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Original Research Article

Impact of Electronic Gadgets on Quality of Sleep among Adolescents

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ABSTRACT

Introduction: Disruption of the sleep negatively affects both physical and psychological state of the children and adolescents. Especially the three domains, they are cognitive, psychomotor and affective. The electronic device, commonly mobile phones affects the quality of sleep of the human especially the adolescent

Methodology: A quantitative non-experimental approach with descriptive survey design was used. 60 adolescents within the age group of 16-19 years were selected by using purposive sampling technique. The study was conducted from JDT College of Nursing and Physiotherapy. The tools used for the study were sociodemographic proforma and standardized questionnaire. The data obtained were analysed using descriptive and inferential statistics.

Result and discussion: The study result found that the qualities of sleep of adolescents who are using electronic gadgets were impaired. Among the 60 sample, 35% of adolescents had undisturbed sleep, 53% had disturbed sleep and11.6% had poor sleep.

Conclusion: Thus there is a significant association between the use of electronic gadgets and quality of sleep among adolescents. There was significant association between the qualities of sleep with all the selected socio demographic variables. Thus the research hypothesis accepted and null hypothesis rejected.

Key words: electronic gadget; impact: quality; sleep

INTRODUCTION

According to the National Sleep Foundation (NSF) sleep is essential for a person's health and wellbeing. [1] The benefit of sleep is more than what we realize. Sleep is important for the regulation of the internal environment, restoration of normal levels of brain activity and prevention of irritable and psychotic behaviour. [2] Poor sleep quality may badly affect the academic performance of the children and adolescents. [3] Nowadays millions of people do not get adequate sleep and they undergone sleep deprivation and sleep disorders. The article shows that 60 % of the adolescents having sleep problems. [1]

In our day today life we face many challenges, we try to solve the problems, earns money, thus we exhausted at the end of all these tasks. But the introduction of electronic gadgets brought drastic changes in our life. [4] Life would have been very difficult without these inventions. It simplified our work, it helped us to store all the information, we got a wireless communication system and now we have all the things in our fingertip. This is how the technology era made us to depend on the

electronic gadgets. The electronic gadgets which we use daily consist of lights, televisions, computers, fans, Air conditioners, refrigerators, telephones, and cell phones. [5]

Adolescents are the most vulnerable group for the addiction of electronic gadgets. That is the adolescence period is a transitional stage of physical and psychological human development generally occurring during the period from puberty to adult hood. Now we live in the increasingly integrated world and our communication system is developing every day. Thus they are having curiosity and enthusiasm to know all these things and they get easily addicted to those gadgets. India stands in front with the largest population of adolescents. [6]

The survey report by Kaiser Family Foundation found that the adolescent spend more than 7 hours per day on an electronic devices. Adolescents who spend significant time on electronic devices have difficulties in their academic performance. Addiction to the computer and laptop leads to sedentary life style, poor health, time management and eating habits. [7]

Disruption of the sleep is negatively affects both physical and psychological state of the children and adolescents. Especially the three domains, they are cognitive, psychomotor and affective. The electronic device, commonly mobile phones affects the quality of sleep of the human especially the adolescent. [8]

The blue light emitted by the super-sharp display prevents the release of melatonin, an important sleep hormone. This, in turn, can lead to sleep impairment in those who use electronic gadgets in excess. So the excessive use of electronic gadgets should be avoided also children/adolescents should not access electronic gadgets until they reach a certain age.

Objectives of the study

- To assess the quality of sleep among adolescents who are using electronic gadgets.
- To find out the association between quality of sleep among adolescents and selected socio demographic variables

METHODOLOGY

A quantitative non-experimental approach with descriptive survey design was used for the study. 60 adolescents within the age group of 16-19 years were selected by using purposive sampling technique. The study was conducted from JDT College of Nursing and Physiotherapy, Calicut. The tools used for the study were socio demographic Performa and a questionnaire to assess the quality of sleep. Reliability was assessed and the score was 0.8, which indicate that the tool is reliable. Before starting the study purpose of the study was explained to the sample and informed consent was obtained from the sample. The data obtained were analysed using both descriptive and inferential statistics.

Prior to analysis obtained data were examined for the missing and outlying of data. Descriptive statistics is used to analyse the demographic data such as age, sex, educational and occupational status of parent monthly income, type of family, general questions regarding types and duration spent by adolescents in using electronic gadgets. Inferential statistics such as chi square test is used to find the association between the demographic variables and quality of sleep among adolescents. Data were analyzed by using Microsoft excel.

STATISTICAL METHODS

In this study descriptive and inferential statistics are used to analyse the data. Sociodemographic data were analysed by using frequency and percentage. Also the quality of sleep was assesses by using frequency and percentage. Association between sample characteristics and quality of sleep was assessed by using Chi square test.

RESULTS AND DISCUSSION

Table 1 Frequency and percentage distribution of socio-demographic details of subjects regarding their age, gender, place of residence, type of family and birth order

Demographic variable	Category	Frequency	Percentage (%)
Age	16-17 yaers	0	0
	17-18 years	16	26.6
	18-19 years	44	73.3
Gender	Male	13	21.6
	Female	47	78.3
Place of residence	Rural	25	58.5
	Urban	55	41.6
Type of family	Nuclear family	51	85
	Joint family	6	10
	Extended family	3	5
Birth order	First child	28	46.6
	Second child	15	25
	Third child	13	21.6
	Fourth child	4	6.6

The present study findings shows that among 60 sample 73.3% of electronic gadgets users are of within the age of 18-19 years and 26.6% are within 17-18 years respectively.78.3% sample were female and21.6% were males. 58.3% sample were residing in urban and 41.6% were residing in rural area. 85% belongs to nuclear family,10% belongs to were joint family and 5% belongs to extended family.46.6% users are first child,25% are second child 21.6% are third child and 6.6% are fourth child of their family.

Table 2: Frequency and percentage distribution and percentage of educational status and occupation of parents and monthly income

Sociodemographic variable	Category	Frequency	Percentage (%)
Education status of father	Primary	5	8.3
	High school	30	50
	Diploma/degree/post graduate	22	36.6
	Professional		35
Educational status of mother	Primary	2	3.3
	High school	30	50
	Diploma/degree/post graduate	24	40
	Professional		46.6
Occupational status of father	Government employee	8	13.3
	Private sector	38	63.3
	Professional	1	1.6
	Nil	13	21.6
Occupational status of mother	Government employee	5	8.3
	Private sector	4	6.6
	Professional	2	3.3
	Nil	49	81.6
Monthly income	Less than Rs.5000	5	8.3
	Rs.5000-Rs.10000	23	38.5
	Rs.10000-Rs.15000	13	21.6
	Above Rs 15000	19	31.6

50% of fathers of sample had only high school education and 36.6% had diploma/degree and post-graduation.50% of mothers of sample had high school education and 40% had diploma/degree/post-graduation.63.3% fathers works at private sector and 21.6% have no job.8.16% mothers were unoccupied and 8.3% were works under government sector.38.5% of monthly income is in between Rs.5000-Rs10000 and 31.6% is above Rs.15000.

Table 3: Frequency and percentage of time spend on electronic gadgets, hours spend on them, most commonly used gadgets, most preferable applications and whether social media influence in life.

Sociodemographic variable	Category	Frequency	Percentage (%)
Time spend in using electronic gadgets	7 am- 7 pm	23	38.3
	7 pm- 7 am	37	61.6
	3-4 hours	16	26.6
	4-8 hours	12	20
	More than 5 hours	3	5
Most commonly used electronic gadgets	Mobile phones	56	93.3
	Computers	0	0
	Television	4	6.6
	Tablets	0	0
	Games and other apps	7	11.6
	Or both	21	35
Social media influence in life	Yes	50	83.3
	No	10	16.6

Table 3 shows that 61.6% of the sample spends time from 7pm- 7am using electronic gadgets remaining 38.3% uses electronic gadgets from 7am- 7pm. Most of them 48.3% spends 2-3 hours on electronic gadgets, 26.6% spends 3-4 hours, 20% spends 4-5 hours using gadgets and the remaining 5% spends more than 5 hours using electronic gadgets. Majority of samples 93.3% uses mobile phones and 6.6% prefers television. Figure 1 shows that most of the sample 53.3% prefers internet 35% prefers both internet games other applications. Figure 2 depicts that majority of sample 83.3% have influence of social media in their life and 16.6% have no influence of social media in their life.

Table 4: Distribution of score on the impact of electronic gadgets on quality of sleep

Quality of sleep	Frequency	Percentage (%)
Undisturbed sleep	32	53
Disturbed sleep	21	35
Poor sleep	7	11.6

Table 4 shows that most of the adolescents, 53% have disturbed sleep, 35% had undisturbed sleep and the remaining 11.6% had poor sleep. Thus it is found that the electronic gadgets have an impact in quality of sleep. Thus the null hypothesis rejected and research hypothesis accepted.

Association between selected demographic variable and quality of sleep was assessed by using Pearson Chi square test. The result showed that the calculated value of birth order (33.828), time spend in using electronic gadgets (11.588) and social media influence in life (8.32) is greater than the table value. It indicates that there is a significant association between the quality of sleep and the selected sociodemographic variables such as birth order, time spend in using electronic gadgets and social media influence in life. Hence the researcher rejected the null hypothesis and accepted the research hypothesis.

DISCUSSION

The findings of the present study were supported by the study conducted by Gamble A L et al. The study result found that over 70% of adolescents using 2 or more electronic devices in their bedroom at night. The study concluded that the use of computers, cell-phones and televisions at higher doses was associated with delayed sleep/wake schedules and wake lag, potentially impairing health and educational outcomes. [8]

A study was conducted by Gradisar M et al on The Sleep and Technology Use of Americans in 2011 in USA. The study results show that nine of 10 subjects were using technological device in the hour before bed. Technology use near bedtime is extremely prevalent in the United States. There students having disturbed sleep at night and having excess daytime sleepiness. Among a range of technologies, interactive technological devices are most strongly associated with sleep complaints. [9]

CONCLUSION

Study concludes that adolescents who are using electronic gadgets have disturbed sleep. Most of the adolescents spend more time for the electronic gadgets than studying. This is also badly affects their academic performance and day today life.

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