STUDY OF USAGE PATTERNS AND EFFECTS OF SMART PHONE AMONG THE MEDICAL STUDENTS OF NIZAMABAD, TELANGANA

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ABSTRACT

BACKGROUND

Smartphone has greatly impacted education, health and social life. It has drastically changed the cultural norms and behaviour of individuals.¹ This study focuses on the usage patterns, accompanying behaviour and effects of smartphones among medical students.² They make it easy to stay in touch with people but their excessive use has raised concern, which might have negative impact 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.³

METHODS

This cross-sectional study was conducted among the medical undergraduate students of Govt. Medical College, Nizamabad, Telangana State, during the period of October-December 2014.^{4,5,6} A convenient sample of 300 medical students was considered for this study. Participants were selected through simple random sampling and a pre-designed, semi-structured questionnaire was given to each student. 300 medical students were given pre-tested, pre-designed, semi-structured & self-administered questionnaire and the data regarding the usage patterns and effects of smart phone among the medical students of Nizamabad was collected.

RESULTS

Among the study subjects, the following results were obtained from our study, after analysis of data.

- 39.3% of them were using smartphone for more than 2 years.
- 96.7% of them feel that their knowledge improved.
- 22.6% of them were using smart phones for more than 6 hrs/day.
- 49.6% use them even after 11 P.M.
- Social networking was the most used feature.
- 72.3% use them in classrooms.

CONCLUSIONS

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.³ 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

Smartphone, Medical Students, Effects of Smartphone, Social Networking

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BACKGROUND

Nowadays, smart phones are a major part of our life due to their usefulness. It is difficult to avoid such new technologies, while we all know the effect it has on the society and also on the environment.

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Nevertheless, use of smartphones has exploded and they have become an essential part of business, commerce and society³. 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 memory³. It has been shown that young people who use cell phones excessively have increased restlessness, more careless lifestyles and greater susceptibility to stress.^{3,7,8} Medical college students might be more vulnerable because of their heavy use of smartphones for study and work. 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.

Aim

To study the usage patterns and effects of smart phone among the medical students of Nizamabad, Telangana.

Objectives

1. Frequency, Patterns- Time spent by medical students on smart phones.
2. Effects of smart phones usage on-
 - Study disturbances.
 - Social behaviour.
 - Education performance.

METHODS

A descriptive cross-sectional study was conducted among the Medical undergraduate students of Govt. Medical College, Nizamabad, Telangana State, during the period of October-December 2014. A convenient sample of 300 medical students were considered for this study⁶. Participants were selected through Simple Random Sampling technique of 300 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

300 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 Nizamabad.

Study Site

Medical undergraduate students of Govt. Medical College, Nizamabad, Telangana.

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

October 2014 - December 2014.

Inclusion Criteria

Govt. Medical College, Nizamabad 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 300 medical under graduates. The mean age of the study population was 21.3 ± 1.2 years. There were 39.7 % males and 60.3 % females⁹. 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.⁵ 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.¹⁰ 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.¹⁰ Around 31.7% feel that their grades have come down since they used the smartphone.¹¹ 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.^{12,13} 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.^{11,14,9} 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 smartphone¹⁵. 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.^{16,17}

Almost 65% of them experienced headache, eyestrain and stress after using the smartphone for a long time.¹⁸ Overall 47.3% of the study subjects feel there is no better alternative to a smart phone.

Usage Patterns of Smart Phone	Percentage (%)
Using for > 8 hrs/ day	10
Using while in Class room	72
Checking the phone every 10-15 mins	41
Maximum usage at home	30.5
Parents complaining about over usage	60
Using while Dining	47
Using while in Wash room	28
Sleeping with Smart Phone underneath Pillow	58
Usage beyond 11 P.M.	49.5

Table 1. Usage Patterns of Smart Phone

Effects of Smart Phone Usage	Percentage (%)
Head ache	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
Grades dipped	33

Table 2. Effects of Smart Phone Usage

Attitude	Percentage (%)
Gained Knowledge	98
Best time killer	76
No better alternative	48

Table 3. Attitude Towards Smart Phone Usage

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Gaming	300	100.0%	0	0.0%	300	100.0%

Table 4. Chi-Square Test.: Gender Vs Gaming

			Gaming		Total
			No	Yes	
Gender	Female	Count	119	61	180
		Expected Count	99.6	80.4	180.0
	Male	Count	47	73	120
		Expected Count	66.4	53.6	120.0
Total		Count	166	134	300
		Expected Count	166.0	134.0	300.0
Table 4 (ii). Gender * Gamina Cross Tabulation					

Table 4 (ii). Gender * Gaming Cross Tabulation

	Value	df	Asymp. Sig. (2-Sided)	Exact Sig. (2-Sided)	Exact Sig. (1-Sided)
Pearson Chi-Square	21.150 ^a	1	.000004		
Continuity Correction ^b	20.073	1	.000		
Likelihood Ratio	21.285	1	.000		
Fisher's Exact Test				.000006	.000004
N of Valid Cases	300				
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 53.60.					
b. Computed only for a 2 x 2 table					

Table 4 (iii). Chi-Square Tests

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Social-Networking	300	100.0%	0	0.0%	300	100.0%

Table 5. Chi-Square Test. Gender Vs Social-Networking

			Social-Networking		Total
			No	Yes	
Gender	Female	Count	41	139	180
		Expected Count	82.2	97.8	180.0
	Male	Count	96	24	120
		Expected Count	54.8	65.2	120.0
Total		Count	137	163	300
		Expected Count	137.0	163.0	300.0
Table 5(ii). Gender * Social-Networking Cross Tabulation					

Table 5(ii). Gender * Social-Networking Cross Tabulation

	Value	df	Asymp. Sig. (2-Sided)	Exact Sig. (2-Sided)	Exact Sig. (1-Sided)
Pearson Chi-Square	95.016 ^a	1	1.8886E-22		
Continuity Correction ^b	92.724	1	.000		
Likelihood Ratio	100.368	1	.000		
Fisher's Exact Test				3.3561E-23	2.4022E-23
N of Valid Cases	300				
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 54.80.					
b. Computed only for a 2 x 2 table					

Table 5 (iii). Chi-Square Tests

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Gender * Effects	300	100.0%	0	0.0%	300	100.0%

Table 6. Chi-Square Test: Gender Vs Effect

			Effects		Total
			No	Yes	
Gender	Female	Count	96	84	180
		Expected Count	69.6	110.4	180.0
	Male	Count	20	100	120
		Expected Count	46.4	73.6	120.0
Total		Count	116	184	300
		Expected Count	116.0	184.0	300.0
Table 6 (ii). Gender * Effects Cross Tabulation					

Table 6 (ii). Gender * Effects Cross Tabulation

	Value	df	Asymp. Sig. (2-Sided)	Exact Sig. (2-Sided)	Exact Sig. (1-Sided)
Pearson Chi-Square	40.817 ^a	1	1.6716E-10		
Continuity Correction ^b	39.286	1	.000		
Likelihood Ratio	43.473	1	.000		
Fisher's Exact Test				7.6486E-11	5.3524E-11
N of Valid Cases	300				
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 46.40.					
b. Computed only for a 2 x 2 table					

Table 6 (iii). Chi-Square Tests

Chi-square test was done and the result are association between Gender Vs Usage of Pattern (Gaming, Social Networking) with χ^2_g (1, N=300)= 21.150, $p= 0.000004 \leq 0.05$; χ^2_{s-n} (1, N=300)=95.016, $p= 1.8886E-22 \leq 0.05$; and Gender Vs Effects with χ^2_e (1, N=300)=40.187, $p= 1.6716E-10 \leq 0.05$ was found to be statistically significant.

DISCUSSION

The present study was conducted in Govt. Medical College, Nizamabad, 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.

Of the 300 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.¹² 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.³ Chatting with strangers was felt comfortable by 18.6% of the students.

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 in secured when others use their phone.

Certain significant gender differences were found in the Smart Phone usage.³

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.

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.¹⁹ Almost half of the students felt that there was no other better alternative to the Smart Phone.

CONCLUSIONS

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.²⁰ 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.

REFERENCES

- [1] Sarwar M, Soomro TR. Impact of smartphone's on society. Eur J Sci Res 2013;98(2):216-26.
- [2] Al-Khlaiwi T, Meo SA. Association of mobile phone radiation with fatigue, headache, dizziness, tension and sleep disturbance in Saudi population. Saudi Med J 2004;25(6):732-6.
- [3] Jamal A, Sedie R, Haleem KA, et al. Patterns of use of 'smart phones' among female medical students and self-reported effects. J Taibah University Medical Sciences 2012;7(1):45-9.
- [4] Jenaro C, Flores N, Gómez-Vela M, et al. Problematic internet and cell-phone use: Psychological, behavioural and health correlates. Addiction Research and Theory 2007;15(3):309-20.
- [5] Beranuy M, Oberst U, Carbonell X, et al. Problematic Internet and mobile phone use and clinical symptoms in college students: the role of emotional intelligence. Computers in Human Behavior 2009;25(5):1182-7.
- [6] Aggarwal M, Grover S, Basu D. Mobile phone use by resident doctors: tendency to addiction-like behaviour. German J Psychiatry 2012;15(2):50-5.
- [7] Van den Bulck J. Television viewing, computer game playing, and internet use and self-reported time to bed and time out of bed in secondary-school children. Sleep 2004;27(1):101-4.
- [8] Thomée S, Härenstam A, Hagberg M. Mobile phone use and stress, sleep disturbances and symptoms of depression among young adults - a prospective cohort study. BMC Public Health 2011;11:66.

- [9] Dixit S, Shukla H, Bhagwat A, et al. A study to evaluate mobile phone dependence among students of a medical college and associated hospital of central India. *Indian J Community Med* 2010;35(2):339-41.
- [10] Gupta N, Garg S, Arora K. Pattern of mobile phone usage and its effects on psychological health, sleep and academic performance in students of a medical university. *Nat J Physiology, Pharmacy and Pharmacology* 2016;6(2):132-9.
- [11] Prasad M, Patthi B, Singla A, et al. Nomophobia: a cross-sectional study to assess mobile phone usage among dental students. *J Clin Diagn Res* 2017;11(2):ZC34-ZC9.
- [12] De la Puente MP, Balmori A. Addiction to cell phones: are there neurophysiological mechanisms involved? *Proyecto* 2007;61:8-12.
- [13] Khan MM. Adverse effect of excessive mobile phone use. *Int J Occup Med Environ Health* 2008;21(4):289-93.
- [14] Basu S. A comment on "nomophobic behaviours among smartphone using medical and engineering students in two colleges of West Bengal" letter by Dasgupta et al. (2017). *Indian J Public Health* 2018;62(1):68-9.
- [15] Buck M. Is a new non-drug addiction emerging? *School and Health* 2008;21:15-9.
- [16] Hocking B, Westerman R. Neurological abnormalities associated with mobile phone use. *Occup Med* 2000;50(5):366-8.
- [17] Hocking B. Preliminary report: symptoms associated with mobile phone use. *Occup Med (Lond)* 1998;48(6):357-60.
- [18] Cinel C, Russo R, Boldini A, et al. Exposure to mobile phone electromagnetic fields and subjective symptoms: a double-blind study. *Psychosom Med* 2008;70(3):345-8.
- [19] Van den Bulck J. Adolescent use of mobile phones for calling and for sending text messages after lights out: results from a prospective cohort study with a one-year follow-up. *Sleep* 2007;30(9):1220-3.
- [20] Oftedal G, Wilen J, Sandstrom M, et al. Symptoms experienced in connection with mobile phone use. *Occup Med (Lond)* 2000;50(4):237-45.