

Nomophobia, A Hidden Cost Of Smart Phone: Its Correlation With Stress Level In Young Medical Students At Raigarh, Chhattisgarh.

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Abstract:

Background: Nomophobia is defined as “the fear of being out of mobile phone contact” which is due to addiction of smart phone which causes fear, anxiety resulting stress out of getting lost of it. Nomophobia a significant predictor in expression of distress factors like depression, anxiety and stress. In spite of above studies, further intensive study is required in this area.

Aim and Objectives: This study aims at identifying the degree and severity of Nomophobia along with the assessment of relationship between Nomophobia and stress level in young adult medical students of Raigarh, Chhattisgarh, India.

Materials and Methods: It is a cross-sectional study conducted on approximately 120 subjects making purposive sampling between age group 18-30 years (young adult medical students) in Raigarh, Chhattisgarh, India. Subjects were regular smart phone users. A detailed history including medical, family and drug history were taken from each subject and their details of socio demography, duration of use of mobile phone daily etc are noted. Different graded Nomophobia are identified using Nomophobia questionnaire (NMP-Q), which is a validated 20-item questionnaire and rated by Likert scale. Stress level are categorized using Perceived Stress Questionnaire (PSQ). Results of the PSQ are correlated highly with the trait anxiety and with scores on Cohen's Perceived Stress Scale.

Results: This finding has shown that there is trend of Nomophobia with highest trend of moderate Nomophobia (60.16%), where as mild and severe Nomophobia are 28.8% and 11.01% respectively. Gradation of stress level based on PSQ index showing that 86.44% of study population of Nomophobia are suffering from moderate stress where as mild stress and severe stress are 7.6% and 5.9% respectively. Correlation between Nomophobia and stress using regression coefficient shows positive correlation between Nomophobia and stress level. This study implicates that moderate graded Nomophobia and moderate graded stressed subjects are maximum in the whole population whereas severe graded are lowest and mild graded are intermediate.

Conclusion: This study shows positive correlation between Nomophobia and stress implicating highest percentage of moderate Nomophobia and highest percentage of moderate stress among Nomophobic subjects.

Key Words: Nomophobia, Stress, NMP-Q, PSQ.

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I. Introduction

Smart phones are now became inevitable and integral part of life for social networking, e-mailing, playing digital games, net banking, transport ticket booking, online shopping etc. ^[1] Present day smart phone is one of such blessing of science but simultaneously it has appeared as curse of science to the new generation with manifestation of clinical and psychological condition called, ‘Nomophobia’ or no mobile phone phobia with manifestation of fear, anxiety and discomfort arising from not having mobile phone at a certain time. ^[1-7] It was first identified in 2008.^[8] It is referred to the psychological condition which arises from the fear to be detached from usage of mobile device. It has been proposed as a “phobia for a particular /Specific thing” based on definitions described in “Diagnostic and statistical manual of mental disorders-5” (DSM-5) (American Psychiatric Association). It is also considered as a non drug induced addiction. ^[3] Four main dimensions have been described for Nomophobia i.e., fear or nervousness due to (i) not able to communicate, (ii) not able to connect (iii) not having immediate access to information (iv) removal of comfort provided by mobile devices. ^[9] ^[10] Despite the large scale beneficial and ubiquitous as well as omnipresent effect of smart phone it has got some negative and deleterious effects like detachment from the real world (trying to live virtually), driving and

walking abilities, attention problems, behavioural factors and life style. [11, 9, 12] Studies have shown that it enhances anxiety, depression, anger, aggressiveness [13], stress, nervousness [14], emotional instability. [15] Addiction of smart phone causes fear, anxiety resulting stress out of getting lost of it. [7, 14, 16, 17] Cheever *et. al.* (2014) noticed that anxiety and stress among college students of America having moderate to high Nomophobia. [18] Rosales-Haumani *et. al.* (2019) showed that high level of stress, panic and anxiety in Peruvian engineering students. [19] A meta analytic review highlighted small to medium association between mobile phone use and stress including significant moderators like problematic and non problematic mobile phones. [20] Mir and Akhtar (2020) showed that significant increase of anxiety in moderately Nomophobic students with time of phone deprivation could slightly delay the anxiety. [21] Santl *et.al.*(2022) showed that Nomophobia a significant predictor in expression of distress factors like depression, anxiety and stress. [2] Again, there is controversy in correlation of Nomophobia and stress when people know for how long they will be deprived of phones and when they have control over the situation. [22] In this aspect further study is required.

This study aims at identifying the prevalence and severity of Nomophobia along with assessment of relationship between Nomophobia and stress level in young adult medical students of Raigarh, Chhattisgarh, India.

II. Material And Methods

This study was a cross-sectional study which was conducted in Department of Physiology at Late Shri Lakhiram Agrawal Memorial Govt. Medical College (LSLAMGMC), Raigarh, Chhattisgarh (CG), India after getting approval from Institutional Scientific Committee and Institutional Ethical Committee. Approximately 120 subjects making purposive sampling with subjects who were easily accessible giving equal probability for selection to each sample between age group 18-30 years (young adult medical students) in Raigarh, Chhattisgarh, India. Subjects were regular Smartphone users, were ready to give informed written consent. Subjects under medication, having any neurological, psychiatric disorder or brain damage using drugs having impact on central nervous system (CNS) were excluded from the study.

Study Protocol: -

1. A detailed history including medical, family and drug history were taken from each subject.
2. Subjects were provided a self-reported English questionnaire with details of socio demographic details, duration of use of mobile phone daily and for what purpose.

3. ASSESSMENT OF NOMOPHOBIA^[10]:-

Nomophobia questionnaire (NMP-Q), which was a validated 20-item questionnaire developed by Yildirim and Correia (2015) to identify and describe the dimensions of Nomophobia. The items were rated by 7-point Likert scale [10] from 1 (strongly disagree) to 7 (strongly Agree).

- I) 0-20 = No Nomophobia .
- II) 21-59 = Mild Nomophobia.
- III) 60-99 = Moderate Nomophobia.
- IV) 100-140 = Severe Nomophobia.

4. ASSESSMENT OF STRESS LEVEL:-

By using Perceived Stress Questionnaire (PSQ), stress level were categorized in least likely, more likely and most prone to suffer from stress related illness in all subjects. Results of the PSQ were correlated highly with the trait anxiety and with scores on Cohen's Perceived Stress Scale. [23] Participants with PSQ score <33.33% were categorized in the low stress group, 33.33–66.66% in the moderate stress group, and >66.66% in the high stress group.

Statistical Analysis:-

Data were tabulated in Microsoft Excel 2010. For studying correlation between Nomophobia and Stress level Karl Pearson Formula was applied. [24]

III. Result

Table 1: Percentage of Nomophobia N=118

Category of Nomophobia	No. of Nomophobia	Percentage (%)
Mild	34	28.8
Moderate	71	60.16
Severe	13	11.01

Figure 1:

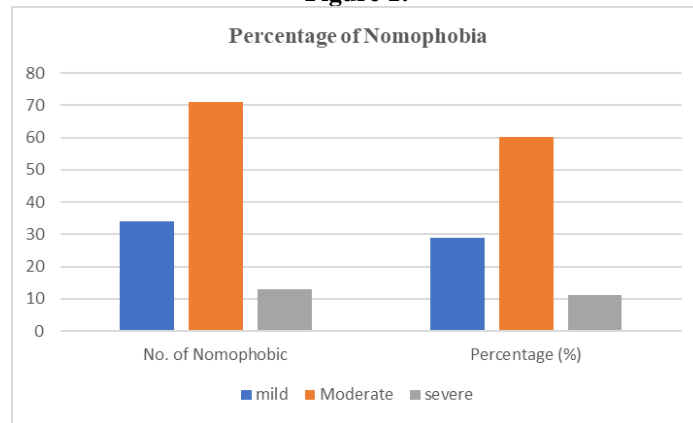
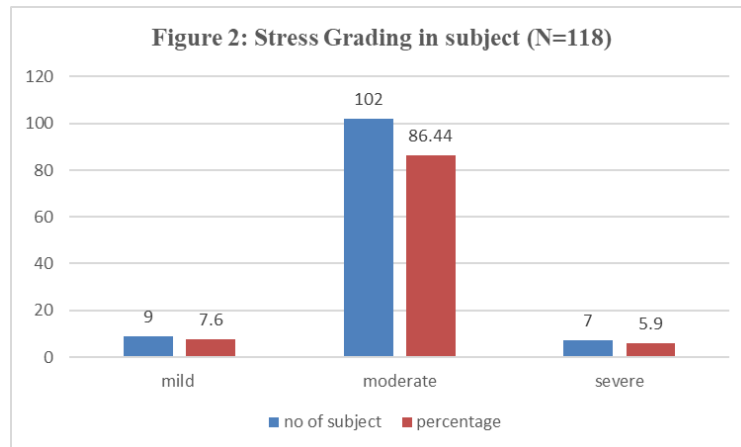


Table 2: Stress Grading in subject (N=118)

Category of stress	No. of subject	percentage
Mild	9	7.6
Moderate	102	86.44
Severe	7	5.9



Gradation of stress to mild, moderate and severe; on the basis of PSQ (Perceived stress questionnaire) and PSQ index (Raw stress score-30/90) adopted from Levenstein *et.al.*, 1993.

Table 3: Correlation between Nomophobia and Stress

	NOMOPHOBIA (SCORE)	PSQ INDEX(%)
Mean±SD	72.34±21.07	48.55±11.23
Correlation coefficient (r.N.S.)	0.119	

Figure 3:

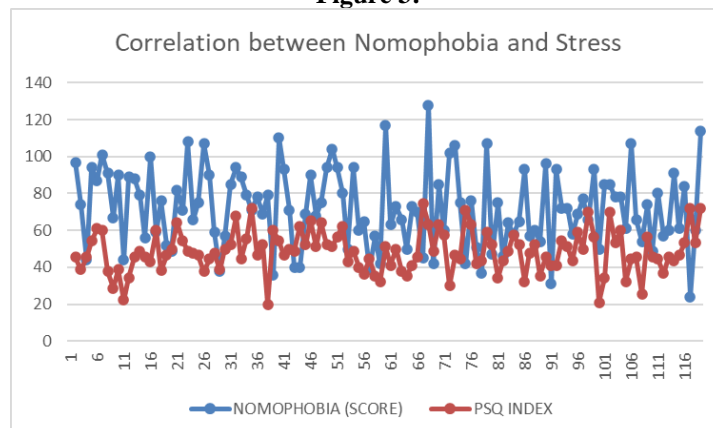


Table4: Correlation and Regression

Correlation rN.S =	0.119947744
Mean Nom. N=	72.34745763
Mean Stress S=	48.55499058
SD of Nom. =	21.0779494
SD of Stress=	12.71890981
Reg.eq y on x	y=0.072x+43.35
Reg.eq x on y	x=0.19y+62.69

Table 5: Comparison of degree of severity of Nomophobia and Stress

Grading of Nomophobia and Stress	No of different graded Nomophobia identified	No of different graded Stressed subject
Mild	34	9
Moderate	71	102
Severe	13	7

Figure 4:

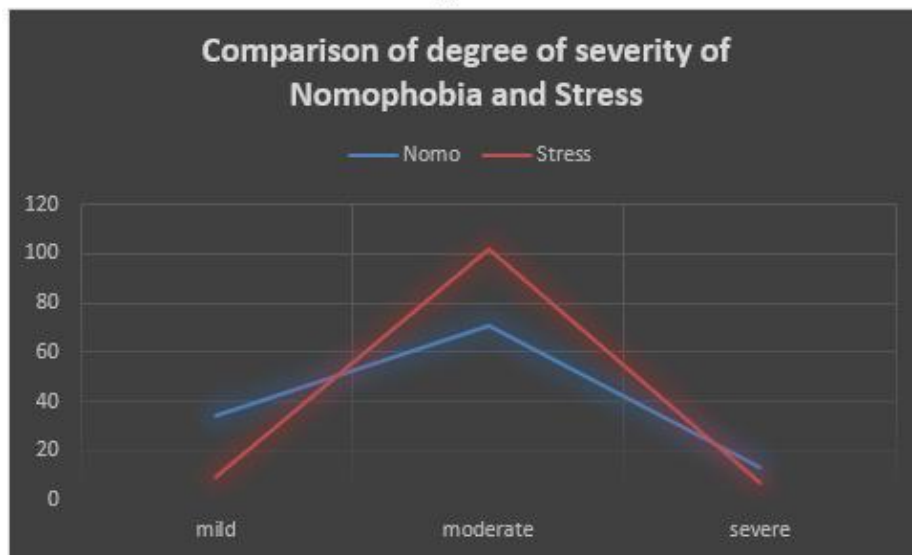


Table 6: Mean and SD of Nomophobia scores and Stress scores

S.NO.	PARAMETER	MEAN	STANDARD DEVIATION (SD)
01	Nomophobia	72.347	21.077
02	Stress	48.554	11.234

In this study effect of Nomophobia or “No Mobile Phone Phobia” on stress level different finding were obtained using PSQ index. [10, 23] This finding has shown that there is trend of Nomophobia presented in Table-1 which is indicating that there is trend of moderate Nomophobia 60.16%, mild Nomophobia 28.8% and severe Nomophobia 11.01% in this study population. Hence prevalence of moderate Nomophobia is highest (60.16%). Figure-1 is representing the same result. Table-2 is showing gradation of stress level in this study population based on PSQ index derived from solved questionnaire. [23] Result shows that 86.44% of study population of Nomophobia is suffering from moderate stress, 7.6% from mild stress and 5.9% from severe stress. Hence prevalence of moderate stress is highest (86.44%) Figure-2 represents the same result in this study. Results in Table-3 and Table-4 represent correlation between Nomophobia scores and stress level derived from PSQ index. Figure-3 corresponds to the results of Table-3. In the Table-4, correlation between Nomophobia and stress has been represented statistically to find regression coefficient. Result in Table-4 shows positive correlation between Nomophobia and stress level. While comparing degree of severity of Nomophobia with different stress level as shown in Table-5, this study implicates that out of 118 subjects, moderate graded Nomophobia and moderate graded stressed subjects are maximum in the whole population. Mild graded Nomophobia and mild graded stressed subjects are less in number than moderate graded Nomophobic and moderate graded stressed subjects. Where as severe graded Nomophobic and severe graded stressed subjects are of lowest in number among above mentioned 3 grades. The similar result has been represented graphically in Figure-4.

IV. Discussion

Prevalence of 'Nomophobia' or no mobile phone phobia with manifestation of fear, anxiety and discomfort arising from not having mobile phone at a certain time have been observed in different studies.^[1-7] This study has shown that there is prevalence of Nomophobia (Table-1 and Figure-1) with variation of degree like moderate Nomophobia 60.16%, mild Nomophobia 28.8% and severe Nomophobia 11.01% which is in conformation with other studies.^[1-7] (Table-2 is showing gradation of stress level of our study population based on PSQ index derived from solved questionnaire.^[23] From this study result revealing 86.44% of study population of Nomophobia is suffering from moderate stress, 7.6% from mild stress and 5.9% from severe stress. Hence prevalence of moderate stress is highest (86.44%). Figure-2 shows the same result. Results in Table-3 and Table-4 show the correlation between Nomophobia scores and stress level derived from PSQ index. Result in Table-4 shows positive correlation between Nomophobia and stress level. Present study is in accordance with some other studies.^[2, 11, 17, 22] Few studies also shown that there is positive correlation between Nomophobia and anxiety.^[18,21] This study again implicates degree of severity of Nomophobia with different stress level. In this study moderate graded Nomophobia and moderate graded stressed subjects are maximum in number in the total study population; whereas severe graded Nomophobia and severe graded stressed subjects are least in the total study population. Mild graded Nomophobia and mild graded stressed subjects are intermediate in number in total study population (Table-5). Present study is unique with respect to correlation of gradation of Nomophobia and stress. Observation in this study is consistent to some extent with some other studies performed without comparing different gradation of Nomophobia and stress.^[2, 11, 17, 22]

Limitations of this study were cross sectional design, small sample size and limited duration of study period. This study was performed on medical students of age between 18-30 years. The results between Nomophobia and loneliness may differ when study is done on school going students of below 18 year old, employed person of middle age group and aged people. Again, different fraternity students and people of different job and profession can show different result. In this study mental health issues such as depression, anxiety disorder and other psychopathological disorders were not considered in details, which may play role of confounding factor. Study on Nomophobia and its correlation with stress are very limited. Hence further studies with large sample size from various population is required overcoming above mentioned limitations.

V. Conclusion

From this study it can be said that with technological advancements people enjoy living in a virtual world to save time and to overcome inconvenience of real world. As a result, use of virtual device in the form of smart phone has become addiction followed by fear of losing it which leads to a chronic condition called Nomophobia. Maximum people are suffering from moderate graded Nomophobia and among the Nomophobic people maximum people are suffering with moderate graded stress. This study aims at quantifying the relationship of severity of Nomophobia with stress level. This study implicates positive correlation between Nomophobia and stress showing highest percentage of moderate Nomophobia and highest percentage of moderate stress among Nomophobic subjects. Hence it may serve as a screening test for applying protective and therapeutic interventions in cases of subjects with Nomophobia and stress. Considering the above mentioned limitations of this study further in depth study is required.

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