

Assessment of Sleep Quality among Young College Student in Bhopal City - A Pilot Study

Mandloi R^{1*}, Jain T², Marwaha N³

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^{1*} Rajeshwari Mandloi, Post Graduate Scholar, Dept of Swasthavritta And Yoga, Pt Khushilal Sharma Govt Ayurveda College, Bhopal, Madhya Pradesh, India.

² Trupti Jain, Guide and Assistant Professor, Dept of Swasthavritta and Yoga, Pt Khushilal Sharma Govt Ayurveda College, Bhopal, Madhya Pradesh, India.

³ Nitin Marwaha, Professor and HOD, Dept of Swasthavritta and Yoga, Pt Khushilal Sharma Govt Ayurveda College, Bhopal, Madhya Pradesh, India.


Background: Sleep is a period of inactivity and restoration of mental and physical function. Sleep Quality is an indicator of good health as it relieves stress and normalizes body tissues. According to Ayurveda Nidra was quoted under Trayopasthambha (Sub pillars of life). In present times, insufficient and disturbed sleep have become common problems in young college going students. Numerous factors that affect the sleep quality in young generation are increased screen time, stress and poor sleep hygiene consumption of caffeine/alcohol/smoking and attempting to sleep in noisy environment.

Materials and Methods: This cross-sectional study was carried out as a pilot study on 30 college going students of age group between 17-24 years from different government /private colleges of Bhopal city. Sample was selected by non-probability sampling technique. A detailed questionnaire was prepared and the subject were interviewed using the questionnaire for collection of relevant data. Assessment of sleep quality was done by PSQI (Pittsburgh sleep quality Index).

Result: Global PSQI scores calculation showed that all (100%) of respondents had PSQ >5 which shows that all students had poor sleep quality and no one had good sleep quality.

Conclusion: On the basis of this study it can be concluded that maximum college going students have poor sleep quality.

Keywords: PSQI, Sleep quality, Trayopasthambha, Nidra

Corresponding Author	How to Cite this Article	To Browse
Rajeshwari Mandloi, Post Graduate Scholar, Dept of Swasthavritta And Yoga, Pt Khushilal Sharma Govt Ayurveda College, Bhopal, Madhya Pradesh, India. Email: mandloirajeshwar@gmail.com	Mandloi R, Jain T, Marwaha N, Assessment of Sleep Quality among Young College Student in Bhopal City - A Pilot Study . J Ayu Int Med Sci. 2025;10(5):27-31. Available From https://jaims.in/jaims/article/view/4660/	

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Introduction

Sleep is a period of inactivity and restoration of mental and physical function.[1] Quality sleep is an indicator of good health as it relieves stress and normalizes body tissues. Hence, its deprivation is linked with various diseases.[2] The situation is so grave that sleep related problems are second leading cause of people's reference to health care centres.[3]

In *Ayurvedic* classics, *Ahara*, *Nidra* and *Brahmacharya* are mentioned as *Trayopasthambha* (Sub pillars of life).[4] According to *Acharya Charaka*, a person goes to sleep when the mind along with the sensory and motor organs are exhausted and they separate themselves from their objects.[5] Happiness or misery, nourishment or malnourishment, strength or weakness, potency or impotency and sexual urge, knowledge, orientation of surrounding, activeness of brain or disorientation and sluggish senses; life or death depends on sleep; therefore, one should take proper sleep at proper time.[6] In present times, insufficient sleep and disturbed sleep have become common problems in young students.[7] Numerous factors that affect the sleep quality in young generation are increased screen time, stress, and poor sleep hygiene such as maintaining variable sleep and wake times, consuming caffeine late at night, smoking, drinking alcohol before bed and attempting to sleep in noisy environment.[8]

Nation's youngsters are its greatest resource for future social and economic development, so their healthcare is top priority. In order to address this, it is necessary to measure and evaluate the sleep patterns of college going students and how these related to other issues.

Aim and Objective

To find out the sleep quality among young college students in Bhopal city.

Materials and Methods

Source of Data:

This cross-sectional study was carried out as a pilot study in month of July & August 2024 on 30 college going students of age group between 17-24 years from different government / private colleges of Bhopal City.

Data was collected by Person-to-Person Interview method.

Study Design:

Sample was selected by non-probability sampling technique.

Method of Collection of Data:

Subjects who were fulfilling inclusion criteria were selected for the study.

Inclusion Criteria:

1. Subjects between the age group of 17 to 24 years of either gender.
2. Subjects who are willing to join the survey study.

Exclusion Criteria:

1. Subjects having any other severe systemic physical or mental illness.
2. Pregnant and lactating women.
3. Subjects who are not willing to join the survey study.
4. Subjects who are doing Night Shifts.

Method Of Study:

After assessing the inclusion/exclusion criteria detail were collected and questionnaire personally.

Questionnaire:

A detailed questionnaire proforma was prepared and the subjects were interviewed using the questionnaire for collection of relevant data. Assessment of sleep quality was done by PSQI (Pittsburgh sleep quality Index).

Pittsburgh Sleep Quality Index (PSQI):

The Pittsburgh Sleep Quality Index (PSQI) was developed by researchers at the University of Pittsburgh in the late 1980s. The Pittsburgh Sleep Quality Index (PSQI) is a widely used self-report questionnaire designed to assess sleep quality and disturbances over a last one-month period. It helps measure different aspects of sleep and can identify sleep disorders.

The PSQI consists of 7 components, as Subjective Sleep Quality, Sleep Latency, Sleep Duration, Habitual Sleep Efficiency, Sleep Disturbances, Use of Sleep Medication, Daytime Dysfunction each scored from 0 to 3, with higher scores indicating worse sleep problems. The overall score ranges from 0-21.

Individuals with score of less than 5 were supposed to have good sleep quality and those with more than 5 to have poor sleep quality.

Data analysis:

From the questionnaire data were collected, calculated and presented in number and percentage.

Observations and Results

In this pilot study 30-college going student were interviewed and their health status was analysed.

Table 1: Age and Gender Wise distribution of subjects:

Gender	17-20 Year	21-24 Year	Percentage (%)
Male	8 (26.6%)	1 (3.33%)	9 (30%)
Female	5 (16.6%)	16 (53.3%)	21 (70%)
Total	13 (43.3)	17 (56.6)	30 (100%)

Age and Sex: In this study, in the age group of 17-20 years maximum 26.6% were male and 16.65% were Female and in the age group of 21-24 years maximum 53.3% were female and 3.33% were male. (Table no.1)

Table 2: Socioeconomic status activity wise distribution of subjects:

Socioeconomic status	Total No.	Percentage (%)
Upper	0	0%
Upper middle	4	13.3%
Middle	17	56.6%
Lower middle	6	20%
Lower	3	10%
Total	30	100%

Socioeconomic status: Maximum 56.6% were middle Socioeconomic status and 20% were Lower middle socioeconomic status, 13.3% were Upper middle socioeconomic status and 10% were lower socioeconomic status. (Table no.2)

Table 3: Religion wise distribution of subjects.

Religion	Total No.	Percentage (%)
Hindu	21	70%
Muslim	9	30%
Sikh	0	0%
Christian	0	0%
Total	30	100%

Religion: Maximum 70% were Hindu and 30% were Muslim. (Table no.3)

Table 4: Diet wise distribution of participants.

Diet	No. of participants	Percentage (%)
Vegetarian	16	53.3%
Mixed	14	46.6%
Total	30	100%

Diet: Maximum 53.3% were taking vegetarian diet and 46.6% had mixed diet. (Table no.4)

Table 5: Frequency of Taking food wise distribution of participants.

Taking food	No. of participants	Percentage (%)
2 times	17	56.6%
3 times	10	33.3%
>4times	3	10%
Total	30	100%

Frequency of taking food: Maximum 56.6% were taking food 2 times/day, 33.3% were taking food 3 times/day, 10% were taking food >4 time/day. (Table no.5)

Table 6: Bowel wise distribution of subjects.

Bowel	Total No.	Percentage (%)
Regular	17	56.6%
Irregular	8	26.6%
Constipation	3	10%
Loose Motion	2	6.6%
Total	30	100%

Bowel: Maximum 56.6% were regular bowel habit while 26.6% were irregular bowel habit only 10% were Constipation bowel habit and 6.6% Lose Motion bowel habit (Table no.6)

Table 7: Emotional makeup wise distribution of participants.

Emotional makeup	No. of participants	Percentage (%)
Normal	11	36.6%
Jolly	3	10%
Tensive	8	26.6%
Anxiety	5	16.6%
Depression	3	10%
Total	30	100%

Emotional makeup: Maximum 36.6% had Normal nature 26% had Tensive, 16.6% had Anxiety and 10% had Depression and Jolly. (Table no.7)

Table 8: Yoga wise distribution of subjects:

Yoga	Total No.	Percentage (%)
Daily	0	0%
2-3 times a week	6	20%
Weekly	9	30%
No	15	50%
Total	30	100%

Yoga: Maximum 50% were not doing Yoga and 30% were doing weekly Yoga and only 20% were doing Yoga 2-3times in a week. (Table no.8)

Table 9: Mobile use (Duration) wise distribution of participants:

Mobile use	Participants	Percentage (%)
2 hrs	8	26.6%
3 hrs	4	13.3%
>4 hrs	18	60%
Total	30	100%

Mobile use (Duration): Maximum 60% were using for >4 hrs, 26% were using for 2 hrs and 13.3% were using for 3hrs. (Table no.9)

Table 10: Mobile use before going to bed wise distribution of participants.

Mobile use	Participants	Percentage (%)
Yes	28	93.3%
No	2	6.66%
Total	30	100%

Mobile use ((before going to bed): Maximum 93.3% were using Mobile before going to bed and 6.66% were not using Mobile before going to bed. (Table no.10)

Table 11: Duration of screen time weekdays wise distribution of participants:

Screen time	No. of participants	Percentage (%)
<2hrs	4	13.3%
>2hrs	26	86.6%
Total	30	100%

Duration of screen time weekdays: Maximum 86.6% had >2hrs Screen time, 13.3% had <2hrs Screen time. (Table no.11)

Table 12: Sleep Timming wise distribution of participants.

Sleep Timming	No. of participants	Percentage (%)
8-10 PM	0	0%
>10 PM	30	100%
Total	30	100%

Sleep Timming: All students (100%) had a sleep after 10 PM. (Table no.12)

Table 13: Sleep Wake up Timming wise distribution of participants.

Sleep Timming	No. of participants	Percentage (%)
6-7	10	33.3%
>7	20	66.6%
Total	30%	100%

Sleep Wake up Timming: Maximum of 66.6% woke up after 7 AM, while 33.3% woke up in between 6-7 AM. (Table no.13)

Table 14: Quality of Sleep wise distribution of participants:

PSQI score	No. of participants	Percentage (%)
Good Sleep (<5)	0	0%
poor sleep (>5)	30	100%
Total	30	100%

Table 15: Distribution of sleep quality based on Pittsburgh Sleep Quality Index.

Scale	0	%	1	%	2	%	3	%
Subjective sleep quality	0	0%	13	10%	10	33.3%	7	23.3%
Sleep latency	1	3.33%	3	10%	10	33.3%	16	53.3%
Sleep duration	6	20%	10	33.3%	6	20%	8	26.6%
Habitual sleep efficiency	17	56.6	7	23.3%	4	13.3%	2	6.66%
Sleep disturbance	1	3.33%	15	50%	13	43.3%	1	3.33%
Use of sleeping medications	19	63.3%	4	13.3%	5	16.6%	2	6.66%
Daytime dysfunction over the last month	3	10%	12	40%	11	36.6%	4	13.3%

Sleep quality based on Pittsburgh Sleep Quality Index:

Based on responses to PSQI questionnaire, the pattern of sleep assessment showed that about 33% and 23% of students rated their subjective sleep quality to be "fairly bad" and "very bad" respectively. About half of the students had a sleep latency of >60 minutes. More than one third of the respondents had a sleep duration <5 hours/day. Habitual sleep efficiency of <75% was observed in about 23.3% respondents.

About half of the respondents reported sleep disturbances, on account of walking at night, getting up to use bathroom, difficulty in breathing, snoring, feeling too hot or cold, bad dreams, pain or other reasons. About 23.26% reported use of sleep medications. 89.9% respondents reported daytime dysfunction and reduced enthusiasm over the last month, due to sleep disturbances and inadequate sleep. (Table15). Global PSQI scores calculation showed that all (100%) of respondents had PSQ >5 which shows that all students had poor sleep quality and no one had good sleep quality. (Table no.14)

Discussion

Our finding reveals that all 100% had bad sleep quality. Simsek and Tekgui in the study also reported that maximum i.e., 82% adolescent had poor sleep quality.[9]

This suggests that sleep disturbances and poor sleep hygiene are prevalent among the college students. Moreover, the fact that no students reported "very good" sleep quality highlights the overall suboptimal sleep health. We made a unique observation in terms of mobile use. Maximum 60% students are using mobile devices for >4 hours daily and 93.3% were using the mobile before bedtime. 86% students have overall screen time >2hrs. This excessive screen time, particularly before bedtime, could be a contributing factor to the poor sleep quality observed and suggest that mobile use may be a widespread behavior affecting sleep patterns. Late sleeping hours, with just, no one students were going to bed between 8pm-10pm is expected to disturbed circadian rhythm in due course of time and lead to associated problems.[10]

Further research might explore this finding in more detail to understand the underlying causes and effects more comprehensively.

Conclusion

The results of the present study showed that, the prevalence of poor sleep quality (PSQ) was notably high among students, highlighting the need for widespread interventions. It is essential for students to adopt healthy sleep habits and minimize the use of electronic devices to ensure timely and high-quality sleep. Maintaining a healthy circadian rhythm is crucial, and restricting screen time before bedtime can further enhance sleep quality.

Limitation

Due to the small sample size of the pilot study and area specific study the accuracy of results cannot be determined.

Recommendations

Future research should involve a larger and more diverse group of college going students from various regions.

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