International Journal of Allied Medical Sciences and Clinical Research (IJAMSCR)

ISSN:2347-6567

IJAMSCR |Volume 6 | Issue 3 | July-Sep – 2018
www.ijamscr.com

Research article *Medical research*

Association of mobile phone use and day time sleepiness in students

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ABSTRACT

Background

Use of mobile phones extremely increased by all age groups in recent years. In fact it is very difficult to found a person who is not using a mobile phone. The usage is very high in students. This has negative impact on sleep quality as the sleep duration was drastically reduced. This further causes day time sleepiness.

Objective

The present study was undertaken to observe the association between the mobile phone use and day time sleepiness.

Methodology

19 apparently healthy male and female postgraduate dental students were included in the study after obtaining written informed consent. Total number of hours of mobile phone usage in a day was collected from the participants. Epworth sleepiness scale was used to assess daytime sleepiness. Permission was obtained to use the questionnaire. Pearson correlation Data was analyzed by SPSS 20.0. Pearson correlation coefficient was used to observe the correlation between the variables. Data was presented as Mean and SEM.

Results

The mean duration of mobile phone usage was 3.65±0.48 hours. The mean score of Epworth sleepiness scale was 10.26±0.63. The value of R is 0.4222. There was a weak positive correlation between the variables. The value of R^2, the coefficient of determination, is 0.1783.

Conclusion

There was positive correlation between the mobile phone use and day time sleepiness. We recommend further detailed studies in this area. Also recommend to limit the use of mobile phones to increase the sleep quality and reduce day time sleepiness for a better quality of life.

Keywords: Sleep; Mobile Phone; Students.

INTRODUCTION

The first company that manufactured mobile phone is Motorola in the year 1973. In the current years mobile phone has become part and parcel in the routine life. The usage of mobile phone was increased drastically and in fact almost everyone has mobile phone. It may not be surprise to say it is difficult to find a person who never uses mobile phone. It's not surprising to know that India is second biggest market of mobile phones in the world after China.The usage is still higher in college students when compared to general population. [1,2] The usage may be multi-purpose. It may be for communication or games or for taking a selfie or watching video or navigation or banking etc. Using a mobile phone is having both positive and negative aspects. However as it is said by elders, anything in excess is bad. Same is applicable to mobile phones also. Using the mobile phone so much time may affect the eyes. It was reported that excessive use of mobile phone leads to early cataract. Further, the risk if brain cancer is more in mobile phone users. [3] There was changes in the sleep patterns, reaction time and the activity of the brain in heavy users. [4, 5] The changes in the sleep patterns has strong negative impact in student population. As the sleep quality drastically decreases, they tend to sleep day time. Excessive day time sleepiness not only affects the academic grades but also decreases the physical and psychological health of the student. This will contributes to overall decrease in the quality of life. The present study was undertaken to observe the association of mobile phone use and day time sleepiness in students.

MATERIALS AND METHODS

Study design: Cross-sectional study

Study setting: The present study was conducted at Department of Physiology, Vishnu Dental College, Bhimavaram.

Study participants: 19 apparently healthy male and female postgraduate dental students were included in the study after obtaining written informed consent.

Methods:

Mobile phone usage: Total number of hours of mobile phone usage in a day was collected from the participants.

Assessment of day time sleepiness

Epworth sleepiness scale was used to assess daytime sleepiness. This is a standard questionnaire to assess day time sleepiness. It comprises of 8 questions and the participants were asked to answer on a four point scale. [7-9] The eight questions are eight situations where the person has to rate himself the chance of dose off.

Ethical consideration

The present study was approved by research committee of the institute. Written informed consent was obtained from all the participants.

Data analysis

Data was analyzed by SPSS 20.0. Pearson correlation coefficient was used to observe the association between the variables.

Results

The mean duration of mobile phone usage was 3.65±0.48 hours. The mean score of Epworth sleepiness scale was 10.26±0.63. The value of R is 0.4222. There was a weak positive correlation between the variables. The value of R^2, the coefficient of determination, is 0.1783 (Table no 1).

Table no 1: Association of mobile phone use and day time sleepiness

Number of hours of use of mobile phone	Epworth sleepiness score	R value	R^2 value
3.65±0.48	10.26±0.63	0.4222	0.1783

(Data was presented as mean and SD)

DISCUSSION

The study was aimed to observe the association between the usage of mobile phones and day time sleepiness. There was a weak positive correlation between the variables. One of the leading causes for decrease in the sleep quality in the students is excessive usage of mobile phone.[10] The usage of mobile phone has no gender difference. [16] Due to excessive use of mobile phone the time to go to bed will be delayed which leads to increase in fatigue and provokes day time sleepiness. [11] Van der Bulck reported that there was increase in the day time sleepiness in the individuals who use mobile phone excessively. [12] Punamaki et al. reported increase in the health complications in the mobile phone users which has negative impact on the quality of sleep. [13] The present study results are in accordance with earlier studies. Excessive use of the mobile phones leads to addiction to the phones. Having phone near to bed will disturb the sleep by ringing or vibrating. Further, excessive use causes excessive drain of battery and consequently has to charge the battery more frequently. This may cause blast of the phone and already several cases are reported and reporting also. The study was conducted to increase awareness, especially in students about the use of mobile phone and how it affects the academic performance by deteriorating the sleep patterns. This is a strong need as there is drastic decrease in the sleep duration of students. It was reported that the decrease in the sleep duration was associated with depression and even with life style diseases like diabetes. Mobile phones can be used but in a limited manner. [14,15] Further, it is suggested to restrict the mobile phone use in the campus for the benefit of students. More awareness programs should be conducted to the students to explain this association and importance of sleep duration and how it is linked to their academic performance.

CONCLUSION

There was positive correlation between the mobile phone use and day time sleepiness. We recommend further detailed studies in this area. Also recommend to limit the use of mobile phones to increase the sleep quality and reduce day time sleepiness for a better quality of life.

ACKNOWLEDGEMENT

We sincerely thank Dr M. C. Suresh Sajjan, Principal and DrVenkata Rama Raju. A, Vice-Principal, Vishnu Dental College, for their extensive support and co-operation throughout the study. Our special thanks to the management of Vishnu Dental College for providing necessary facilities for the study.

Conflicts of Interest: Nil
Source of Funding: Self-Funding

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How to cite this article: DaraLavanya, Kumar SaiSailesh, RavikanthManyam, Sudhakar Reddy R, SwathiMovva, Amarnath P.Association of mobile phone use and day time sleepiness in students. Int J of Allied Med Sci and Clin Res 2018; 6(3): 617-620.
Source of Support: Nil. **Conflict of Interest:** None declared.