International Journal of Community Medicine and Public Health
Lunge VR et al. Int J Community Med Public Health. 2019 Feb;6(2):500-503
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20190083

Original Research Article

Prevalence and purposes of gadget use among medical students

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Received: 23 December 2018
Accepted: 09 January 2019

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ABSTRACT

Background: The prevalence of gadgets is increasing among the medical students and this is the matter to worry as they use it for other purposes than the science. Data need to focus on how many proportion of medical students use the gadgets and for what they use it. The objective was to study the prevalence and purposes of gadget use among medical students.
Methods: An institution based cross-sectional study was carried out in among 306 medical students. This study was based on self-administered questionnaires. The whole batch of students was contacted on a particular day for data collection. Study questionnaires were distributed to them. In between, the doubts regarding any questions were clarified. The questionnaires were taken back after a half hour. An attempt was made to see that all the questions were completely responded to. The data was analyzed using proportions and mean values. Statistical tests like Chi-Square test, and Student's T-test was used.
Results: Majority of people using gadgets were female (71%). More than half of users were in the age group of 21-23 years. Smartphone was the most commonly used gadget. About 2/5th of the students used gadgets for about 1-3 hours. More than half of the students used gadgets in the sitting position. The vast majority of students used gadgets at chest level.
Conclusions: The findings of this study indicate that use of gadgets takes a prevalent part in the daily lives of medical students.

Keywords: Prevalence, Gadget use, Students, Finding

INTRODUCTION

Now a days almost everybody in the society are having the smart phones. Smart phone use has been using not only in the general public but also among the students. Its increasing use among medical students has been a matter of concern as the students get diverted from the studies of the medical sciences. Some students overuse the gadgets which can affect their health and wellbeing. US study has reported that SMS was the most commonly used among the university students for communicating each other.[1]

Another study has shown that 79% of the adults in the age group of 18-44 years use smart phones. These phones are found to be with them always.[2]

Text neck syndrome is nothing but injury to the neck muscles due to stress. It can also be due to overuse of the smart phones. The typical position of bending forward and keeping the neck hanging downwards continuously while using the smart phone can lead to this type of injury if the use of smart phone is over a period of years together. These smart phones and other gadgets have replaced a lot of other things. Everything is available in these gadgets including social media, entertainments,

health information, all material related to the academics. Because of these utilities associated with the use of smart phones, it is difficult to stay for longer period of times away from the smart phones. Thus people are spending more and more time with these gadgets. But proper position is not adopted most of the time and this results in the neck flexion for prolonged periods of time. This leads to the so called text neck syndrome. Text neck syndrome is acquiring the proportion of global problem of health improrance.[2]

The people while using smart phones continuously stare at the smart phones and look downwards. They hold their hands in front of the face and put some strain on the neck muscles. The head bends forward. This leads to more curvature anteriorly at lower cervical vertebrae. This leads to more curvature posteriorly at thoracic vertebrae to have the proper balance of the body. This puts extra stress on the cervical spine.[3]

There is pain in the muscles leading to the musculoskeletal pain due to incorrect posture of the head and the incorrect posture of the neck.[4]

Due to prolonged use of the smart phones, the new cases of the muscular pain of the small muscles are increasing. There is constant movement of the fingers and thumb while using the smart phones. This puts excessive strain on these parts.[5]

Present study was carried out to study the prevalence and purposes of gadget use among medical students.

METHODS

Study design

An institution based cross-sectional study was carried out.

Study place

Malla Reddy Institute of Medical Sciences under the Department of Community Medicine.

Study period

From May 2018-July 2018.

Sample size

During the study period, 306 medical students were interviewed, from 2012-2017 batches.

Ethical considerations

Institution Ethics Committee permission was obtained. Students were contacted and those willing to participate in the present study were included after they gave the informed consent. Their personal identity was not revealed in the study questionnaire and they were not identified by any of the means.

Based on the review of literature, a semi-structural study questionnaire was prepared. Permission from the Dean, MRIMS, was obtained to carry out the study.

This study was based on self-administered questionnaires. The whole batch of students was contacted on a particular day for data collection.

They were explained the nature of the study.

Study questionnaires were distributed to them. In between, the doubts regarding any questions were clarified. The questionnaires were taken back after a half hour. An attempt was made to see that all the questions were completely responded to.

The data was analyzed using proportions and mean values. Statistical tests like Chi-Square test, and Student's T-test was used.

RESULTS

Table 1 shows sex wise distribution of gadget use. It was found that the majority of people using gadgets were female, with a percentage of almost 71%. This may be because of the larger number of females in medicine.

Table 1: Sex wise distribution of gadget use.

Sex	Number	Percentage (%)
Male	89	29.08
Female	217	70.91
Total	306	100

Table 2 shows age wise distribution of gadget use. It was found that more than half of males who use the gadgets are in the age group of 21-23 years. Same data was found in the female age distribution as well. There were smaller percentages in the 24-25 years age group; this may be because the 24-25 years age group has passed out mostly.

Table 3 shows batch wise distribution of gadget use. It was found that1/4th of males using gadgets were of 2013 batch, and a slightly larger number in 2014 batch. Least number was found in the 2012 batch. Among female, least was again among the 2012 batch, and almost 1/3rd in females of 2013 and 2016 batch.

Table 4 shows region wise distribution of gadget use. The vast majority of users were in urban areas. This is because the students coming to the medical colleges usually have more access and awareness about the medical sciences only from urban areas as compared to the urban areas. Hence students were from urban area which constituted 95%.

Table 2: Age wise distribution of gadget use.

Age/sex (yrs)	Male	Percentage (%)	Female	Percentage (%)	Total	Total percentage (%)
18-20	31	34.38	96	44.2	127	41.5
21-23	49	55.05	118	54.3	167	54.5
24-25	9	10.1	3	1.38	12	3.92
Total	89	29.08 (of total)	217	70.91 (of total)	306	

Table 3: Batch wise distribution of gadget use.

Batch	Male	Percentage (%)	Female	Percentage (%)
2012	6	6.74	5	2.3
2013	24	26.9	63	29.03
2014	25	28	56	25.8
2016	18	20.2	68	31.33
2017	16	17.9	25	11.52
Total	89		217	

Table 4: Region wise distribution of gadget use.

Region	Number	Percentage (%)
Urban	291	95
Rural	89	5
Total	306	

Table 5: Types of gadget use.

Type	Number	Percentage (%)
Desktop	1	0.3
Mobile	2	0.65
Laptop	3	0.9
Tablet	40	13
Mixed	260	84.96
Total	306	

Table 5 shows types of gadget use. Desktop users were of the least proportion, comprising only 0.3% of the total. This may because of smart phones and tablets taking over the functionality. Largest majority of students used mixed types of gadgets.

Table 6: Time spent per day on the gadget use.

Time	Number	Percentage (%)
Up to 1 hour	21	6.86
1-3 hours	127	41.5
3-5 hours	98	32.02
More than 5 hours	60	19.60
Total	306	100

Table 6 shows time spent per day on the gadget use. About 2/5ths of the students used gadgets for about 1-3 hours, and almost a third used them for 3-5 hours. The least proportion used gadgets for less than 1 hour. Thus it has been found that more and more number of medical students was involved in the use of the gadgets while they are supposed to study.

Table 7: Purpose of use of gadgets.

Use	Number	Percentage (%)
Social media and academics	4	1.3
Entertainment and academics	10	3.26
Academics only	20	6.53
Social media and entertainment	29	9.47
Social media only	69	22.5
Entertainment only	115	37.5
All	60	19.6
Total	306	100

Table 7 shows purpose of use of gadgets. Almost 40% of students used gadgets for entertainment only. Only 1% of people used them for social media and academics. 1/5th used them for social media only. About 1/5th used them for all of the above.

DISCUSSION

Shah et al in their study reported that the number of males were more than females and this finding is similar to the finding of the present study.[6] The mean value of SAS in their study was 102.49, the mean value of NDI was 30 that of the CHDQ was 6.12. SAS and NDI were found to be positively correlated. SAS and CHDQ were also positively correlated. The authors noted that in short term among the students there is association between smart phone use and musculoskeletal form affecting the neck and thumb. The authors said that in long term this may cause disability.[6]

Selvaganapathy et al observed that the mean value of CVA was 49.83 among those who used smart phone regularly.[7] The mean value of the CVA was 50.68 among those who used smart phone heavily. But the difference was not found to be statistically significant. The mean

value of depression was 13.5 among those who used the smart phone regularly. The mean value of depression was 18.79 among those who used the smart phone heavily. This difference was found to be statistically significant.[7]

Sharan et al found that the problems associated with smart phone use were "tendinitis in extensor pollicis longus, myofascial pain syndrome of adductor pollicis, 1st interossei and extensor digitorum communis."[8] The authors noted that thoracic outlet syndrome was seen in 51.9% of the study subjects. 25.9% of the study subjects had fibromyalgia. 7.41% had hypothyroidism. 14.8% of the study subjects had wrist tendinitis. 7.41% of the study subjects had De Quervain's syndrome.[8]

Ming et al studied a case. The case presented with inflammation and tenderness in the left side of the thumb at its base.[9] The complaint of pain was from two years. It increased over the period of time. It got worse over the period of time. There was subluxation on x-ray examination. Excision arthroplasty was done. On careful history it was revealed that excessive smart phone use with active involvement of the left thumb led the present problem. Gaming on the smart phone as well as texting on the smart phone over long periods of time can lead to such situations. The author published this case report to make the people aware about such problems so that they can take appropriate preventive action.[9]

Eapen et al found in their study that 18.5% of the study subjects had CTD in the hands. The thumb was found to be most affected in 52% of the cases. 61.7% of the cases complained of pain. 44.3% complained of fatigue. The authors concluded that CTD in the mild form is more prevalent among the students. They stated that it depends upon how the phone is used.[10]

CONCLUSION

The findings of this study, through questionnaires, indicate that use of gadgets takes a prevalent part in the daily lives of medical students. It was found that there was a large association between neck/shoulder pain and headaches, with the use of gadgets.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Lunge VR, Kokiwar PR. Prevalence and purposes of gadget use among medical students. Int J Community Med Public Health 2019;6:500-3.