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Influence of Screen Time on the Sleep Quality: A Cross- Sectional Study on Ayurveda College Students

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Abstract:

Background: The majority of students experience inadequate sleep, which is linked to daytime drowsiness. Long-term screen use is thought to negatively impact sleep through a variety of mechanisms. However, media devices are developing so quickly, the correlation between media device use and poor sleep is not been sufficiently evaluated.

Aim: To assess the effect of the screen time on the sleep quality among college students

Materials and Methods: An analytical cross-sectional study was carried out on the students of Alva's Ayurveda Medical College and Hospital, Moodubidire using a self-administered online questionnaire through Google forms. The questionnaire covered student's personal information, medical history, screen usage including the type of device, duration of screen use, effect of screen use on their sleep quality.

Result: A total of 60 students fulfilling the inclusion criteria completed the study questionnaire. Students aged from 19-30 with the mean age of 24.19. Among those, 12 students (20%) used screen for more than 5 hours on daily basis, 10 students (16.66 %) used screen for 4-5 hrs, 19 students (31.66%) used screen for 3-4 hours, 17 students (28.33%) used screen for 2-3 hrs, 2 students (3.33%) used screen for less than 2 hours.

Keywords: Sleep quality, screen time, mobile phone, electronic device effect

Introduction:

Sleep is necessary for our bodies to maintain a robust immune system, repair and rejuvenate our cells, and feel focused and stimulated. Extended periods of sleep deprivation can cause a number of health problems, such as elevated stress, depression, and compromised immunity. In order to stay healthy and enhance our general quality of life, we must make sure that we prioritize getting enough excellent sleep.

As technology has developed further, dependence on gadgets likelaptops, tablets, and cell phones has grown.

While there are many advantages to these devices, they can also have a big impact on sleep patterns, especially for students. As a primary care physician, it is important to know how screen time affects sleep because it can have a big impact on our patient's health and well-being. Blue light from electronic devices can suppress melatonin production and change circadian rhythms, which can lead to disrupted sleep, which can worsen pre-existing health issues, impair cognitive function, and increase the risk of accidents and injuries.Furthermore, excessive screen time can lead to addiction, social isolation, and mental health issues such as anxiety and depression.

According to numerous studies, teen's usage of electronic devices can have a major impact on the length and quality of their sleep. According to research in the journal Sleep Medicine, teens who reported using screens a lot sleep for shorter periods of time and had more trouble falling asleep than those who used screens less.[(1)]The Journal of Clinical Sleep Medicine also reported that engaging with electronic devices at night was associated with worse academic performance and increased levels of daytime tiredness.[(2)]In order to encourage healthy sleep patterns, it is advised that people set a regular bedtime and limit their screen usage before bed.

In India, sleep problems have gotten little attention, despite the fact that they are becoming a more significant public health concern as technology advances, particularly among adolescents and young people. According to a study, between 39 and 44 percent of Indian teenagers and young people were addicted to smartphones. [(3)]However, sleep problem independently associated with smartphone screentime is a neglected topic among youngsters in India.

Thus, the present study can help to understand the linkage between screen time and sleep problems among the college going students.

Methodology:

An analytical cross-sectional study was carried out using a self-administered questionnaire which was circulated through Google forms targeting the students of Alva's Ayurveda Medical College aging between 19-30 years, during the period of January 2023.

The students who are on certain medications were excluded from this study.

The questionnaire covered the student's personal information, medical history, screen usage including the type of device, duration of screen use, effect of screen use on their sleep quality.

Assesment:

The students were assessed on the lines of the questions asked and were put down under these parameters:

1) Problem arising falling asleep because of electronic device
2) Feeling after waking up after usage of electronic device
3) Device predominantly causing sleeplessness.
4) Relation of Screen time usage with difficulty falling asleep.

Data Analysis:

After data for this study was extracted, revised, coded and fed into statistical software SigmaStat 3.1.

All the statistical tests were done using Chi-square test with P value less than 0.01, which was statistically significant

Results:

A total of 60 students fulfilling the inclusion criteria completed the study questionnaire.Students ranged from 20-30 years with mean age of 24.19 years old.Exact of 23 students (38.33 %) were male and 37 students (61.66 %) were female.

	Parameter	X^2	d.f	P value	Significance
1)	Problem arising falling asleep because of electronic device	64.63	9	>0.001	Statistically Significant
2)	Feeling after waking up after usage of electronic device	73.971	12	> 0.050	Statistically Significant
3)	Device predominantly causing sleeplessness	61.135	12	> 0.001	Statistically Significant
4)	Relation of Screen time usage with difficulty falling asleep	66.92	15	> 0.001	Statistically Significant

Among those, 12 students (20 %) used screen for more than 5 hours on daily basis, 10 students (16.66 %) used screen for 4-5 hrs, 19 students (31.66 %) used screen for 3-4 hours, 17 students (28.33 %) used screen for 2-3 hrs, 2 students (3.33 %) used screen for less than 2 hours.

Discussion:

For both physical and emotional well-being, sleep is essential. Every night, adolescents should get eight to ten hours of sleep. Working memory, learning, cognitive function, attentiveness, and attention are all significantly impacted by sleep.[4]Screen usage has a negative correlation with health indicators in wealthy nations' youth and young adults.[5]According to a survey conducted among private school students in Gwalior City, 6.3% of teenagers had severe internet addiction and 24% had moderate addiction.[6]

This study highlighted the poor sleep quality among more than half of the students. Further the discussion on the various parameters also reveals the same.

1) **Problem arising falling asleep because of electronic device:**
   In the following observation, it was been found that majority of the subjectsi.e. 37 were using mobile phones before going the bed which caused them difficulty falling asleep.

2) **Feeling after waking up after usage of electronic device:**
In this study, the subjects were equally energised and non-energised after waking up, but majority of the subject were found to be using an electronic device more than 3 hours a day.

3) **Device predominantly causing sleeplessness:**
The majority of the subjects were found using mobile phones as a primary electronic device which is presumed to be the causative factor for sleeplessness.

4) **Relation of Screen time usage with difficulty falling asleep:**
Majority of the participants were able to get asleep within 30 mins to 1 hour which might be the probable factor to assess the effect of more screen time affecting sleep pattern.

These were the relation drawn out of the answers given by the subjects in an online questionnaire.

Conclusion:

From the conducted study, an attempt is made to build a relationship between the digital screen time and its effect on the sleep pattern of an individual.

Our observation has found out that the students feel difficulty falling asleep due to excessive use of electronic device.

It has also been noted that more the number of hours person ends up using a device, that much a person feels non-energised in waking up from the sleep.

Also, the mobile phone was the dominant among all the devices which caused sleeplessness.

As more the person is indulged in using device, more he/she is exposed to the screen time which in turn resulted into sleeplessness.

In the end, the study was concluded to be statistically significant with all the parameters.

Source of Support: NIL

Conflict of Interest: None declared

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