

Original Article

Mobile Phone Addiction among MBBS Interns Working in a Tertiary Health Care Institution in North India

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Abstract

Background: Mobile phone is not just a good instrument for communication, but has many features of use in day to day life. It has insinuated into every aspect of human life and potential for misuse exists. Not much work has been done in this area among medical interns in North India, hence this study was planned.

Aim: To study the pattern of mobile phone addiction among MBBS interns.

Settings and Design: The present study was a cross sectional study that was conducted in the department of Psychiatry.

Methods and Material: A total of 50 MBBS intern participated in this study.

Sampling Technique: Convenience and purposive sampling was used.

Tools used: The instruments used in data collection were: Mobile phone addiction scale (MPAS) and socio-demographic data sheet.

Statistical analysis used: The data was analyzed to evaluate by means of descriptive and inferential statistics using SPSS-20.

Results: Both male and female population was in equal number; majority of MBBS interns were in the age group of 21 to 23 years (60%); majority of the participants hailed from the nuclear family (60%). 56% of the participants showed mild level of addiction and 42% showed moderate level of addiction as measured on MPAS tool.

Conclusions: 56% sample had mild addiction; 42% moderate addiction and only 2% severe addiction on MPAS. Our study suggests a need for awareness drive in the medical institutions and imparts knowledge to the MBBS interns about the harmful effects of mobile phone addiction.

Keywords: mobile phone addiction, MBBS interns.

Introduction

Bianchi and Philips were amongst the first to introduce the concept of addiction to mobile phones.¹ The term addiction is not exclusively applied to psychoactive substances but it also extends to behavior which shows a pattern similar to substance addiction. Over the years, mobile technology has experienced an exponential growth in India. Like substance addiction initially free of cost services are being provided by some telecommunication firms in India and recent government authorized data reports in India and mobile phones have attained penetration index value of approximately eighty percent.

According to Peele (1985), any extensive form of behavior is addictive. The term addiction has moved a long way behind the substance abuse and has accommodated several psychological addictions. Research works of several research points to the direction that the transformative technology of mobile phone usage is heading towards an object of addiction. Due to their stimulating factors, young people are more vulnerable to excessive mobile phone use and thus become dependent on them.¹

Maladaptive use of mobile phones has been identified, and has been linked with psychological dysfunction.² The population that is most susceptible to abuse or dependence on these technologies consists of mainly the adolescents. Teenagers are not only more vulnerable to mobile phone addiction process because of cortical development^{3, 4} but they are more likely to find the technologies in use to be fascinating. The special vulnerability to addiction render the adolescent population more prone to this “*modern day addiction.*”

The rising use of mobile phone made people dependent on this device, to an extent that with usual disruption of services people feel disturbed. In a study conducted among medical students reveals that 19% males and 18% females suffer from fear of being out of contact through mobile phone.^{3,4,5}

In an Indian study conducted in Bangalore 23% medical students felt they lose concentration and become stressed when they do not have their mobile phones around them.⁶ Mittal et al⁷ evaluated dependence on mobile phones among second to eighth semester medical undergraduate students at Puducherry and found that restlessness was observed among very frequent users of mobile phones. In a study conducted in Kerala among MBBS students and Interns, 33% of the study participants were very frequent users of mobile phones; 57% of the participants checked their mobile phones every half an hour and 45% of the medical students reported to have headache, earache and blurring of vision as the symptoms revealed by them due to prolonged usage of mobiles.⁸ Mobile phone is not just a good instrument for communication, but has many features of use in day to day life. It has insinuated into every aspect of human life and potential for misuse exists. Not much work has been done in this area among medical interns in North India, hence this study was planned.

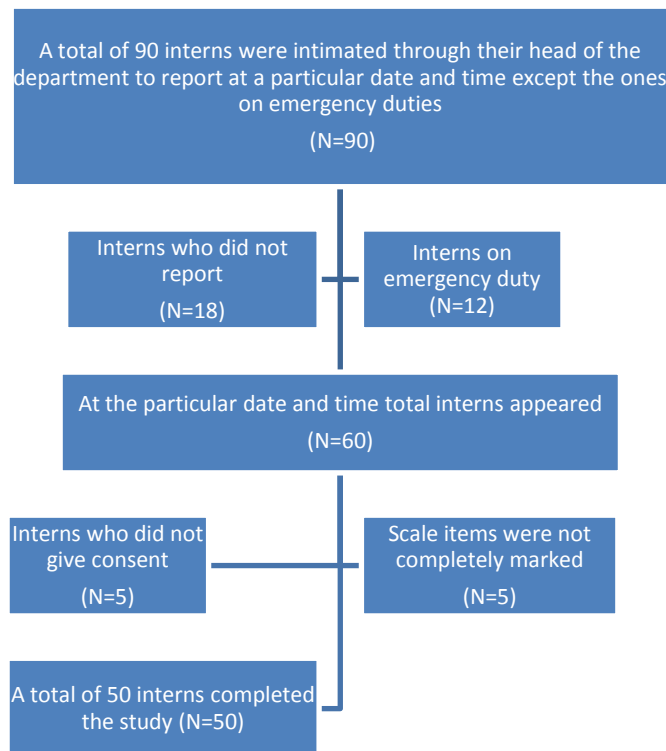
Aim

The aim was to study the pattern of mobile phone addiction among MBBS interns.

Material and Methods

The present study was a cross-sectional study that was conducted in the department of Psychiatry at MM institute of Medical Sciences and Research, Mullana (Ambala) Haryana; a teaching hospital in Northern India. The study was approved by the institutional ethical committee.

Procedure of data collection



All the participants were voluntary in nature. All the participants were administered the scale at the same time the aim of the study and the methodology to fill the options in the scale were explained by principal investigator (MB). Quantitative research approach with descriptive study design was used for the study.

Type of sampling: Convenience and purposive sampling technique was used.

Tools Used: The following tools were used in data collection.

1. **Mobile phone addiction scale (MPAS):**⁹

This scale was developed by Velayudhan and Sridivya in 2012 at Coimbatore (India). This scale has a total of 37 items grouped under six categories such as maladaptive use (9 items); self-expression (9 items); peer relationship (6 items); interpersonal relationship (4 items); impulsivity (4 items) and usage time (5 items). The scale has been constructed based on the clinical criteria of substance dependence formulated by DSM-IV TR. The scores have been divided into three categories: low (25 percentile); moderate (26-75 percentile) and high (76

percentile and above) based on the percentile division. The alpha reliability of the scale is 0.79 and is quite satisfactory. The Cronbach alpha co-efficient is 0.89.

2. **Socio-demographic data sheet:** The structured format was used to record the socio-demographic variables such as age, gender and type of family.

Statistical Analysis

The data was analyzed to evaluate by means of descriptive and inferential statistics using the software SPSS Statistics for Windows version 20. Descriptive analysis included evaluation of frequency and percentages for categorical variables and mean and standard deviation for the continuous variables. ANOVA test was used for finding association between socio-demographic variables and subscale items of mobile phone addiction scale.

Results

Socio-demographic characteristic of the sample

As depicted in Table 1, majority of MBBS interns were in the age group of 21 to 23 years (60%).

Both male and female population was in equal number. Maximum number of participants hailed from nuclear family (60%).

Distribution of sample as per category of mobile phone addiction scale

As depicted in Table 2, of the total number of subjects 56% (N=28) showed mild level of addiction category and 42% (N=21) showed moderate level of addiction as measured on MPAS tool.

Mild range of score (37-99) was found in 20% (N=10) of the male subjects and 36% (N=18) of female subjects. Moderate range of score (98-135) was found in 30% (N=15) of male subjects and 12% (N=6) of female subjects. Severe range of score (136-185) was found in only 2% (N=1) of male subjects.

Item –wise analysis of MPAS

Table 3 shows the item –wise analysis of MPAS; Maladaptive usage the mean was 41.57 ± 139.64 ; Self-expression the mean was 45.34 ± 152.39 ; Peer relationship the mean was 31.415 ± 103.43 ; Inter personal Relationship the mean was 26.31 ± 84.5 ; Impulsivity the mean was 24.92 ± 80.1 ; Usage of time the mean was 30.79 ± 100.2 .

Interpretation of Item –wise analysis of MPAS in terms of addiction

Table 4 shows the interpretation of the item –wise analysis of MPAS in terms of addiction as below:

- a. **Maladaptive usage:** In terms of the mild addiction level score was found in 24% of male subjects and 32% of female subjects. Moderate addiction level score was found in 20% of male subjects and 12% of female subjects. Severe addiction level score was found in 8% of male subjects and 4% of female subjects.
- b. **Self-Expression:** In terms of self-expression 20% of male subjects and 34% of female subjects had mild addiction range scores; 16% of the male and 24% of female subject's had moderate range of addiction score and 2% of the male and 4% of the female subjects had severe range of addiction score.
- c. **Peer relationship:** Mild addiction level score was found in 40% of male subjects and 22% of

female subjects whereas moderate addiction level score was found in 22% of male subjects and 6% of female subjects and severe addiction level score was found in 6% of male subjects and 4% of female subject on MPAS.

- d. **Interpersonal relationship:** Mild addiction level score was found in 30% of male subjects and 28% of female subjects whereas moderate addiction level score was found in 14% of male subjects and 22% of female subjects and severe addiction level score was found in 2% of male subjects and 4% of female subject on MPAS.
- e. **Impulsivity:** Mild addiction level score was found in 26% of male subjects and 36% of female subjects whereas moderate addiction level score was found in 14% of male subjects and 20% of female subjects severe addiction level score was found in 4% of female subject and none of the male subjects on MPAS.
- f. **Usage of time:** Mild addiction level score was found in 10% of male subjects and 6% of female subjects whereas Moderate addiction level score was found in 42% of male subjects and 36% of female subjects severe addiction level score was found in 2% of male subjects and 4% of female subject on MPAS.

The overall scale score revealed that the 20% of males and 36% female subjects were found to have mild addiction; whereas 18% males and 24% female subjects were found to have moderate addiction and only 2% males and no female subjects were found to have severe addiction.

Association of level of addiction of students with demographic variables

Table 5 shows the association of level of mobile phone addiction among students with demographic variables. The ANOVA test results revealed that association of mobile phone addiction items with age, gender and with type of family was not statistically significant.

Table 1: Socio-demographic characteristic of the sample(N=50)

Variable	Sub variable	Frequency	Percentage
AGE (in years)	21-23	30	60
	24-26	19	38
	27-30	1	2
Gender	Male	25	50
	Female	25	50
Type of Family	Joint	20	40
	Nuclear	30	60

Table-2: Distribution as per severity (category) of dependence (N=50)

Categories (Range of score)	Sex	Frequency		Percentage
Mild (37-99)	Male	10	28	56
	Female	18		
Moderate (98-135)	Male	15	21	42
	Female	6		
Severe (136-185)	Male	1	1	2
	Female	0		

Table 3: Item-wise analysis of mobile phone addiction scale (N=50)

Items	Mean	Minimum	Maximum	St. error	Standard Deviation
Maladaptive usage	41.571	10.0	1024.0	19.36	139.64
Self-expression	45.340	10.0	1118.0	21.13	152.39
Peer relationship	31.415	6.0	754.0	14.34	103.43
Inter-personal Relationship	26.31	6	608	11.7	84.5
Impulsivity	24.92	7	576	11.1	80.1
Usage of time	30.79	10	728	13.9	100.2

Table 4: Item – wise analysis in terms of addiction (N=50)

Items	Range of score	Frequency		Percentage		Interpretation
		Male	Female	Male	Female	
Maladaptive usage	9-20	12	16	24	32	Mild addiction
	21-29	10	6	20	12	Moderate addiction
	30-45	4	2	8	4	High addiction
Self-expression	9-22	10	17	20	34	Mild addiction
	23-32	8	12	16	24	Moderate addiction
	33-45	1	1	2	2	High addiction
Peer relation	6-17	20	11	40	22	Mild addiction
	18-22	11	3	22	6	Moderate addiction
	23-30	3	2	6	4	High addiction
Interpersonal relationship	4-12	15	14	30	28	Mild addiction
	13-16	7	11	14	22	Moderate addiction
	17-20	1	2	2	4	High addiction
Impulsivity	4-12	13	18	26	36	Mild addiction
	13-16	7	10	14	20	Moderate addiction
	17-20	0	2	0	4	High addiction
Usage of time	5-12	5	3	10	6	Mild addiction
	13-17	21	18	42	36	Moderate addiction
	18-25	1	2	2	4	High addiction
Scale as a whole	37-99	10	18	20	36	Mild addiction
	98-127	9	12	18	24	Moderate addiction
	128-185	1	0	2	0	High addiction

Table 5: Association of level of addiction of students with demographic variables (N=50)

Demographic variables		'F' value	df	P value	Significance
Age (in years)	21-23	1.32	36	0.29	Not Significant (NS)
	24-26				
	27-29				
Gender	Male	1.38	72	0.27	Not Significant (NS)
	Female				
Type of family	Joint family Nuclear family	1.23	36	0.35	Not Significant (NS)

df –degrees of freedom

Discussion

The present study was a cross-sectional study and similar studies from Bangalore, Puducherry, and Kerala are documented; our observations are comparable to the previous researcher's findings.^{6,8} In our study male and female subjects were equally represented (50% each). In the documented literature proportions of male subjects in various studies were in the range of 39% - 61%; and the female proportion was in the range of 47% - 61%.⁶⁻⁸ The authors of a cross-sectional study done on mobile phone addiction among medical students in Bangalore reported that 23% of medical students felt decreased concentration and become stressed when they do not have their mobile phone within their reach.⁶

In our study, 56% of the participants showed mild level of addiction and 42% showed moderate level of addiction and only 2% of the participants showed severe level of addiction as measured on MPAS. Our study figures are higher in comparison to the previous studies reported in literature. Mobile phone addiction was reported to be 31.33% of sample students as reported by Nikhita et al.¹⁰; however Haug et al¹¹ reported a further lower prevalence rate of 17%. The reason for the differences in prevalence rate could be that we have used a standardized scale in our study which is specially designed to find the prevalence rate of mobile phone addiction.

In a study conducted in Puducherry among medical students by Mittal et al⁷, there was no significant difference between call patterns of males and females subjects; they also reported that students were restless when they were unable to contact desired person and when they forget to bring the mobile phone in the college. The

restlessness was observed significantly among very frequent users. In the present study we did not compare the call patterns of males and females subjects.

Datta et al⁸ conducted a descriptive study to assess the mobile phone use pattern and self-reported health problems among medical students the outcome of the study was that 45% of the students reported health related symptoms. The majority of symptoms reported were earache (91%), headache (22%), blurring of vision (9%) and insomnia (4%). The authors suggested the alternative methods for recreation and limited mobile phone usage. In the present study we did not measure the health related symptoms.

In a previous descriptive study conducted on pattern of mobile phone usage and its effects on psychological health, the total time spent on mobile phones was significantly associated with waking time, tiredness and difficulty in waking up. Further the authors found highly significantly association of mobile phone misuse with decline in study habits, increase in missed classes and going late for classes.¹¹ In an international study conducted in Iran⁵, university students were mostly placed in habitual behaviors category (21.49%) and addictive behavior category (15.70%). The authors attributed the trend is due to the fast growth in the use of online social networking services and extensive use of technology which can lead to mobile phone misuse. It has implications for academic as well as governmental and non-for-profit organizations regarding the effect of mobile phones on individual's and public health. The present study endorses the findings of the Iranian study and highlights that mobile phone addiction is rapidly

rising and awareness is the key to tackle this health issue.

Moderate addiction levels were found in usage of time in the present study. Similar findings were reported by some previous researchers.⁷⁻⁸ In our study, on other subscale items the mild addiction levels were found in higher percentage of cases in maladaptive usage, self-expression, peer relationship, interpersonal relationship. In contrast to our study previous authors reported moderate level of addiction on these domains of the MAPS scale.⁷ The addiction levels could be due to attitude of individual towards the objects and its usage as well as it may be linked to usage time anxiety of each individual.

Davey et al¹² in a meta-analysis of six studies that were aimed to assess mobile phone addiction in Indian adolescents revealed characteristic features of emerging mobile phone misuse. These features included a preoccupation with using their mobile phone throughout the day; the inability to restrict mobile phone use despite knowing the harmful effects of its use; a severe craving, accompanied by anxiety and restlessness and the tendency to sleep with the phone nearby accompanied by the need to repeatedly wake up and check the phone.

In the literature most of the studies were conducted among professional medical students and other college students and in some studies sample of the study included medical intern trainee. Studies conducted in various regions of India reflect diverse situation depending on the use of study instruments and different group of population.⁶⁻⁹ Our study sample comprised of MBBS Interns only. Upon joining internship period, students embark their professional journey with high expectations and are loaded with lots of new information to be crammed which at times become difficult to process. The student completes the study period of highly competitive environment and come directly across the clinical duties of different specialties in the internship period.

Our study suggests a need for awareness drive in the medical institutions and imparts knowledge to

the MBBS interns and students about the harmful effects of mobile phone addiction. Counseling sessions for the high risk group population are quite helpful in the preventive strategies. Medical education is a full time commitment and role of MBBS interns for the supportive and patient care is recognized in Indian setup. High risk population strategies among the youth are the need of the hour as they are heaviest users of information and technology. Youth explore and are inquisitive about the latest development in communication technology. This young population always felt need to keep in touch with their friends every second, minute or hour. The mobile phone addiction in modern era is ignored by the hospital authorities and policy planners.

Conclusions

36% of the sample had mild addiction where as 24% of the sample had moderate addiction and none had severe addiction as assessed on MPAS. MPAS reported more prominence of symptoms on the domain of self-expression and impulsivity in females; whereas as prominence of symptoms on the domain of peer relation and slightly higher on the domain of usage of time in males; however almost equal prevalence was observed in the domain of maladaptive usage and interpersonal relationship in both groups.

Our study suggests a need for awareness drive in the institution and imparts knowledge to the MBBS interns and student about the harmful effects of mobile phone addiction. Mobile phone usage regulation in a hospital is still a debatable issue and need its further exploration in the current era. Prevention is better than cure. There is a definite need to map the effect of this necessary health problem. The findings from our study suggest that this study should be replicated in different regional medical colleges in India among all the medical students and not only interns; may bedone in a multi-centric center and also with large sample size. In view of these limitations the results of our study can't be generalized.

References

1. Bianchi A, Phillips J. Psychological predictors of problem mobile phone use. *Cyberpsychol Behav* 2005; 8:39-51.
2. Bian M, Leung L. Linking loneliness, shyness, smartphone addiction symptoms, and patterns of smartphone use to social capital. *Soc Sci Comp Rev* 2015; 33:61-79.
3. Hong FY, Chiu SI, Huang DH. A model of the relationship between psychological characteristics, mobile phone addiction and use of mobile phones by Taiwanese University female students. *Comp Hum Behav* 2012; 28:2152-9.
4. Ezoe S, Toda M. Relationships of loneliness and mobile phone dependence with Internet addiction in Japanese medical students. *Journal of Preventive Medicine*, 2013; 3(6): 407-12.
5. Zahra Babadi-AM, Bibi EZ, Yasamin A, Hojaetolah A, Nasim H. The relationship between mental health and addiction to mobile phones among university students of Shahrekord, Iran. *Addict Health*, 2014; 6(3-4):93-9.
6. Pavithra MB, Suwarna M K, Mahadeva MTS. A study on nomophobia-mobile phone dependence among students of a medical college in Bangalore. *National J of Community Medicine* 2015; 6:340-4.
7. Mittal A, Vedapriya D R, Lavanya K. Cell phone dependence among medical students and its implications – a cross sectional study. *Int J Cur Res Rev* 2015; 7:7-13
8. Datta S, Nelson V, Simon S. Mobile phone use pattern and self-reported health problems among medical students. *J Evolution Med Dent Sci* 2016; 5 (21):1116-9.
9. Velayudhan A, Srividya, S. Manual for Mobile Phone Addiction Scale (MPAS). Prasad Psycho Corporation. 2012
10. Nikhita CS, Jadhav PR, Ajinkya SA. Prevalence of mobile phone dependence in secondary school adolescents. *J Clin Diagn Res* 2015; 9(11): 6-9.
11. Haug S, Castro RP, Kwon M, Filler A, Kowatsch T, Schaub MP. Smartphone use and smartphone addiction among young people in Switzerland. *J Behav Addict*, 2015; 4(4):299-307.
12. Davey S, Davey A. Assessment of smartphone addiction in Indian adolescents: a mixed method study by systematic-review and meta-analysis approach. *Int J Prev Med* 2014; 5: 1500-11.