

# Are Students of Isra University Sleep Deprived; A Prospective Study

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## ABSTRACT

**Objectives:** To assess the sleep pattern of students of Isra University using Pittsburgh sleep quality index & Epworth sleepiness scale.

**Study Design:** Descriptive study.

**Place and Duration of Study:** This study was conducted at Isra University medical college Hyderabad Sind from Jan 2010 to June 2010.

**Materials and Methods:** One hundred medical students of various batches of Isra University were randomly selected for this study. There were 57 females & 43 males. All were given instructions to fill the questionnaires of Pittsburgh sleep quality index & Epworth sleepiness scale. These were then collected and analyzed.

**Results:** Among the students mean Epworth score was  $8.37 \pm .342$  and the mean Pittsburgh score was  $5.99 \pm 0.322$ . Pittsburgh score was above the reference value. There was no difference in these scores between male & female students. In 34% students, Epworth score was above 9 and in 55% students Pittsburgh score was above 5. Both scores were higher in more female students than males. 26% students had less duration of sleep & 13% had difficulty in daily routine due to insufficient sleep.

**Conclusion:** It is concluded that Sleep as assessed by using Epworth sleepiness scale was within normal range. Mean Pittsburgh sleep quality index was above normal range indicating poor sleep quality. Duration of sleep was mainly affected.

**Key Words:** Pittsburgh score, Epworth score,

## INTRODUCTION

Sleep is essential for health and quality of life.<sup>(1)</sup> Insomnia is a subjective complaint of dissatisfaction with the quantity, quality or timing of sleep. This disorder is estimated to occur in approximately 12% to 25% of the general population.<sup>(2,3)</sup>

Sleep deprivation causes anxiety and many other health problems. It causes stress, proneness to accidents, mental illness and even premature deaths.<sup>(4)</sup>

College students suffer from more sleep disturbances than the general population. Sleep difficulties in college students can lead to lower levels of performance, memory, and cognitive ability, as well as increased levels of anxiety and decreased levels of well-being. Sleep quality is also highly correlated with college students' emotional response to stress.<sup>(5)</sup>

Gaultney JF (2010) reported from his study that Twenty-seven percent of students were at risk for at least one sleep disorder & those at risk may also be at risk for academic failure.<sup>(6)</sup>

Taylor DJ (2010) found that students get insufficient sleep and frequently use medication as sleep aids, use stimulants as alertness aids, and fall asleep at the wheel, or have motor vehicle accidents due to sleepiness.<sup>(7)</sup>

It has been reported that short sleepers (6 hours or fewer in 24 hours) had an average GPA of 2.74 compared to longer sleepers (9 or more hours in 24 hours) with an average GPA of 3.24. Lack of sleep

decreases students ability to concentrate and results in more errors in work.<sup>(8)</sup>

Buboltz, Brown, and Barlow (2001) observed that there was a high percentage of sleep problems in students, which supported past research that college students suffer more from sleep problems than the "normal" adult population.<sup>(9)</sup>

63% of college students do not get enough sleep, according to a recent study by the National Sleep Foundation. 15% percent of college students admit that they fall asleep in class. Students who studied hard all week and then stayed up all night partying on the weekend lost as much as 30% of what they had learned during the week.<sup>(10)</sup>

About 68 percent of college students who were surveyed said that worries about school and life keep them awake, with one-fifth saying this occurs at least once a week. It was found that less than a third of the 1,125 survey participants get the eight hours of sleep at night that people their age need.<sup>(11)</sup>

The ESS is a self-administered questionnaire with 8 questions. It provides a measure of a person's general level of daytime sleepiness, or their average sleep propensity in daily life. It has become the world standard method for making this assessment.<sup>(12)</sup>

The Pittsburgh sleep quality index (psqi) is designed to assess sleep quality during the past month and contains 19 self-rated questions from which 7 component scores are calculated and summed into a global score. Higher scores represent worse sleep quality: component scores

range from 0 to 3 and global scores range from 0 to 21<sup>(13)</sup>.

Present study was undertaken to observe sleep problems in the students of Isra University Hyderabad Sind.

## MATERIALS AND METHODS

### Selection of subjects-

One hundred medical students were randomly selected from various classes of Isra University. These included students from all batches available, 57 female & 43 males.

After permission from ethical committee and informed consent from subjects, printed Performa with ESS and PSI were distributed among all subjects. Each performa contained instructions / guidelines for filling it.

Students taking drugs for sleep regularly, those with an apparent physical or psychological problem & those whose life pattern has recently changed were excluded from this study.

### Data analysis

Properly filled performas were collected and two scales were evaluated as follows;

### Pittsburgh Sleep Quality Index-

Answers of all questions were converted into seven components from C1 to C7. After determining score of each component, all seven were added. This was global Pittsburgh score.

### Epworth Sleepiness Scale

This included the chances of dozing under various conditions.

Following scale were used to choose the most appropriate number for each situation:

0 = would never doze or sleep.

1 = slight chance of dozing or sleeping

2 = moderate chance of dozing or sleeping

3 = high chance of dozing or sleeping

## RESULTS

The results are summarized in tables 1-5

Table No.1 shows mean sleep scores in all students. Mean Epworth score was  $8.37 \pm .342$  & mean Pittsburgh score was  $5.99 \pm 0.322$ .

Table No. 2 shows Sex-wise comparison of two scores in all students. Mean Epworth score in males was  $8.42 \pm 0.346$  &  $8.30 \pm 0.339$  in females. There was no significant difference in Epworth score in two groups. Mean Pittsburgh score in males was  $5.98 \pm 0.355$  &  $6.00 \pm 0.290$  in females. There was no significant difference in Epworth score in two groups.

Table No.3 shows sex wise individualPittsburgh sleep index score in all students. There was no difference in any component between two groups.

**Table No.1: Mean Sleep scores in all students**

| Group    | N   | Epworth         | Pittsburgh       |
|----------|-----|-----------------|------------------|
| students | 100 | $8.37 \pm .342$ | $5.99 \pm 0.322$ |

**Table No.2: Sex-wise comparison of two scores in all students**

| Scores     | Male (n=45)      | Female (n= 57)   | P-value |
|------------|------------------|------------------|---------|
| Epworth    | $8.42 \pm 0.346$ | $8.30 \pm 0.339$ | 0.801   |
| Pittsburgh | $5.98 \pm 0.355$ | $6.00 \pm 0.290$ | 0.961   |

**Table No.3: Sex wise individual Pittsburgh sleep index score in all students**

| Component | Component Score |        |
|-----------|-----------------|--------|
|           | Male            | Female |
| C1        | .87             | .58    |
| C2        | 1.22            | 1.25   |
| C3        | 1.62            | 1.84   |
| C4        | .02             | .02    |
| C5        | .91             | .95    |
| C6        | .11             | .09    |
| C7        | 1.44            | 1.19   |

**Table No.4: Subjects with Epworth score more than 9**

| Epworth score | Males | Females | Percentage |
|---------------|-------|---------|------------|
| >09           | 13    | 21      | 34         |

**Table No.5: Subjects with Pittsburgh score more than 5**

| Pittsburgh score | Males | Females | Percentage |
|------------------|-------|---------|------------|
| >05              | 22    | 33      | 55         |

**Table No.6: Subjects with Pittsburgh sleep index 03 in various components**

| Component                     | Total Students | Male | Female |
|-------------------------------|----------------|------|--------|
| C1-subjective sleep           | 04             | 03   | 01     |
| C2-sleep latency              | 05             | 01   | 04     |
| C3-sleep duration             | 26             | 09   | 17     |
| C4- habitual sleep efficiency | 00             | -    | -      |
| C5-sleep disturbances         | 00             | -    | -      |
| C6- use of medicine           | 00             | -    | -      |
| C7-day time dysfunction       | 13             | 08   | 05     |

Table No.4 shows subjects with Epworth score more than 9. This included 13 males & 21 females. Over all 34% of students had Epworth score above 9.

Table No.5 shows subjects with Pittsburgh score more than 5. This included 22 males & 33 females. Over all 55% of students had Pittsburgh score above 5.

Table No.6 shows subjects with Pittsburgh sleep index 03 in various components. 26% of the students had C3 component value of 03 and 13% of the students had C7 component score of 03.

## DISCUSSION

College students suffer from more sleep disturbances than the general population. This has been reported by various previous studies<sup>(5, 6, 7, 8, 9, 10, 11, and 12)</sup>.

In the present study, one hundred medical students were randomly selected from various batches of Isra University; 57 females & 43 males. Their sleep pattern was evaluated by using Epworth & Pittsburgh sleep scales.

In our study, mean Epworth score was  $8.37 \pm .342$ . General reference value of this score is between 0-9 (12) while normal range in Australia is 4.6, in USA 4.5 and in Italy 4.4.<sup>(14)</sup> we found no significant difference in Epworth score between males and females staff members. Previous studies have also not shown any gender difference in this score.<sup>(14)</sup>

The Epworth Sleepiness Scale (ESS) measures the daytime sleepiness and has been found to be normal in many people with a variety of sleep disorders. About 10 – 20 percent of the general population has ESS scores > 10<sup>(14)</sup>. The ASP is not synonymous with fatigue or tiredness. Although the students complain of too less sleep, their ESS was within normal limits but on the higher side.

In our study, mean Pittsburgh sleep quality index (psqi) was  $5.99 \pm 0.322$ . A global score of 5 or more indicates poor sleep quality; the higher the score, the worse the quality.<sup>(15)</sup> So, this score in our students indicates poor sleep quality & quantity. When compared, we found no significant difference in this score or any of its components between males & females.

When we analyzed scores of different individuals, we found that 34% of the students had an Epworth score more than 9. These included 21 females & 13 males. Similarly, 55% of students had a Pittsburgh score more than 5. These included 33 females & 22 males. This reveals that sleep problem was more frequent in female students than in males. Previous studies also reveal that female students suffer more from sleep disturbances than males.<sup>(9)</sup>

Analysis of individual components of Pittsburgh sleep index reveals that 26% of the students had value of C3 of 03. This component indicates duration of sleep. So, most common sleep problem in this study was insufficient sleep duration. Similarly, 13% students had component C7 of 03 values. This component indicates daytime dysfunction. So these students had difficulty in their routine daily work due to insufficient sleep. Also some students had difficulty in going to sleep with their C2 value of 03.

Gaultney JF (2010) in his study of 1,845 college students found that Twenty-seven percent of students

were at risk for at least one sleep disorder. They were also at the risk of academic failure.<sup>(6)</sup>

Stress about school and life keeps 68 percent of students awake at night - 20 percent of them at least once a week. The study of 1,125 students appears online in the Journal of Adolescent Health. It found that only 30 percent of students sleep at least eight hours a night — the average requirement for young adults.<sup>(11)</sup>

Sleep is a very important component of a person's life, and its potential effects should not be overlooked. There are many studies that suggested that sleepiness & lack of sleep can adversely affect the academic performance of the college students.<sup>(16, 17, 18, 19)</sup>

Therefore, this sleep problem in students of our university should be taken seriously and its solution be sorted out.

## CONCLUSION

It is concluded that Sleep as assessed by using Epworth sleepiness scale was within normal range. Mean Pittsburgh sleep quality index was above normal range indicating poor sleep quality. Duration of sleep was mainly affected.

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