotional changes. Studies suggest increased levels of dopamine in case of SA and reduced levels of GABA, causes serotonin and melanin surge associated with NMP and ISI.

NMP and ISI act as mediators influencing each other interactions along with SA. The correlation has been established as mild positive. NMP acts as mediator when the regression is upon IS and vis-à-vis. This concludes, NMP and ISI are caused due to SA and both have a mediation effect closely associated with mood, personality and neurological functions.

Stages of Smartphone Addiction

The smart phone addiction can be categorised into various stages in comparative to tendency developing with insomnia and nomophobia. It is considered a serious and common progressive mental illness. Smart phone addiction is colloquially known as "nomophobia", still not classified under any specific mental disorder as per DSM-V.**(6)** There are propositions of being classified under a typical substance addiction, OCD, phobia, etc.

We have derived a latent prototype for staging smartphone addiction (SA) with classification in three **stages – I, II, III** with respect to associations with nomophobia (NMP) and insomnia (IS). The **stage-I** will have absolutely *"no symptoms"* but with high screen-time exposure and habits of procrastination. The **stage-II** will have *"either nomophobia or insomnia"* and **stage-III** will have *"both nomophobia and insomnia"*. **(Table 5)** It is suspected that nomophobia induces symptoms like stress, anxiety, obsession-compulsion, aggression, insomnia and further escalates to crisis.

Table5: Classification of levels of smart phone addiction

Levels	Manifested conditions
stage I	**no symptom,** but over screen-time**
stage II	**either NMP or IS evident**
stage III	**both NMP and IS co-exist**

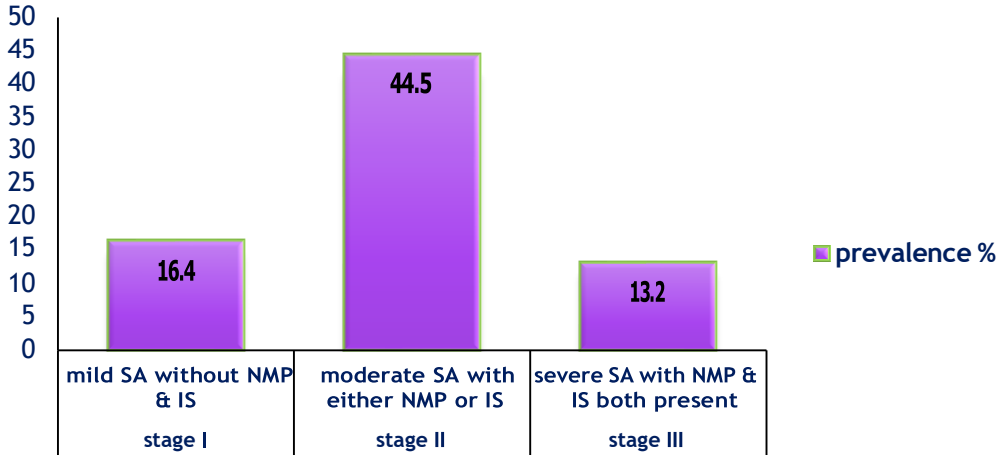
*NMP - nomophobia; IS – insomnia

**symptoms of aggression, anxiety due to altered lifestyle may exist

The above table can be used to classify the degree of prevalence of smart phone addiction among students. The classified levels of smart phone addiction prevalence are as follows, **16.4%** at **stage I** with mild SA without NMP & IS; where as

44.5% students at **stage II** with a moderate SA with symptoms of either NMP or IS; and **13.2%** were at **stage III** found with severe SA with NMP & IS both present. These comorbid cases are adjoined with many risks to health of individual. **(Figure 4)**

Figure4: Levels Classification and prevalence of smartphone addiction



This could be further tested for staging and categorization of smartphone addiction, considering nomophobia and insomnia as key factors influencing the severity index.

12. RECOMMENDATION

The researcher suggests more studies to elaborate the effectiveness of proposed **Nomophobia Mediation Controller Framework (NMCF)** and **CBT** in control of smartphone addiction.

Broader investigations required for generalizing the mediation of nomophobia and insomnia on smartphone addiction and it's staging, to be recognized under **DSM** classification, a remark on practice of clinical psychology.

13. IMPLICATION

The knowledge regarding prevalence of smartphone addiction among nursing students could help to raise awareness and promote mental health and academics outcome.

The proposed **Nomophobia Mediation Controller Framework** could be adopted by academicians, clinicians, counselors and educators to outline crisis intervention to eliminate barriers in self care to counter smartphone addiction.

14. CONCLUSION

Most students use smart phones for learning, entertainment, and social media browsing, but overuse is a concern. The results supported the assumptions that nomophobia is caused by smartphone addiction, and it has a mediated association with insomnia. This is related to mood disturbances and unusual lifestyle.

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