

Smartphone Use and its Health Related Problems in Undergraduate Students of Sialkot

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ABSTRACT

Objective: To investigate the Smartphone use and health related problems among undergraduate students

Study Design: Cross-sectional study

Place and Duration of Study: This study was conducted at the Various educational institutions of Sialkot during the month of October 2018.

Materials and Methods: Undergraduate students were approached. Non-probability convenience sampling technique was used to get a sample size of 417. Students from 14th year of study and having Smartphone were included. Exclusion criteria were students suffering from severe illnesses, delirious or refusing written informed consent. A data sheet contained information about demographics, Smartphone use and problem faced. The data was analyzed by SPSS v 23.

Results: Of the 417 students 194 (46.52%) were males and 223 (53.48%) were females. Majority were from urban middle income class. 356 (85.37%) student's family members had Smartphone. Students were from four study groups, 106 (25.42%) from arts, 105 (25.18%) from general science, 104 (24.94%) from medical and 102 (24.46%) from computer & IT. Three most common application used by the students were Facebook 397 (95.20%), web browser 389 (93.28%) and WhatsApp 368 (88.25%). By average daily use YouTube was 2.1 hours, WhatsApp 1.9 hours and video gaming 1.8 hours. Three most common problems were day time sleepiness 208 (49.64%), insomnia 193 (46.28%) and fatigue 178 (42.68%).

Conclusion: Three most common application used were Facebook 397 (95.20%), web browser 389 (93.28%) and WhatsApp 368 (88.25%). Three most common problems reported were day time sleepiness 208 (49.64%), insomnia 193 (46.28%) and fatigue 178 (42.68%).

Key Words: Smartphone, Students, Health problems, Cell Phone, addiction,

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INTRODUCTION

Smartphone is a gadget with highly developed features. Mobile phone and cellular phone are synonyms of smartphone. In the past a device with connected wires was used for communication purpose and a specific device was used for specific purpose. With the innovation of smartphone, revolutionary changes have occurred in technology era and now a single smartphone is used for multipurpose. Multiple applications have been developed and can be installed when needed.

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One can easily communicate with others through text message, voice call, and video call. It is an easiest mean for professionalism, information access and workplace organization. In the health field smartphones play a pivotal role because health care provider and patients strive for better patients' health.¹ However, in present situation negative impacts of smartphones are getting public interest. A study conducted on medical students of Saudi Arabia revealed that 44.4% medical students suffered from decreased concentration, fatigue, hearing loss, memory problem and headaches due to excessive use of smartphones.² In Sakarya University Turkey and Isfahan University of Medical Sciences Iran both studies showed that worsening of sleep quality was due to increasing addiction of smartphone.^{3,5} Another study declared that smartphone addiction makes the person nervous and depress when he/she is away from his/her smartphone.⁴ A study in Pakistan showed that, smartphone addiction had negative affect on participants' relationship with families because they didn't bear any interference while using smartphones.⁶ To our knowledge no such study has been conducted in Sialkot. The objective of the current study was to investigate the smartphone use and health related

problems among the students of various educational institutions of Sialkot.

MATERIALS AND METHODS

The study was conducted at various educational institutions of Sialkot city during the month of October 2018. Non probability convenience sampling technique was used. It was a cross sectional study. Ethical approval was taken from ethical review committee. Guidelines in the Declaration of Helsinki were followed. Title and purpose of the study were explained to students. Written informed consent was taken. Sample size was calculated by open pie calculator. Initially 423 students were approached. Six students refused to give informed consent. The demographics of these students were not very different from rest of the students. So 417 students were included in the final study. Inclusion criteria were students in their 14th year of study and having smartphone. Exclusion criteria were students suffering from severe physical or psychiatric illness, unconscious students or students who were in delirium or refused to give written informed consent. A data sheet was made. It contained three parts. In the first part demographic information of the students was recorded. In the second part information about smartphone use and its applications and the average daily duration of use of each application by the students were recorded. In the third part, there was a list of different health problems and students were asked to tick mark the problems they thought, they faced due to the use of smartphone. The data sheet was collected from all the students of medical, arts, general science and computer & IT. The data was analyzed by SPSS v 23.

RESULTS

Of the 417 students who were included in the study, there were 194 (46.52%) males and 223 (53.48%) females. Mean age of the male students was 20.11 ± 1.23 years with range from 19-21 years. Mean age of the female students was 19.8 ± 1.36 years with range from 18-21 years. All students were in their 14th year of study. 67 (16.07%) students had family monthly income of less than 30000, 249 (59.71%) were from income group 30000-75000 and 101 (24.22%) belonged to above 75000 income group. Most of the students 191 (45.81%) belonged to urban background while 89 (21.34%) students were from semi-urban background. 137 (32.85%) students belonged to rural background. Most of the students 231 (55.40%) were day scholar while 186 (44.60%) students were living in hostel. 356 (85.37%) student's family members had smartphone while only 61 (14.63%) student's family members did not have smartphone. The students were from four professional study groups. Out of the total 417 students, 106 (25.42%) students were from arts group, 105

(25.18%) students belonged to general science group, 104 (24.94%) students were from medical group while 102 (24.46%) students belonged to computer & IT. Table 1.

Table No.1. Demographics of the students N=417.

Variable	Number	Percentage %
Gender		
Male	194	46.52%
Female	223	53.48%
Family monthly income in Pak Rs		
Less than 30000	67	16.07%
30000-75000	249	59.71%
Above 75000	101	24.22%
Family background		
Urban	191	45.81%
Semi-urban	89	21.34%
Rural	137	32.85%
Residence		
Hostel	186	44.60%
Day scholar	231	55.40%
Other family members having smartphone		
Yes	356	85.37%
No	61	14.63%
Subjects of study		
Arts	106	25.42%
General science	105	25.18%
Medical	104	24.94%
Computer & IT	102	24.46%

Table No.2. Smartphone applications used by students N=417

Sr. No.	Applications	Number	%age	Average daily use in hours
1	Facebook	397	95.20 %	1.5
2	WhatsApp	368	88.25%	1.9
3	Instagram	193	46.28%	0.6
4	Twitter	115	27.57%	0.15
5	YouTube	278	66.66%	2.1
6	Web browser	389	93.28%	0.8
7	Video gaming	285	68.34%	1.8
8	Study purpose	171	41.00%	0.5
9	Text message	207	49.64%	0.2
10	Others	86	20.62%	0.3

Out of the total 417 students, 397 (95.20%) students were using Facebook with average daily duration of 1.5 hours. 368 (88.25%) students were communicating through WhatsApp with 1.9 hours average daily usage.

193 (46.28%) students were spending their average daily 0.6 hours with Instagram. Twitter users were 115 (27.57%) with average daily duration of 0.15 hours. 278 (66.66%) students were watching dramas, movies, seasons and news channels with average 2.1 hours daily usage. 389 (93.28%) students with average 0.8 hours daily usage, 285(68.34%) students with average 1.8 hours daily usage, 171 (41.00%) students with average 0.5 hours were spending their time with web browser, video gaming and study purpose respectively. Table 2.

Table No.3. Problems reported after Smartphone use by students N=417

Serial number	Problems	Number	Percentage %
1	Fatigue	178	42.68%
2	Headache	157	37.65%
3	Irritability	165	39.57%
4	Insomnia	193	46.28%
5	Weight gain	127	30.45%
6	Eye problems	85	20.38%
7	Day time sleepiness	207	49.64%
8	Impaired concentration	103	24.70%
9	Ear problems	67	16.06%
10	No problems	45	10.80%

178 (42.68%) students complained of fatigue in daily life. Headache was present among 157 (37.65%) students. 165 (39.57%) were noted with irritability. Insomnia and day time sleepiness were present among 193 (46.28%) and 207 (49.64%) respectively. The preponderance of day time sleepiness was due to use of smartphone at night time. 127(30.45%) students were caught with reduced physical activity and reported a complain of weight gain. 85(20.38%) students thought that their eye problem was due to smart phone use. Impaired concentration was reported by 103 (24.70%) students. Only 45 (10.80%) students did not report any complain while 67 (16.06%) students suffered from ear hearing related problems. Table 3.

DISCUSSION

The results of our study show that the three most common application used by the students were Face book 397 (95.20%), web browser 389 (93.28%) and WhatsApp 368 (88.25%). By average daily use, three most common applications being used were YouTube 2.1 hours, WhatsApp 1.9 hours and video gaming 1.8 hours. Three most common problems reported by the student were day time sleepiness 208 (49.64%), insomnia 193 (46.28%) and fatigue 178 (42.68%).

In a Saudi Arabian study on students, three most commonly used applications were WhatsApp (41%), Twitter (18.5%) and Instagram (12.5%)⁷, while in our study Facebook 397 (95.20%), web browser 389 (93.28%), and WhatsApp 368 (88.25%) are three most commonly used applications. Studies conducted in Turkey and Iran reported that sleep quality worsens with increasing use of smartphone. The results of our study show that almost half 208 (49.64%) reported day time sleepiness and insomnia was reported by 193 (46.28%) students. These results corroborate with our results.^{3,5} Fatigue was reported by 178 (42.68%) students. Another Saudi Arabian study on students reported 44.4% of students suffered from fatigue. The results are similar to our findings.² Decreased sleeping hours and weight gain were present among 43% and 30% of study participants of Saudi Arabian study which are similar to our study.⁷

A survey from doctors about their patients in Karachi Pakistan revealed that 80% of patients suffered from hearing problems while in our study 16.06% students faced hearing problems which contrasts with our result. This may be because sample was different. We conducted the study on students rather than patients.⁸ A study done on students in Multan Pakistan reported that 52.7% participants used text message application.⁹ In our study 49.64% used text message app which is quite similar to our data. The strengths of our study are its easy methodology and a common public health problem faced by the students was addressed. The limitations are small sample size, cross sectional nature of study and recall bias on the part of the students. In future studies, with standardized questionnaire and more rigorous methodology are needed.

CONCLUSION

Three most common applications used by students were Facebook 397 (95.20%), web browser 389 (93.28%) and WhatsApp 368 (88.25%). By average daily use three most common applications were YouTube 2.1 hours, WhatsApp 1.9 hours and video gaming 1.8 hours. Three most common problems reported by the student were day time sleepiness 208 (49.64%), insomnia 193 (46.28%) and fatigue 178 (42.68%).

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Conflict of Interest: The study has no conflict of interest to declare by any author.

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