

# Sleep Evaluation among the Faculty Members of Isra University Using Pittsburgh Sleep Quality Index and Epworth Sleepiness Scale

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## ABSTRACT

**OBJECTIVES:** To assess the sleep pattern among teaching faculty of Isra University using Pittsburgh sleep quality index and Epworth sleepiness scale

**DESIGN:** Descriptive study

**SETTING:** Isra University Medical College and Hospital Hyderabad Sindh.

**METHOD:** Eighty three members of teaching faculty of Isra were randomly selected for this study. These were divided into 02 groups, basic and clinical teachers. All were given instructions to fill the questionnaires of Pittsburgh sleep quality index and Epworth sleepiness scale. These were then collected and analyzed.

**RESULTS:** Among faculty members mean Epworth score was  $8.2 \pm 0.58$  and mean Pittsburgh score was  $5.7 \pm 0.54$ . Both the scores in two groups were within normal range. In males Epworth and Pittsburgh scores were  $8.3 \pm 0.85$  and  $5.6 \pm 0.72$  respectively while in females these scores were  $8.01 \pm 0.73$  and  $6.67 \pm 0.86$ . Pittsburgh score was significantly higher in females as compared to males.

**CONCLUSION:** It is concluded that sleep as assessed by using Pittsburgh sleep quality index and Epworth sleepiness scale was within normal range among the faculty members of Isra University. Female faculty members had significantly higher Pittsburgh score as compared to male faculty members signifying worse sleep quality.

**KEY WORDS:** Pittsburgh score, Epworth score, sleep.

## INTRODUCTION

Sleep is defined as a functional, physiological, reversible and cyclical state that interrupts the wake period, permits restoring the conditions from the start of the preceding wake and presents characteristic behavioral manifestations, such as relative immobility and increased threshold of response to external stimuli.<sup>1</sup> Insomnia is defined as poverty of sleep that can be due to its duration, quality or time taken to fall in sleep. It occurs in about 12% to 25% of the general population.<sup>2</sup> Too busy schedules that are part of life of persons of medical profession affect the concentration, mental ability and increase the chances of errors in these persons.<sup>3</sup>

The methods used to assess sleep and rest can be separated in two groups: those using equipment and self-report methods. Examples of the first group are polysomnography and actigraphy, which use equipment to provide information about sleep, but are expensive and complex to apply. The other group includes interviews, diaries and standardized instruments, filled out by the patients themselves or by an evaluator.<sup>1</sup>

Epworth sleep scale (ESS) consists of 8 simple questions regarding sleep tendency during daily routine work and it is used worldwide. This is a simple, self-

administered questionnaire which is shown to provide a measurement of the subject's general level of daytime sleepiness. Total ESS scores significantly distinguished normal subjects from patients in various diagnostic groups including obstructive sleep apnea syndrome, narcolepsy and idiopathic hypersomnia.<sup>4</sup>

The Pittsburgh Sleep Quality Index (PSQI) is easily used to assess the quality and patterns of sleep in older adults. It consists of 18 questions covering seven areas in which sleep problems occur and can be completed in about 10 minutes.<sup>5</sup> It is used to evaluate sleep quality and pattern for the previous month. It consists of 19 questions and their answers are combined to form 7 components. When scores are these components are added, global score is obtained. Greater scores indicate poor sleep quality.<sup>6</sup>

Our faculty members always complain of poverty of sleep, both in duration and quality. Since lack of sleep causes poor performance and judgment errors during day time activities; this can be very harmful especially for clinicians. Therefore, present study was undertaken to observe sleep quality and quantity among faculty members of Isra University.

### Objectives

To evaluate the sleep quantity and quality among fac-

ulty members of Isra University and to compare these between members of basic sciences and clinical sciences as well as between male and female members. To identify any sleep problem among faculty members of Isra university.

**MATERIALS AND METHODS**

Eighty three teaching faculty members of basic sciences and clinical sciences were included in our study. The selection criteria were;

Faculty members working here for more than one year  
Faculty members having normal physical and mental health

Clinician doing regular evening practice

Basic sciences teachers not involved in clinical practice

All ages and both sexes were included

Following subjects were excluded from the present study;

Those taking sleeping drugs regularly

Those with physical or psychological problems affecting sleep

Those whose life pattern has recently changed e.g. change of house, marriage, childbirth, death of close relative, etc

After permission from ethical committee and informed consent from subjects, printed proforma with Epworth sleep scale<sup>4</sup> and Pittsburgh sleep quality index<sup>5</sup> were distributed among all subjects. Each proforma contained instructions / guidelines for filling it.

Properly filled proforma were collected and two scales were evaluated.

Data were analyzed by SPSS (Statistical Packages for Social Sciences) version 16.0. Chi- square test and Z – test of proportion was used for comparison of qualitative output response. Mean, SD and SEM ± was calculated by the help of measures of central tendency and measures of dispersion. Statistical significance was taken at p< 0.05.

**RESULTS**

Total 83 teaching faculty members were selected for this study. Their mean age was 45.66±12.3 years. Among faculty members mean Epworth score was 8.2 ± 0.58 and mean Pittsburgh score was 5.7 ± 0.54

In male faculty members Epworth and Pittsburgh scores were 8.3 ± 0.85 and 5.6 ± 0.72 respectively while in female faculty members these scores were 8.01 ± 0.73 and 6.67 ± 0.86. Pittsburgh score was significantly higher in females as compared to males (P=0.02).

There were 42 subjects from basic side and 41 from

clinical side. In faculty members of basic side Epworth and Pittsburgh scores were 7.5 ± 0.63 and 5.24±0.58 respectively (P=0.094) while in faculty members of clinical side these scores were 8.9 ± 0.52 and 6.17 ± 0.5 (0.229). There was no significant difference in the two scores between the faculty members of basic and clinical side.

**Table I** shows score of individual components of Pittsburgh sleep quality index in basic and clinical side teachers. There was no significant difference in any component between two groups. **Table II** shows sex wise score of individual components of Pittsburgh sleep quality index in basic side teachers. Component C5 and C7 were significantly higher in female faculty members. **Table III** shows sex wise score of individual components of Pittsburgh sleep quality index in clinical side teachers. There was no significant difference in any component between two groups.

**TABLE I: INDIVIDUAL COMPONENT SCORE IN PITTSBURGH SLEEP INDEX IN BASIC AND CLINICAL TEACHER**

Component	Component Score	
	Basic	Clinical
C1	.74	.93
C2	.90	1.1
C3	1.48	1.66
C4	.19	.17
C5	.81	.95
C6	.21	.24
C7	.68	1.12

**TABLE II: SEX WISE INDIVIDUAL PITTSBURGH SLEEP INDEX SCORE IN BASIC TEACHERS**

Component	Component Score	
	Male	Female
C1	.6	01
C2	.72	1.25
C3	1.6	1.38
C4	.12	.31
C5	.68	1.06*
C6	.36	.00
C7	.36	1.69*

\*P value < 0.05 as compared to male

**TABLE III: SEX WISE INDIVIDUAL PITTSBURGH SLEEP INDEX SCORE IN CLINICAL TEACHERS**

Component	Component Score	
	Male	Female
C1	.72	1.18
C2	1.00	1.18
C3	1.84	1.29
C4	.08	.29
C5	.84	1.06
C6	.12	.41
C7	1.08	1.12

## DISCUSSION

This study was conducted at Isra University Hyderabad. Eighty three faculty members of Isra University were included in this study. All subjects were asked to fill a Proforma having Epworth and Pittsburgh sleep scales. These performas were then collected and analyzed. The aim of this study was to assess the sleep pattern among the faculty members of Isra University. Epworth Sleepiness Scale (ESS) gives the tendency to sleep during routine daily works. Its scores range from 0 to 24, with higher scores indicating greater sleepiness. In the present study, mean Epworth score was  $8.19 \pm 3.8$ . There are no reference values available for our population. The reference range is between 0 to 9 as a whole<sup>5</sup> while normal range in Australia is 4.6, in USA 4.5 and in Italy 4.4. We found no significant difference in Epworth score between males and females faculty members. Epworth Sleepiness Scale (ESS) is within normal limits in many people having sleep problems. A score value of 10 or more has been found in about 10-20% of normal general population. It has been reported that this score does not differ with sex or age.<sup>7</sup>

Knutson KL et al (2006) in their study of more than 600 participants, aged 38 to 50 years, from the Chicago site of the Coronary Artery Risk Development in Young Adults (CARDIA) found a mean ESS score as  $7.4 \pm 4.3$ .

Although the faculty members of our institution often complain of too less sleep, their ESS was within normal limits but on the higher side.

Pittsburgh sleep quality index (PSQI) gives sleep estimation that is measured by the subject himself<sup>5</sup>. It is used to evaluate sleep quality and pattern for the previous month. It consists of 19 questions and their answers are combined to form 7 components. When scores of these components are added, global score is obtained. Greater scores indicate poor sleep

quality.<sup>6</sup> Normal average component values range from 0 to 3 and global scores range from 0 to 21. In the present study, the mean psqi in faculty members was  $5.7 \pm 0.54$ . It is reported that a global score of 5 or more indicates poverty of sleep quality; the greater the score, the poorer the quality.<sup>5</sup>

Knutson KL et al (2006) in their study of more than 600 participants, aged 38 to 50 years, from the Chicago site of the Coronary Artery Risk Development in Young Adults (CARDIA) found a mean PSQI as  $5.5 \pm 3.1$ .

Faculty members described their sleep problems and attributed these to their long working hours, busy schedules, frustration attributed to students and patients, complete lack of recreation, financial problems in basic sciences faculty, and attitude of administration.

Among the component scores, components C5 and C7 were significantly increased in females in the present study. These indicate sleep disturbances and day time problems due to sleep disturbance. Female subjects complained of short duration of sleep, and day time problems resulting from it. Cut off scores are not available for component scales.<sup>8</sup>

Higher PSQI scores are associated with female sex, greater psychological distress, and greater sleep disturbance on sleep diaries.<sup>9</sup> The probable reason for higher sleep problem in our faculty members include additional house hold duties and adverse working environment. Using cutoff point of 5.5 in PSQI, high strain job subjects are less likely to have good quality sleep compared with those having lower strain at workplaces after adjustment of potential cofounders.<sup>10</sup> Aloba et al (2007) found that PSQI was of moderate value in screening for insomnia, with the best cut-off score at 5 among students of Nigeria as compared to western culture.<sup>11</sup>

Léger D et al (2002) observed that compared to good sleepers, severe insomniacs reported more medical problems, had more physician-office visits, were hospitalized twice as often, and used more medication.<sup>12</sup> Severe insomniacs had a higher rate of absenteeism, missing work twice as often as did good sleepers. They also had more problems at work.

Qureshi et al (2010) during their study on residents of pediatric medicine at Lahore observed that continuous long stretch of duty causes significant deterioration in cognitive and behavioral status of residents.<sup>13</sup> The residents themselves are unable to appreciate this deterioration.

Both scores were also compared between clinicians and faculty members of basic sciences. No significant difference was found for these scores between two groups. No such study is available in the past.

## CONCLUSION

It is concluded that Sleep as assessed by using Pittsburgh sleep quality index and Epworth sleepiness scale was within normal range among the faculty members of Isra University. Female faculty members had significantly higher Pittsburgh score as compared to male faculty members signifying worse sleep quality.

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