

Review Article

Prevalence of Stress and Sleep Disorders among Medical Students at Al-Kindy College of Medicine and its impact on Academic Performance

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Abstract: *Introduction:* Sleep, an essential therapeutic part of human physiology, Sleep problems was widespread among students in medical colleges, and excessive stress and the pressure of holding grades can affect their sleep quality. The relationship between sleep, stress and cognition/learning is far more complex than perceived. *Material and Method:* Cross sectional study was conducted in Al-Kindy College of Medicine, during the period from (2022 to 2023) academic year. The electronic questionnaire was distributed among all students. Analysis of data was carried out using IBM SPSS version 24. *Results:* A total of (500) medical students' online surveys were analyzed from AL-Kindy College of Medicine, The highest number of participants was from the fifth year with (114) students, and percentage of (22.8%), whereas the lowest number of participants was from the second year with (68) students (13.6%). There were about (258) male with percentage of (51.6%), and (242) female with percentage of (48.4) participated in this study. The majority of students (160) with percentage of (32%) were sleeping (6) hours/day, and a minority (1) student with percentage of (0.2%) had 3 hours sleeping/day. There was a significant relationship between sleep hours and sleep deprivation like, about (297) students, with prevalence of (59.4%) agreed that sleeplessness negatively affected their academic performance, while (41) students with percentage of (8.2%) disagreed. According to the effect of stress, the prevalence of sleep disorders among undergraduate medical students was shown that (169) students with percentage of (33.8%), were always stressed, while (34) students with percentage of (6.8 %), were rarely affected by stress. According to the causes of stress, the majority of students (198), with percentage of (39.6%), were had too much study, while (1) student, with percentage of (0.2%), was had no significant reason. Other (174) students, with percentage of (34.8%), were under stress because of exams and (127) students, with percentage of (25.4%), were under stress because of life events. *Conclusions:* Sleep disorders are common among medical students. The study also reveals that there is a strong, positive and significant relationship between stress levels sources of stress and sleep deprivation which is associated with poor academic performance. *Recommendations:* Keeping bedtime and wake time consistent, including on weekends. Regular activity helps promote a good night's sleep. Also schedule exercise at least a few hours before bedtime and avoid stimulating activities before bedtime. Further research is required in this field.

Keywords: Stress, sleep disorder, academic performance, Baghdad.

1. INTRODUCTION

Sleep, an essential therapeutic part of human physiology, has been well established as critically important for functioning, mental health, and good quality of life is a highly complex state that arises from an interaction between multiple brain regions, neurotransmitter pathways, and hormones. This complexity makes sleep very vulnerable to disruption. Small changes in brain function can have a big effect on sleep, and disrupted sleep leads to many health problems and disrupted academic performance [1].

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Sleep deprivation occurs when insufficient sleep results in reduced quality, insufficient alertness, and health deterioration. It has several detrimental effects on health [2].

Insufficient sleep creates a serious and complex spectrum of health risks for adolescents. The effects ranged from inattention, decreased cognitive performance, and low educational achievement to the risk of obesity and cardiovascular disease, mood changes, including increased suicide risk, and increased levels of car accidents [3].

Symptoms of sleep disorders are different; most sleep disorders contain one or more of the following symptoms: tiredness, lack of sleep at night, prolonged daytime sleepiness, sleep attacks or involuntary sleeping spells, lack of muscle function, headache [4].

Significant declines in sleep and sleep quality across populations have been correlated with increased work and social stresses, lifestyle changes, technology application, too much study and so forth [5]. The National Sleep Foundation discovered that people who registered insufficient sleep also documented stressed. Sleep deprivation also increased the risk of depressive symptoms [6].

Sleep problems were widespread among students in medical colleges, and excessive stress and the pressure of holding grades can affect their sleep quality [7]. Naturally everyone needs a certain amount of “pressure” to perform at their best. But when pressures exceed a person’s ability to cope, the result is stress. Prolonged stress can set up distress and shut down the ability to cope with ordinary situations causing illnesses [8].

The relationship between sleep, stress and cognition/learning is far more complex than perceived. Therefore, this review aims to recognize the interrelationships between sleep disorders and academic performance. It critically examines the effects of sleep and stress on cognition, learning and academic performance. Furthermore, it discusses how various regulatory factors can directly or indirectly influence cognition and learning. Factors such as gender, sleep hours, life events, and students work load, were discussed [8]. The study aimed to detect the prevalence of sleep disorders and stress among medical students of AL-Kindy College of Medicine through the investigations of sleep hours.

2. SUBJECT AND METHODS

2.1. Study Design:

It was a cross sectional study with analytic elements.

2.2. Study Setting:

This study was conducted in Al-Kindy College of Medicine. It was carried out from October 2022 to May 2023.

2.3 Study Sample

A total of 500 medical students were involved from first to sixth grade. There were no inclusion criteria, i.e. all students were suitable for this study.

2.4 Permissions and Ethical Consideration

Permissions from people participants in this study with avoiding personal questions were taken. Ethics also put in consideration by using unknown information of individual’s personal information such as names because of privacy.

2.5. Data Collection Instrument

The electronic questionnaire was distributed among all students. The questionnaire composed of three sections: The first section was about the socio-demographic details of the patient including: gender and academic year. The second section was about: how many hours they used to sleep. The third section was about: why and how often they were stressed.

Statistical Analysis

Analysis of data was carried out using IBM SPSS version 24, using procedure for :frequency, percentages, tables and graphs.

RESULTS

Total of (500) medical students were recruited from first year to sixth year. The highest number of participants was from the fifth year with (114) students, with percentage of (22.8%), whereas the lowest number of participants was from the second year with (68) students (13.6%), (Table 1).

Table 1: Number and percentage of medical students according to the stages

Stages	Frequency	Percentage
First	72	14.4
Second	68	13.6
Third	104	20.8
Forth	71	14.2
Fifth	114	22.8
Sixth	71	14.2
Total	500	100.0

There were about (258) male with percentage of (51.6%), and (242) female with percentage of (48.4) in this study, as shown in (figure 1).

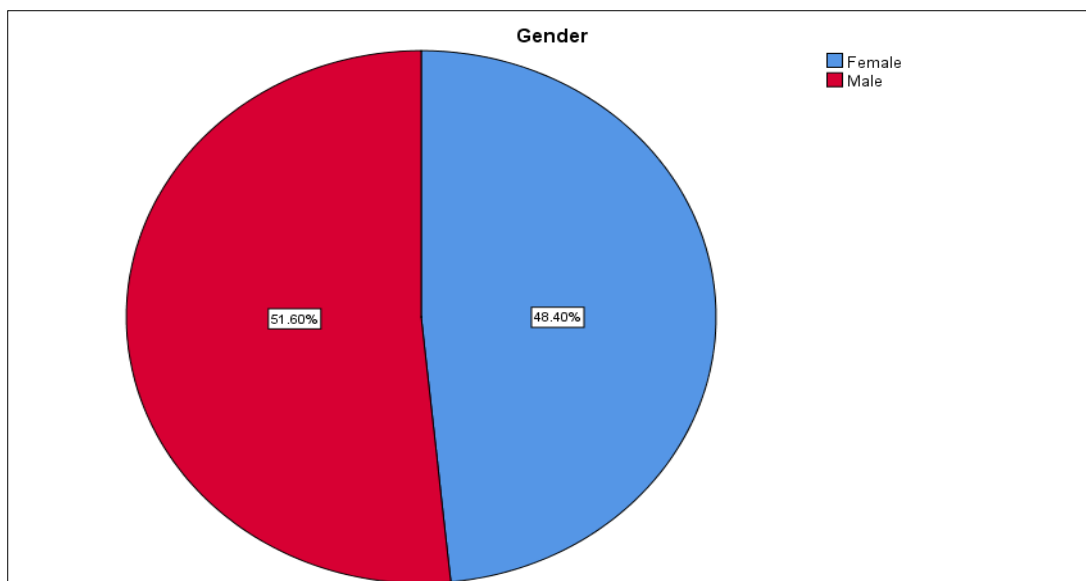


Figure 1: Percentage of medical students regarding to gender

The majority of students (160) with percentage of (32%) were sleeping (6) hours/day, while the minority (1) student with percentage of (0.2%) had 3 hours sleeping/day. Seventy one students with percentage of (14.2%) were sleeping for 4 hours/day, while (143) students with percentage of (28.6%) were sleeping for five hours/day. Others are sleeping hours per day were ranging between (7- 9) hours (table 2).

Table 2: Prevalence of sleeping hours among medical students

Sleep hours	Frequency	Percentage
3	1	0.2
4	71	14.2
5	143	28.6
6	160	32.0
7	111	22.2
8	5	1.0
9	5	1.0
Total	496	99.2
Total	500	100.0

In this study, there was a significant relationship between sleep hours and sleep disorders, (297) students, with prevalence of (59.4%) agreed that sleeplessness negatively affected their academic performance, while (28) students with percentage of (5.6%) strongly disagreed, as shown in (table 3).

Tables 3: Prevalence of sleep disorder effect of on academic performance

	Frequency	Percentage
Agree	297	59.4
Disagree	41	8.2

Strongly agree	134	26.8
Strongly disagree	28	5.6
Total	500	100.0

According to the effect of stress, the prevalence of sleep disorders among undergraduate medical students was shown that (169) students with percentage of (33.8%), were always stressed, while (34) students with percentage of (6.8 %), were rarely affected by stress (Figure 2, and Chart 1).

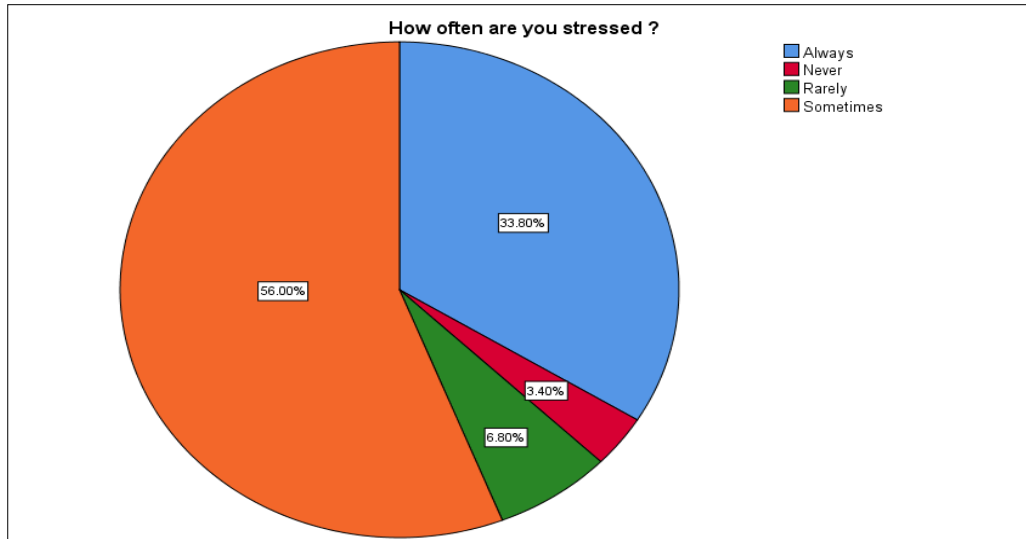


Figure 2: Prevalence of sleep disorders among medical students according to the stress

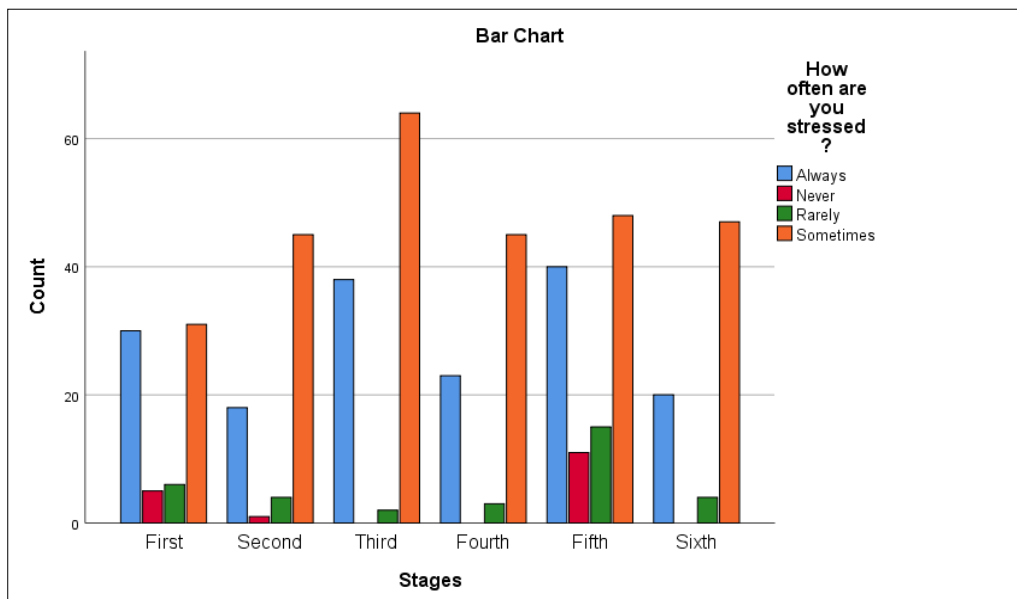


Chart 1: Prevalence of sleep disorders among medical students according to the stress

It was founded that those students were stressed due to several causes. The majority of students (198), with percentage of (39.6%), were had too much study, while (1) student, with percentage of (0.2%), was had no significant reason. Other (174) students, with percentage of (34.8%), were under stress because of exams and (127) students, with percentage of (25.4%), were under stress because of life events (Table 4).

Table 4: Prevalence of stress causes of among medical students

	Frequency	Percentage
Exams	174	34.8
Life events	127	25.4
No thing	1	0.2

Too much study	198	39.6
Total	500	100.0

DISCUSSION

Medical students are under tremendous pressure due to the demands from the academic community. Their sleep pattern is associated with limited sleep length, delayed sleep, and the frequency of daytime napping episodes. The medical student population tends to be one of the populations at high risk for sleep deprivation [1].

This research was carried out in AL-Kindy college of medicine to assess the dilemma of poor sleep quality using the data questionnaire. The socio-demographic characteristics of participants showed that females and males have almost the same percentage. The current study reveals that 86.8% of students in medical school suffered from poor quality of sleep. This may be due to medical students' various activities and pressures that may require excessive night-time study [9]. In 2018 in their research stated that the study findings are extremely alarming; there were 64.24% students with a global PSQI score of ≥ 5 , indicating poor sleep quality. These findings were also compatible with results obtained from other countries and showed that university students in Hong Kong and Lithuania had poor sleep quality (59.4%) and (57.5%) respectively [10, 11]. However, in another study, one-third of Moroccan medical students present excessive daytime sleepiness, which is similar to present study [12].

The majority of participants were stressed due to study load (39.6%) while others were stressed by lesser extent due to life events (25.4%), different findings were established and emphasized in Egypt's medical students they stated that Experience discrimination, hate or abuse were the major cause of stress (40.54%) [13].

The present research demonstrates a significant association between sleep disorders and low academic performance.

This is consistent with other research studies that offer considerable evidence regarding the correlation of sleep disruption with a decreasing trend in mean grade point average (GPA) scores [10].

Moreover, Indian students who were sleeping for shorter periods reported lower GPAs and poor memory and cognitive function [14].

Sleep appears to play a significant role in memory consolidation but is not well understood. Sleep after study encourages the integration of newly acquired information with established memories [15].

Majority of the students were identified in the moderate stress category. This is similar to studies from Portugal and Saudi Arabia about stress prevalent in medical students [7, 16].

The perception of a greater level of stress by the fifth stage medical students in this study cannot be attributed to a single source. Overall they reported feeling stressed from a number of sources. This is in accordance with the studies carried out by Dyrbe indicating higher stress in the advanced stage medical students in Canada and United States [17, 18].

This study's findings were also consistent with those recorded in Egypt, where the prevalence of poor sleep quality was 58.5% among medical students [19].

Sleep disorders are common among medical students and it affects their physical, mental, and psychological health. It is crucial to detect these problems and address them before their condition deteriorates. The study also reveals that there is a strong, positive and significant relationship between stress levels sources of stress and sleep problems. Further research is required in this field.

CONCLUSIONS

Sleep disorders are common among medical students and it affects their physical, mental, and psychological health. It is crucial to detect these problems and address them before their condition deteriorates. The study also reveals that there is a strong, positive and significant relationship between stress levels sources of stress and sleep problems.

RECOMMENDATIONS

Keeping bedtime and wake time consistent from day to day, including on weekends. Regular activity helps promote a good night's sleep. Schedule exercise at least a few hours before bedtime and avoid stimulating activities

before bedtime. Further research is required in this field, and more studies are recommended and should assess the implementation of measures to prevent such disorders.

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