



**ANALYSIS OF SLEEP PATTERN AMONG UNDERGRADUATE MEDICAL
STUDENTS IN A PRIVATE MEDICAL COLLEGE, PUDUCHERRY**

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ABSTRACT

Background: Sleep is defined as a state of unconsciousness from which a person can be aroused. Sleep plays a fundamental role in the lives of human beings and it is essential for the normal functioning of all the systems of our body. Sleep is clearly an important aspect of successful academic and personal life in college, yet very little attention has been given to finding an appropriate sleeping pattern. In general, few studies have assessed sleep habits among medical students as a specific group. Hence, this study was designed to assess sleep patterns among undergraduate medical students at different academic levels. **Aim:** To analyze the quality of sleep pattern among undergraduate medical students. **Methods:** A Cross sectional study was conducted among undergraduate medical students of private medical college, Puducherry. The target population was undergraduate students of years (2nd-final phase, 3rd-1st and 3rd-final, and CRRI). One hundred and thirty one medical students participated in this cross-sectional study. They answered Pittsburgh Sleep Quality Index

(PSQI) questionnaire. Data is analyzed using suitable statistical methods. **Results:** Among 131 students participated in our study, 27 (20.61%) have good sleep quality and 104 (79.39%) have poor sleep quality. In our study we found that that poor sleep quality is more among day scholars than hostellers which is 81.54% and 77.27% respectively. **Conclusion:** From our study, we conclude that most of the medical students have poor sleep quality. So, timely intervention is needed before it affects their health and academic performance. Factors which disturb the sleep should be analyzed by each of them and it should be corrected.

Keywords: Sleep Pattern, Day Scholars, Hostellers, Pittsburgh Sleep Quality Index, Medical Students

INTRODUCTION

Sleep is defined as a state of unconsciousness from which a person can be aroused [1]. In this state, the brain is relatively more responsive to internal stimuli than external stimuli. Sleep affects our physical and mental health and it is essential for the normal functioning of all the systems of our body. Sleep plays a fundamental role in the lives of human beings, which is thought to affect the competence of their customary activities. Human beings, like other species, frame their routine according to a 24-hour cycle, and this organization depends upon endogenous and environmental factors. The pattern of sleep and wakefulness in different subjects is known to vary with their age, the demands of their occupation, their physiological and psychosocial characteristics [2].

The sleep wake cycle is a circadian rhythm which is spontaneously generated by the organism with a periodicity, in the

adult, of about one day [3]. Therefore we tend to maintain relatively stable schedules. Since the sleep wake cycle is in harmony with other circadian rhythms such as, deep body temperature and cellular mitosis, abrupt shift of sleep schedules can lead to internal dissociation among circadian rhythms which may imply undesirable effects such as somnolence, attention deficits and performance decrements [4].

Most sleep specialists agree that, although adults require 8 hours of sleep per day, sleep patterns of young adults differ from those of their adult counterparts in several ways, including a need for increased sleep [5]. However, some people need more than 9 hours of sleep (long sleepers) while others feel well with less than 6 hours of sleep (short sleepers). Adolescents undergo a phase delay in sleep onset accompanied by increased irregularities in their sleep patterns,

jeopardizing sleep sufficiency in student [6].

To be a qualified physician requires a great deal of knowledge and extensive training. Therefore, the burden put on medical students is tremendous. They face the challenges of trying to maintain a high level of academic achievement, trying to acquire adequate medical knowledge, learning clinical skills and adjusting to an ever-changing hospital environment in a limited period of time. Unfortunately, students who experience academic difficulties do not realize that poor sleep habits may contribute to their problems. It has been reported that sleep deprived students performed significantly worse than students who have a normal night's sleep [7].

Sleep is clearly an important aspect of successful academic and personal life in college, yet very little attention has been given to finding an appropriate sleeping pattern. In general, few studies have assessed sleep habits among medical students as a specific group. Hence, this study was designed to assess sleep patterns among undergraduate medical students at different academic years.

METHODOLOGY

A Cross sectional study was conducted among undergraduate medical students of private medical college,

Puducherry. The target population was undergraduate students of years (2nd -final phase, 3rd-1st and 3rd-final, and CRR) currently enrolled in private medical college, Puducherry during the study period. One hundred and thirty one medical students participated in this cross-sectional study. Verbal consent and ethical committee clearance was obtained from the students and management respectively, before handing over the questionnaire. First a basic proforma consisting of age, gender, year of study and place of stay (day scholar or hosteller) was asked. The questionnaire used for the study was Pittsburgh Sleep Quality Index (PSQI) [8]. It contains 10 questions, related to normal sleep habits. Four questions were asked on a four-point scale from "not during the past month" to "three or more times a week"). One question was about subjective evaluation of sleep quality (ranging on a four-point scale from "very good" to "very bad"). A value above 5 on this test indicates a poor sleep quality. Data collection spanned over the month of August 2017. Data was analyzed using suitable statistical methods.

RESULTS

Among 131 students participated in our study, 27 (20.61%) have good sleep quality and 104 (79.39%) have poor sleep quality.

Table 1: Sleep quality among male and female medical students (n=131)

Gender	Good Sleep Quality	Poor Sleep Quality	Chi-Square: 0.007 df: 1 p-value: 0.934
Male	14 (20.90%)	53 (79.10%)	
Female	13 (20.31%)	51 (79.69%)	

- 79.10% and 79.69% of male & female medical students have poor sleep quality
- 20.90% and 20.31% of male & female medical students have good sleep quality, which was not statistically significant

Table 2: Sleep quality among day scholar and hosteller (n=131)

Residence	Good Sleep Quality	Poor Sleep Quality	Chi-Square: 0.364 df: 1 p-value: 0.546
Day Scholar	12 (18.46%)	53 (81.54%)	
Hostel	15 (22.73%)	51 (77.27%)	

- 81.54% and 77.27% of day scholar & hostel medical students have poor sleep quality.
- 18.46% and 22.73% of day scholar & hostel medical students have good sleep quality
 - The above finding was not statistically significant

Table 3: Sleep quality among different year medical students (n=131)

Year of M.B.B.S.,	Good sleep quality	Poor sleep quality	Chi-Square: 10.490 df:3 p-value: 0.015
2nd Year (Final Phase)	5 (15.15%)	28 (84.85%)	
3rd Year (Phase I)	4 (12.12%)	29 (87.88%)	
3rd Year (Final phase)	5 (15.15%)	28 (84.85%)	
CRRRI	13 (40.62%)	19 (59.38%)	

15.15% of 2nd Year (Final Phase) students have good quality of sleep & 84.85% of them have poor quality of sleep. 12.12% of 3rd Year (Phase I) students have good quality of sleep & 87.88% of them have poor quality of sleep. 15.15% of 3rd Year (Final phase) students have good quality of sleep & 84.85% of them have poor quality of sleep. 40.62% of CRRRI students have good quality of sleep & 59.38% of them have poor quality of sleep, which was statistically significant.

DISCUSSION

We all need sleep to be able to function the next day. However, the unanswered question is, how much sleep do we need? Sleep researchers do not seem to agree on how much we should sleep. With the new civilization, sleep restriction has become a global problem [9]. Most young

adults report sleeping on average approximately 7.5 hours a night on weekday nights and slightly longer, 8.5 hours, on weekend nights [10].

Medical students are a special group of young adults who have life constraints that can cause irregular sleep habits or shortening of mean sleep length, compared with individual's sleep need. There is some evidence in literature supporting the hypothesis that sleep difficulties and deprivation can significantly impair student's academic performance [11].

PSQI measures sleep quality and value above five indicates poor sleep quality. To know the effect residence on sleep we divided the students into home group and hostel group. Both groups show PSQI higher than five indicating poor sleep quality.

In a Lithuanian survey, more than half (59.4%) of the medical students scored > 5 on the PSQI, indicating poor sleep quality [12]. But in our study 79.39% of the medical students scored > 5 on the PSQI, indicating poor sleep quality.

In our study, 79.10% and 79.69% of male & female medical students have poor sleep quality and 20.90% and 20.31% of male & female medical students have good sleep quality. Gender and quality of sleep is not statistically significant.

In a study done at Ahmedabad, they found that poor sleep quality among day scholars is 55% and among hostellers it was 70.5% [13]. Comparing these hostellers has more sleep deprivation. But in our study we found that that poor sleep quality among day scholars is 81.54% and among hostellers it is 77.27%. It shows that day scholars have more sleep deprivation when compared to hostellers.

In our study, 15.15% of 2nd Year (Final Phase) students have good quality of sleep & 84.85% of them have poor quality of sleep. 12.12% of 3rd Year (Phase I) students have good quality of sleep & 87.88% of them have poor quality of sleep. 15.15% of 3rd Year (Final phase) students have good quality of sleep & 84.85% of them have poor quality of sleep. 40.62% of CRRIs students have good quality of sleep & 59.38% of them have poor quality of

sleep. On analyzing the data 3rd Year (Phase I) students have more disturbances in sleep quality and CRRIs students have fewer disturbances in sleep quality.

Further study is needed to know the effect of sleep deprivation on performance and factors which disturbs the sleep.

CONCLUSION

From our study, we conclude that most of the medical students have poor sleep quality. So, timely intervention is needed before it affects their health and academic performance. Factors which disturb the sleep should be analyzed by each of them and it should be corrected.

Conflict of Interest: Nil

Source of Funding: Self/Diagnostic kits are provided by institution as on complimentary basis for research.

Ethical Clearance No: No.IEC/C:62/2016

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