

**ASSESSMENT OF QUALITY OF SLEEP AMONG MEDICAL STUDENTS OF A PRIVATE MEDICAL COLLEGE, TUMKUR, KARNATAKA.**

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**ABSTRACT**

**Background: Introduction:** Sleep is a physiological process essential to life. Its quality is strongly related to psychological and physical health and other measures of well-being<sup>1</sup>. Medical students, in particular, are often thought to have less free time, longer courses, and longer working hours than most of their fellow non-medical peers<sup>2</sup>. This study was conducted with the objectives to assess quality of sleep among medical students and to assess the association between socio-demographic variables and sleep quality. **Materials and methods:** It is a cross sectional study conducted amongst the medical students of Sri Siddhartha Medical College, Tumkur between January 2017 to July 2017. A self-reported questionnaire: the Pittsburgh sleep quality index (PSQI) by Buysse was used. Data was collected from 200 students. **Results:** The mean age of the participants was 19.8 with the standard deviation of 2.346. Out of 200 students 99 (49.5%) belong to normal PSQI score and 101 (50.5%) belong to poor PSQI score. Out of 100 female participants 49 (49.0%) were normal while 51(51.0%) have poor PSQI out of 100 males 50(50.0%) males have normal while 50(50%) have poor global PSQI score. There was no significant association between gender, age and global PSQI score after applying chi square test (p> 0.05). **Conclusion:** The high prevalence rate of poor quality of sleep among medical students shows that further follow-up is needed and also there is need to create awareness among medical students regarding sleep quality.

**Key-words:** Sleep quality, Medical students, PSQI, India.

**INTRODUCTION**

Sleep is a physiological process essential to life. Its quality is strongly related to psychological and physical health and other measures of well-being<sup>1</sup>. It is well documented that once in college, students find themselves cutting back on their sleep, in an effort to adjust and cope with their newfound workloads. Medical students, in particular, are often thought to have less free time, longer courses, and longer working hours than most of their fellow non-medical peers. A few studies, including a systematic review published in 2006, corroborate these claims and show an increased incidence of stress and burnout among medical students Sleep plays very important role in health of an individual<sup>2</sup>. Sleep problems are common in the general population, and approximately one-third of adults report some form of insomnia<sup>3, 4</sup>. Evidences have shown the linkage of poor sleep with cardiovascular disease, stroke, diabetes, metabolic dysfunctions<sup>5-7</sup>. Medical students carry a large academic load which could potentially contribute to poor sleep quality above and beyond that already experienced by modern society<sup>8</sup>. Medical students are one subgroup of the general population who appear to be especially vulnerable to poor sleep, perhaps due to the long duration and high intensity of study, clinical duties that include overnight on-call duties, work that can be emotionally

challenging, and lifestyle choices.<sup>4</sup> Research on sleep disturbances in undergraduate medical students is of particular interest because of the known relationship between sleep and mental health and the concern that the academic demands of medical training can cause significant stress. Any additional undiagnosed sleep problem can presumably exacerbate mental stress in these students with potential long term consequences for both individual's health and the overall performance of the health care system.<sup>8</sup> Medical students, in particular, are often thought to have less free time, longer courses, and longer working hours than most of their fellow non-medical peers<sup>2</sup>. Different studies conducted in different parts of the world show high prevalence of sleep problems among medical students and its association with the academic performance and stress<sup>8-11</sup>.

Poor sleep quality remains a recurring feature of student life. Not only does sleep affect cognitive processes but is also key to the recovery from stress and elimination of fatigue . Any impairment in sleep, both psychological and physical, has been implicated in an increase in burnout.<sup>2</sup> The habit of sleeping late and sleeping less was more among medical students due to increased academic demands leading to effects on their

health. There is paucity of such data in the state, and the literature review does not reveal many such studies from our area. In view of addressing the demand for this need, this study was undertaken with the objectives to assess quality of sleep among medical students and to assess the association of various socio-demographic variables and sleep quality.

**METHODS**

This cross-sectional study was carried out in Shree Siddharta Medical College, Tumkur Karnataka during the month of January 2017 to July 2017. Data was collected through a self-reported questionnaire the Pittsburgh sleep quality index (PSQI) by Buysse.

The sample size was calculated using a study done by Shad R et.al<sup>2</sup> by using the formula  $4pq/d^2$  where p is prevalence, 62.6 45.5%, q = 100 – p and d is allowable error of 10%, which was found to be minimum of 90 subjects. A total of 200 subjects were studied out of them hundred were male and hundred were female students of age 18-25 years studying in Sri Siddhartha medical college. Informed consent was taken from the participants. Data were collected during the time when students were free from their classes after taking permission from college authorities. Pittsburgh Sleep Quality Index (PSQI) - It is a self-administered questionnaire used to assess sleep quality in last 1 month. It gives a combined PSQI score that ranges from 0 to 21, and a higher score is indicative of poorer sleep quality. Scores less than or equal to 5 were associated with good sleep quality and score more than 5 were considered as poor sleep quality. Students who were having past history of sleep disorders and currently using sedative medications were excluded from the study.

Data were compiled in an Excel worksheet. The data were analyzed by using SPSS software, version 21.0. Descriptive statistics including frequency, percentage, mean, standard deviation, and chi square-test, was used to observe the association between dental caries and other variables such as age, sex. A P-value less than 0.05 was considered statistically significant.

**RESULTS**

Two hundred medical students were involved in the study .Out of two hundred participants 123 (61.5%) belong to 17-19 years of age, 41 (20.5%) belong to 20-22 years of age and 36(18.0%) belong to >= 23 years of age; the mean age being 19.80 and standard deviation of 2.346 as shown in Table 1.

**Table 1: Distribution of Study Population Based on Age Group**

Age	Frequency	Percentage
17-19	123	61.5
20-22	41	20.5
>=23	36	18
<b>Total</b>	<b>200</b>	<b>100</b>

**Table 2: Distribution of Study Population Based on Global PSQI Score**

PQSI score	Frequency	Percentage
Normal	99	49.5
Poor	101	50.5
<b>Total</b>	<b>200</b>	<b>100</b>

Out of 200 participants 99 (49.5%) belong to normal PSQI score and 101 (50. 5%) belong to poor PSQI score. The mean global PSQI score was 5.19 with standard deviation of 2.990 as shown in Table2.

**Table 3: Association between Gender and Global PSQI Score**

Sex	Global PSQI score		Total
	Normal	Poor	
Female	49 (49.0%)	51 (51.0%)	100 (50%)
Male	50 (50%)	50 (50%)	100 (50%)
<b>Total</b>	<b>99 (49.5%)</b>	<b>101 (50.5%)</b>	<b>200(100%)</b>

**Table 4: Association between Age and Global PSQI Score**

Age group	Global PSQI score		Total
	Normal	Poor	
17-19	58 (47.2%)	65 (52.8%)	123(61.5%)
20-22	22 (53.7%)	19 (46.3%)	41(20.5%)
≥23	19 (52.8%)	17 (47.2%)	36(18%)
<b>Total</b>	<b>99(49.5%)</b>	<b>101(50.5%)</b>	<b>200(100%)</b>

p Value=0.702

Out of 100 female participants 49 (49.0%) had normal while 51(51.0%) have poor PSQI score whereas 50(50%) males had normal while 50(50%) have poor global PSQI score Table 3.58 (47.2%) subjects had normal PSQI score whereas 65(52.8%) had poor PSQI score falling in age group of 17-19 ,22(53.7%) had normal PSQI score whereas 19 (46.3%) had poor PSQI score falling in age group of 20-22, and 19(52.8%) had normal PSQI score whereas 17 (47.2%) had Poor PSQI score falling in age group of >=23. There was no significant association between gender, age and global PSQI score after applying chi square test (p> 0.05).Table 4.

**DISCUSSION**

In a study on 244 Iranian medical students, 40.6% reported poor sleep quality; this was significantly associated with lower grades, economic and marital status, and type of training, but not gender<sup>12</sup> which is similar to the current study similarly in a Chinese study, 19% of the medical students were found to have poor sleep quality as assessed by the Pittsburgh Sleep Quality Index (PSQI), with differences seen between years of study but not between genders which is very low compared to present study<sup>13</sup> but About 70% of Hong Kong medical students self-reported sleep deprivation<sup>14</sup> . In a study done in India on the students surveyed, 62.6% were found to be poor sleepers which is similar to our

study<sup>2</sup>. One more study done in India 38% of medical student's reported poor quality of sleep<sup>15</sup>. In one more study done by Kaur et al to find association of sleep quality with general health among undergraduate students based on PSQI questionnaire in PGIMER Chandigarh, India showed mean PSQI score of study participants was  $4.77 \pm 2.518$ <sup>5</sup>. In a study done by Giri et al in Maharashtra, only 17.3% of the medical students had poor quality of sleep which is very less compared to this study<sup>16</sup>. Another study compared sleep patterns between medical and law students in India and found that 60.8% of law students had refreshing sleep at night as opposed to just 47.1% of medical students<sup>17</sup>. In a study done by Shad et al. Medical students were found to have more poor sleep (72.9%)<sup>2</sup>.

In a study done by Aruna T et al to find out the sleep pattern among medical students based Chennai, Tamil Nadu showed that more than 70% of university students were having sleep related problems which is higher to the findings from this study<sup>18</sup>. In another study in Maharashtra the sleep quality in females is better than the males<sup>16</sup>. In a study done by Singh R et al sleep patterns are affected by age, gender, living conditions, doing exercise and workload<sup>15</sup>. In a study done in Hong Kong of poor sleep was associated with female gender, relatively higher year of study, and perceived adequate sleep in the past month<sup>14</sup>.

**Conclusion:** The high prevalence rate of poor quality of sleep among medical students shows that further follow-up is needed and also there is need to create awareness among medical students regarding sleep quality.

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