



Effect of Electronic Gadgets on Quality of Sleep Among College Students

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ABSTRACT

A descriptive study to assess the effect of electronic Gadgets on Quality of Sleep among College Students. This study was conducted at Pondicherry Engineering College, Puducherry. Clearance from the Institutional Review Board and formal permission from the study settings were obtained. 240 samples were selected by the stratified random technique. Structure questionnaire was used to assess the quality of sleep and gadgets usage among participants after the content validity. The data gathered were analysed by using descriptive and inferential statistics. The present study assessed the quality of sleep and gadget usage on college students and it was found that 57.1% of participants had poor sleep quality, 42.9% participants had good sleep quality and in relation to gadget usage, 64.6% of participants had mild addiction, 31.3% participants had moderate addiction and 4.2% participants had severe addiction. The correlation between effects of gadget usage and quality of sleep were assessed. It was found that $r=0.378$ and it denotes a weak correlation. There is an association between quality of sleep with selected demographic variables, namely age ($p=0.026$). The research evidence identifies that the majority of college students had poor sleep quality and mild gadgets addiction. Hence, there is a requirement for intervention or psychological measures to reduce gadget students among college students.

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INTRODUCTION

Background of the Study

Gadgets become a necessary part of the day to day

life and they become one of the most important means of communication. But on the other hand, there is also a wide range of ill effects due to gadgets. Sleep has an important role in different aspects of life. Good sleep is more important for children and adolescent. It is also suggested that sleep disturbance may increase the risk of physical and mental problems during adolescents using a Mobile phone with advanced technology are very attractive and popular gadgets become an important part in the day to day life and it becomes one of the most means of communication. Sleep has an important role in the different aspects of life. Good sleep is more important for children and adolescent, it was suggested that sleep disturbance may increase the risk of physical and mental problems during adolescents (Owusu-Marfo *et al.*, 2018).

In the last decade, we have witnessed a sharp increase in the availability and usage of electronic devices such as smartphone, computer, videogames and tablets. Electronic devices have become an integral part of adolescence life. In 2012, it was estimated that 78% of all American aged from 12-18 years had a mobile phone and 37% had smartphones. As per the reports, at least one electronic device in their bedroom, in addition to the entertainment aspects, electronic devices play an important part in the social life of adolescences (Nathan and Zeitzer, 2013).

The more active form of stimulating social media may affect sleep in a negative way. Sleep is an important aspect of maintaining the body circadian rhythm. Melatonin is a hormone produced during dark, helps to regulate and promote sleep. People who do not have enough melatonin of the hormone take longer to feel asleep. Sleep at night is essential for health. But modern has explored the popularity of handheld digital devices. So significantly impacted on the sleep wake pattern lack of sleep can affect alertness, concentration, memory, leading to problems at work or study place. It extends the response of the circadian clock is depend on how bright the light is and how far the device is from the eyes, as well as what colours have emitted. Later it may develop an anxiety disorder, depressive illness. Proper sleep length and quality are essential components for ones physical and emotional well-being researches shows that reduced sleep length and quality may negatively cognitive function and general health. Mobile phones, as we were initially marketed, were a source of communication, but the improved technology made electronic gadgets a widely unrestricted tool in our life. And in today's generation, gadgets become a constant companion for college (Prabha and Prakash, 2017).

Mobile phones have improved the technological advancement, that was ranging from text messages and receiving calls to many functions like starting from the touch screen, colour display range to internet asses and it made lots of benefits like connectivity, availability of information. On the other hands, over usage of gadgets may lead to negative health consequence like sleep disturbance, depression, accidents. Inappropriate usage of gadgets by the students like using mobile phones in classrooms affect the student's academic performance, it may make the least value for relationships and make the first preference in active participation in social networking (Kurugodiyavar et al., 2017).

A research was conducted at United States (US) in 2011, the poll found that 95% of people were in the

habit of using some forms of technology in the time before they go to sleep with activities ranging from playing video games to messaging on their phone. A research was conducted in National Academy of Science found that using a screen at night shortly before bed could suppress melatonin level by more than 50%. Due to that effect, the levels will not increase for 90 minutes in the following nights (Krisnana et al., 2020).

A cross sectional study was conducted in Iran among 380 Undergraduate students selected by proportional stratified sampling. The data were collected by standard questionnaire Cell-Phone Over Use Scale (COS) and Pittsburgh Sleep Quality Questionnaire. And the results reveal that the prevalence of over-use of the cell phone was 10.7% and the prevalence of poor sleep quality was 61.7 percentage (Absari et al., 2016).

At the regional level, research was conducted at Tamilnadu by Karpaga Vinayaga Institute of Medical Science And Research center (KIMSRC) in 2017 on the usage of mobile phones on sleep disturbance, stress and academic performance among medical students and they found that among 203 study participants, everyone had a smartphone and other gadgets which are used for communication and social networking. The duration of gadgets usage ranged from 5 minutes to 10 hours per day. Among study participants, 61% used gadgets during night time and 72.4% have poor sleep quality, 66.5% had moderate stress, and 14.8% had severe stress (Jennifer et al., 2017).

Need for Study

Sleep quality is poorly defined yet ubiquitously used by researchers, clinicians and patients. Both insomnia and normal sleeper groups defined sleep quality by tiredness on waking and throughout the day, feeling rested and restored on waking and the number of awakenings they experienced in the night. The advent of the electronic device has a significant impact on the sleep wake pattern because of the LED light. It revealed that sleep quality and day time sleep was determined by Pittsburgh Sleep Quality Index and Epworth Sleepiness Scale (Prabha and Prakash, 2017).

A study conducted on just as the individual becomes addicted to a various substance such as alcohol or drug they can also suffer from behavioural addiction such as games, computer or the internet and the booming use of the smartphone. Through there also lots of benefits of the smartphone if properly utilized, like connectivity, increased productivity, availability of information. Smartphone overuse or addiction may lead to negative health consequences

like neck pain, accident, depression and sleep disturbances. Sleep problems and sleep deprivation lead to poor academic performance and excessive day time sleepiness among college students. Since students already have lots of academic burdens and sleep problems due to other factors, smartphone overuse or addiction, if present, may further complicate things and may lead to significant stress and mental health problems. Chronic sleep deprivation due to smartphone use may impair academic performance, mood regulation and driving safety (Kurgodiyavar *et al.*, 2017).

Various theories have been proposed to explain the mechanism of sleep disturbance due to excessive use of electronic media devices like smartphones- interference with sleep through increased psychophysiological arousal, through bright light exposure, which may delay the circadian rhythm, exposure to electromagnetic radiations and physical discomfort caused by prolonged media use (Kurgodiyavar *et al.*, 2017).

Since Medical students are required to be alert and attentive during the learning period so that they acquire professional level knowledge and skills of patient care, medical students who already have lots of academic burden and sleep problems due to other factors, smartphone overuse addiction if present may further complicate the things and may lead to significant stress and mental health problems (Kurgodiyavar *et al.*, 2017).

A study paralleling the rise in mobile phone use is on an equally rapid decline in the number of time teenagers are spending asleep at night. Prior research indicates that there might be a relationship between day time sleepiness and nocturnal mobile phone use in teenagers in a variety of country. Those individuals who felt they needed to be accessible and those who had attempted to reduce mobile phone use they also once who stayed up later to use the mobile phone use and were awaked more often at night (Hapurachige, 2014).

We may be growing old in a world where a technological solution is born. Technology has developed so much that it is almost crucial to have electronic devices, particularly television, mobile, internet, videogames etc. Teenagers have gotten so used to have technology around them. However, while having these electronic gadgets that make life easier, comfortable, most of the times, it could also have negative effects on their lives, particularly in their studies and family relationships due to the over usage of gadgets (Esther, 2012).

Statement of Problem

A Study to assess the effects of electronic gadgets on quality of sleep among college students at selected college, Puducherry.

Objectives

1. To assess the level of Quality of Sleep and the level of electronic gadget addiction.
2. To assess the Effect on Electronic Gadgets on Quality of Sleep
3. To associate the Quality of Sleep with the selected demographic variables.

Hypotheses

H₁ There is a significant relation between sleep quality and usage of gadgets.

H₂ There is a significant association exist between the quality of sleep with the selected demographic variables

Operational Definition

Effect

It is the capability to produce a possible change in sleep quality after gadgets usage.

Electronic Gadgets

It is an electronic device used by college students such as mobile phones, laptops, ipad, tablets, video games, etc. It is using the Modified Gadgets Addiction Questionnaire was used to assess the gadgets addiction among students.

Quality of sleep

It refers to the level of sleep, which is assessed by using the Pittsburgh Sleep Quality Index.

College Students

A college student refers to male and female students of the age group from 18 – 25 years studying Engineering at Pondicherry Engineering College, Puducherry.

METHODOLOGY

Research Approach

A quantitative research approach was adopted.

Research Design

Descriptive research design was adopted to assess the effect of electronic gadgets on sleep quality among college students.

Setting of The Study

The study was conducted in Pondicherry engineering college.

Variables**Independent Variable**

Gadgets usage are taken as independent variable.

Dependent Variables

Quality of Sleep is taken as the dependent variable.

Population**Target Population**

Engineering Students who are studying in Pondicherry.

Accessible Population

Engineering Students of Pondicherry Engineering College.

Sample Size

Sample size is required for this study is 62 college students. Study size was calculated by using "artificial light from tablets and smartphone affecting sleep pattern in youngster" by Prabha with correlation coefficient $r = -0.75$, power=90, alpha error =5% sampling size is 62. As per norms, the sample size can be taken 4 times that of the estimated minimal sample size so, the study has been conducted with 240 samples.

Sampling Criteria

Male and female engineering students in the age group of 18 – 25. were included in the study.

Sampling Technique

Stratified sampling technique was used for selecting samples.

Ethical Consideration

1. The study proposal was approved by the institutional review board of the college.
2. Informed consent was obtained from the study participant
3. Confidentiality of information was maintained by utilizing code numbers for the sample

Instruments and Tools

A Structured knowledge questionnaire was used to assess the quality of sleep and the usage of electronic gadgets.

Development and Description of Tool

After an extensive review of literature and discussion with the experts, a standard questionnaire was prepared to assess the quality of sleep and electronic gadgets usage. The questionnaire divided into 3 sections, 'A' and 'B' and 'C'.

Section A

It contains demographic questions on variables which include Age, gender, religion, Type of family, Domicile, Branch of Engineering, Year, of course, Year of gadgets uses.

Section B

It contains 10 multiple choice questions to assess the quality of sleep by using the Modified Pittsburgh Quality of Sleep Index. In the PQSI scale, the score ranges from 0 - 21. The score interpretations are <5 indicates Good sleep quality and >5 indicates Poor sleep quality.

Section C

Modified Gadgets Addiction Rating scale, which has 20 multiple choice questions. The score interpretations are <60 indicates Mild addiction, 60-80 indicates, Moderate addiction and >80 indicates severe addiction. Scoring 1,2,3,4,5 denotes never, rarely, sometimes, often, always.

Pilot Study

Pilot study is a rehearsal for a major study to test the reliability, practicability, appropriateness and feasibility of the tool to be used in the study. The pilot study was conducted to identify the feasibility of the study on 1st March 2019 at Pondicherry engineering college, Puducherry. After obtaining consent from research participants, a pilot study was conducted to identify the feasibility of the study among 24 students. Data collection was done using a structured knowledge questionnaire. Anonymity and confidentiality were maintained while collecting information. The data were analyzed by SPSS-21. The results revealed that $r = 0.341$, there is a weak correlation between the quality of sleep and gadgets usage. 46% of students have poor sleep quality and 60% of students have gadgets addiction. There is no significant relationship between the quality of sleep with selected demographic variables.

Reliability of Tool

The reliability of the tool was established by the split half method and the internal consistency of the tool was found to be reliable ($r = 0.827$). Modified Gadgets Addiction Rating Scale and Pittsburgh Sleep Quality Index reliable ($r = 0.882$).

Data Collection Process

The quality of sleep and electronic gadgets usage was assessed by a standard questionnaire. Prior to data collection, formal approval was obtained from the Dean, Pondicherry engineering college, Puducherry. Formal approval was obtained from the HOD's of all departments. Then the study was carried out during March 2019 with 240 student's

selected using stratified sampling technique in Pondicherry engineering college, Puducherry. 10 students were selected from each class of all the department. So, a totally 6 departments(Computer Science Engineering, Information Technology, Civil Engineering, Chemical Engineering, Electronics And Instrumentation Engineering, Electronics And Communication Engineering) were selected. The data collection was done from 4.3.19 to 9.3.19 at Pondicherry Engineering College. The data was collected during the free hours of the student. During the data collection, the Self introduction was given by the investigator, the purpose of the study was explained to the subjects assuring confidentiality of findings. Written consent was obtained from the participants to participate in the study. The datasheet consists of a structured 3 part questionnaire designed by the researcher in English. Necessary information was given by the researcher to the students. A structured questionnaire was given by the researcher to the study participants and was set to choose the appropriate options.

Plan for Data Analysis

Descriptive Statistics

1. Frequency and percentage distribution were used to analyze the demographic data.
2. Mean and the standard deviation was used to assess the quality of sleep and gadgets usage.

Inferential Statistics

1. Chi square test was used to study the association between sleep quality and demographic variables of college students.
2. Spearman correlation coefficient was used to study the correlation between the quality of sleep and electronic gadgets use.

Scope of The Study

This study will help assess the level of addiction on the usage of gadgets & also help to understand the co-relation that exists between the sleep quality & usage of electronic gadgets.

ANALYSIS AND INTERPRETATION OF FINDINGS

Organization and Presentation of the Data

Section A

Description of demographic variables of the students.

Section B

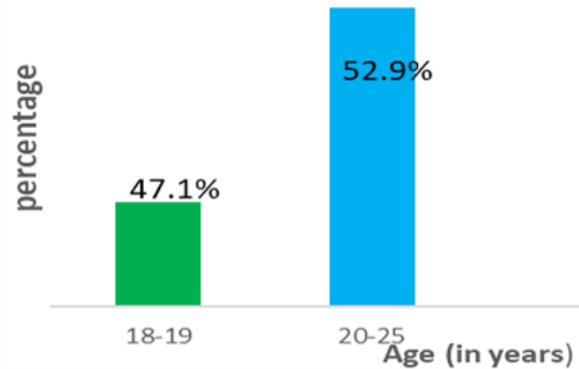


Figure 1: Distribution of students according to the age

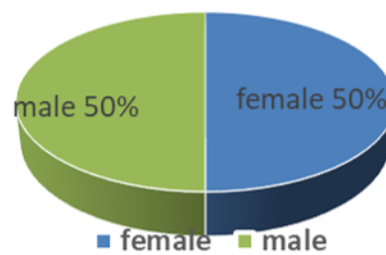


Figure 2: Distribution of students according to the gender

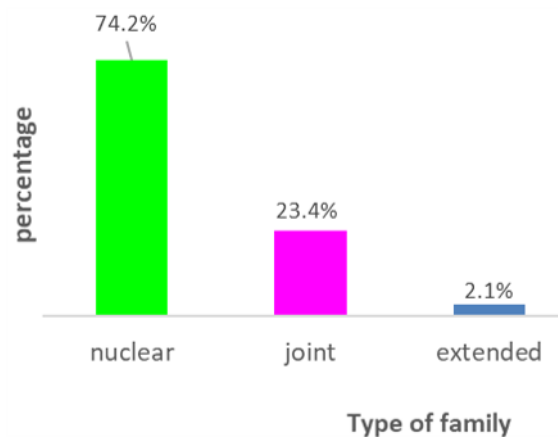


Figure 3: Distribution of students according to the type of family

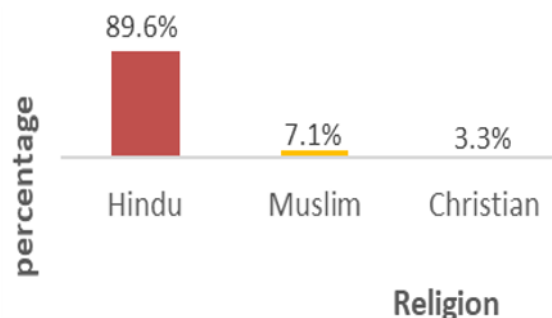


Figure 4: Distribution of students according to the religion

Table 1: Spearman's Correlation Coefficient of Quality of sleep and Electronic Gadgets usage among students

Domain	Mean	Standard Deviation	Spearman Correlation Coefficient Value
Quality of sleep	5.42	3.11	0.378
Gadgets usage	53.77	15.43	

Table 2: Association Between Quality of Sleep with the Selected Demographic Variables of the Students(n=240)

Sl.No	Demographic variables	Quality of sleep				Fisher's exact test	P value
		Good		Poor			
		No	%	No	%		
1	Age(in years)					0.026	S
	18-19	57	25.0	56	22.0		
	20-25	46	20.8	81	32.0		
2	Gender					0.083	NS
	Male	44	19.5	74	32.0		
	Female	59	26.2	63	23.7		
3	Type of Family					0.528	NS
	Nuclear	80	35.4	98	37.0		
	Joint	21	05.4	36	18.7		
	Extended	2	0.8	3	02.5		
4	Religion					0.121	NS
	Hindu	97	43.3	118	47.5		
	Muslim	2	02.0	6	04.5		
	Christian	4	0.4	13	02.0		
5	Domicile					0.155	NS
	Rural	28	18.7	37	15.8		
	Urban	65	22.0	75	28.7		
	Semi urban	10	05.0	25	09.5		
6	Branch					0.268	NS
	Computer science Engineering	21	10.4	19	06.2		
	Information Technology	12	06.2	28	10.4		
	Civil Engineering	16	08.7	24	07.9		
	Chemical Engineering	18	07.0	22	09.5		
	Electronic and Instrumental Engineering	21	09.5	19	07.0		
Electronic and Communication Engineering	15	03.7	25	04			
7	Year of Engineering program					0.176	NS
	1 st year	33	15.8	27	09.16		
	2 nd year	24	12.5	36	12.5		
	3 rd year	24	10.0	36	15.0		
	4 th year	22	07.5	38	16.6		
8	No. of year electronic Gadgets used					0.213	NS
	0-2 years	36	13.3	34	12.5		
	3-4 years	36	16.2	52	22.5		
	Above 4 years	31	12.1	51	23.3		

NS= Not significant(P value >0.05); S= significant (P value <0.05)

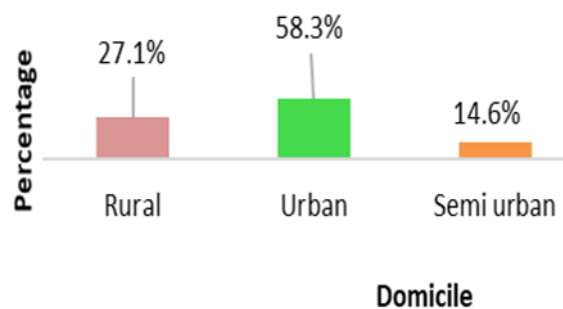


Figure 5: Distribution of students according to the Domicile

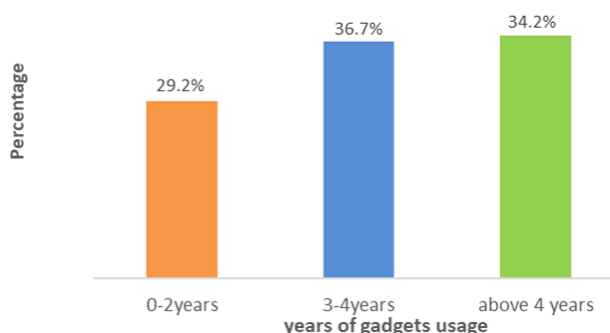


Figure 6: Distribution of participants according to the years of gadgets usage

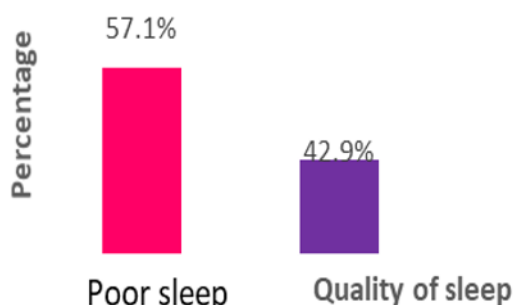


Figure 7: Distribution of participants according to the quality of sleep

Assess the Quality of Sleep and Effect of Electronic gadgets among the students

Section C

Correlation between the Effect on Electronic Gadgets use on Quality of sleep.

Section D

Association between the Quality of sleep with the selected demographic variables of the students.

Figure 1 reveals that among two forty participants, most of them 52.9% were between 20-25 years of age, 47.1% of participants were coming under the age group of 18-19 years of age.

Figure 2 reveals the distribution of participants based on gender, shows that both male (50%) and female (50%) were equally participated.

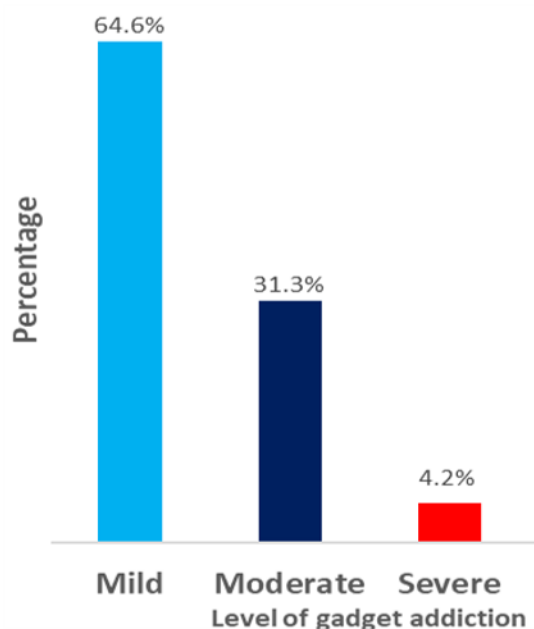


Figure 8: Distribution of participants according to the level of Gadgets usage

Figure 3 reveals distribution of participants based on the type of family it shows that the majority (74.2%) of participants were from the nuclear family, 23.8% of participants were from a joint family and 2.1% participants were from extended family.

Figure 4 reveals the distribution of participants based on religion show that majority (89.6%) participants were Hindu, 7.1% of participants were Muslims and remaining 3.3% of participants belongs to Christian religion.

Figure 5 reveals distribution of participants based on domicile shows that majority(58.3%) of participants were from Urban, 27.1% of participants were from Rural and 14.6% of participants were from Semi urban area.

Figure 6 reveals the distribution of participants based on the no of years of gadgets usage shows that 29.2% participants were using gadgets for 0-2 years, 36.7% participants were using gadgets for 3-4 years and 34.2% participants were using gadgets for above 4 years.

Figure 7 reveals the distribution of participants based on the quality of sleep shows that majority (57.1%) of participants were Poor sleepers and 42.9% of participants were Good sleepers.

Figure 8 reveals the distribution of participants based on the level of addiction of gadgets shows that majority (64.6%) has mild addiction, (31.3%) has moderate addiction and (4.2%) has severe addiction.

Table 1 Shows weak correlation between the effect

of gadgets and quality of sleep. $r = 0.378$, a Moderate Correlation between Quality of sleep and Electronic Gadgets usage according to Spearman's Correlation Coefficient.

Table 2 Shows that there is an association between Quality of sleep with selected demographic variables age, gender, types of family, religion, domicile, a branch of engineering, years, of course, years of gadgets use. There is an association only with one demographic variable that is age, were $p=0.026$.

DISCUSSION

Among 240 participants, most of them (52.9%) were between 20-25 years of age, (47.1%) of participants were coming under the age group of 18-19 years of age. In relation to gender (50%) were male and (50%) were female. In relation to the type of family (74.2%) were nuclear family, (23.8%) belonged to the joint family, (2.1%) were in the extended family. In religion, the majority (89.6%) of participants were Hindu. (7.1%) of participants were Muslim and the remaining (3.3%)of participants belongs to Christian religion. In relation to domicile, most (58.3%) of the participants coming from urban, (27.1%) were coming from rural area and the remaining (14.6) were from semi urban. In relation to a branch of study, all the departments were equally distributed (16.7%), In relation to years of course also were equally distributed each are (25%). In relation to years of gadgets usage, the majority (36.7%) 3-4 years were they using, (34.2%) of the participant were using above 4 years and remaining (29.2%) of them using 0-2 years.

Among 240 participants, most of them (57.1%) participants had poor sleep quality, 42.9% participants had good sleep quality and in relation to gadget usage, 64.6% participants had mild addiction, 31.3% participants had moderate addiction and 4.2% participants had severe addiction.

The first objective was to assess the quality of sleep and the effects of gadgets use among college students

The overall quality of sleep among college students reveals that the majority, 54% of participants were had poor sleep quality, 46% of participants had good sleep quality. The mean score obtained for the overall sleep quality score was 5.4 out of 21.

A descriptive study was conducted by Dr Prathak Ashish(2016) on the addiction of gadgets and their impact on youth at Shri Atai Vajgayee Government arts and commerce college, Indore. Research sample 300 students were assessed by using a structured questionnaire. The structured questionnaire

was used for data collection. Data were analysed by using Statistical Analysis SPSS. The results reveal that, in physical health problems through earphone on ear capacity among 300 students, 10% students hearing problem over the use of earphone for 1-2 hours per day, 13% over the use of earphone for 2-4 hours per day, 55%of students are having a hearing problem over the use of 4-6 hours per day. Then in headache, 11% of students having headache due use of gadgets for 1-2 hours per day, 15% of the students over the use of 2-4 hours per day, 42% over the use of 4-6 hours. In sleep problem 2% of students having sleep problem over the use of gadgets for 1-2 hours per day, 4% over the use of 2-4 hours per day, 9% over the use of 4-6 hours per day, 60% more than 6 hours. Hence, the time taken for the gadgets increases then automatically health problem also increases (Ashis, 2016).

The overall effect on gadgets usage among college students reveals that the majority, 64% of participants were had mild gadgets addiction, 31% of participants were had moderate gadgets addiction, 5% of participants had severe addiction. The mean score obtained for overall gadgets usage score was 53.90 out of 100.

A descriptive cross sectional study was conducted to explore the relationship between social media use and sleep quality at Innou university school of medicine in Turkey. Research sample 397 students participated in a questionnaire Pittsburgh Sleep Quality Index PSQI was used for data collection. The Mann Whitney U and Kruskal Wallis test were used for analysis. The study result reveals that 56.4% of students sleep quality was bad and the quality of sleep of girls was less than that of boys. Finally, conclude that 50% of students sleep quality was bad due to the usage of social media (Seyitoglu and Gunes, 2016).

The second objective was to assess the effects of gadgets use on the quality of sleep

The analysis was done to find the correlation between gadgets usage and quality of sleep. Pearson correlation was used to assess the effects of gadgets use on quality of sleep. The result reveals that ($r=0.390$) shows a weak correlation between the effects of gadgets use and quality of sleep. Inferential statistics were done in SPSS version 21.

A descriptive study was conducted on artificial light from an electronic devices affecting sleep pattern in youngsters. The sample size was 50 male exposed to artificial light from an electronic gadgets aged between 18 -25 years. The tools to assess used are the Pittsburg Sleep Quality Index (PSOI), Epworth Sleepiness Scale(ESS) were used for data collection.

The data analyzed was done by using the chi square test. Then results reveal that LCD/ LED Television electronic gadgets are exposed to artificial light, which affects the normal sleep cycle rhythm. Melatonin hormone produced during dark help to regulate, promote sleep is responsible for the sleep wake cycle. Hence the study concludes that the participants using a smartphone for a longer duration at bedtime have a poor quality of sleep and increased day time sleepiness($r=0.75$)³.

The third objective was to find an association between the quality of sleep with selected demographic variables among college students

There is no significant association between quality of sleep and demographic variables. Only age has a significant relation with quality of sleep($p=0.026^*$).

A cross sectional study was conducted on physical activity and sleep quality in students of the physical education and sport of Brasov Romania. The research samples were 394 students of transilvania, University of Brasov. The Standardized Tools International Physical Activity Questionnaire Short Form (IPAQ-SF) and Pittsburgh Sleep Quality Index questionnaire (PSQI) were used for physical performance and sleep quality. Results reveal that in quality of sleep in men, 74.1% had a good sleep quality and 25.8% had poor sleep quality in women 71.9% had a good quality of sleep and 28.05% had a poor sleep quality. The association were statistically significant for $p<0.01$ for students in the first year of study and sleep quality for students in the third year of study ([Badicu, 2018](#)).

Major Findings of the Study

1. 57.1% of participants having poor quality of sleep.
2. 64.6% of participants had mild addiction, 31.3% of participants had moderate addiction, 4.2% of participants had severe addiction.
3. Spearman Correlation Coefficient $r=0.378$ and it shows a moderate correlation between the gadgets use and quality of sleep.

Summary

The present study was done to "assess the effect of gadgets on quality of sleep among college students at Pondicherry Engineering College, Puducherry". The study was conducted using a descriptive research design. A structured questionnaire was used to assess the effect of gadgets on the quality of sleep among Pondicherry Engineering College undergraduate students after content validity. A

pilot study was conducted to determine the feasibility of the study. The data was collected for one week and was analyzes were done by using a descriptive-inferential statistical package for social sciences for windows version SPSS 21.

Implication

Nursing practice

Nurses play an important role in preventing addiction among students.

Nursing Education

1. Health teaching has to be provided regarding the importance of sleep hygiene.
2. Health teaching needs to be done to reduce the level of gadgets addiction.
3. The teacher can motivate the students to do more project on a particular type of electronic devices among students.

Nursing Administration

The findings of the study help the administrator for decision making policy and setting jammer on the college campus. So that violation of mobile uses is prevented.

Nursing Research

The finding of the study suggests that educators and researchers should encourage the nurse to read, discuss and conduct research studies. So as to enable the nurses to make data based decision rather than intuitive decision.

CONCLUSIONS

The present study assessed the effect of gadgets on the quality of sleep among college students. Here this study reveals about the quality of sleep the majority (54%) of participants had poor quality of sleep and the remaining (46%) of participants had a good quality of sleep. In relation to effect gadgets use (61%) of participants had mild gadgets addiction, (34%) of participants had moderate gadgets addiction, remaining (5%) of participants had severe gadgets addiction. The correlation between the effect of gadgets use on quality of sleep shows a weak correlation ($r=0.390$).

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The authors declare that they have no funding support for this study.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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