

## PREVALENCE OF SLEEP DISORDERS AMONG MEDICAL STUDENTS- A CROSS-SECTIONAL STUDY

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### Abstract

**Introduction:** Sleep is one of anyone's physiological and fundamental needs, quality of which is related to health. Quality and quantity of sleep can easily be altered in people with changes in physical and social conditions. Sleep disturbance is one of the most common health complaints among young adults and late adolescents. A number of studies have reported a high prevalence of sleep problems among individuals from these age groups, medical students being more vulnerable in this age group.

**Materials and Methods:** A total of 270 students were interviewed using sociodemographic data and sleep 50 scale and the data was evaluated using SPSS software for results.

**Results:** A total number of 270 medical students, in which 177 medical students, 39 internship students, 54 post graduates were in this study were in the study. The highest participants being medical students around 66% whereas lowest being interns around 14%. Most of the participants were of age group 21-25yrs around 136 about 50% 16-20 yrs. age group 35% 26-29 age group 14% and age group 31-35 1%.

**Conclusion:** Sleep disorders are common among medical students and its affects their physical, psychological and their mental health in the long run. It is a necessity to address these problems before worsening of their condition these are quite common in medical field starting from first year to post graduation decreasing through the years Females being at more risk.it is worth the effort to identify and treat sleep disorders among students.

**Keywords:** Sleep disorder, sleep 50 scale, medical students

### Introduction

Sleep is one of anyone's physiological and fundamental needs, quality of which is related to health <sup>[1]</sup>. Quality and quantity of sleep can easily be altered in people with changes in

physical and social conditions. Sleep disturbance is one of the most common health complaints among young adults and late adolescents [2]. A number of studies have reported a high prevalence of sleep problems among individuals from these age groups, medical students being more vulnerable in this age group [3]. Due to their age conditions and particular social position, students are exposed to numerous stresses. Factors like being away from the home environment, separation from family, entering a new environment, educational issues and problems, competition with other students, working future, and dormitory life can be considered as stresses for students. Medical students are further exposed to a lot of pressure due to academic demands [4]. The consequences of sleep problem whether due to insufficient sleep or an untreated sleep disorder can be quite serious. Sleep problems have been associated with deficits in attention and academic performance, drowsy driving, risk-taking behavior and depression, impaired social relationships, and poorer health [5]. The International Classification of Sleep Disorders [6] categorizes 3 types of sleep disorders: Dyssomnias (Which may produce EDS), Parasomnias (which usually are not associated with EDS), and medical/psychological disorders. Sleep disorders can also be associated with mental disorders, such as psychoses, mood disorders, anxiety disorders, panic disorders, and alcoholism [6]. 50 million to 70 million people have ongoing sleep disorders in world [7]. Prevalence of sleep disorders affects 22% -65% of general population [8, 9]. Numerous chronic medical conditions such as hypertension, diabetes mellitus, and coronary artery disease are additionally associated with sleep disorders [10].

Medical students are a subset of the population that are more liable to develop sleep disorders and sleep deprivation; this is likely attributed to long intensive study, clinical tasks and high academic loads [11]. Sleep disorders affects students' quality of life, their general health and academic performance consequently it is important to detect these disorders prior to the deepening of the problem [12]. Sleep deprivation in medical students is found to affect cognitive functions [13, 14]. Numerous studies demonstrate 70-76% of medical students have poor sleep quality [15, 16, 17].

### **Design and Methods Study design**

A cross-sectional study was done among medical students at Basaveshwara Medical College and Hospital, Chitradurga, Karnataka. In the form of a survey based on a questionnaire.

### **Participants**

The questionnaire was mailed to all MBBS students from the first to the final year, interns,

post-internship students, and post-graduates at Basaveshwara Medical College and Hospital, Chitradurga, Karnataka.

### Data collection

**Study tool:** The survey was divided into two portions. First, the sociodemographic data: age, gender, and educational level. The second part contains the SLEEP 50 questionnaire.

### Sleep 50 questionnaire

The study used the sleep 50 questionnaire scale validated by spoor maker and its scoring system. the questionnaire consists of 50 questions {items} divided into 9 sections {subscales} with each subscale assessing a specific sleep disorder according to dsm 4 criteria Items were scored according to a 4 point scale { 1 = not at all, 2 = somewhat, 3 = rather much, 4 = very much } and this was termed impact scale. If any item was scored as either 3 or 4 points, that indicated the presence of a sleep symptom for that sleep disorder [18]. Each subscale had its own cut off point. to diagnose a specific sleep disorder two factors must be met i) the total items score for the subscale must exceed its cutoff point ii) at least one item in subscale scored with 3 or 4 points indicating presence of at least one symptom for diagnosing a sleep disorder not only the specific subscale (e.g., Insomnia) needs to exceed a certain cutoff point, but so does the Impact subscale. If the score on the Impact subscale is below that cutoff value, no sleep disorder can be diagnosed (Sleep complaints are present without significant impairments in daily functioning) [18].

Sleep disorder	Items	Optimal cut off values
Obstructive sleep apnea	1-8	Total.>15
Insomnia	9-16	Total >19
Narcolepsy	17-21	Total>7
Restless leg syndrome /periodic limb movement	22-25	Total>7
Circadian rhythm disorder	26-28	Total>8
Sleep walking	29-31	Total>7
Nightmares	32-36	Item 32>3and total33-36 >9
Factors influencing sleep	37-43	Total>15
Impact of sleep on daily functionality	44-50	Total>15

### Data analysis

This study was analyzed using SPSS software version for 27 windows 11 version. Continuous variables data was summarized by mean and standard deviation and categorical variables were described using frequencies and percentages the significant level set at  $p < 0.001$ . Independent continuous variables underwent t test while categorical variables underwent chi square test

### Results

A total number of 270 medical students, in which 177 medical students, 39 internship students, 54 post graduates were in this study were in the study. The highest participants being medical students around 66% whereas lowest being interns around 14% Most of the participants were of age group 21-25 yrs around 136 about 50% 16-20 yrs. age group 35% 26-29 age group 14% and age group 31-35 1%. Female students comprises of 67% and male 33%.

**Table 1:** Sociodemographic data

Gender	Frequency	Percentage
Male	87	33%
Female	183	67%
Age		
16-a20 Yrs.	94	35%
21-25 Yrs.	136	50%
26-30 Yrs.	37	14%

**Table 2:** Sociodemographic data in qualification

Education		Percentage
Internship	39	14%
Medical student	177	66%
Postgraduates	54	20%

**Table 3:** Prevalence of sleep disorders

Disorder	Freque	Percent
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	<b>ncy</b>	<b>age</b>
Obstructive sleep apnea	20	7.4
Insomnia	38	14.07
Narcolepsy	114	42.2
Restless leg / periodic limb movement disorder	49	18.1
Circadian rhythm disorder	28	10.3
Sleepwalking	23	8.5
Nightmares	18	6.6
Factors influencing sleep	16	5.9
Impact of sleep on daily functioning	126	46.6

Table 3 presents frequencies of specific sleep disorders. The sleep 50 questionnaire was used in diagnosing seven common sleep disorders 221 [81%] of the participants complained of at least one sleep disorder. The most prevalent disorder being narcolepsy [NL] with 114 [42.2%], followed by restless leg syndrome 49 [18.1], insomnia 38 [14%], circadian rhythm disorder [CRD] 28 [10%], sleep walking 23 [8.5%] nightmares 18 [6.6%] and obstructive sleep apnea 20 [7.4%] Table 4 lists frequencies of combined sleep disorder with 32 [11.8%] of participants positive for at least two sleep disorders, 24 [8.8%] has three combined sleep disorders, 12 [4.4%] has four combined sleep disorders, 9 [3.3%] five combined disorders, 2 [0.7%] six combined sleep disorders and one person has all seven disorders.

**Table 4:** Frequencies of sleep disorder

No sleep disorder	144	53.3
One sleep disorder	46	17
Two sleep disorders	32	11.8
Three sleep disorders	24	8.8
Four sleep disorders	12	4.4
Five sleep disorders	9	3.3
Six sleep disorders	2	0.7

Seven sleep disorders	1	0.3
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The participants were asked to rate their sleep from 1 to 10 where 28 members have very bad sleep whereas 55 members have very good and rest of the participants are just satisfied. mean hrs. of sleep in 23 participants is less than 4 hrs. sleep, 4 -6 hrs. of sleep in 103, 7-10hrs about 140, 4 participants has more than 10 hrs. of sleep

## Discussion

This study among Basaveshwara medical students has revealed a high rate of sleep disorders. This was seen in previous studies reporting high prevalence of sleep disorders in medical students. These sleep disorders influence memory consolidation, learning capacity, physiological functions and over all general health.

Atleast one sleep disorder was found in 46.6% of this study population this is higher to Abdulghani with 36.6% of students in Riyadh King Saud University <sup>[19]</sup> and lesser to Umm al Qura study who found 73% students with sleep disorder <sup>[20]</sup>.

Narcolepsy is the most prevalent sleep disorder with 34.8% of study population, restless leg syndrome 18%, insomnia 14.07%, circadian rhythm 10% sleep walk 8.5%, obstructive sleep apnea 7.4% least being nightmares 6.6% This is seen in Umm al Qura study <sup>[20]</sup> with narcolepsy with 51.6%, insomnia 31.5%, circadian rhythm and restless leg syndrome with 22.4%, 16.4% obstructive sleep apnea. This ratio is in contrast with Thomas <sup>[21]</sup> who stated 22% insomnia, 17% nightmares, 8% circadian rhythm disorder, 7% had narcolepsy & restless leg syndrome. The finding that 35% of students were at risk for narcolepsy is high. Prevalence of each sleep disorder was consistent with that being reported with an exception of narcolepsy. Prevalence of narcolepsy in world is <1%. This anomaly could be due to some characteristic of Narcolepsy scale of the questionnaire <sup>[22]</sup>.

Spoormaker *et al.* noted that the narcolepsy scale was the most problematic one with one of its items loading on IDFScale and another loading on narcolepsy and nightmare scale the narcolepsy scale was conflated with other sleep disorders with the fact that 42% of the students who were at risk for narcolepsy were also at risk for at least one sleep disorder. Females were at greater risk for at least one sleep disorder. Women are more likely to report depression anxiety and nightmares which were associated with stress and psychopathology. Assuming an average sleep need for 8 hours per night the students in this sample reported about mean of 6 hours of sleep even though they compensate by sleeping extra it would

not be enough to compensate for the lost sleep. Identification and treatment of these students with sleep disorder will bring benefits in their personal, social and professional lives and will improve their quality of living.

### Conclusion

Sleep disorders are common among medical students and its affects their physical, psychological and their mental health in the long run. it is a necessity to address these problems before worsening of their condition these are quite common in medical field starting from first year to post graduation decreasing through the years Females being at more risk.it is worth the effort to identify and treat sleep disorders among students.

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