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THE SLEEP QUALITY USING PITTSBURGH SLEEP QUALITY INDEX.

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ABSTRACT:

BACKGROUND: Good quality and enough sleep are necessary for the proper cognitive performance of medical students. There is a wide prevalence of sleep disturbances among Pakistani medical students and there is a need to spread awareness regarding the problems concerning sleep patterns. **OBJECTIVE:** To determine the quality of sleep among first and final year medical students. **METHODOLOGY:** It's a cross sectional study conducted at Services Institute of Medical College Lahore from the 10th May to 15th June 2016.A total of 300 Male and female medical students of first and final year were administered PSQI and their socio-demographic profile along with academic performance was noted. The results were collected and analyzed in SPSS ver.21.0. **RESULTS:** Of the 300 students approached,63.67% were females and 36.33% were males. Overall, PSQI score >5 (indicating poor sleep quality) was found to be 64.7%. The mean PSQI score among first year males was 7.68 with a standard deviation of 3.95 and among females was 7.47 with a standard deviation of 3.02. On the other hand, the mean PSQI score among final year males was found to be 6.97 with a standard deviation of 3.86 and among final year females was 5.65 with a standard deviation of 1.40. 69.7% of the males and 61.8% of the females were classified as poor sleepers.
CONCLUSION: Sleep quality among first and final year medical students was significantly poor. Hence, efforts must be directed towards creating awareness about sleep hygiene, its deprivation and consequences among medical students.

KEY WORDS:

Qualities of sleep, first and final year medical students, Pittsburgh sleep quality index, sleep disturbances.

INTRODUCTION:

Sleep is an integral requirement of optimum human functioning. The quality of sleep is significant due to its close relation to the psychological and physical well-being of an individual [1]. Average sleep duration in an adult is 7 to 8 hours. Adequate sleep is essential for proper functioning of mind and body [2]. Poor sleep quality is associated with increased risks of depression and other psychiatric disorders. The most common types of sleep disorders are: Insomnia (Difficulty in falling or staying asleep), Sleep apnea (difficulty in breathing during sleep), Restless leg syndrome (a tingling sensation in the legs) and Narcolepsy (excessive daytime drowsiness) [3]
There are certain population groups that are more susceptible to sleep disorders. For instance, university students, particularly medical students [1]. The highly

demanding professional and academic requirements make medicine one of the most stressful fields of education. Medical students cut down their hours of sleep in order to achieve their desired goals. Moreover, they have to face constant stress and anxiety due to extensive medical curricula, frequent examinations and fear of failure. [4,11] Additional factors are competition among classmates and hostile environment and routine, including going late to bed. [5]. Poor sleep quality among medical students not only leads to physical and psychological morbidities but also affects learning, memory and cognition [2].
The criterion used to determine the sleep quality is the Pittsburgh Sleep Quality Index PSQI which is a self-rated instrument that measures sleep habits for a month [6,7] It has seven subscale scores that measure subjective quality, latency, duration, habitual sleep efficiency (HSE), disturbance, medication use, and

daytime dysfunction. [7]

Research shows that medical students exhibit changes to their habits, including sleep duration as they progress through the course of their program, owing to the increasing academic pressure and stress levels every year.[8]. According to a research, the prevalence of disturbed sleep patterns among Pakistani medical students was higher than in their non-medical counterparts.[9]. Similarly, another research held in five medical colleges in Sindh showed that sleep quality among Pakistani medical students was significantly poor.[2]. Another study proved that 26/150 students experienced daytime sleepiness while 20/150 were border line.[8] likewise another research conducted among 36 medical students showed that 38.9% had substandard sleep according to PSQI. [10]

A study showing the comparison between first and final year medical students stated that final year students have less sleep due to their busy schedule. [12] It was further concluded in another research that daytime sleepiness prevailed more in clinical students, with one in every five candidates had fairly bad to extremely bad sleep quality. [13]

The purpose of this research was to study the sleep quality among medical students and to ensure enough awareness and education regarding the problems concerning sleep patterns.

OBJECTIVES:

The objective of our research was to determine the quality of sleep and associated factors among first and final year medical students.

MATERIAL AND METHODS:

Study Design:
Cross sectional study

Study Setting:
The study was conducted Services Institute of Medical Sciences, Lahore.

Duration Of Study:
The study lasted from the 10th May to 15th June 2016.

Sample Size:
300 students were administered PSQI

Sampling Technique:
purposive sampling

Inclusion criteria:
Male and female medical students of first and final year. 100 medical students those fulfilling the inclusion criteria were included in our study.

Exclusion criteria:

Male and female medicals students who had been debarred or who had recently migrated.

Data Analysis Procedure:

Chi-square test was used to assess any association between these variables with P < .05 defined as statistical significance.

RESULTS:

A total of 300 students of SIMS were randomly distributed questionnaires.

-Out of these 300 students 63.67% were females and 36.33% were males. The questionnaires were equally distributed among first and final year medical students. PSQI scores range from 0 to 20 and a value above 5 indicates bad sleep quality. Overall, the PSQI score of <5(indicating good quality sleep) was found to be 35.3% whereas that of >5(indicating poor quality sleep) was found to be 64.7%.

FIGURE 1:
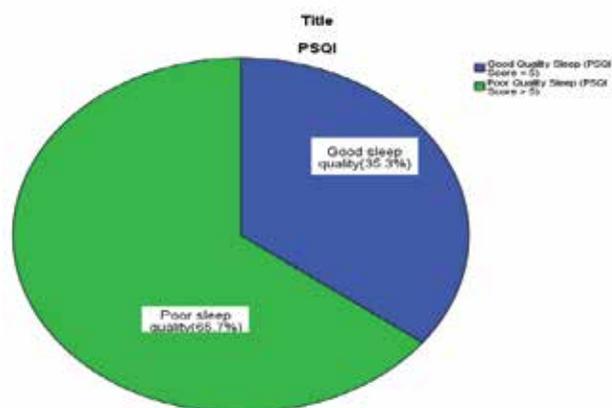
The mean PSQI score among first year males was 7.68 with a standard deviation of 3.95 and among females was 7.47 with a standard deviation of 3.02.On the other hand, the mean PSQI score among final year males was found to be 6.97 with a standard deviation of 3.86 and among final year females was 5.65 with a standard deviation of 1.40.

Table 1

Gender	N	Mean	SD	Min	Max
First year					
Male	60	7.6833	3.95522	.00	18.00
Female	90	7.4778	3.02880	1.00	14.00
Total	150	7.5600	3.41823	.00	18.00
Final year					
Male	49	6.9796	3.65666	1.00	14.00
Female	101	5.6535	3.40422	.00	16.00
Total	150	6.0867	3.53494	.00	16.00

-Out of a total of 60 males from first year,15 students (39.5%) were found to have a good sleep quality with a PSQI score of <5. On the other hand,45 males (40.2%) were classified as "poor sleepers" with a PSQI score of >5. On the other hand, among final year males (total 49),18 were found to have a good sleep quality (36.7%) with a PSQI score of <5, whereas 31 (63.3%) had a poor sleep quality. Among first year females, out of a total of 90, 23 (25.6%) had a good sleep quality (PSQI score <5) whereas 67 (74.4%) were classified as poor sleepers. (PSQI score >5). On the other hand, among final year females, out of a total of 101, 50(49.5%), had a good sleep quality and 51 (50.5%) had a poor sleep quality.

-Comparison of PSQI score between males and females showed that females generally had a better sleep quality than males where 69.7% of the males and 61.8% of the females were classified as poor sleepers.

Table 2

Comparison of the PSQI score among first and final year students showed that generally first year students had a poorer sleep quality as compared to final year students. It was shown by the research that 112 (74.7%) first year students had a poor sleep quality as compared to 82 (54.7%) final year students. Also, the chi square value of 13.130 showed that there was an association between year of professional and sleep quality.

-Another finding was that around 90% of the total students got 5 hours of actual sleep at night with the majority lying within the range of 4-6 hours.

Graph 1
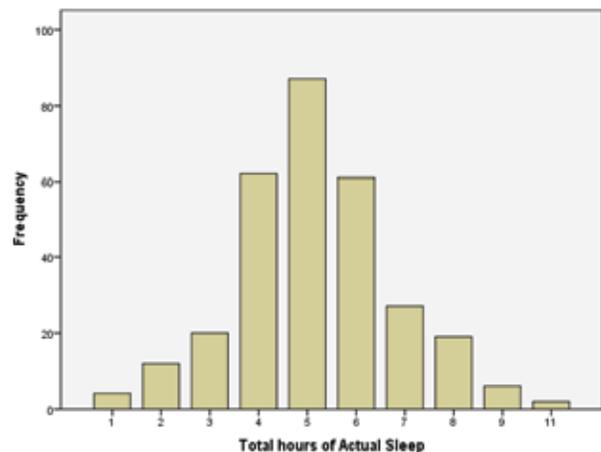
-Measures of sleep quality was significantly deranged among poor sleepers when

PSQI	Gender	
	Male	**Female**
Score < 5	33	73
	30.3%	38.2%
Score > 5	76	118
	69.7%	61.8%

compared to normal sleepers. Statistically significant differences were observed with time taken to fall asleep, subjective sleep quality, use of sleep medications and daytime dysfunction. In comparison with normal sleepers, poor sleepers reported 20.1% of the poor sleepers could not get to sleep within 30 minutes. Other commonly occurring disturbances included, waking up in the middle of the night or early morning, having pain. Also, trouble with staying awake while driving, eating meals, engaging in social activity and keeping up enthusiasm to get things done was commonly seen. -Also, it was seen that there was an association between academic

Academic performance rating	PSQI	
	Score <5	Score > 5
fairly good	59	96
	38.1%	61.9%
	19.7%	32.0%
very good	23	43
	34.8%	65.2%
	7.7%	14.3%
fairly bad	15	40
	27.3%	72.7%
	5.0%	13.3%
very bad	9	15
	37.5%	62.5%
	3.0%	5.0%

performance and sleep quality as the results indicated that 72.7% of the poor sleepers rated the academic performance as fairly bad as compared to normal sleepers (27.3%) with fairly bad academic performance. Similarly, very bad academic performance was reported by 62.5% of the poor sleepers as compared to normal sleepers (37.5%).

DISCUSSON:

Our research showed that the sleep quality among first and final year medical students was poor and about 64.7% of the subjects suffered from poor sleep quality. It was associated with daytime drowsiness, delayed onset of sleep and other perturbed sleeping habits. This is a significant finding as the results of our study are also supported by other researches. According to our results, about 85-90% of the students got only five hours of actual sleep at night whereas the average sleep duration in an adult is 7 to 8 hours.

Sleep has an integral part in learning and memory processes, and its deprivation seriously affects these functions. Moreover, those medical students who are classified as "poor sleepers" are highly likely to cause serious medical errors than those who get sufficient amount of sleep. [14]

According to our research, first year medical students were found to suffer more on account of poor sleep quality than final year medical students. Poor sleep quality specifically among first year medical students can be attributed to problems in adjusting to the new environment and making social links. [15,16] Generally, poor sleep quality among medical students can be attributed to academic demands, exam stress, busy social schedule and lack of awareness about the importance of adequate sleep. [1,2]

It was also seen that sleep quality was linked to academic progress , leisure activities and other elements of general lifestyle like driving, eating meals and engaging in social activity which is in accordance with other researches.[14,17] The results of our research showed that the frequency among poor sleepers was 24.2% when investigating problems in keeping up enthusiasm to get things done as compared to normal sleepers(17.7%) hence proving that there was a high prevalence of daytime drowsiness in such candidates.

Apart from this, poor sleep quality is also found to be associated with psychiatric problems [18] and certain physiological problems like experiencing pain. It was also seen that use of sleeping pills was more frequent (11.9%) among poor sleepers than normal sleepers. (7. 7%). This result was also shown by another research. [14] Sleep quality has also been linked to gender, as according to our results, the females were found to have better sleep quality than males, which is consistent with other researches. [19]

Not enough data are available to evaluate the potential factors that can contribute to poor sleep quality among medical students of first and final year. Hence, further researches on this subject are required.

There is a strong link between sleep quality and academic performance was also shown by a number of other researches.[16] Poor sleep quality can also adversely affect thinking, memory and concentration.[20]

Our research has certain limitations. For example, the questionnaire might contain inaccurate answers, although we tried to minimize this defect by having a direct contact with the subjects. Secondly, since it was a cross-sectional study, the possibility of recall bias might be there.

CONCLUSION:

• Our data demonstrate that sleep quality among first and final year medical students was significantly poor.
• This is an important area of medical students'

well-being that needs to be given attention in a medical school.
• Moreover, effective measures should be taken to spread awareness about the importance of adequate sleep and to implement stress management program among Pakistani medical students.

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