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A DESCRIPTIVE STUDY ON BEHAVIOR ASSOCIATED WITH MOBILE PHONE USAGE AND ITS EFFECT ON HEALTH AMONG MEDICAL STUDENTS IN CHENNAI

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ABSTRACT: BACKGROUND: Mobile phone usage has created undeniable health problems. The purpose of the current study is to describe patterns of mobile phone usage and associated effects on health. **MATERIALS AND METHODS:** The study questionnaire was administered to (n = 213) the Medical students of ACS Medical College which covered the socio-demographic profile, behavior patterns like repeated checking, midnight checking etc., benefits as well as health problems encountered due to mobile phone usage. **RESULTS:** In Our study 213 students have participated with the mean age of 17.8 and 67% were females. As far as the behavioral pattern associated with mobile usage was concerned about 90% (192) study participants keep the mobile under the pillow or near the bed, 45% (96) of them frequently (at least once or twice) check the mobile for any missed calls or messages at midnight (in between sleep), 48.8% (104) of them were checking the mobile as soon they get up from the bed, 19.2% (41) were using during class hours, 25.4% (54) rest room usage, 35.7% (76) usage while driving and 56.3% (120) were using the mobile while it is in charging mode. Majority 137 (64.3%) have experienced health problems like headache, sleep disturbance, ear pain, irritability and (111) 52% of the students replied that they were addicted to mobile phones. **CONCLUSION:** This study has explored that the young students have become addictive towards the mobile phone usage in spite of development of health problems and poor academic performance. **KEYWORDS:** Mobile phone usage, mobile addiction.

INTRODUCTION: The mobile phone is a modern-day invention, which has managed to reach many parts of the world enabling telecommunications across areas where it was not possible before. The mobile phone is viewed as an important communication tool and has become an integral part of the human society. Indians are increasingly using the mobile phone rather than the land line telephones as a way to keep in touch with their family, friends, colleagues and business associates. The first generation of the mobile phone was built with basic features such as voice call. Today, mobile phones are equipped with other features that allow further communications and entertainments such as the Short Message Service (SMS), MP3 player, games, internet and videos¹. These additional features attracted people across all walks of life including the younger generations, and consequently led to the increase in the number of mobile phone users in India.

Although these devices have proved to be lifesaving in certain circumstances (e.g., after accidents) and helped to improve the quality of life in some sectors, concerns continue to be raised about potential adverse health impacts associated with their use. We conducted a cross sectional study in order to explore the usage pattern among the vulnerable age group that is college students and the health effects experienced by them owing to its excess use.

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MATERIALS AND METHODS: The study was conducted among ACS medical college students, as an observational descriptive design for 2 months period. All students those who have consented to participate in the study were administered with the questionnaire. The questionnaire enquires about various aspects like Socio-demographic profile, duration of mobile usage, usage for entertainment purpose, behavioral pattern (midnight checking of mobile, early morning checking, restroom usage, keeping the mobile aside even at home), symptoms experienced and their opinion on mobile phones. The questionnaire was pre tested among the similar population by a pilot study among some 30 students and the modifications were done according to the experiences of pilot study.

After getting the official permission from the college management, the students were asked to assemble in a class room and the investigator explained about the purpose of the research study. The students were selected by simple random sampling method from the existing list of three hundred students. Then the questionnaires were distributed to the respondents and were asked to fill it up after getting the informed consent. The questions which they have not understood were cleared then and there. The data were entered in excel sheet and analyzed using Epi-info software 2008.

DEFINITION OF SOME CHARACTERISTICS: MIDNIGHT CHECKING OF THE MOBILE: This was definition created by the author with the experience of the pilot study. The definition that the investigator used in this study was “those study participants who checked their mobile at least once or more than once in the midst of sleeping without the ringing sound itself.

OUTCOME MEASURE: As there was no clear cut definition per se for Mobile phone addiction, the addictive behavior was assessed based on two self-reported questions. “Is it possible to live without mobiles” and Do you think you are addicted to mobile phone use. If they say no to the first question and then they were considered to have mobile phone addiction disorder. So in this study addiction was assessed as self-reported by the study participants and also by assessing the activities related to the behavior towards the mobile usage. Addictive behaviour usually falls in the realm of abnormal behaviour. It is frequently defined as any activity, substance, object, or behaviour that has become the major focus of a person's life to the exclusion of other activities, or that has begun to harm the individual or others physically, mentally, or socially².

RESULTS: Out of a total of 213 student participants, sixty seven per cent were females, ten per cent used mobile phones for more than six years and around nineteen per cent used mobile phones between four to six years'. Twenty seven percent (55) of the students were having more than one mobile phone and around 32% (66) were having more than one sim cards. Thirty four percent of the study participants spend more than 1 hour either continuously or intermittently per day. Majority of the students spent less than one hour on hearing music, on gaming and on mobile internet which was 49%(105), 63.3 (135) and 45.5% (97) respectively. As far as the behavioral pattern is concerned 90% (192) study participants keep the mobile under the pillow or near the bed, 45% (96) of them check the mobile for any missed calls or messages at midnight, 48.8% (104) of them were checking the mobile as soon they get up from the bed.

When they were questioned about the usage of mobile phone during some activities they replied that 19.2% (41) were using during class hours, 25.4% (54) rest room usage, 35.7% (76) usage while driving and 56.3% (120) were using the mobile while it is in charging mode. Their main

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subjects of communication through (calls/sms/MMS) were love affairs, family matters, social matters and academic with graded importance. Majority 137 (64.3%) have experienced health problems like headache, sleep disturbance, ear pain, irritability. Almost (111) 52% of the students were replied that they can't live without mobile phones; 88 (41.3%) said that mobile phones are distractions, (49) 23% of our study population stated that their academic performances are affected due to mobile usage. Approximately 81% of the study participants were aware on health problems due to mobile phone usage. Addiction to mobiles was assessed by self-perception question "Is it possible to live without mobiles", for which 52% of the study participants responded that they can't live without mobiles.

DISCUSSION: At present there are no much larger studies or information about the mobile phone usage pattern and behavioral pattern on mobile usage. The result of this study shows that 52% (111) of the addicted to mobile phone usage which made them to answer that it is not possible to live without mobile phone. Similar 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 (MACRO ANALYSIS)³. The behavioral patterns associated with mobile phone usage of our study were almost similar to the study conducted among medical college students at Indore, in which 73% students responded that they keep their mobile phones with them even when they go to sleep (for 24 hrs. a day), 18.5% students used mobile phones during college hours and 8.5% students used it when absolutely necessary; 20% students responded that they lose their concentration and become stressed when they do not have their mobile around or their mobile has run out of battery (Sanjay Dixit et al)⁴. In our study 82% of respondents replied that they feel uncomfortable when others (friends/family members) try to use their mobile. But the study conducted in USA among university students showed that 90 to 92% do not share their mobile with anyone (Chakraborty. S)⁵. The study conducted in Poland (Szykowska A et al)⁶ among randomly selected university students showed that 70% complained of headache and 20% of dizziness. Impaired concentration occurred in 56% of respondents. Facial dermatitis was reported by 11%. The most prevalent symptom related to mobile phone use was the thermal sensation within the auricle and behind/around the ear and 82 subjects complained of headache. As long as our study was concerned, 64% of the study participants had shown headache, sleep disturbance, ear pain, irritability.

CONCLUSION: Our study was carried out on a focus group of 213 participants, which may not reflect the scenario worldwide since millions of cellular mobile subscribers are added every now and then. Because of this dangerous increasing trend especially among the young generations, they are more and more prone to become addicted to mobile phone usage. So the students are to be educated regarding the health problems owing to the over usage of mobile phones and at the same time several studies are needed to assess the extent of the problem.

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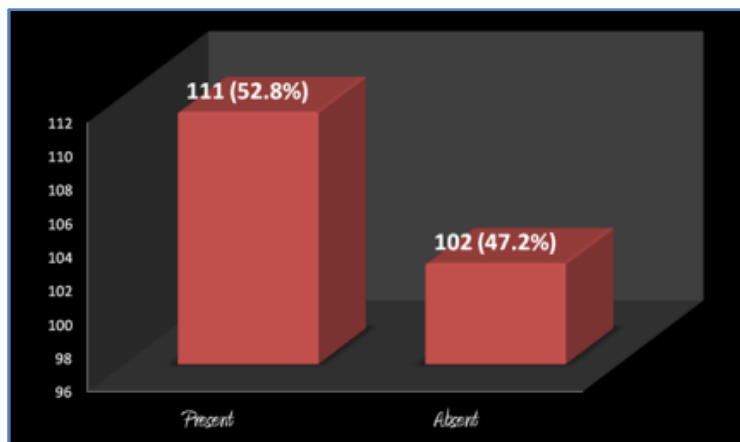
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Variable	Number = 213 and percentages
Gender	
Male	70 (33%)
Female	143 (67%)
Duration of usage	
Less than 2 years	57 (26.8%)
2 to 4 years	95 (44.6%)
4 to 6 years	40 (18.8%)
More than 6 years	21 (9.9%)
Number of mobile phones	
Single	149 (70%)
Two	44 (21%)
Three	20 (9%)
Number of sim cards	
One	137 (64.31%)
Two	49 (23%)
Three	27 (12.67%)
Duration spent on calls per day	
Less than one hour	140 (66%)
1 to 2 hours	39 (18%)
More than 2 hours	34 (16%)
Duration spent on hearing music	
Less than one hour	105 (49.3%)
1 to 3 hours	56 (26.3%)

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3 to 5 hours	14 (6.6%)
More than 5 hours	18 (8.5%)
Not using	20 (9.4%)
Duration spent on gaming	
Less than one hour	135 (63.3%)
1 to 3 hours	23 (10.8%)
3 to 5 hours	5 (2.3%)
More than 5 hours	7 (3.2%)
Not using	43 (20.3%)
Duration spent on internet	
Less than one hour	97 (45.5%)
1 to 3 hours	32 (15%)
3 to 5 hours	13 (6.1%)
More than 5 hours	7 (3.3%)
Not using	64 (30%)
Usage other than communication	
Hear songs	191 (89.7%)
Gaming	164 (77%)
Internet	142 (66.7%)
Behavioral pattern	
Keeping it under the pillow	192 (90%)
Midnight checking	96 (45.1%)
Checking first in the morning	104 (48.8%)
Class hours usage	41 (19.2%)
Restroom usage	54 (25.4%)
Usage while driving	76 (35.7%)
usage while charging	120 (56.3%)
Opinion on usage	
Academic hindrance	49 (23%)
Mobile phones are distractions	88 (41.3%)
Beneficial (studies)	32 (15%)
Technology should be utilized	20 (9.4%)
Others (Can be reduced/stopped)	24 (11.3%)
Knowledge and experience	
Aware about side effects	173 (81%)
Symptoms experienced	136 (64%)
Impossible to live without mobile phones	111 (52%)
Table – 1: Frequency distribution of study participants	

**Figure 1 - Mobile addiction – among study participants****AUTHORS:**

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