Assessmentof Mobile Phone Dependence And Self Perceived Effects Among Students of A Medical College, Visakhapatnam.

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Introduction: *Mobile phone is a new technological tool in the field of communication, use of which may involve risk of abuse and addictive behaviour. In recent years there is an increase in prevalence of mobile phone dependence among younger population.*
Objective:*To assess mobile phone dependence and self-perceived effects among medical students.*
Methodology:*A descriptive cross-sectional study was done among 200 MBBS students during May 2016. Modified Mobile Phone Dependence Questionnaire (MPDQ) with 20 items each with ratings 0, 1, 2, and 3with total scores ranging from 0 to 60 was used for assessing dependence. The questionnaire was self-administered after taking informed consent. Subjects with scores in the highest quartile were put in the high-dependence category. Epi-data version 3.1 and SPSS version 16 used for data entry and analysis.*
Results:*Among 200 MBBS students aged 17 to 24 years, 38.5% were males, 61.5% were females and 38%day scholars,62% hostellers. Mean score for mobile phone dependence was19.62±7.84 and high dependence was seen in 26% subjects. Self- attribution of mobile phone dependence was seen in 51%. Self -perceived effects observed were eyestrain (51%),headache(38.5%),sleep disturbances(33%), anxiety(25.5%) academic disturbances(27.5%), problems in relationships(7%),accidents etc.*
Conclusion:*There is need to create awareness regarding mobile phone dependence and its physical and psychosocial effects.*
Keywords: *Dependence, Medical students, Mobile phone*

I.   Introduction

India has the fastest growing telecom network in the world with its high population and development potential. Telephony was introduced in India in 1882. The total number of telephones in the country stands at 1002.05 million, while the overall tele-density has increased to 79.67% as of 31 May 2015and the total numbers of mobile phone subscribers have reached 975.78 million with mobile tele-density increased to 77.58% as of May 2015.[1] India might currently be second to China in the total number of mobile subscribers, it has been adding nearly twice as many subscribers every month.The reasons for increasing cell phone use are increase in communication, safety, increased status symbol, entertainment etc. Over-use of mobile phones can affect social and psychological well-being and health.[2]It is often defined as a "dependence syndrome," which is the term used by the World Health Organization (WHO Expert Committee, 1964) to replace addiction orhabituation.[3] This is categorized under ICD-10,as a behavioural addiction which according to the DSM-5, includes: 1.use in larger quantities or for longer than initially intended, 2. a desire to cut down or control use, 3. spending a great deal of time obtaining, using, or recovering from the substance, 4. craving, 5. use in situations in which it is physically hazardous, 6. continued use of the substance despite adverse physical or psychological consequences associated with use, and 7.withdrawal symptoms.[4]In India, addiction is stated at 39-44% for youth.[5]

Existing literature reviews[6]have shown that although there has been quite a rapid increase in research related to mobile phone dependence, there isstill a lack of research done in Indian scenario.In the light of the above, the present study was conducted, to assess the mobile phone dependence in younger generation like medical college students and to know its self-perceived effects.

II.   Methodology

Study design-A descriptive cross-sectional study.
Study setting- Andhra Medical College,Visakhapatnam.
Study population- MBBS students

Study period-1month of September 2015
Sample size- 200 MBBS students.
Sampling technique-A total of 200 MBBS students were selected for the study, 50 each from first, second, third and fourth year MBBS.Students were selected by simple random sampling technique.
Inclusion criteria- All MBBS students in age group 17-25 years who were using their mobile phonesand willing to participate in the study.
Exclusion criteria- Those who were not present during the study period and those who did not use mobile phones and unwilling to participate in study were excluded.
Study tool-The assessment of an individual's mobile phone use should take into account three distinct aspects: (1) the user's profile, (2) actual use and (3) problematic use. Thisassessment was done by combining semi-structured interviews and validated questionnaire.

A pre-tested, self-administered and semi structured questionnaire was used to collect information about socio-demographic profile, pattern of mobile phone use, self-perceived effects.

Mobile Phone Dependence Questionnaire (MPDQ; Toda, Monden, Kubo,Morimoto, 2004) is a 20-item self-reportthat assesses the frequency of occurrenceof behaviours associated with mobile phone dependence. On a four-point scale ranging from Always to Hardly Ever(0,1,2,3 on Likert scale), participants indicate the general frequency with which they perform certain mobile phone related behaviours. Scores range from zero to sixty, with higher scores indicating greater levels of dependence. Subjects in the highest quartile were put in the high-dependence category.

Study variables- Socio demographic variables include age,sex,residence,year of study.Regarding pattern of mobile phone usage-duration of mobile phone use by self,amount spent on it for recharge,primary purpose of usage. Variables regarding self-perceived effects of mobile phone use by self like head ache,insomnia,poor academic performance,accidents etc. To assess dependence, 20 items of MPDQ used.
Data collection-On the day of data collection, from all students who were available in aparticular class 50 students fulfilling the inclusion criteria were selected by simple random sampling technique.The respondents were first explained about the rationale ofthis studyandinformed consent was taken. Ethical clearance was obtained from the institution before the conduct of study. Confidentiality of theinformation to be rendered by them was emphasized upon.Permission from the Head of the institute and concerned department was taken prior to study.
Data entry and analysis-Data was entered using Epi data version 3.1 and analysed by using SPSS version 16 and necessary statistical tests like chi-square test and proportions were used.

III.   Results
The outcome of the study was discussed under following headings-
1. Basic information –socio demographic profile, pattern of mobile phone use
2. Self-perceived effects of mobile phone use by self.
3. Information regarding mobile phone dependence.
Among 200 study participants, 77(38.5%)were males and 123(61.5%) were females;of these 76(38%) were day scholars and 124(62%) were residing in hostel.The participants were in age group 17-24 years with mean age19.7±1.8years. (Table 1)

Regarding information related to pattern of mobile phone use,duration of possession of their mobile phone was from 1-7years with mean duration 3.35±1.51yrs.Duration of hours of mobile phone use per day ranged from 1-12 hours with mean 4.47±2.5hrs. Amount spent on mobile recharge ranged from 100-1200 Rupees per month with majority (43.5%) spent less than 200 Rupees. About 32.5%use mobile for making calls, 23.5% for internet browsing, 15% for texting and 29% mostly for entertainment like listening to music,playing games etc.

Table1: Socio demographic profile and pattern of mobile phone usage of Study participant's (N=200)

Sl.no	Variable		Frequency n(%)	High Dependence	Low Dependence	P value
1	Age(years)	<20	113 (56.5%)	26 (23%)	87 (77%)	0.792 (ns)
		>20	87 (43.5%)	26 (29.9%)	61 (70.1%)	
2	Gender	Males	77 (38.5%)	20 (25.9%)	57 (74.1 %)	0.995 (ns)
		Females	123 (61.5%)	32 (26%)	91 (74 %)	
3	Residence	Day scholars	76 (38%)	20 (26.3%)	56 (73.7%)	0.936 (ns)
		Hostellers	124 (62%)	32 (25.8 %)	92 (74.2%)	
4	Duration	>4 hours	121 (60.5%)	38 (31.4 %)	83 (68.6 %)	0.031 (s)

	of usage per day in hours	<4hours	79 (39.5%)	14(17.7 %)	65(82.3%)	
5	Study year	First year	50 (25%)	10 (20%)	40 (80 %)	0.267 (ns)
		Second year	50 (25%)	18 (36%)	32 (64%)	
		Final part-1	50 (25%)	13 (26%)	37 (74 %)	
		Final part-2	50 (25%)	11 (22%)	39(78 %)	

Table 2 shows self-perceived effects of mobile phone usage by study participants by self, 51%, 38.5%, 33%, 27.5%, 25.5% experienced eye strain,head-ache,insomnia,lack of concentration,irritability respectively. 63.5%agreed that mobile phones might contribute to e-waste leading to environmental hazards

Table 2: Self-Perceived Effects Of Mobile Phone Use Among Participants

Variable (n,%)	High dependence n=52 (26%)	Low dependence n=148(74%)	P value
Headache (77, 38.5%)	46(59.8%)	31 (40.2%)	0.000(s)
Eye strain(102,51%)	39(38.2%)	63(61.8%)	0.000(s)
Anxiety(39 19.5%)	23(58.9%)	16(41.1%)	0.017(s)
Insomnia(66, 33%)	26(39.39%)	40(60.61%)	0.02(s)
Poor academic performance (33,16.5%)	12(36.36%)	21(63.64%)	0.137(ns)
Lack of concentration (55,27.5%)	16(29.1%)	39(70.9%)	0.539(ns)
Irritability(51, 25.5%)	27(52.95%)	24(47.05%)	0.000(s)

S-Significant, Ns-Non Significant

Scores for mobile phone dependence ranged from 5-44,with mean score19.62±7.84. Respondents in the highest quartile were put in the high dependence category(>25) which were 52(26%) in the present study as shown in table 1.Self-attribution of mobile phone dependence was seen in 51% of participants which is more than that estimated in the study.The students having scores >25 were maximum from 3rd year of MBBS(36%) and least from 1st year which was 20%.In gender based observation,25.9% males,26%females and 26.3%of day scholars and 25.8%of residents in hostels were found to have high dependence score(table 1).Around 80%responded that they keep their mobile with them even during sleep, 58% used mobile phone during academic sessions and duty hours,67% said that they feel unsettled when they forget to carry mobile phone with them,83% recharged mobile battery every day,47% make or attend calls during late night,13%used their mobile while driving to receive calls and messages,31% said they talk on mobile phone for more than hour per day,56% reported that they keep on checking mobile even it hasn't rung as shown in figure 1.
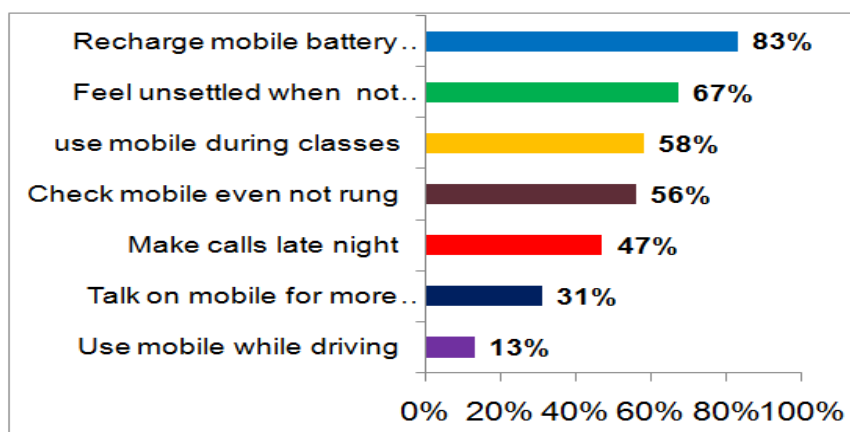
Figure 1: Responses of study participants for Items of MPDQ (N=200)

There is no significant association between age,gender,residence,year of study and the level of dependence in this study.There is a positive correlation between the duration of mobile phone use and dependence.

IV. Discussion

In the present study the sample consists of38.5 %males,61.5 %females with overall 26%of dependence on mobile phones. This study revealed that the prevalence of dependence is equal in study group irrespective of gender and place of stay.Similarly,in a study done by Sanjay Dixit et al[6]among medical students in Indore,

18.5%of sample was found to be dependent on mobile phones. Study done to assess ill effects of mobile phone use among professional students by Acharya JP et al [7]showed 51.5%,50.8%,47.4%,38.5% reported headache,irritability,lack of concentration,anxiety respectively. 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.[8]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.[9]The use of mobile phones by students at places andsituations where its use should be restricted is quitecommon, as studied by Subbaet al., which rangedfrom 17.9% usage while driving to 95.5% while inclassroom.[10]Mahmoodabadet al. reported 84% usageamong medical students in classrooms and 18.6%during driving.[11]The only established health hazard as cited by anindependent expert group on mobile phones was its usewhile driving.The risk was the same when the phonewas used "hands free" (via a loudspeaker), implying thedistraction caused by the conversation.[12-14]The Indian Council of Medical Research has also initiateda cohort study in Delhi to explore the association, ifany, between cell phone use and neurological disorders (cognitive behaviour, sleep-related disorders, depression etc.), reproductive dysfunctions, cardiological and otological disorders, and carcinogenic potential in the Indian population.[15]The present observations in this study are from a small group of students only, which may not reflect the general population, the youth is getting more and more dependent on mobile phones, which may lead to serious physical and psycho social problems .There is need for multi centric studies to be done to assess the real problem in the society and to take appropriate steps to tackle the growing problem.

V.   Conclusion

Thus there is increased concern regarding impact of mobiles on human health and environment.Formulation of guidelines by appropriateregulatory bodies regarding phone usage in workplacefor students, doctors, and other professionalsis of utmost importance. This should be supplementedby mass media efforts (both electronic and print media)to raise awareness among people regarding the possiblehealth effects of mobile phones andthe guidelines to minimize its exposure and use phone judiciously to avoid becoming dependent on technology instead of mastering it.

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