

Original Article

## A STUDY TO EVALUATE THE PHANTOM VIBRATION SYNDROME (PVS) AND RINGXIETY AMONG STUDENTS OF TECHNICAL INSTITUTE

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### ABSTRACT

**Objective:** The present study was aimed to find out the prevalence of mobile phone dependency (nomophobia) and its correlation with psychological complications like Phantom vibration syndrome (PVS) and Ringxiety among college students of technical institute.

**Material and method:** 120 college students of Moradabad educational trust group of Institutions, Moradabad, were randomly selected. The study was divided into three parts i.e. Sample size and selection, Data collection and data interpretation. The students were randomly selected which belongs to different age groups (18-30) and different branches like, Engineering, Pharmacy, Architecture etc. Students using Smart phone with internet were included in the study. A questionnaire was developed and was pretested on 10 students to study mobile phone dependence (nomophobic) and its psychological relevance/consequence (PVS and ringxiety) among the study subjects. The individual responses thus obtained were then compiled, processed and analyzed to arrive at the results on various issues to find out the prevalence of mobile phone dependence (nomophobic) and its psychological relevance (PVS/ringxiety).

**Results:** The individual's which had experienced false vibration hallucination (FVH) and false ringing hallucination (FRH) every day and when they are alone was considered to be suffered from PVS and Ringxiety respectively and on the basis of that the prevalence of PVS and Ringxiety was found to be 17.64% and 35.71 % respectively.

**Conclusion:** On the basis of the results of the study the prevalence of PVS and ringxiety was found to be 17.64% and 35.71 % respectively.

### 1. INTRODUCTION

In recent times there seems to have been a transformation of the cell phone from a status symbol to a necessity because of the countless perks that a mobile phone provides like personal diary, email dispatcher, calculator, video game player, camera and music player [1-2]. Indian market has emerged as the second largest market after China for mobile phone handsets [3-4]. Our study was undertaken to find out the prevalence of nomophobia

in the Indian scenario considering the tremendous increase in the number of mobile phone users in the past decade. We decided to conduct the study in our college since the younger generation is the latest consumer of the mobile phones, and the under 25 year age group in professional colleges like medical, engineering college, pharmacy college etc. use mobile phones quite frequently since most of them reside in hostels as well as day scholars.

A study from United Kingdom on 2163 people revealed that 53% of the subjects tend to be anxious when they lose their mobile phone, run out of battery or credit or have no network coverage. The study found that about 58% of men and 48% of women suffer from the phobia, and an additional 9% feel stressed when their mobile phones are off. About 55% of those surveyed cited keeping in touch with friends or family as the main reason that they got anxious when they could not use their mobile phones [5]. A study conducted by Market Analysis and Consumer Research Organization (MACRO) in Mumbai to study the various patterns and association of mobile phone usage reported that 58% of the respondents could not manage without a mobile phone even for a day. In our opinion, the pathological dependence on mobile also fulfills the criteria of so called “Mobile or Cell Dependence Syndrome” resembling substance Dependence Disorder, producing predominantly ‘Psychological Dependence’ [6]. Mobile phone use can be considered as one of the socialized form of addiction or dependence and become a giant hindrance in development of nation and also more prone to physical isolation with their families [7-11]. So our study was aimed to find out the prevalence of Nomophobia and its correlation with psychological dependencies like Phantom vibration syndrome and ringxiety.

## 2. MATERIAL AND METHOD

### 2.1 Sample size and selection

The present study was a cross sectional observational study among 120 college students of Moradabad educational trust group of Institutions, Moradabad, with primary objective to find out the prevalence of the mobile phone dependency (nomophobic) and secondary as to find out the prevalence of Phantom vibration syndrome (PVS) with or without ringxiety. The students were randomly selected which belongs to different age groups (18-30) and different branches like, Engineering, Pharmacy, Architecture etc. Students using Smart phone with internet were included in the study.

### 2.2 Data collection

A questionnaire was developed and was pretested on 10 students to study mobile phone dependence (nomophobic) and its psychological relevance/consequence (PVS and ringxiety) among the study subjects. The questionnaire designed on the lines of one already developed by was modified according to the local conditions [12-13]. A study questionnaire was design which consists of four sections:

#### I. Section I: Demographics/Basic Information

This section retrieves some basic and personal information like name, age, sex, educational qualifications etc.

#### II. Section II: Smart phone Use

This section retrieves information regarding smart phone usage like how long have you been using your smart phone, how many hours per day do you thing you spend using your smart phone. Apart from that this section also retrieves the smart phones usage habit like preference of

purpose of smart phone use (checking social media, chatting with friends and family, gaming, killing time etc), use of smart phone during lecture/conference, toilet etc.

#### III. Section III: Nomo phobia Questionnaire (NMP-Q)

This section tells about the psychological tendencies related to being out of smart phone (nomophobia). The section consist of predefined statements like “I would feel nervous because I would not be able to receive text messages and call”, “I feel distressed/nervous when I thought of being without my smart phone” etc. which indicate how much a person agree, strongly agree, disagree and strongly disagree with the statements that might be correlated with their psychological well being.

#### IV. Section IV: Phantom vibration syndrome Questionnaire (PVS-Q)

This section of the questionnaire was designated to find out the degree of symptoms related to PVS and ringxiety. The section consist of questions like, “Have to ever experienced false ringing hallucinations”, “Have to ever experienced false vibration hallucinations” with its frequency and number of times event occurred to find out its association related to the mode of use of smart phone (vibration only or ringing only or silent only or vibration with ringing).

The questionnaire was distributed among the students randomly to retrieve information and was made free to answer independently in the absence of investigator to avoid any biasing that might influence or confuse/hesitate the participant. Written inform consent was also taken by the participants.

### 2.3 Data Interpretation

The individual responses thus obtained were then compiled, processed and analyzed to arrive at the results on various issues to find out the prevalence of mobile phone dependence (nomophobic) and its psychological relevance (PVS/ringxiety). To study participant-expressed symptoms and emotions and to understand the contribution and weight of each variable in separating the group, we used the multivariate method of canonical correlation analysis for dichotomous variables. For the variables that were categorical, the prevalence ratios reflect the ratio of the proportion of those with the characteristic who have a positive response to the proportion of those without the characteristic who have a positive response, adjusting for other covariates in the model.

#### 2.4 Criteria for interpretation of prevalence of PVS

The individual’s which had experienced FVH everyday and when they are alone was considered to be suffering from PVS.

#### 2.5 Criteria for interpretation of prevalence of Ringxiety

The individual’s which had experienced FRH every day and when they are alone was considered to be suffering from Ringxiety.

On the basis of above cited criteria the prevalence of PVS and ringxiety was found to be 17.64% and 35.71 % respectively.

### 3. RESULT AND DISCUSSION

The study reveals some interesting facts related to smart phone use by college students. As per demographic data concerns the maximum smart phone users belongs to age group 18-21 (66.6%) (Table 1), also male are dominant smart phone users as compared to females (78.33%) (Table 2). Branch wise prevalence of smart phone users are more dominating (52.2%) as compared with other branches (Table 3), it might show some biasing as the study natively belongs to faculty of pharmacy. 34.16% of students uses smart phone from less than a year that might be due to when students got engaged in higher studies then only they brought mobile phone, 7.5% of students uses smart phone from more than 5 years that might be more prone to smart phone addiction (Table 4) [14-18]. 61% of users can't live without DATA plan with their smart phone (Table 5) that could be correlated with the fact that how much they are indulged in web world. More than 50 % of students spend more than 1 hours with their smart phone in which 25% of students indulged for more than 5 hours with their smart phones (Table 6).

We have more than 70 of students using more than 25 mobile apps (Downloaded) with 22% that uses more than 50 apps (Table 7). 70 % of students kill their time with social networking as preferred purpose of smart phone usage (Table 8) [19-24]. As mobile phone is strictly prohibited in college campus but still more than 50 % used it during and between lectures/ conference/ workshop (Table 9), 70 percent of students can't concentrate in studies as they are with their smart phone during self studies, 35 % smart phone user were too busy that they brought their phone to toilet (Table 9). 45 % of college students were at risk of road accident as they use smart phone while driving. Table 10 represents some psychological aspects related to smart phone use. 47.5 % strongly agree (SA) that they feel distressed /nervous when they thought of being without smart phone that how much they are psychologically depending on their smart phone [25-27]. 35.8 % clearly showed their psychological dependency on social networking and they become depressed when they would not stay up-to-date with social media and online networks as well as when they are unable to receive text messages and call (Table 10).

The result in Table 11 reflect how much students are conscious to check their smart phone, 57.5 % students have a look with their phone for more than 35 times per day and majority of populations are so much conscious that the check their phone for every 5 minutes (Table 12). As per smart phone carried habit concern majority of students kept their phone in side pocket (Table 13). 55% users prefer to use smart phone after midnights for text chatting (59.16) (Table 14). Majority of students have

fun to change their ringtone daily that might be correlated with FRH (Table 15) [28]. 60 percent were not believed to switch off their phone for sleeping, that might be due to security reasons and might be due to addiction (Table 16).

Majority of students preferred vibration mode (48.3) and secondarily ringing mode (17.5), (Table 17). That results presented were strongly correlated as significant students were might be at risk under FRH (46.66) and 44.64% have a daily experienced of it (Table 17). Secondarily while travelling or driving, 35.71 % experienced FRH when they are alone. 70.83 % strongly agree that they had experienced FVH, out of which 42.35% had a daily experienced of FVH, but generally experienced during travelling and only 17.64 % when alone [29].

**Table 1: Age group distribution of smart phone users**

S. No	Age group	No. of individuals	Percentage
1	18-21	80	66.6
2	22-25	35	29.15
3	26-30	5	4.15

**Table 2: Gender wise distribution of smart phone users**

S. No	Gender	No. of individuals	Percentage
1	Male	94	78.33
2	Female	26	21.60

**Table 3: Branch wise distribution of smart phone users**

S. No	Branch	No. of individuals	Percentage
1	Pharmacy	63	52.5
2	Engineering	35	29.16
3	Architecture	13	10.83
4	Others	9	7.5

**Table 4: For how long the students using smart phone**

S. No	Duration	No. of individuals	Percentage
1.	Less than a year	41	34.16
2.	1 year to less than 2 years	31	25.83
3.	2 years to less than 3 years	9	7.50
4.	3 years to less than 4 years	18	15
5.	4 years to less than 5 years	12	10
6.	5 years or more	9	7.5

**Table 5:** Students using smart phone with data plan (Always, sometimes and never)

S. No	Data Plan usage	No. of individuals	Percentage
1	Always	74	61.6
2	Sometimes	33	37.5
3	Never	13	10.83

**Table 6:** Number of hours students spent in with their smart phone

S. No	Hours	No. of individuals	Percentage
1	Less than 1 hour	37	39.16
2	1-3 hours	19	15.83
3	3-5 hours	24	20
4	More than 5 hours	30	25

**Table 7:** Number of applications using by students in their smart phone

S. No	No. of applications	No. of individuals	Percentage
1	1-30	92	76.6
2	31-60	22	18.3
3	61-90	4	3.3
4	91-120	1	0.8
5	121-150	1	0.8

**Table 8:** Preferred purpose for using smart phone

S. No	Preferred purpose	No. of individuals	Percentage
1	Checking social media	70	58.3
2	Chatting with friends and family	17	14.1
3	Looking up information up on the Internet	5	4.1
4	Talking with family or friends	16	13.3

5	Checking lecture notes	1	0.8
6	Checking email	9	7.5
7	Killing time	1	0.8
8	Other	1	0.8

**Table 9:** Student-Smart phone use habits

S. No	Preferred purpose	Individual's Response		Percentage	
		YES	NO	YES	NO
1	Students using smart phone during lectures/lab/conference/workshop	66	54	55	45
2	Students using smart phone between lectures/lab/conference/workshop	63	57	52.5	47.5
3	Students using smart phone during self studies/office work	92	28	76.6	23.3
4	Students using smart phone during lunch time	53	67	44.16	55.83
5	Students using smart phone in the toilet	42	78	35	65
6	Students using smart while talking to some body	89	31	74.16	25.8
7	Students using smart phone while waiting for someone or some thing	80	40	66.6	33.3
8	Students using smart phone on local public transportation	69	51	57.5	42.5
9	Students using smart phone while walking	62	58	51.6	48.3
10	Students using smart phone while driving/ watching TV or a movie	54	66	45	55

**Table 10:** Student’s Psychological response related to Nomophobic behavior

S. No	Statement (s)	Individual’s Response				Percentage			
		A	SA	D	SD	A	SA	D	SD
1	I often think about my smart phone when I am not using it.	64	21	31	04	53.3	17.5	25.8	3.3
2	I often use my smart phone, for no particular reason.	48	14	47	11	40	11.6	39.1	9.1
3	Arguments have arisen with others because of my smart phone use.	60	12	29	19	50	10	24.1	15.8
4	Interrupt whatever else I am doing when I am contacted on my smart phone.	55	17	38	10	45.8	14.16	31.66	8.3
5	I feel distressed/ nervous when I thought of being without my smart phone.	24	57	31	8	20	47.5	25.8	6.6
6	I have been unable to reduce my smart phone use.	33	27	45	17	27.5	22.5	35.8	14.1
7	I would be irritated if I could not use my smart phone and/or its capabilities when I wanted to do so.	26	35	41	18	21.6	29.1	34.8	15
8	Running out of battery and balance in my smart phone would irritate me.	43	31	20	26	35.8	25.8	16.6	21.6
9	If I did not have a data signal or could not connect to Wi-Fi, then I would constantly check to see if I had a signal or could find a Wi-Fi network.	60	24	17	19	50	20	14.1	15.8
10	I would feel nervous because I would not be able to receive text messages and calls.	51	43	21	5	42.5	35.8	17.5	4.8
11	I would be nervous because I would be disconnected from my online identity.	39	10	60	11	32.5	8.3	50	9.1
12	I would be uncomfortable/ depressed because I could not stay up-to-date with social media and online networks.	51	43	16	10	42.5	35.8	13.3	8.3

**Table 11:** No. of times per day students checking their smart phone

S. No	No. of times per day	No. of individuals	Percentage
1	1-20	43	35.8
2	21-40	69	57.5
3	41-60	8	6.66

**Table 12:** Frequency of checking smart phone

S. No	Frequency	No. of individuals	Percentage
1	Every 5 minutes	43	35.8
2	Every 10 minutes	21	17.5
3	Every hour	3	2.5
4	Every 2 hours	10	8.3
5	Every 20 minutes	22	18.3
6	Every 3 hours	17	14.1
7	Every 30 minutes	4	3.1

**Table 13:** Smart phone location to carry with

S. No	Location	No. of individuals	Percentage
1	Belt pocket	20	16.6
2	Side pocket	46	38.3
3	Shirt pocket	00	00
4	Back pocket	42	35
5	Others	12	10

**Table 14:** Smart phone use after midnights

S. No	Individual’s Response		Percentage	
	YES	NO	YES	NO
1	66	54	55	45

**Table 15:** Preferred use of Smart phone after midnights

S. No	Preferred use	No. of individuals	Percentage
1	Text chatting	71	59.16
2	Voice chats	09	7.5
3	Gaming	21	17.5
4	Online stuffs	19	15.8



**Table 16:** Frequency of changing of ringtone by students

S. No	Frequency	No. of individuals	Percentage
1	Daily	40	33.3
2	Weekly	32	26.6
3	Monthly	12	10
4	Yearly	31	25.8
5	Never	5	4.1

**Table 17:** Habit to switch off smart phone before getting to bed for sleeping

S. No	Individual's Response		Percentage	
	YES	NO	YES	NO
1	49	71	40.8	59.1

**Table 18:** Preferred mode of smart phone by college students

S. No	Frequency	No. of individuals	Percentage
1	Vibration mode	58	48.3
2	Ringtone mode	21	17.5
3	Vibration + Ringtone mode	36	30
4	Silent	05	4.1

**Table 19:** Students experienced false ringing hallucination (FRH)

	No. of individuals	Percentage
NO	64	53.33
YES	56	46.66
<b>Part I (If YES)</b>	What is the frequency of FRH	
Every day	25	44.64
1-4 times per week	11	19.6
More than 5 times per week	7	12.5
1-4 times per month	5	8.9
More than 5 times per month	8	14.28
<b>Part II (If YES)</b>	Student's experience FRH generally	
During travelling	27	42.85
During sleep	4	7.14
During watching movies/TVs	5	8.90
When alone	20	35.71

**Table 20:** Students experienced false vibration hallucination (FVH)

	No. of individuals	Percentage
NO	35	29.16
YES	85	70.83
<b>Part I (If YES)</b>	What is the frequency of FRH	
Every day	36	42.35
1-4 times per week	24	28.2
More than 5 times per week	15	17.64
1-4 times per month	9	10.5
More than 5 times per month	1	1.17
<b>Part II (If YES)</b>	Student's experience FRH generally	
During travelling	41	48.23
During sleep	3	3.52
During watching movies/TVs	26	30.58
When alone	15	17.64

#### 4. CONCLUSION

The results of the study were clearly shown to have a prevalence of both FVH and FRH (17.64% and 35.71 % respectively). In our opinion, the mobile phones dependence might lead to the psychological dependence on mobile that develops or resembling Dependence/ Disorder/syndrome (Here Phantom vibration syndrome and ringxiety). Mobile phone use can be considered as one of the socialized form of addiction or dependence. The possible areas of research on 'mobile addiction' relate to Host (psychological profile, physical and psychological impact and adverse sequelae, withdrawal syndromes), Agent (Type, Mode, Time and Duration of daily use, Addiction potential) and Environment (Company, Family, Society and Laws affecting use). The other areas which need detailed exploration is Sexting (sending messages with sexual connotations representing foreplay), spread of nosocomial infections (as mobile phones are never washed or cleaned) and effects of mobile phones radiations on pregnancy and children.

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