

Original Research

Mobile phone usage along with daily routine activities and its adverse effects on health among medical students of RajaRajeswari Medical College and Hospital, Bengaluru – A cross sectional study

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ABSTRACT:

Introduction: A mobile phone is a long-range, electronic device used for mobile voice or data communication over a network of specialized base stations known as cell sites. Approximately it's estimated that 85% of Americans, 60% of the British, and perhaps 45% of Indians use it, as of today there has been high dependence on the mobile phones in the recent times. **Materials and methods:** This was a cross-sectional study, which was carried out among medical students of Rajarajeswari medical college and hospital, Bengaluru. Sample size was calculated using open epi with anticipated frequency of 50%, design effect of 1.5 and at 95% CI came up to 354 and was rounded off to 360. **Results:** 66.7% use in case of emergency or personal safety. 66.3% never use while driving. 31.7% never use it in toilet. 18.6% had Pain in the neck, 31.4% had Headache, 21.7% had Vision problems 17.2% had Digestive problems 17 % had Exhaust 3.1% had Got burns and 7.5% had Diarrhea. **Conclusion:** The findings in our study suggests that the usage of mobile phones though have become inevitable and a part of our routine activities

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INTRODUCTION

Whereas at the same time, this mobile phones can cause harm. There are only limited studies done on usage of mobile phone, it has been advised that excessive use of mobile phone can be associated with health-compromising behaviors, such as smoking or alcohol drinking. Since because of these adverse effects of mobile phones on health there have been a large body of research (both epidemiological and experimental, in non-human animals and in humans) undertaken in various parts of the world. Very interesting results such as speeding up of reaction time during exposure, particularly during behavioral tasks calling for attention, and electroencephalographic changes during cognitive processes in humans have been found out.^{1,2} Usage of mobile phones has been seen more among Youth and they are the ones who have been affected most from

the entry of mobile phones into their lives, especially university students.³ There has been a widespread use of mobile phones by the People which have indicated that they have welcomed the technology. However, concerns about the possible adverse effects on health, as a result of the exposure to RF and microwave electromagnetic fields, have been expressed since the introduction of mobile phones.⁴ Adverse effects of Mobile phone addiction is not only on the health but it has negative impacts on students include social, educational, health and economic consequences.⁵ Increased use of mobile phones may cause psychological illness such as dry eyes, computer vision syndrome, weakness of thumb and wrist, neck pain and rigidity, increased frequency of De Quervain's tenosynovitis, tactile hallucinations, nomophobia, insecurity, delusions, auditory sleep disturbances, insomnia, hallucinations, lower self-

confidence, and mobile phone addiction disorders.⁶ The signs of smartphone addiction are constantly checking the phone for no reason, feeling anxious or restless without the phone, waking up in the middle of night to check the mobile and communication updates, delay in professional performance as a result of prolonged phone activities, and distracted with smartphone applications.⁷ Now a days it's very common to use mobile phones while eating, driving, in bathroom, in toilets, in meetings, during the lessons.⁸

OBJECTIVE

To assess the pattern of mobile phone usage along with the daily routine activities and its adverse effects on health among the medical students of Rajarajeswari Medical College and Hospital, Bengaluru.

MATERIALS AND METHODS

This was a cross-sectional study, which was carried out among medical students of Rajarajeswari medical

college and hospital, Bengaluru. Sample size was calculated using open epi with anticipated frequency of 50%, design effect of 1.5 and at 95% CI came up to 354 and was rounded off to 360. Initially population proportionate sampling was done to select required number of study subjects from each class and simple random sampling was done to select study subjects in each class. All the study subjects were briefed about the study and the consent was taken. The study subjects will be administered with a pretested semi structured questionnaire containing questions regarding the demographic details, questions related to usage patterns of mobile phones, and common health problems they are facing and their perceptions regarding mobile phone addiction. The data thus obtained was entered into Microsoft excel sheet and was analyzed using SPSS version v21. The results were expressed in frequencies and percentages, appropriate tests of significance such as chi square etc was used when needed.

RESULTS

Table 1: Class wise distribution of study subjects:

Class	Frequency	Percentage %
II year	183	50.8
III year	69	19.1
IV year	61	16.9
Interns	47	13

Table 2: Age and gender wise classification of the study subjects:

Gender	Frequency n=360	Percentage (%)
Female	245	68%
Male	115	32%
Age(yrs)		
18	74	20.5
19	137	38
20	53	14.7
21	49	13.6
22	24	6.6
23	23	6.3

Pie chart showing subjects distribution based on their stay:

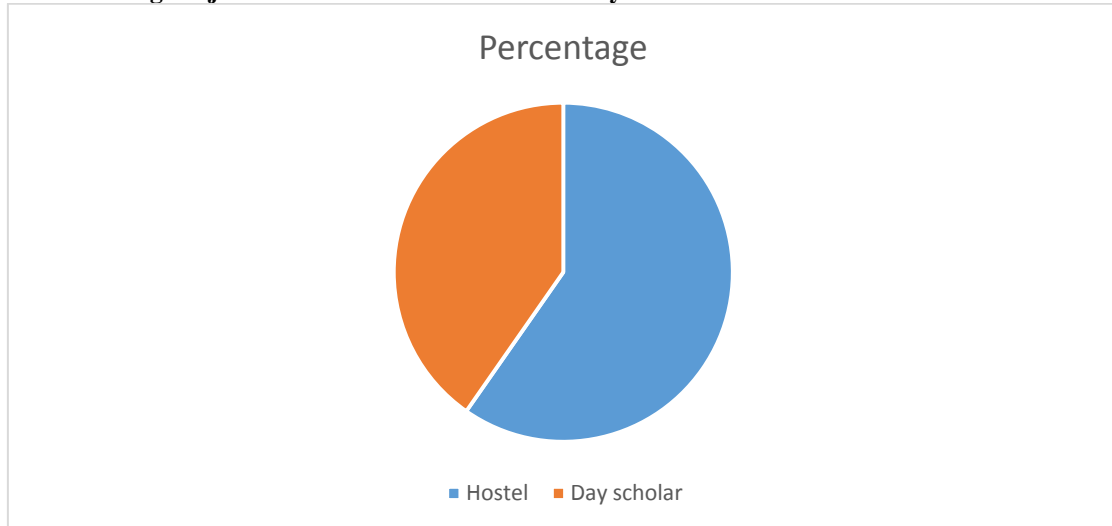
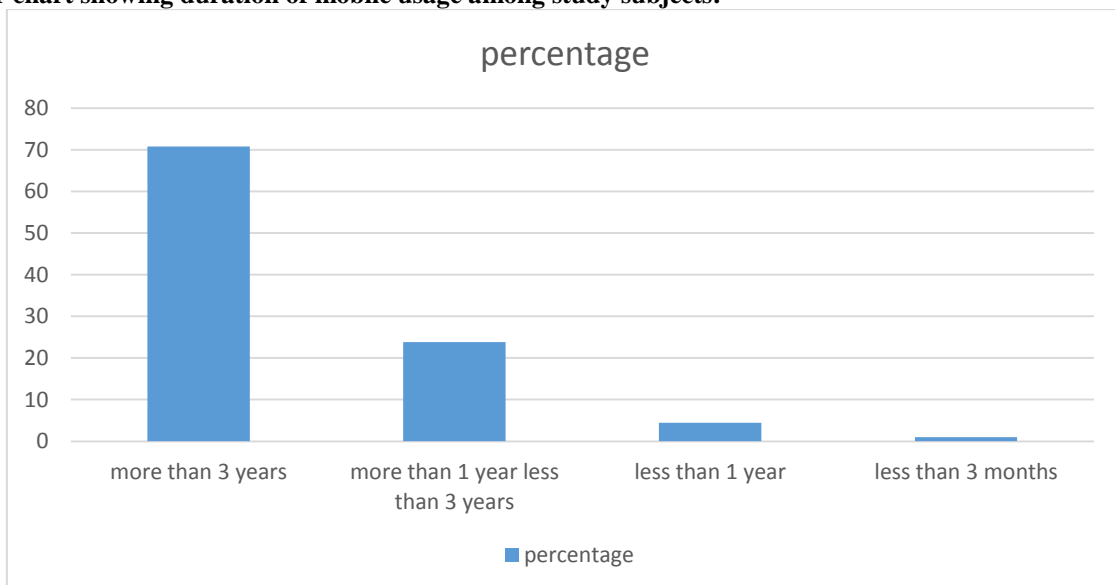


Table 3: Distribution of Study subjects based on the reason to acquire mobile phone:

Reasons to acquire mobile	Frequency	Percentage %
To use in case of emergency or personal safety	134	66.7
Everyone I know had one	29	14.4
To keep in touch with friends and other social contacts	117	58.2
To keep in touch with parents	120	59.7
For information access (phone numbers, internet, email, sports scores, etc)	126	62.7
It offers good value	20	10
Privacy management (I use it to stay in touch with close friends and/or family; others call me on my landline)	47	23.4

Bar chart showing duration of mobile usage among study subjects:



Pie chart showing distribution of study subjects based on How often they use their mobile phone:

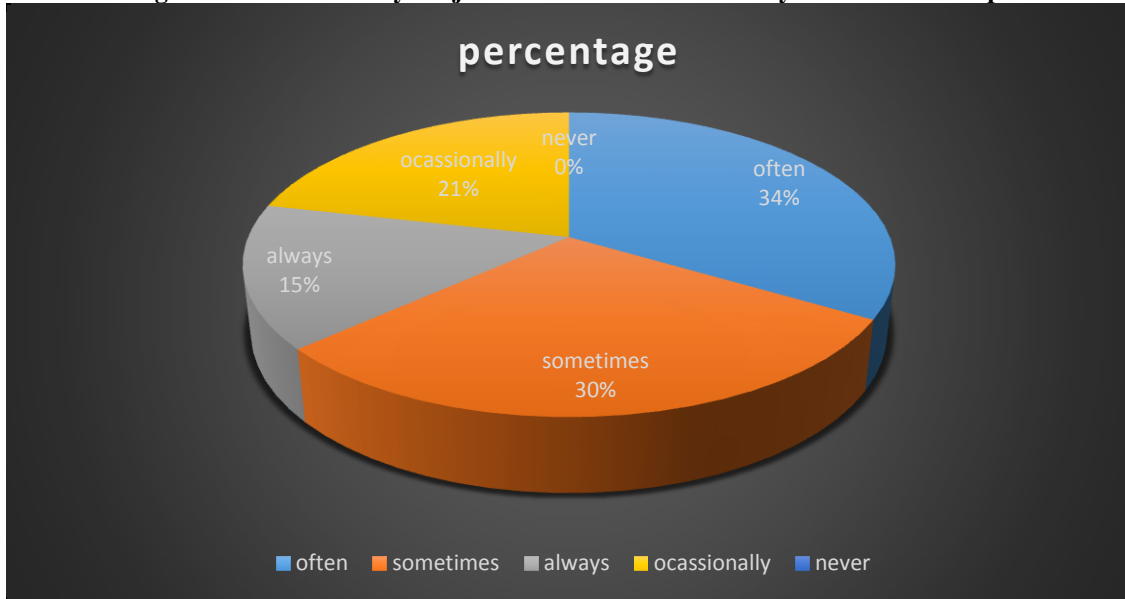


Table 4: Distribution of study subjects based on mobile usage while driving:

Usage while driving	Frequency	Percentage %
Never	239	66.3
Sometimes	107	29.7
Always	2	0.5
Emergency	5	1.4
With Bluetooth	7	2

Table 5: Distribution of study subjects based on their usage of mobile phones in bathroom/toilet:

Usage	Frequency	Percentage %
Sometimes	114	31.7
always	5	1.4
Multiple times a day	57	15.8
Rarely	77	21.3
Never	107	29.7

Table 6: Distribution of study subjects based on illness in recent past:

Illness	Frequency	Percentage %
Pain in the neck	67	18.6
Headache	113	31.4
Vision problems	78	21.7
Digestive problems	62	17.2
Exhaust	61	17
Got burns	11	3.1
Diarrhea	27	7.5
None	178	49.5

Table 7: Distribution of study subjects based on their mobile phone usage while having food:

Duration	Frequency	Percentage %
Always	2	0.5
Sometimes	153	42.5
Multiple times a day	38	10.5
Rarely	107	29.7
Never	60	16.8

Table 8: Comparison of study subjects who always use mobile phones in the toilet with having diarrhea in the recent past:

Usage of mobile phone in toilet/bathroom	Frequency	Diarrhea and digestive problems	
		Present	Absent
Multiple times a day	57	18	39
Never	107	12	95

Odds ratio: 3.65, the chi-square statistic with Yates correction is 9.0007. The p-value is .002699. Significant at $p < .05$.

Usage of mobile in toilet/bathroom	Frequency	Neck pain	
		Present	Absent
Multiple times a day	57	9	48
Never	107	15	92

Odds ratio: 1.15, the chi-square statistic with Yates correction is 0.0054. The p-value is .941367. Not significant at $p < .05$.

DISCUSSION

According to the study conducted by Latha Rajendra Kumar et al, named “Awareness of mobile phone hazards among university students in a Malaysian medical school”¹, it is seen that 12% of males and 26% females have experienced headache due to mobile phone usage as compared to 31.4% of the students included in this study who have undergone the same mobile phone hazard, as well as diarrhea which has been associated with mobile phone usage, has been agreed upon by approximately 2% of the students in the above mentioned study and there has been a significant association (p -value < 0.05) between mobile phone usage and diarrhea in our study as well. The study conducted by Sameeha Naser Abed et al, “Health problems of Mobile Phone Addiction for Sample of students and their health awareness at institute technical of kut.”³ Shows that 61.73% of males and 66.22% of females have experienced headache and a total of 57.76% of the total participants experienced pain in neck as compared with 31.4% of the participants in our study who have experienced headache and 18.6% of them have experienced pain in neck. Another study conducted by Amine Hatun Atas et al, “Smartphone Use of University Students: Patterns, Purposes, and Situations”¹⁰ shows that students (39.4) who are 18 years and above have been using mobile phones for a minimum period of three years in comparison with 68% of the participants in the present study. Similarly, a study conducted by Mahendra M. Alate et al, called “Survey Report on Use of Smartphone among the College Students”⁹ also shows the usage of mobile phones of more than 3 years by students aged between 21 and 22 years.

CONCLUSION

The findings in our study suggests that the usage of mobile phones though have become inevitable and a part of our routine activities, it has contributed to

many health hazards which maybe in terms of the physical health complaints such as headache and neck pain and also contributing to diarrhea due to transmission of infective agents and hence being a fomite as well.

Consideration of only the hazards of impact of the mobile phone on mental health has been given importance but that may not be the only problems we face due to mobile phones is to be given importance.

CONFLICT OF INTEREST

None declared

SOURCE OF FUNDING

None

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