International Journal of Innovative Research in Health Science
Published: March 10, 2026
Volume 2, Issue 2, Pages 7- 11

Research Article

DOI: https://doi.org/10.63349/ijirhs.202612

A study to assess the impact of internet usage time on sleep among adolescents in selected Girls hostel, Madurai.

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Abstract:

Introduction: Internet overuse is a phenomenon that has increased of problem in adolescents, especially in hostel staying girls, as it is a phenomenon that has a detrimental impact on the quality of sleep and general well-being. Excessive use of digital media is linked to insomnia, emotional difficulties, and bad performance at school. **Aim:** The aim of the present study was to determine the effect of time spent on internet on sleep quality of adolescent girls who live in a chosen hostel in Madurai. **Methodology**: The research design was a quantitative, non-experimental and descriptive study design. Data collection was done on 100 female adolescents between the ages of 17 and 19 years who live at Surya Girls Hostel, Shenoy Nagar, Madurai. A purposive sampling method used a non-probability technique to select the participants. The measures were gathered in the form of a structured questionnaire which includes social-demographic factors, the Young Internet Addiction Questionnaire, and the Pittsburgh Sleep Quality Index. The instruments were tested and proved to be credible. Data analysis was carried out using descriptive and inferential statistics. **Findings:** The findings made show that 53 and 28 percent of the studied participants were slightly and moderately addicted to the internet, respectively, with no one being severely addicted to the internet. The quality of sleep was not good in 83 percent of the respondents and the mean sleep score was 9.2 and 3.4. The results revealed a very strong relationship between internet addiction and type of recreation (2 6.55, 0.008) and daily hours spent on internet (2 12.93, 0.044). More internet usage was related to a greater level of addiction and low quality of sleep. **Conclusion**: The researchers got the conclusion that over-use of internet has a great impact on the sleep quality of teenage girls. Healthy internet habits and sleep hygiene need to be promoted to help them to achieve physical, psychological, and academic well-being.

Keywords: Internet usage, sleep, adolescents.

INTRODUCTION

Sleep is a natural condition of lowered activity (physical and mental) that helps in a process of memory, learning, immunity, emotional stability, and physical development. It comes in the phases of REM and non-REM and is controlled by body circadian rhythm. Health is highly dependent on adequate sleep, which in turn causes physical illnesses, mental, and academic problems when one sleeps poorly. Teenagers need to have 8 to 10 hours of sleep a day, and most of them face chronic sleeplessness, which impacts their mood, self-confidence, and school grades. The internet has also changed communication, education and entertainment especially among the youth due to the rapid growth of the internet. Despite the relevant learning materials, there has been addiction to the internet following its overuse and unregulated usage especially by the adolescents. Addiction to the internet has been recorded to cause sleep disturbances, depression, anxiety, underachievement in school, isolation, and interference with daily activities. Girls in hostels are particularly susceptible since they have easy access to the internet, lack of supervision and are affected by academic and emotional pressures. Most of them spend several hours per day in social media sites which shorten their sleep quality and period. The constant use of the internet prior to sleep also disrupts sleep habits and concentration. The usage of internet excessively impacts negatively on concentration, decision making and emotional well-being and inadequate sleep exacerbates the memory and learning capabilities. These factors taken collectively are dangerous to the

physical, psychological, and academic health of adolescents. Hence, a healthy internet use and proper sleep should be encouraged to enhance the wellbeing and growth of adolescents.

NEED FOR THE STUDY

Literature indicates that too much use of internet affects the physical, mental, and academic well being of adolescents negatively, especially by causing sleeping disorders like inability to sleep, waking up too often, sleeps not being restful, and experiencing daytime exhaustion. The use of the internet and social media is problematic more among adolescent girls compared to boys and is closely linked with emotional distress and low sleep quality.

The literature on global and regional research is that internet addiction is very high in the teenagers and it is particularly high in girls residing in hostels. A high percentage of adolescent girls in hostels in India, Sri Lanka, and Tamil Nadu spend over two hours a day on the internet and most of them display signs of addiction in the form of addiction. This excessive usage has been associated with poor academic achievements, anxiety, depression and lack of concentration.
Access to electronic equipment in the night interferes with circadian rhythms and leads to sleep deprivation because of cognitive stimulation and the production of blue light. Digital technology addiction has been identified by the World Health Organization as a worldwide issue, with its consequences to time management, energy, and sleep patterns identified.
Generally, it is proven that excessive use of the internet correlates strongly with low quality of sleep and mental issues among adolescents. Internet addiction predisposes poor sleep which is a vicious cycle. Thus, maintaining an appropriate balance in the use of the internet and good sleep patterns is needed to enhance the overall well-being of adolescents and this is particularly true when it comes to the girls in the hostel.

MATERIALS AND METHODS

Study Population and Design of Study.

The study adopted a non-experimental descriptive research design based on the quantitative research study in order to determine the effects of internet use time on sleep in teenagers. This was done in Surya Girls Hostel, Shenoy Nagar, Madurai. Adolescent girls of 17-19 years old formed a target population. The available population was the teenage girls in the chosen hostel. A sample of 100 participants that met the inclusion criteria was sampled under non-probability purposive sampling.

Inclusion and Exclusion Criterion.

The inclusion criteria included the group of adolescent girls who check the internet more than two hours a day and were ready to take part in the study. The study excluded adolescents that were not available at the time of data collection and those with neurological or psychiatric diseases.

Tools

The structured questionnaire was used as a collection instrument of data in the form of three sections. In section A socio-demographic variables including age, education, family type, income, recreation, and internet usage patterns were included. Section B included the standardized Young Internet Addiction Questionnaire that contained 20 questions with a six-point scale to determine the degree of internet addiction. Section C contained the standardized Pittsburgh Sleep Quality Index to assess the level of sleep. The instruments were tested by experts and their reliability was checked through the test-retest method which indicated high reliability.

Ethical Clearance

The Institutional Review Board of Madurai Medical College, Madurai approved the study ethically. The concerned authorities were also given permission. All the participants were informed about the purpose of the study, and informed consent was signed. The study was conducted in confidentiality, privacy and anonymity.

Data Collection Procedure

Data collection was done in Surya Girls Hostel 24.03.2025 30.04.2025 after getting the required permission. The researcher was able to develop a rapport with the participants and justify the study. Data collection was done with verbal and written consent. The interview technique was applied to collect the information using the standardized questionnaires, and each respondent had about 35 to 40 minutes. Data collection would be done with privacy and confidentiality and a pamphlet on sleep hygiene would be given after the data had been collected.

Data Analysis

The data obtained were processed through descriptive and inferential statistics in terms of the study objectives. Socio-demographic variables were described using frequency and percentage distribution. A chi-square test was used to determine the relationship between the use of the internet and sleep quality. The time spent using the internet was found to have a correlation with sleep in adolescent girls using linear regression analysis.

RESULTS:

Demographic Variables

The research involved 100 teenage girls, the majority 18 years old (67%), and then 19 years (33). Majority of the participants were undertaking paramedical education (66-percent), whereas 30-percent were in the arts and science courses. About religion, 66% were Hindu, 25% Christian and 9% Muslim. Over fifty percent of the respondents were nuclear families (51 degree), with joint families (47 degree) coming next.

The most used social media platform was Instagram (53%), WhatsApp (20%), and Facebook (14%). The majority of participants (69) spent 1-4 hours on the internet daily, 26% spent 5-8 hours and 5% spent 9-12 hours on the internet daily. In general, the results show that the level of activity among the adolescent girls living in hostels in terms of social media use and online activities is high. (Table 1)

The findings revealed that only 17% of the adolescent girls had good sleep quality, while a majority of 83% experienced poor sleep. The mean sleep score was 9.2 ± 3.4, indicating overall poor sleep quality among the participants. This suggests that most hostel-residing adolescent girls were affected by sleep disturbances, which may be associated with excessive internet usage and lifestyle factors. (Table 2)

Table 1: Socio-Demographic variables. (n = 100)

S. No.	Socio-demographic Variables	Category	Frequency (f)	Percentage (%)
1	Age (completed years)	17 years	0	0
		18 years	67	67
		19 years	33	33
2	Education	Arts & Science	30	30
		Para medical	66	66
		Others	4	4
3	Religion	Hindu	66	66
		Christian	25	25
		Muslim	9	9
4	Type of family	Nuclear family	51	51
		Joint family	47	47
		Extended family	2	2
5	Family income per month	< Rs. 10,000	4	4
		Rs. 10,001 – 20,000	31	31
		Rs. 20,001 – 30,000	45	45
		> Rs. 30,001	20	20
6	Type of recreation	Radio	10	10
		Television	28	28
		Books	17	17
		Sports	7	7
		Online gaming	38	38
7	Mostly used social media	Facebook	14	14
		YouTube	10	10
		WhatsApp	20	20
		Instagram	53	53
		Twitter	3	3
8	Internet usage per day	1–4 hours	69	69
		5–8 hours	26	26
		9–12 hours	5	5

Table 2: Sleep quality of the adolescents (n = 100)

Sleep	(f)	(%)	Mean with standard deviation
Good sleep	17	17%	9.2 ± 3.4
Poor sleep	**83**	**83%**	

Table 3: Significant Association between Internet Usage and Socio-Demographic Variables (n = 100)

S. No	Socio-Demographic Variable	Category	Normal f (%)	Mildly Addicted f (%)	Moderately Addicted f (%)	χ^2 / p-value / Significance
1	Type of Recreation	Radio	2 (2)	4 (4)	4 (4)	χ^2=26.55, p=0.008, S
		Television	5 (5)	13 (13)	10 (10)	
		Books	10 (10)	5 (5)	2 (2)	
		Sports	0 (0)	5 (5)	2 (2)	
		Online Gaming	2 (2)	26 (26)	10 (10)	
2	Internet Usage Hours per Day	1–4 Hours	19 (19)	35 (35)	15 (15)	χ^2=12.93, p=0.044, S
		5–8 Hours	0 (0)	16 (16)	10 (10)	
		9–12 Hours	0 (0)	2 (2)	3 (3)	

S = Significant ($p < 0.05$); HS = Highly Significant ($p < 0.01$)

DISCUSSION

The research findings indicated that a majority of the adolescent females had low sleep quality with 83% of them reporting poor quality sleep and a mere 17% of them reported good sleep. The average sleep score was 9.2 and the standard deviation was 3.4 which revealed that there were disturbed sleep patterns on average. On internet addiction, the sample was mostly mildly to moderate addicted as 53 and 28 percent were mildly and moderately addicted respectively and no one was severely addicted.

A statistical analysis showed the existence of a significant correlation between the type of recreation and internet addiction (2 = 26.55, p = 0.008), with more addicts among adolescents participating in online games and activities on the screen. The hours of internet use used in a day also were significantly related to the addiction to the internet (2 = 12.93, p = 0.044), and those who used the internet over five hours per day were more prone to moderate levels of addiction.

These results show that there is a close relationship between an extended period of internet usage and increased addiction rates and low sleep quality. The findings underline the fact that an overdose of online interactions leads to issues related to sleep disorders and impairment of physical, psychological and educational conditions among adolescent female subjects.

CONCLUSION

The study concluded that excessive internet use among adolescent girls was associated with high levels of mild to moderate internet addiction and poor sleep quality. A majority of participants (83%) experienced poor sleep, with a mean sleep score of 9.2 ± 3.4. Significant associations were found between internet addiction and type of recreation ($\chi^2 = 26.55$, $p = 0.008$) as well as daily internet usage hours ($\chi^2 = 12.93$, $p = 0.044$). These findings indicate that prolonged engagement in online and screen-based activities adversely affects sleep patterns and overall well-being of hostel-residing adolescents.

RECOMMENDATIONS:

Based on the findings, awareness programs should be conducted to educate adolescents about healthy internet usage and sleep hygiene. Hostel authorities and educators should encourage participation in physical and recreational activities and regulate excessive screen time. Counseling services should be made available for students showing signs of internet addiction. Parents and teachers should monitor internet use and promote balanced lifestyles. Further studies with larger samples and different settings are recommended to strengthen generalization and support the development of effective intervention strategies

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Cite this article as: S. Gnanaprabha et al. (2026). A study to assess the impact of internet usage time on sleep among adolescents in selected Girls hostel, Madurai. *International Journal of Innovative Research in Health Science*, 2(2), 7-11.