

## A cross sectional study of usage patterns and effects of smart phone among the medical students of tertiary care hospital

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Received: 04-06-2021 / Revised: 09-07-2021 / Accepted: 20-09-2021

### Abstract

**Introduction:** Mobile phone usage has become indispensable, especially among the youngsters. This has brought about psychological dependency towards mobile phones leading to addiction in them. Excessive use of mobile phones is known to be associated with head ache, ear ache, warmth sensations and also perceived concentration difficulties. **Materials and Methods:** A descriptive cross-sectional study was conducted among the Medical undergraduate students of Department of Community Medicine, Katuri Medical College, Guntur during the period of January 2021-June 2021. A convenient sample of 150 medical students were considered for this study. Participants were selected through Simple Random Sampling technique of 150 in number and a pre-designed, semi-structured questionnaire was self-administered to each student. All students who were willing to participate were included in the study. Data was entered and analysed with MS Excel and SPSS. **Results:** The study population included 150 medical under graduates. The mean age of the study population was  $21.3 \pm 1.2$  years. There were 39.7 % males and 60.3 % females. Around 8% of the subjects had no siblings and 65% of them had only one sibling. The per capita income was ranging from 2000 to 50,000 per month. Around 11.3% had per capita income more than 30,000 and 20.7% had more than 20,000. **Conclusion:** The pattern of use differs between males and females. Usage for social networking is more among females. Usage after midnight and chatting with strangers is more prevalent among males. Behaviours like getting annoyed/restless when interrupted, are a point of concern. Factors like using the smartphone till late in the night might cause less sleep which might lead to less concentration in the classrooms. Also, the usage while in classroom is very high, this might also affect their concentration on studies. Symptoms like headache, eyestrain and stress were found in majority of the students after using the smartphone for a long time. All these factors might affect their concentration, academic performance and also their health in the long run. In the existing scenario the need of the hour is to educate and create awareness among the students about the ill effects of over usage of smart phone, not only on their health but also on their studies and life style.

**Key Words:** Mobile phone, head ache, ear ache, warmth sensations.

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### Introduction

Mobile phone usage has become indispensable, especially among the youngsters. This has brought about psychological dependency towards mobile phones leading to addiction in them. Excessive use of mobile phones is known to be associated with head ache, ear ache, warmth sensations and also perceived concentration difficulties[1]. There are also various studies which have showed that the majority of mobile users suffer from sleep deprivation and increased stress affecting their cognitive and learning abilities[2,3]. Nevertheless, use of smart phones has exploded and they have become an essential part of business, commerce and society[3]. They make it easy to stay in touch with people, but their excessive use has raised concern, which might have negative impacts on health and studies. Some of the hazards related to the smartphone use include headache, sleep disturbance, lack of concentration and impairment of short term memory[4].

It has been shown that young people who use cell phones excessively have increased restlessness, more careless lifestyles and greater susceptibility to stress[5,6,7]. Medical college students might be more vulnerable because of their heavy use of smart phones for study and work[8,9]. Therefore, this study aimed to assess the usage patterns and the extent of influence of Smart phones on the Medical students who participated in this study.

### Materials and methods

A descriptive cross-sectional study was conducted among the Medical undergraduate students of Department of Community Medicine, Katuri Medical College, Guntur during the period of January 2021-June 2021. A convenient sample of 150 medical students were considered for this study. Participants were selected through Simple Random Sampling technique of 150 in number and a pre-designed, semi-structured questionnaire was self-administered to each student. All students who were willing to participate were included in the study. Data was entered and analysed with MS Excel and SPSS.

### Study Sample

150 Medical Students were given pre-tested, Pre-designed, semi-structured & self-administered questionnaire and the data collected regarding the usage patterns and effects of smart phone among the medical students of Guntur.

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**Study Site**

Medical undergraduate students of Department of Community Medicine, Katuri Medical College, Guntur.

**Study Design**

A cross-sectional survey, Participants were selected through simple random sampling and a pre-designed, semi-structured questionnaire was self-administered to each student.

**Study Period**

January 2021-June 2021

**Inclusion Criteria**

Katuri Medical College, Guntur students who were willing to participate were included in the study.

**Exclusion Criteria**

Students not willing to participate in the study.

**Methodology**

A Pre-tested, Pre-designed & semi-structured questionnaire was self-administered to, Participants willing to participate in the study. Data collected from the filled in questionnaire of the participants.

**Statistical Analysis**

Chi-square test was done and the association between social networking and the following factors was found to be statistically significant-

- Frequency of checking the phone.
- Usage even while in classroom.
- Preference to be with the smartphone even while at home.
- Getting restless/annoyed when interrupted.
- Feeling insecure when others used phone.
- Feeling sleepy very often in the classroom.

Also, the following associations for males vs females were found to be statistically significant. Data was entered with MS Excel 2007 and analysed using SPSS Ver.22.

**Results**

The study population included 150 medical under graduates. The mean age of the study population was  $21.3 \pm 1.2$  years. There were 39.7 % males and 60.3 % females. Around 8% of the subjects had no siblings and 65% of them had only one sibling. The per capita income was ranging from 2000 to 50,000 per month. Around 11.3% had per capita income more than 30,000 and 20.7% had more than 20,000.

Around 39.3% of them were using smartphone for more than 2 years. Around 22.6% of them were using for more than 6 hrs/day. Almost 49.6% use it beyond 11 P.M. in the night. Gaming was the most used feature among 63% of males and 37% of females. Social networking was the most used feature among 79% females and 21% males. Around 2% use for music and 1.7% use it for porn.

Almost 96.7% of them feel that the smartphone has helped them to gain knowledge. Around 72.3% use their smartphone even while in the classroom and 34% feel sleepy in the classroom, very often. Around 31.7% feel that their grades have come down since they used the smartphone. Around 41% of them check their phone every 10-15 minutes. Around 30.7% prefer to be with their smartphone even while at home.

Around 59.7% of the students' parents complain that they are spending too much of their time with the smartphone. On being interrupted while they are on their smartphone, 44% feel restless to get back to their phone and 16% get annoyed with their family and ask them to leave. Almost 53.3% feel insecure when others use their smartphone. Around 46.7% of them carry their smartphone to the dining table and 20.3% complete their food in a hurry so as to attend to their smartphone. Around 26.7% carry their smartphone to the washroom.

Around 14% of them are not involved in any kind of outdoor activities. Around 16.3% of them feel that they have gained weight since they have been using smartphone. Around 18.7% feel comfortable chatting even with strangers. Around 14% of them are not involved in any kind of outdoor activities. Around 16.3% of them feel that they have gained weight since they have been using smartphone. Almost 90% of them were aware of the radiation hazards of the smartphone.

Almost 65% of them experienced headache, eyestrain and stress after using the smartphone for a long time. Overall 47.3% of the study subjects feel there is no better alternative to a smart phone.

**Table 1: Duration of smart Phone usage**

S.No	Duration of smart phone usage	Percentage
1	<6 months	10.70%
2	6-12 months	10.30%
3	1-2 years	39.70%
4	>2 years	39.30%

**Table 2: Male and female dominant usage patterns**

Gender	Gaming	Social networking
Male	61%	21%
Female	34%	77%

**Table 3: Usage Patterns of Smart Phone**

S.No	Usage Patterns of Smart Phone	Percentage (%)
1	Using for > 8 hrs/ day	10
2	Using while in Class room	72
3	Checking the phone every 10-15 mins	41
4	Maximum usage at home	30.5
5	Parents complaining about over usage	60
6	Using while Dining	47
7	Using while in Wash room	28
8	Sleeping with Smart Phone underneath Pillow	58
9	Usage beyond 11 P.M.	49.5

**Table 4: Effects of Smart Phone Usage**

S.No	Effects of Smart Phone Usage	Percentage (%)
1	Head ache	65
2	Weight gain	17
3	No outdoor activity	14
4	Eating in hurry	20
5	Insecure when others use their Phone	53
6	Annoyed on being Interrupted	60
7	Feeling sleepy in Class room	35
8	Grades dipped	33

**Table 5: Attitude towards Smart Phone Usage**

S.No	Attitude	Percentage (%)
1	Gained Knowledge	98
2	Best time killer	76
3	No better alternative	48

### Discussion

The present study was conducted in Katuri Medical College, Guntur, among under graduates. Majority belonged to 21-22 years. There were more females (60.3 %) than males in the group. Majority belonged to upper middle and upper class of modified Kuppuswamy socioeconomic status[10,11,12].

Of the 150 students, majority (61.33%) of them used Smart Phone for > 4 hours per day. Most of them were using for social networking and gaming. Almost half of the males (48.73%) check their phone every 10-15 minutes. Class room usage of Smart Phone was found to be very high in both males and females. Almost one fourth of the students carry their Smart Phone to wash room and use it even after midnight. Chatting with strangers was felt comfortable by 18.6% of the students[13,14,15].

Social networking was predominantly playing a significant role behind student behaviours, like frequently checking the phone, using the phone in class rooms, getting annoyed when interrupted and feeling insecure when others use their phone[16].

Certain significant gender differences were found in the Smart Phone usage. In a study conducted by Unnikrishnan et al in Coastal South India 56% were male and 44% were female students[11].

Males were more significantly checking the phone frequently, preferring to use phone even at home, using while dining, carrying it to the wash room, using the phone beyond midnight and chatting with strangers, when compared to females[17].

Two-thirds (65%) of the subjects were experiencing symptoms like headache after using smart phone for longer hours. One third (31.6%) of the students feel that their grades have come down because of Smart Phone usage and 16.3% of them felt that they gained weight after using Smart Phone. Almost half of the students felt that there was no other better alternative to the Smart Phone[18,19].

In the present study, headache (65%), weight gain (17%), no outdoor activity (14%), eating in hurry (20%), Insecure when others use their Phone (53%), Annoyed on being Interrupted (60%), Feeling sleepy in Class room (35%) and Grades dipped (33%). Similar study was conducted by Paul et al among the medical students found that 35.4% of the students complained of headache and spasms of arm or neck muscles (31.0%) or loss of attention (24.7%). Among the medical students of Western Maharashtra, headache was 30.20% among girls, 15.60% in boys, eye symptoms 5.50%, sleep deprivation 21% by Yadav[20].

### Conclusion

The pattern of use differs between males and females. Usage for social networking is more among females. Usage after midnight and chatting with strangers is more prevalent among males. Parental concern about over usage of smartphone is more among males. Males are more insecure when others use their smartphone when compared to females. Risky behaviours like chatting with strangers is noticeably prevalent among the students. Accompanying behaviours like getting annoyed/restlessness when interrupted, are a point of concern. Factors

like using the smartphone till late in the night might cause less sleep which might lead to less concentration in the classrooms. Also, usage while in classroom is very high, this might also affect their concentration on studies. Symptoms like headache, eyestrain and stress were found in majority of the students after using the smartphone for a long time. All these factors might affect their concentration, academic performance and also their health in the long run. In the existing scenario the need of the hour is to educate and create awareness among the students about the ill effects of over usage of smart phone, not only on their health but also on their studies and healthy life style. Timely supervision and counseling need to be given to those who are using smart phones for an alarmingly increasing duration. Educational institutions need to involve the students in extra-curricular activities to a larger extent, to limit their sedentary habits and make their routine more interesting.

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**Conflict of Interest: Nil Source of support: Nil**