

Research Article

FREQUENCY AND DETERMINANTS OF SLEEP DISORDERS AND USE OF SEDATIVES AMONG MEDICAL STUDENTS OF CONTINENTAL MEDICAL COLLEGE LAHORE

*Razia Chaudhry, Aneeqa MumtazJoya and Shail Fayyaz KAhloon

Department of Community medicine Continental Medical College / Hayate Memorial Hospital Lahore

Received 20th April 2020; Accepted 24th May 2020; Published online 30th June 2020

ABSTRACT

Background: Sleep disturbance is a common clinical problem experienced by medical students due to hectic academic curriculum and extensive investment of time and energy in their every day lectures and clinical duties. The use of sedative-hypnotic medications has been established in a fraction of students suffering from sleep deprivation and other sleep disorders, emphasizing the need for further research and discussion. **Objectives:** 1. To assess the frequency of sleep disorders and their determinants among medical students of a private Medical College Lahore; 2. To find out the use of sedatives amongst medical students to target the group for health education. **Study subjects and setting:** Hundred (100) students from all five MBBS classes of Continental Medical College were included in the study. **Study Design and Methods:** Descriptive Cross sectional study was conducted on 100 students, 20 students from each class were selected by systematic random sampling technique. **Results:** From 100 students 29% agreed to tell that they face the trouble falling asleep, while 39% said that they take naps during whole night while studying and 32 % rated their sleep as excellent and sound for 6-8 hrs/24 hrs. While 10 % suffered with sleep disorder as very poor quality of sleep. Psychological instability and Academic stress were two major potential causes of sleep deprivation by 49% and 35% respectively. Although only a few(10 %) admitted the use of sedatives to help them sleep, another 12% also used sedatives to tackle panic attacks. **Conclusion:** Study concluded that sleep disturbances are closely associated with medical study stress. Psychological disorders as anxiety and depression are also associated with medical curriculum and results also signify that a small fraction of students use sedatives to help them with sleep.

Keywords: Sleep disorders, Medical students, Use of Sedatives.

INTRODUCTION

Sleep disorder is defined as irregular sleep with abnormal quantity or quality leading to daily dysfunction¹. Medical students are considered as one fraction of population that are highly vulnerable to sleep disturbance on account of their stressful studies, hectic duties, erratic sleep schedule and consistent competitive environment. Several diverse studies from different countries have formulated that how medical students suffer from sleep disorders, such as insomnia, excessive day-time sleepiness and poor sleep quality.² Since sleep disturbance is one arising point of discussion in public health this subject shows staggering results in medical students and is often associated with emotional distress, like anxiety is related to incidence of nightmares and irregular sleep cycle; this combination thus leads to cognitive and learning problems.³ Sleep disorders disturbs nervous, immune and endocrine systems thus making students vulnerable to various diseases such as psychological disability, diabetes, low work efficacy, hypertension and other cardiovascular diseases. Studies have shown mood instability, drug use and abuse, late night social media usage and inactive lifestyle also related to such disorders.⁴ One such study carried out on medical students of Eastern University of Iran showed prevalence of cigarette smoking and psychological disorders among the target students as 12.5% and 40% respectively, while 21.5% of them suffered sleep disorders.¹ It was found in many studies in different countries that prove sleep deprivation effects academic performance and health status for example one study carried out recently in 2019 in University of Tripura elaborated how 69% reported a history of staying awake the whole night before an exam and 64% agreed they suffered during exam due to sleep deprivation.⁵ Psychological indications of such stressful schedule such as depression, anxiety, burnout has various coping mechanism implied by the students like cognitive responses, relaxation exercise

but students may also resort to increased sedative use to deal with the effects of stress on mental health stability. Thus signifying the fact that sleep disorders impact academic performance and general wellbeing which emphasizes the need to focus on screening and targeted interventions for students with sleep irregularity so our population does not fall victim to drug abuse and mental health issues.³ In one such global literature review of medical students sleep experience while conducting a study at Aga Khan university Department of medicine evaluated that poor sleep is not only common among medical students, but its prevalence is also higher in comparative students of other various fields and population in general; according to the study approximately one third of adults report some form of Insomnia. ⁷ In one of Cross sectional study conducted in King Abdul Aziz University, Jeddah, Saudi Arabia, was aimed to relate poor sleep quality and excessive daytime sleepiness with the performance of medical students, their future work as practitioners and in health care system. The study showed the prevalence of poor sleep quality and EDS among medical students was 70.4% and 37.3%, respectively. Poor sleep quality was associated with students' gender, age, high-Grade Point Average (GPA), drinking caffeinated beverages, anxiety, depression, and EDS. ⁸ Another research by Franklin C. Brown et al was based on inadequate sleep hygiene, sleep deprivation which can arise from poor sleep behavior; sleep hygiene encourages habits conducive to restorative sleep and avoidance of substances or behavior that are not healthy. Good sleep hygiene includes a regular sleep wake schedule, quiet sleep environment and avoidance of caffeine after lunch and stimulator activators before bed. The authors used psychometrically sound instruments to examine these students and their findings signify that knowledge of sleep hygiene is related to sleep practices, which, in turn, affects overall sleep quality ⁹. The objectives of this study were to assess the frequency of sleep disorders and their determinants among medical students, and to find out the usage of sedatives among medical students

*Corresponding Author: Razia Chaudhry

Department of Community medicine Continental Medical College, Lahore.

MATERIALS AND METHODS

Study design: Descriptive Cross-sectional study

Study Setting: Continental Medical College, Lahore

Study Population: Students of all MBBS classes of Continental Medical College Lahore with 20 students from each class were included in this study.

Study Duration: From April 2019 to June 2019

Sample Size: Sample size was calculated by WINPEPI. The Calculated sample size was 97 but 100 students were taken. Prevalence of sleep disorders was estimated as 12% with Confidence interval at 95%.

Sampling Technique: 20 students from each class were included from attendance registers, by using systematic random sampling technique. In case of non availability of the indicated student, the next number was included in the sample. Desired information was collected from 100 students.

Data collection procedure and instrument: A structured Questionnaire was administered to the study subjects and required information was collected after taking informed consent. Data Analysis Plan: Data was compiled and analyzed through SPSS version 23. Frequency tables were generated for all possible variables. Bar and pie charts were used to present categorical data.

RESULTS

100 students were included in the survey. 20 students from each class were taken, 58 (58%) were females and 42(42%) were males. Among these students 56(56%) were day scholars while 44 (44%) of the students resided in hostels. Regarding the educational status of parents, 2(2%) stated that their parents were primary /secondary educated. 8 (8%) stated that their parents were matric, 16(16%) stated intermediate, 12(12%) stated as undergraduate, and 60(60%) said that their parental education was postgraduate

Table 1. Total Hours of Sleep / day

Hours Of sleep/day	Frequency	Percentage
4-6	18	18.0
6-8	42	42.0
8-12	27	27.0
>12	13	13.0
Total	100	100.0

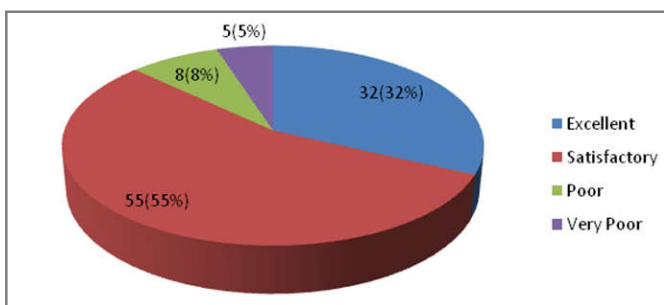


Diagram 1. Sleep Rating by the Students

Table no 1, showed that 42(42%) of the students slept for 6-8 hours in a day, 18(18%) students slept only for 4-6 hours, 27(27%) had 8-12 hours of sleep and only 13(13%) of the students sleep for more than

12 hours. 69(69%) of students reported that they take a nap, while the rest of the 31(31%) disagreed. 29(29%) of students admitted for having trouble while falling asleep while the majority with 71(71%) didn't find any trouble falling asleep. Diagram no 1, showed that When asked to rate their sleep, 32(32%) of students rated excellent, 55(55%) satisfactory, 8(8%) of the students had poor sleep and only 5(5%) suffered from very poor sleep. The frequency of snoring among students was as follows; 53% say that they never snore, 28% snore rarely, 14% snore occasionally while only 5% of students agreed to snore most of the time. Out of 100 students 53(53%) said that they never snored during sleep, 28(28%) snored rarely, 14(14%) snored occasionally, while only 5(5%) of students agreed that they snored most of the time. There were different responses when questioned about having nightmares during sleeping, only 14(14%) said they mostly had them while sleeping, 30(30%) students said that they had them occasionally, 39(39%) said they rarely had dream sand the rest never had any nightmares. When asked whether they felt Restlessness in legs before sleeping, 16(16%) of the students mostly faced it, 20(20%) said they suffered occasionally, 38(38%) rarely, while the rest of the 26 (26%) students never faced it. Out of the total 100 students, 60(60%) of the students said that they do not talk while asleep, whereas 40(40%) agreed.

Table 2. History of sleep walking

Variables	Frequency	Percentage
Yes	11	11.0
No	89	89.0
Total	100	100.0

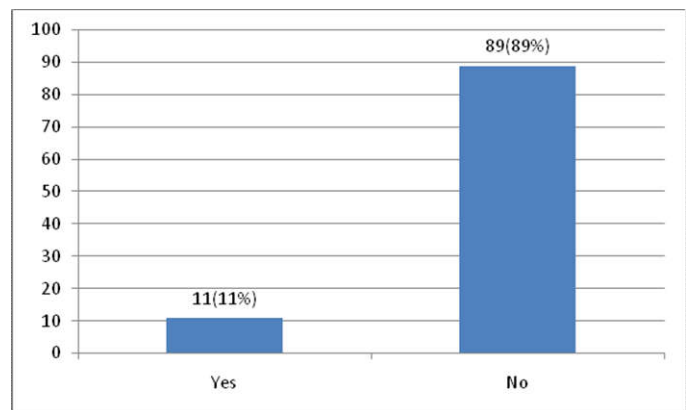


Diagram 2. History of sleep walking

Table no 2 shows that out of 100 students 11 (11%) of the students gave history of sleep walking, while 89(89%) did not give such history regarding sleep walking. Psychological health being a major factor in affecting sleep when asked 49(49%) of students agreed that they suffered from anxiety or had worries that disturbed their sleep cycle ,while 51(51%) did not had such complaints. Academic load, which is another cause for sleep disturbance in students is extremely burdening for 35(35%) of students, 6(6%) could manage it easily and 12(12%) remain unaffected. Majority 72(72%) excessively watched TV and scrolled through social media before going to bed which resulted in sleep disturbance. When the respondents were asked if they frequently smoked after dinner 13(13%), agreed, while 30 (30%) of the students admitted of having excessive caffeine intake in the evening.

Table 3. Use of sedative to help sleep

Variables	Frequency	Percentage
Yes	11	11.0
No	89	89.0
Total	100	100.0

Table no 3 showed that there were different responses for use of sedatives, only 11 (11%) agreed for using a sedative to help them sleep. Out of the total respondents 7(7%) also agreed that they abused sedatives, while 93(93%) never abused any sedatives. 12(12%) of the student population used a sedative when they suffered from a panic attack.

DISCUSSION

Students learning and academic performance have been closely linked to sleep quality and quantity. An enhanced cognitive process such as consolidation and encoding of memories are of vital importance for higher studies and especially for medical education because medical students need to recall a substantial amount of complex factual knowledge within a short period of time and all these factors are controlled if the student has a stable sleep routine. A questionnaire was randomly distributed among medical students in Continental Medical College Lahore about 58% were female surgeries and 42% were male. Among the participants, many were day scholars while about 44% of students reside in hostels. A 6-8 hour of sleep in a day was selected by many of the participants as a preferred amount of sleep to have a productive day while only 13% agreed on 12 hours sleep a day. However, decreased nocturnal sleep time, late bedtimes during weekdays, and increased daytime sleepiness was negatively associated with academic performance in medical students (Al-Saied *et al.*, 2014). A study on a group of Brazilian medical students showed that excessive daytime sleepiness adversely affected their academic performance while it also showed a correlation between sleep onset, sleep regularity, and sleep length with academic performance of medical students. There is a clear correlation between sleep disorders and various psychiatric illnesses, especially mood and anxiety disorders. Poor sleep quality that is associated with many sleep disorders can predispose to the development or exacerbation of psychological distress and mental illness. Likewise, the presence of psychiatric illness may complicate the diagnosis and treatment of sleep disorders. Moreover, the survey showed a variation in the response when students were asked about the nightmares, snoring, and restlessness in their legs. Furthermore, about 49% of the students agreed they suffer anxiety due to the academic load, thus being another cause of sleep disturbance in students. Many studies have been done to examine the correlation between psychiatric disorders and sleep disturbances in the general population. Those studies indicate that sleep disturbance can be a comorbidity, a cause, or a symptom of psychiatric disorders (Azad *et al.*, 2015). There is a limited study on the association of smoking and the use of excessive caffeine among the medical students, however, when the students were surveyed on the use of such factors, 13% agreed on smoking after the dinner and 30% on the use of caffeine in the evening. According to (Azad *et al.*, 2015) there is an interesting relationship between the evening phenotype circadian rhythm disorder and depressive disorder, with the ongoing discussion regarding the direction of the relationship between them. ⁷ Chronic sleep deficiency can lead to substance abuse disorders. To regulate sleep/wake schedule, young people can use alcohol and over-the-counter drugs at a higher frequency. The ultimate consequence of such behaviors can lead to "the stimulant-sedation loop" that is the use of stimulant to counteract daytime sleepiness and subsequent use of sedative to counteract the effects of a stimulant. Presence of such a relationship between sleep deprivation and substance abuse among medical students needs to be explored. The use of various sedative substances among medical students varies between regions based on cultural and availability. There have been limited studies on the use of sedative mainly in Lahore and other cities of Pakistan. In the research done by (Al-Sayed *et al.*, 2014) the self-rate of the sedative substance was 17% with almost all the students using the

sedatives and histamines to induce sleep. And this pattern was reflecting the lack of alcohol availability and another sedative drug. Alcohol being illegal due to law the student had no other option than the use of sedatives like Benzodiazepines and Barbiturates. Those students who exercised regularly were found to use more of the sedative drugs when compared to the students with irregular exercise pattern. This appears to be an inconsistent association, as individuals who exercise regularly would seem to be better at organizing their time including their sleep-wake cycle. This association may be explained by students who are having difficulty sleeping using exercise as a method to promote sleep, together with using other methods such as sedative drugs at times when exercise is not feasible, such as during examination periods. Sedative drug use was found to be more common among students with a lower GPA. Students with a poor academic record may have had problems organizing their time and may, therefore, have been more likely to use a quick method of inducing sleep at the desired time (Al-Sayed *et al.*, 2014). In our results it was illustrated, only 11% agreed on the use of sedative to induce sleep while 7% agreed on the abuse and only 12% of the participants agreed on sedative use when they suffer a panic attack.

CONCLUSION

Sleep disturbance and irregularity is a common problem faced by medical students. Although only a fraction of students reportedly rated their sleep as poor in this study but disorders like sleep talking, sleep walking, restlessness and sleep paralysis are significantly prevalent in the student body. According to the study one potential causative factor in stress induction which leads to sleep disturbance is educational overload and the fear of failing their professional year, almost half the student percentage finds it extremely challenging to combat educational stress. Moreover a fraction of students also resort to use sedatives to help them treat their sleep irregularity especially during hectic examination season.

RECOMMENDATIONS

- Cohort studies that observe the association between educational stress, academic overload, and sleep may help distinguish between inter and intra subject variation at a given time point and over a time period.
- Students can be educated, counseled and encouraged to adopt habits that can decrease their levels of perceived stress and improve their sleep hygiene.
- Developing college policies that can promote healthier and more adequate sleep among medical students can have large impacts on their performance and overall well being.

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