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A study to assess the impact of smart phone usage and quality of sleep among college students at SIMATS

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Abstract
Mobile phone is a small, portable communication device that enables people to make phone calls whenever where they are. All mobile phones operate in the radiofrequency range. Hence all mobile phones emit radio frequency radiation. Exposure from the antennas is continuous (very low) irradiates the whole body and exposes entire community. Therefore the exposure to low level radiation for long term will lead to some biological hazards. The aims of the study are to assess the impact of smart phone usage among college students and to evaluate the impact of smart phone usage and quality of sleep among college students. A descriptive study was chosen to assess the impact of smart phone usage and sleep quality. The study was conducted among 100 students in Saveetha Institution of Medical and Technical Science involving both Male and females students who fulfilled the inclusive criteria. Convenient sampling technique was used. The present study results show that shows out of 100 samples 10 (10%) had normal, 39 (39%) samples had mild questionable impact of smart phone using, 49 (49%) sample had moderate questionable impact of smart phone using, 2 (2%) had severe questionable impact of smart phone use. While coming to the quality of sleep 46 (46%) samples had good sleep quality, 28 (28%) samples had fairly good sleep quality, 10 (10%) samples had fairly poor sleep quality, and 6 (6%) samples had sleep quality. The study suggests that there should be limitation in using the smart phones and hazards should be highlighted by the health professional to the students.

Keywords: assess, smart phone, quality of sleep

Introduction

Mobile phone is a small, portable communication device that enables people to make phone calls whenever where they are. Signal transmission is the very basic concept for mobile phone. The convenience of mobile phone is allowing people to communicate with one another without the limitation of regions and time. Mobile phone is a device providing two-way communication. The technology influencing on mobile phone started back in the mid twentieth century. The very first mobile telephony service was in Sweden.

The whole world is gripped by the mobile craze. Whether it is a student, housewife, shopkeeper, rickshaw driver, and milkman, professional, rich or poor, almost everyone carries a cell phone in his/her hand. A Mobile phone is a must have item for many an average teenager. Many people spend more than six hours a day on their phones in talking, texting or playing games. The extensive use of cell phone is making us addict of this small device. Just like every medicine has its side effects, cell phones also have some drawbacks. The increased usage of mobile phone has increased the magnitude of potential health risks among its users.

All mobile phones operate in the radiofrequency range. Hence all mobile phones emit radio frequency radiation. Exposure from the antennas is continuous (very low) irradiates the whole body and exposes entire community. Therefore the exposure to low level radiation for long term will lead to some biological hazards. During normal use of mobile phone the antenna is more close to the users head.

India reports have claimed that up to 70% of the microwave emission from hand held mobile telephones. These mobile telephones absorb in the users head.

A survey was conducted by Hubbo in 2006 regarding the statistics of use of mobile phones by teenagers and survey report (2008) revealed that 88% of teenager regularly communicates via sms, 76% teens use the internet to instant message, 71% use their mobiles as a portable MP3 player, 70% of teenagers take photos and videos and 64% play games.

Cellular phone increase the risk of brain cancer (brain tumor) and it can also cause biological damage through heating effects. Cellular phone causes symptoms including headaches, ear ache, blurring of vision, short-term memory loss, and numbness, tingling and burning sensations, bad sleep, fatigue & anxiety. Single and double strand DNA breaks in brain cells increased after exposure to Radio frequency (RF). Exposure to both continuous wave and pulsed RF (Mobile Phone) produced DNA damage. Research by other scientists indicates that prolonged use of mobile phones may cause hot-spots to develop inside the brain, causing damage which could lead to Alzheimer's disease or cancer (Brain tumor). The objectives of the study are to assess the impact of smart phone usage among college students, to evaluate the impact of smart phone usage and quality of sleep among college students and to find out association between the levels of knowledge regarding quality of sleep on usage of mobile phones among adolescents with selected demographic variables.

Methods and Materials

A quantitative approach with descriptive research design was used to conduct the study. The study was conducted in

Saveetha Institution of Medical and Technical Science. The data were collected using convenient sampling technique with 100 College students both male and female who met the inclusion criteria. The inclusion criteria for the sampling are College student who are willing to participate in the study, College student who are using mobile phone and College student who are available at time of data collection. The data were collected after obtaining ethical clearance from the Institutional Ethical Committee of Saveetha Institute of Medical Science and Technology. The reason for the investigation was disclosed to the subjects and assent was got from them. Data were assembled using Standard check list to assess the impact of smart phone usage and quality of sleep. The data was summarized, processed with descriptive and non-parametric statistics.

Results

The present study shows that out of 100 samples 10 (10%) had normal, 39 (39%) samples had mild questionable impact of smart phone usage, 49 (49%) sample had moderate questionable impact of smart phone usage, 2 (2%) had severe questionable impact of smart phone usage.(Table 1)

Table 1: Frequency and percentage distribution of impact of smart phone usage and quality of sleep among students

Assess the impact of smart phone usage	Normal		Mild		Moderate		Severe	
	No	%	No	%	No	%	No	%
	10	10%	39	39%	49	49%	2	2%

The present study shows that out of 100 samples 46 (46%) samples had good sleep quality, 28 (28%) samples had fairly good sleep quality, 10 (10%) samples had fairly poor sleep quality, 6 (6%) samples had sleep quality. (Table 2)

Table 2: Percentage distribution of sleep quality

Assess the sleep quality	Good		Fairly good		Fairly poor		Poor	
	No	%	No	%	No	%	No	%
	46	46%	28	28%	10	10%	6	6%

The present study shows that mean is 5.41 and the standard deviation is 1.7920 for assessment of impact of smart phone usage (Table 3)

Table 3: Mean and Standard Deviation to assess the impact of Smartphone usage

S. No	Variables	Mean	Standard deviation
1	Assess the impact of smart phone usage	5.41	1.7920

The present study shows that mean is 6.63 and the standard deviation is 1.893 for assessment of sleep quality (Table 4)

Table 4: Mean and Deviation to assess the quality of sleep

S. No	Variables	Mean	Standard deviation
1	Assess the quality of sleep	6.63	1.893

Discussion

A study by Kwon, Lee *et al* showed that the SAS mean score was 110.02, in a study by Demirci *et al* reported in 2014 the SAS mean score was 75.76 and in other study in 2015 it was 75.68. The Mean SAS score was significantly higher among poor sleepers than compared to good sleepers, suggesting relation between smart phone use and sleep quality. In our study 117 (49%) were having poor sleep quality according to PSQI scale, this was similar to other studies conducted on medical students in Iran which showed 40.6% prevalence of poor sleepers, 38.9% in Brazil, 77% in Pakistan and in a study conducted on non-medical college students it was about 60%. There was association between gender and sleep quality on univariate analysis with more boys among poor sleepers than among good sleepers, but on multivariate analysis it was not significant. In a study among nursing students by Ahn and Kim along with smart phone overuse stress was also a factor significantly influencing quality of sleep, with an explanatory power of 21.1%. Lemola *et al* reported that smart phone ownership was related to late bedtimes in adolescents but it was unrelated to sleep disturbance.22 Various studies have reported that the addiction or overuse of electronic devices, Internet and smart phone are similar as for as their effect on sleep is concerned as they lead to exposure to either bright light of the screens or electromagnetic radiations or both. Loughran *et al* reported that mobile phone exposure prior to sleep may modify the sleep electroencephalogram. Various studies have shown that melatonin production is decreased on exposure to electromagnetic fields especially in the evening and hypothesis that decreased melatonin is the cause for impaired sleep quality has been suggested. In a study by Hysing *et al* both daytime and bedtime use of electronic devices led to an increased risk of short sleep duration, long sleep onset latency and sleep deficiency. One more smart phone use variable we studied was time to initiate smart phone use after waking up from bed which showed association with sleep quality on univariate analysis but not on multivariate analysis. Checking the smart phone immediately after waking up or repeatedly can both be a cause or an effect of smart phone addiction.

Conclusion

The present study showed that college students especially males who are addicted to smart phone have poor quality sleep. College students, who have to develop their skill and knowledge to be competent professionals, should use smart phone appropriately and be cautious about negative effect of smart phone addiction on sleep as well as physical and psychological health.

References

1. Alosaimi FD, Alyahya H, Alshahwan H, Mahyijari NA, Shaik SA. Smartphone addiction among university students in Riyadh, Saudi Arabia. Saudi Med J. 2016; 37:675-83.
2. Ahmed I, Ramzan M, Qazi TF, Jabeen S. An investigation of mobile phone consumption patterns among students and professionals; is there any difference? Eur J Econ Finance Adm Sci. 2011; 39:136-43.
3. Walsh SP, White KM. Me, my mobile and I: The role of self and prototypical identity influences in the prediction of mobile phone behavior. J Appl Soc Psychol. 2007; 37:2405-34.
4. Griffiths M. Gambling on the internet: A brief note. J Gambl Stud. 1996; 12:471-3.
5. Diagnostic and Statistical Manual of Mental Disorders. 5th ed. Washington DC American Psychiatric Association, 2013.

6. Lin YH, Lin YC, Lee YH, Lin PH, Lin SH, Chang LR, *et al*. Time distortion associated with smartphone addiction: Identifying smartphone addiction via a mobile application (App). J Psychiatr Res. 2015; 65:139-45.
7. Haverila M. Cell phone usage and broad feature preferences: A study among Finnish undergraduate students. Telemat Inform. 2013; 30:177-88.
8. Smetaniuk P. A preliminary investigation into the prevalence and prediction of problematic cell phone use. J Behav Addict. 2014; 3:41-53.
9. Haug S, Castro RP, Kwon M, Filler A, Kowatsch T, Schaub MP. *et al*. Smartphone use and smartphone addiction among young people in Switzerland. J Behav Addictions. 2015; 4:299-307.
10. Kuss DJ, Griffiths MD. Online social networking and addiction - A review of the psychological literature. Int J Environ Res Publ Health. 2011; 8:3528-52.
11. Sahin S, Ozdemir K, Unsal A, Temiz N. Evaluation of mobile phone addiction level and sleep quality in university students. Pak J Med Sci. 2013; 29:913-8.
12. Yogesh S, Abha S, Priyanka S. Short communication mobile usage and sleep patterns among medical students. Indian J Physiol Pharmacol. 2014; 58:100-3.
13. Brand S, Kirov R. Sleep and its importance in adolescence and in common adolescent somatic and psychiatric 10 conditions. Int J General Med. 2011; 4:425-42.
14. Kwon M, Kim DJ, Cho H, Yang S. The smartphone addiction scale: Development and validation of a short version for adolescents. PLoS One. 2013; 8:e83558.
15. Kwon M, Lee JY, Won WY, Park JW, Min JA, Hahn C. *et al*. Development and validation of a smartphone addiction scale (SAS). PLoS One. 2013; 8:e56936.
16. Buysse DJ, Reynolds CF, Monk TH, Berman SR, Kupfer DJ. The Pittsburgh sleep quality index: A new instrument for psychiatric practice and research. Psychiatr Res. 1989; 28:193-213.
17. Soni R, Upadhyay R, Jain M. Prevalence of smart phone addiction, sleep quality and associated behaviour problems in adolescents. Int J Res Med Sci. 2017; 5:515-9.
18. Chen B, Liu F, Ding S, Ying X, Wang L, Wen Y. *et al* Gender differences in factors associated with smartphone addiction: A crosssectional study among medical college students. BMC Psychiatr. 2017; 17:341.
19. Waqas A, Khan S, Sharif W, Khalid U, Ali A. Association of academic stress with sleeping difficulties in medical students of a Pakistani medical school: A cross sectional survey. Peer J. 2015; 3:e840.
20. Lund HG, Reider BD, Whiting AB, Prichard JR. Sleep patterns and predictors of disturbed sleep in a large population of college students. J Adolescent Health. 2010; 46:124-32.
21. Kurugodiyavar MD, Sushma HR, Godbole M, Nekar MS. Impact of smartphone use on quality of sleep among medical students. Int J Community Med Public Health. 2018; 5:101-9.