

## ORIGINAL ARTICLE

### PREVALENCE OF SLEEP DISORDERS AMONG COLLEGE STUDENTS: A CLINICAL STUDY

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#### ABSTRACT:

**Background:** Sleep is important for functioning of the human body. Important bodily processes can be impaired without sleep. However, sleep deprivation is becoming common in modern society, especially in students. The present study was done to determine the prevalence of sleep disorders among college students and their effect on academic performance. **Materials & Methods:** The present study was conducted on 1,524 college students. It included first year students, juniors and seniors. The survey used, the SLEEP-50 has been validated for college students. It consists of 50 items that tap a variety of sleep characteristics. Scoring was done by students as 1- "not at all", 2-"somewhat", 3- "rather much", or 4- "very much" true. The SLEEP-50 provides scores for Insomnia, Narcolepsy, Obstructive Sleep Apnea (OSA), Circadian Rhythm Disorders (CRDs), Sleep walking, Nightmares. Scoring was done to determine which students were at risk for the various disorders. **Results:** Out of 1524 students examined, 381 were found to have sleep disorder. Females comprised 565 and males comprised 43%. Obstructive sleep apnea was seen in 11% of examined students. Narcolepsy was seen in 18% of students. Other sleep disorders were CRDs (6%), sleep walking (1%), night mares (3%) and insomnia (4%). The difference among different sleep disorders were significant (P- 0.04). Maximum numbers of student complaint of use of alcohol at night (17%). **Conclusions:** Author concluded that college students are at risk for sleep disorders or poor sleep hygiene, and that sleep may impact academic success. Students should be taught to reduce stress level in their life which may improve their academic performance.

**Key Words:** Obstructive sleep apnea, Narcolepsy, sleep

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This article may be cited as: Jain A, Sandeep Verma S. Prevalence of sleep disorders among college students: A clinical study. J Adv Med Dent Scie Res 2016;4(6):103-106.

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<p><b>Quick Response Code</b></p> 	<p>Website: <a href="http://www.jamdsr.com">www.jamdsr.com</a></p>
	<p><b>DOI:</b> 10.21276/jamdsr.2016.4.6.23</p>

#### INTRODUCTION

Sleep is important for functioning of the human body. Important bodily processes can be impaired without sleep. However, sleep deprivation is becoming common in modern society, especially in students. Sleep is an essential component of human health and well-being and it is a complex biological process. Sleep is regulated in the body in a manner similar to eating and breathing. Mental, physical, and emotional health is maintained by sleep.<sup>1</sup>

College students experience a number of sleep problems. These problems can hamper health, mood and academic performance. Sleep deprivation is a common sleep problem among college students that can induce excessive daytime sleepiness (EDS). Many college students are older

adolescents and are still dealing with adolescent physiology such as a biologically driven delayed sleep phase.<sup>2</sup>

A survey by National Sleep Foundation found that 59% of adults 18 to 29 years of age describe themselves as night-owls. Living in a noisy residence may decrease the sleep and is one of social factors. Students try to sleep in the weekends for longer time in order to compensate which actually worsens the condition.<sup>3</sup>

Thacher (2008)<sup>4</sup> stated that stress is a leading contributor to sleep difficulties. Work pressures, troubles in relations, demanding school requirements, or a death in the family are common circumstances that may trigger stress-related sleep deficiency.

Lifestyle and work-related factors are the most common causes of sleep deprivation (Orzel-Gryglewska (2010).<sup>5</sup>

Social and emotional adjustments such as academic expectations, jobs adjustments, new living conditions, roommates are other factors. Students are often required to find a balance between schoolwork, social activities, and careers.

The present study was done to determine the prevalence of sleep disorders among college students and their effect on academic performance.

**MATERIAL & METHODS**

The present study was conducted on 1,524 college students. It included first year students, juniors and seniors. The survey used, the SLEEP-50 (Spoomaker et al)<sup>6</sup>, has been validated for college students. It consists of 50 items that tap a variety of sleep characteristics. Scoring was done by students as 1- “not at all”, 2-“somewhat”, 3- “rather much”, or 4- “very much” true. The SLEEP-50 provides scores for Insomnia, Narcolepsy, Obstructive Sleep Apnea (OSA), Circadian Rhythm Disorders (CRDs), Sleepwalking, Nightmares. Scoring was done to determine which students were at risk for the various disorders. Results of the study were analyzed for correct inference using chi square test.

**RESULTS**

Out of 1524 students examined, 381 were found to have sleep disorder. Females comprised 565 and males comprised 43%. The difference was non significant (P-0.6). (Table I)

**TABLE I:** Distribution of students on basis of gender

Total Examined	Male	Female	P Value
1524	808	716	0.6
<b>With Sleep Disorder</b>	166 (43%)	215 (56%)	
<b>381 (25%)</b>			

Table II shows range, cut point for each disorder and percentage of person at risk of specific disorder. Obstructive sleep apnea was seen in 11% of examined students. Narcolepsy was seen in 18% of students. Other sleep disorders were CRDs (6%), sleep walking (1%), night mares (3%) and insomnia (4%). The difference among different sleep disorders were significant (P- 0.04).

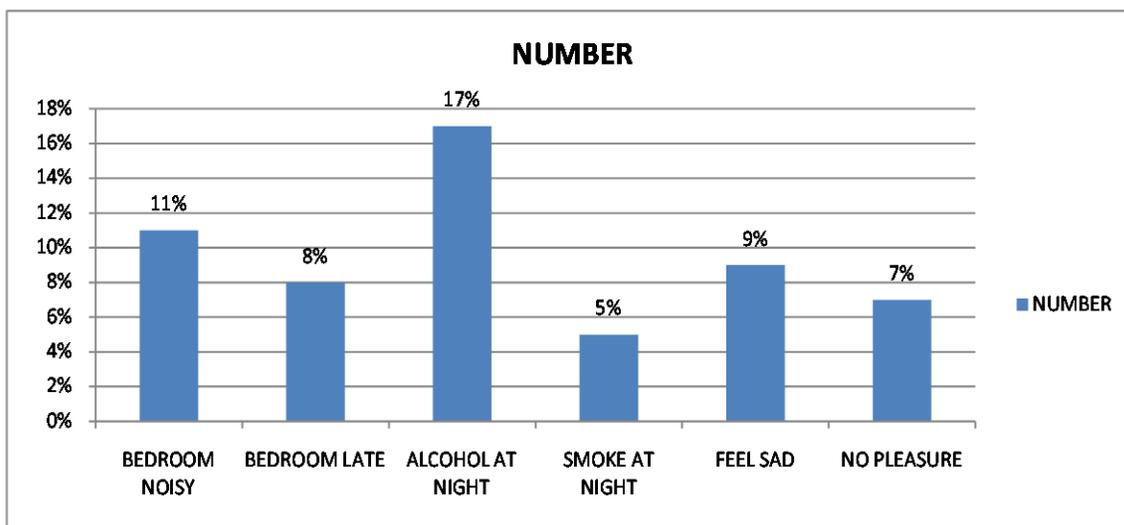
Maximum numbers of student complaint of use of alcohol at night (17%) (Graph-I). 11% complaint of noise around bedrooms, 95 feels sad during sleep time. Going to bedroom too late was seen in 8% of students. Feeling sad (9%) and feeling of no pleasure in life (7%). The difference was statistical significant (P-0.01).

Graph II shows that 31% of narcoleptic students were at academic risk too. OSA showed risk (25%), CRDs (35%), sleep walking (17%), night mares (12%) and insomnia (22%). The difference among sleep disorders was significant (P-0.03).

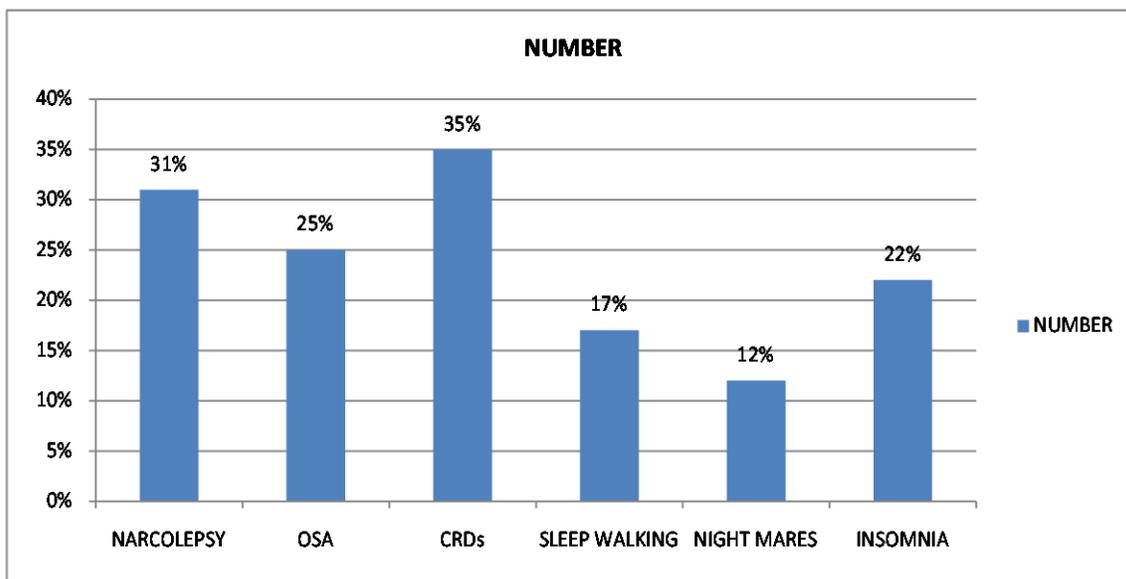
**TABLE II:** Sleep scale score

	RANGE	CUT POINT	% RISK (N)
<b>Insomnia</b>	8-30	>16	4 (60)
<b>OSA</b>	8-31	>17	11 (167)
<b>CRDs</b>	4-16	>10	6 (91)
<b>Sleep Walking</b>	1-14	>8	1 (15)
<b>Night Mares</b>	3-20	>12	3 (46)
<b>Narcolepsy</b>	6-18	>8	18 (275)

**GRAPH I:** Number of students with poor sleep practices



**GRAPH II:** Percentage students at risk for sleep disorder who are at academic risk



**DISCUSSION**

Sleep has useful role in life. Sufficient sleep is required for proper functioning of nervous system. Sleep is an essential process that regenerates the body to function optimally.

Pace-Schott et al.<sup>7</sup> in his study suggested that most university students accumulate sleep debt over time. This debt is compensated on the weekends. Although an individual cannot catch up on sleep once sleep debt has been acquired, healthy sleeping patterns can return with time. Chokroverty<sup>8</sup> suggested that most individuals need an average of eight hours of sleep per day, but many people can tolerate an average of six hours. Limited sleep habits limit the performance and activity of individual. Sleep less than than six hours over the duration of days or even weeks results in sleep debt. College students have higher risk of these habits which shortcomes their performance and daily activity.

This study was done on college students to estimate their risk of disorders and whether these disorders or habits have effects on their academic performance as well.

Out of 1524 students examined, 381 were found to have sleep disorder. Females comprised 565 and males comprised 43%. In present study, the students were given Sleep-50 scoring systems where students had to give scoring.

Among various sleep disorders, commonly seen was Insomnia, Narcolepsy, Obstructive Sleep Apnea (OSA), Circadian Rhythm Disorders (CRDs), Sleepwalking, Nightmares.

Obstructive sleep apnea was seen in 11% of examined students. Narcolepsy was seen in 18% of students. Other sleep disorders were CRDs (6%), sleep walking (1%), night mares (3%) and insomnia (4%). The difference among different sleep disorders were significant (P- 0.04). The

results are in agreement with Smith et al.<sup>9</sup> However, Carney CE<sup>10</sup> in his study revealed insomnia as a major sleep disorder among students.

Among various habits, use of alcohol at night (17%) was seen in m`aximum number. 11% complaint of noise around bedrooms, 95 feels sad during sleep time. Going to bedroom too late was seen in 8% of students. Feeling sad (9%) and feeling of no pleasure in life (7%) was other factors. Levin R<sup>11</sup> stated that noise around the sleep area is one of the common causes for sleep disorder.

We also evaluated whether these sleep disorders have effects on academic performance. In our study, we found that 31% of narcoleptic students were at academic risk too. OSA showed risk (25%), CRDs (35%), sleep walking (17%), night mares (12%) and insomnia (22%). Tsai LL et al<sup>12</sup> concluded that in adequate sleep have deleterious effects on academic performance of the patients.

There is a need to educate college students about good sleep hygiene, it is not established that this will change sleep behavior or daytime outcomes. Tsai Li evaluated the effectiveness of a 2- credit course on sleep management. Lectures, group discussion, and self-evaluation were used to educate 241 college students about sleep hygiene, resulting in improved sleep quality, but not sleep patterns. The authors concluded that the course had only a mild impact on sleep behaviors.

**CONCLUSION**

Author concluded that college students are at risk for sleep disorders or poor sleep hygiene, and that sleep may impact academic success. Students should be taught to reduce stress level in their life which may improve their academic performance.

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**Source of support:** Nil

**Conflict of interest:** None declared

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