

IMPACT OF QUALITY AND DURATION OF SLEEP ON ACADAMIC PERFORMANCE AMONG UNDERGRADUATE MEDICAL STUDENTS IN MIRPURKHAS SINDH

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DOI: <https://doi.org/10.5281/zenodo.22668619>

Keywords

Article History

Received: 01 June 2026

Accepted: 23 August 2026

Published: 09 September 2026

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Abstract

Background: Sufficient sleep is critical for cognitive function, memory consolidation, and neurobehavioral performance. Undergraduate medical students face rigorous academic demands, often leading to sleep deprivation and poor sleep quality, which may negatively influence their cumulative grades.

Objective: To evaluate the impact of sleep quality and sleep duration on the academic performance of undergraduate medical students in Mirpurkhas, Sindh.

Methods: A cross-sectional study was conducted among [Insert Number, e.g., 200] undergraduate medical students across various professional years in Mirpurkhas. Data were collected using a structured questionnaire, incorporating the Pittsburgh Sleep Quality Index (PSQI) to assess sleep quality and self-reported daily sleep duration. Academic performance was measured using the students' [Insert metric, e.g., recent annual exam scores / GPA]. Data were analyzed using [Insert statistical software, e.g., SPSS version 26], with p-values < 0.05 considered statistically significant.

Results: Out of the total participants, [Insert %] were classified as poor sleepers (PSQI score > 5). The average daily sleep duration was [Insert average, e.g., 5.8] hours. A statistically significant correlation ($p < [Insert p-value]$) was found between poor sleep quality and lower academic performance. Students sleeping less than [Insert hours, e.g., 6 hours] per night exhibited significantly lower scores compared to those getting adequate sleep. [Optional: Mention if a specific gender or academic year was more affected].

Conclusion: Poor sleep quality and inadequate sleep duration are highly prevalent among medical students in Mirpurkhas and are significantly associated with diminished academic performance. There is an urgent need for institutional awareness programs to educate future doctors on sleep hygiene to optimize both their health and academic success.

1. Introduction

Poor sleep quality are two types of sleep issues that have a significant impact on people's life.

produces a variety of symptoms that make work or learning more difficult, such as fatigue, lack of energy, worry, irritability, or sadness,

excessive daytime drowsiness, difficulty focusing, paying attention, remembering, or memorizing information, among other difficulties [1]. Although there are short and long sleepers, adults should get at least 7 hours of sleep each night for excellent health. Insomnia, obstructive sleep apnea (OSA), and shift work issues all have an adverse effect on sleep quality and can lead to sleep deprivation, which is common among healthcare professionals [2].

Population-based investigations have revealed a widespread consensus. According to this consensus, 30% of adult samples from various nations have at least one symptom of insomnia, such as trouble falling asleep or staying asleep, waking up early, or occasionally having non-restorative or poor quality sleep [3]. Students in college or university frequently have sleep issues, which can have an effect on their academic performance, health, and mood. The National Sleep Foundation reports that 3.59% of adults between the ages of 18 and 29 . They can't get enough sleep if they have to wake up early since they can't fall asleep earlier in the evening. Additionally, sleep may be involuntarily restricted due to living in a noisy apartment or residence hall or deliberately sacrificed due to social considerations [4]. Particularly sadness and anxiety. The demographic of medical students is one that seems to be more. Another study found a link between sleep disruption and mental illnesses among medical students, susceptible to sleep deprivation since they need to remain awake to do their duties at the hospital or are always stressed out due to their exams [5]. The major symptoms of insomnia include having trouble falling asleep, staying asleep, or waking up too early. In the Health Behavior in School-aged Children (HBSC), a World Health Organization (WHO) joint cross-national study including 220,000 kids and teenagers, sleep disorders were more common among school-aged kids (ages 11 to 15) in Europe and Canada, with 28% of girls and 18% of boys. Teenagers' emotional and physical health can be negatively impacted by insomnia and inadequate sleep, which are important public health issues [6]. The most well-known sleep disorder and most frequent sleep complaint is

insomnia. People who struggle with insomnia either find it difficult to get asleep or to stay asleep for longer than seven hours. According to statistics, 30% of adults experience sleep problems. Sleep deprivation may result from certain scholastic situations, greater responsibilities, challenging exams, and time spent learning [7]. Long-term effects of chronic insomnia have been linked to poor physical and psychological health, including obesity, diabetes, hypertension, cardiovascular disease, and weakened immune system (e.g., depression, anxiety, and suicide risk). In the student population, sleeplessness has been linked to subpar academic performance as well as poor eating and drug use patterns [8]. Adults of all ages are advised to get seven to nine hours of sleep per night. However, current research demonstrates that the majority of young individuals often sleep for less time than is advised. Stress and inadequate sleep have a domino effect on one another. Psycho-social stresses have been shown in studies to occasionally produce sleep disruptions as well as to lead to insufficient sleep [9]. Although some collegiate teams were in season and others were in the vacations when the study was done in the late fall and early winter. This investigation focused on student-athletes at a particular university there may be differences in sports training, daily routines, and other lifestyle decisions, which might have distinct effects on sleep. Additionally, sleep problems, which were not particularly evaluated in this study, can affect athletes' ability to sleep [10]. Adult prevalence rates for poor sleep hygiene and insomnia might vary greatly depending on the study population and the diagnostic methods used. Age, sex, fertile stage, hormonal levels (such as cortisol, estrogen, and testosterone), consumption of alcohol, tobacco, caffeine, and energy drinks, sedentary lifestyle, obesity, stress level, low educational level, low economic income, some ethnic groups, physical sleeping environment, and other factors are some of the factors linked to sleep disorder [11]. For learning and memory encoding, sleep is crucial. It is obvious that adequate sleep is necessary for the efficient accumulation of both procedural and declarative knowledge. Early research

supported the idea that rapid-eye movement (REM) sleep might improve procedural memory [12]. Sleep quality is the description that how well your sleep is sleep quality assessed through seven components (sleep duration, sleep disturbance, sleep latency, daytime dysfunction due to sleepiness, sleep efficiency, overall sleep quality and, sleep medication) [13]. Student achievement in a variety of academic topics is measured by academic performance and classroom performance are frequently used by educators to assess student progress [14]. Due to their heavy academic loads, medical students may have poorer sleep quality than the average member of modern society. Therefore, it's critical to determine whether they have a sleep issue, how severe it is, and whether it has any impact on their academic performance or general well-being [15]. Due to intense academic and clinical pressure, medical students' sleep quality is significantly impacted. Smart smartphone use is essential to preventing personal health issues. The biggest sleep disorder that average people can identify and complain about is insomnia, which can be due to intense academic and clinical pressure, medical students' sleep quality is significantly impacted. Smart smartphone use is essential to preventing personal health issues. The biggest sleep disorder that average people can identify and complain about is insomnia, which can either be difficulties in falling asleep or having trouble asleep for more than 7 hours [16]. Adults frequently experience sleep problems, and according to certain studies, 30% of them may experience insomnia at any given time [17]. According to recent studies, the prevalence of insomnia among medical students can range from 9.5 to 27%, which is evidence that sleep deprivation may be significantly associated with memory loss and diminished learning abilities, which ultimately can lead to lower academic achievements [18]. Sleep is a fundamental human need and is necessary for health, a high quality of life, and effective performance [19].

2. Literature review.

The study by Baronage-Correa ET AL. (2018) investigates the prevalence of sleep

disturbances and their associations with academic performance, depressive symptoms, and substance use among medical students at the Pontifical Universalized Hanoverian. The findings revealed significant correlations between sleep disturbances and various adverse outcomes. Prevalence of Sleep Issues: High rates of poor sleep quality were reported, with many students experiencing excessive daytime sleepiness. Academic Performance: Students with sleep disturbances tended to have lower academic performance, suggesting that poor sleep may hinder their educational outcomes. Fifty-four percent of students were women. Poor sleep quality (PSQI>5) and daytime sleepiness (ESS>10) were found in 65% of the population. A higher GPA was more frequent in students with good sleep quality [20].

The study by Gaultney (2010) in southern university in United States. Investigates the prevalence of sleep disorders among college students and their effects on academic performance. Conducted with a sample of 1,845 students from a large southeastern public university, the research utilized a validated sleep disorder questionnaire to assess sleep patterns and associated academic outcomes during the 2007-2008 academic year. (Impact on Academic Performance) Students identified as at risk for sleep disorders were significantly over-represented among those with poor academic standing (GPA < 2.0). This suggests a correlation between sleep issues and academic difficulties, highlighting that insufficient sleep and irregular sleep patterns can adversely affect students' grades. Sleep Patterns: The research indicated that many students experienced a discrepancy between their sleep duration on weekdays and weekends, contributing to overall sleep deprivation. Consequences of Sleep Disorders: The implications of sleep disorders extend beyond academic performance, as they can lead to issues such as impaired attention, increased risk of drowsy driving, and mental health challenges including depression and anxiety [21].

The study by Hedin ET AL. (2020) titled "Insomnia in Relation to Academic Performance, Self-Reported Health, Physical Activity, and Substance Use Among

Adolescents" investigates the connections between insomnia and various factors affecting academic performance. The study found a significant association between insomnia and poor academic performance. Adolescents who reported insomnia were more likely to have failed one or more school courses. The findings suggest that insomnia is a significant public health concern among adolescents, impacting their academic performance and overall well-being. A total of 177 respondents, with a response rate of 55%, were obtained. According to the PSQI score, 36.6% of participants were considered to have abnormal sleep habits, with a statistically significant increase in female students ($P < 0.05$).

Abnormal PSQI scores were associated with lower academic achievement ($P < 0.05$). Marital status, habitat, smoking and physical activity were also associated with PSQI scores [22]. A cross-sectional study" by Carrión-Pantoja et al. was published in the Journal of Clinical Medicine on April 2, 2022. This research investigates the relationship between insomnia symptoms, sleep hygiene practices, mental health, and academic performance among university students in Spain. Academic Performance: There was a notable association between insomnia and lower academic performance, suggesting that sleep quality plays a crucial role in students' educational success. The authors recommend interventions focused on improving sleep hygiene and addressing mental health issues to enhance both sleep quality and academic outcomes for students. This study contributes valuable insights into the interplay between sleep, mental health, and academic performance, underscoring the need for comprehensive support systems in university settings to promote student well-being and success [23].

A study of Pakistani medical students "G.MAHESHWARI" and "SHAUKAT" KING EDWARD MEDICAL UNIVERSITY PAKISTAN. Found that 64.24% had poor sleep quality, with a mean GPA of 2.92 ± 1.09 compared to 3.41 ± 1.04 for good sleepers ($p < 0.0001$).

Students with lower GPA (2.0-2.7) were more likely to report very bad subjective sleep quality, longer sleep latency, shorter sleep duration,

lower sleep efficiency, and more daytime dysfunction[1][2][3]. The consensus from this study is that adequate, high-quality sleep is essential for medical and dental students to perform well academically. Poor sleep leads to excessive daytime sleepiness which negatively impacts learning, memory, and cognitive functioning. Students and their educators should prioritize improving sleep habits to support academic success [24].

A study by Sepehr Rasekhi, Student Research Committee, Hormozgan University of Medical Sciences, Bandar Abbas, IR Iran. , Faculty of Medicine, Hormozgan University of Medical Sciences, Bandar Abbas, IR Iran. Medical students are exposed to a significant level of pressure because of their academic demands. Thus, they are at increased risk for sleep disorders. A total of 177 respondents, with a response rate of 55%, were obtained. According to the PSQI score, 36.6% of participants were considered to have abnormal sleep habits, with a statistically significant increase in female students ($P < 0.05$). Abnormal PSQI scores were associated with lower academic achievement ($P < 0.05$). Marital status, habitat, smoking and physical activity were also associated with PSQI scores. A high prevalence of sleep disorder was found in this population, specifically among female students. Analysis of the relationship between sleep disorder and academic performance indicates a significant relationship of PSQI scores with marital states, habitat, smoking, physical activity, and academic performance. [25].

The study published in Bio-med Research International* in October 2019, investigates the prevalence of insomnia among students in medical and paramedical fields in Jordan and its correlation with academic performance. The research involved a cross-sectional survey conducted from November to December 2018, targeting students from various colleges at the Jordan University of Science and Technology. A total of 977 students participated, providing insights into their sleep patterns and academic performance. The study found that 26.0% of the participants suffered from clinical insomnia, while a significant 75.9% reported either subthreshold or clinical insomnia. This indicates a high prevalence of sleep

disturbances among the student population. Students who reported good sleep quality had significantly lower Insomnia Severity Index (ISI) scores compared to those with poor sleep quality. Those who slept more than 7 hours per night had lower ISI scores than students who slept less than 6 hours.

Academic performance, measured by Cumulative Grade Point Average (CGPA), was positively correlated with sleep quality. Students with a CGPA of 3.0 or higher reported better sleep quality compared to those with a CGPA below 2.5. The study highlights the critical issue of insomnia among medical and paramedical students in Jordan, emphasizing its significant impact on academic success. These results may serve as a foundation for developing strategies to address sleep-related challenges in academic settings [26].

The study by Yassin ET AL. investigated the prevalence of sleep disorders among medical students and their association with academic performance. The researchers conducted a cross-sectional study and found that sleep disorders were common among medical students, with a prevalence of 58.2%. The most prevalent sleep disorders were insomnia (35.3%), followed by excessive daytime sleepiness (27.1%) and poor sleep quality (25.9%). The study also revealed a significant association between sleep disorders and poor academic performance, with students who had sleep disorders being more likely to have lower grades compared to those without sleep disorders. [27].

The systematic review and meta-analysis authored by Sloane ET AL., investigates the prevalence of sleep disturbances among medical students and their impact on academic performance. "Sleep disruption in medicine students and its relationship with impaired academic performance," Published in **Sleep Medicine Reviews** in October 2020, the study highlights significant findings regarding sleep quality, duration, and daytime sleepiness. Prevalence of Sleep Issues Poor sleep quality was reported by 39.8% of the medical students surveyed (5646 out of 14,170). Insufficient sleep duration affected 29.1% of students (3762 out of 12,906). Excessive daytime

sleepiness was observed in 35.9% of participants (1324 out of 3688) across the studies included in the review. Impact on Academic Performance A significant correlation was found between academic grades and sleep quality scores (correlation coefficient $r = 0.15$, $p = 0.002$). Daytime sleepiness also negatively correlated with academic performance (correlation coefficient $r = -0.12$, $p < 0.001$). Interestingly, sleep duration did not show a significant correlation with academic performance (correlation coefficient $r = 0.03$, $p = 0.132$).

The authors advocate for urgent interventions to improve sleep quality among medical students, suggesting that enhancing sleep could lead to better academic outcomes and ultimately improve healthcare quality. This comprehensive review underscores the critical relationship between sleep disruption and academic performance in medical students, emphasizing the need for targeted strategies to address sleep issues in this population [28].

The article by Jalali ET AL. was published in **Advances in Medical Education and Practice** titled "The effect of sleep quality on students' academic achievement on July 17, 2020. This study investigates the relationship between sleep quality and academic performance among students. The research highlights that poor sleep quality can negatively impact cognitive functions, leading to decreased academic performance. It emphasizes the importance of adequate sleep for students to enhance their learning and retention capabilities. The findings suggest that educational institutions should promote healthy sleep habits to improve students' academic outcomes. The results indicated that 34 cases (33.3%) of the subjects were male. The mean age of the sample 23.10 ± 3.25 , where the mean age for females was 22.46 ± 2.44 and for males was 24.38 ± 4.19 . The participants in the study came from various disciplines including laboratory science, medicine, pharmacology, emergency medicine, obstetrics, radiology, operating room, health technology, and nursing. Most students lived in dormitories (50%) and 46.1% at home, with 3.9% living in rental houses. The students' educational level ranged between the third semester and twelfth

semester. Among those participating in the study, 67 patients (65.7%) consumed coffee, 90 cases (88.2%) used tea, and 1 (1%) took a drug. For comparing the mean scores of students and the component of sleep, Spearman test (non-normal data) was employed, where a significant correlation was observed between GPA and hours taking to fall asleep [29].

3. Objective Of The Study.

The aim of our study is to determine the impact of quality and duration of sleep on academic performance among undergraduate medical students in Mirpurkhas Sindh.

04. Significance

Sleep plays a crucial role in cognitive processes, memory consolidation, and overall physical and mental health. In undergraduate medical students, poor sleep quality and insufficient sleep duration can lead to decreased attention, impaired learning, and lower academic performance. This research is significant because it highlights the prevalence and impact of sleep disturbances in a high-pressure academic environment, where students are prone to irregular schedules and heavy workloads. Understanding the relationship between sleep and academic performance can help educators, administrators, and healthcare providers develop strategies to improve students' sleep habits, enhance learning outcomes, and promote overall well-being. Additionally, this study provides local evidence from Mirpurkhas, Sindh, which can inform health awareness programs and policy interventions tailored to the needs of medical students in this region.

Materials And Methods.

4.1 STUDY DESIGN: The study is cross-sectional study.

4.2 STUDY SETTING: All Private sector medical colleges in Mirpurkhas.

Mohammad Medical college Mirpurkhas .
Bhitai Medical and Dental college Mirpurkhas.
Bhitai institute of physical therapy and rehabilitation sciences Mirpurkhas.

4.3 STUDY DURATION: The duration of the study is 6 months after the approval of

synopsis

4.4 SAMPLE SIZE: The sample size of 200 students surveyed.

4.5 SAMPLING TECHNIQUE: Non-probability convenient sampling technique used.

4.6 (A) INCLUSION CRITERIA:

▯ **Enrollment Status:** Full-time undergraduate medical students currently enrolled in the MBBS program (from 1st year to final year).

▯ **Institutional Affiliation:** Students registered at recognized medical institutions in Mirpurkhas (e.g., Muhammad Medical College).

▯ **Consent:** Students who voluntarily consent to participate and fill out the questionnaire.

▯ **Academic Record:** Students who have at least one prior semester/professional exam result available to measure academic performance

4.6(B) EXCLUSION CRITERIA:

▯ **Pre-existing Sleep/Psychiatric Disorders:** Students diagnosed with clinical sleep disorders (like insomnia, sleep apnea) or psychiatric conditions (like major depression, severe anxiety) that inherently disrupt sleep or require sedatives/stimulants.

▯ **Chronic Medical Illnesses:** Students suffering from chronic painful conditions or systemic illnesses that severely impact sleep quality.

▯ **Recent Major Life Events:** Students who experienced acute personal trauma or major stress recently (e.g., family bereavement) that could temporarily alter sleep and academic focus.

▯ **Substance Use:** Students regularly taking prescription sleeping pills, high-dose stimulants, or illicit substances. (Note: Routine tea/coffee intake is usually not excluded).

▯ **Incomplete Data:** Questionnaires with missing critical values regarding sleep hours or academic scores.

4.7 DATA COLLECTION

PROCEDURE: A structured questionnaire consisting of two sections comprised demographic information including gender age and CGPA. The second part comprised of Pittsburgh Sleep Quality Index (PSQI) . Participants confidentially maintained and

Data is coded anonymously. Participants confidentially maintained Data is coded anonymously. Distributed to participants

4.8 DATA COLLECTION TOOL: PSQI (Pittsburgh sleep quality index) questionnaire for sleep quality and duration. : Demographic data and Academic performance collect by their CGPA (Cumulative Grade Point Average).

4.9 DATA ANALYSIS: Data will be entered in Microsoft Excel Sheets and will be analyzed using IBM SPSS Statistics (V-22.0) . chi square was calculated for correlation between PSQI and CGPA.

4.10 ETHICAL CONCERN: : Ethical approval for study taken from the Institutional Review Board (IRB) of Institute of Bhitai. Only those participants included who have signed the written consent form and they are free to refuse or withdraw from study at any time. The information will be kept confidential and anonymous.

5. Results

Out of 200 pupils, 51.5% (103) of them were female and 48.5 % (97) of them were male. Of the students, 14 (7%) have a BS in nursing. 41 pupils (20.5%). 42 students—or (21%) of the total— are in the BDS department. Furthermore, 103 pupils (51.5%) come from the DPT department.

Between (3.08) and (1.12) was the average CGPA for all research participants. 30% of the students, or (60), had a cgpa of less than (2.71). 60% (112) of students have a cgpa between (2.7) and (3.4) , while 10% have a cgpa between 3.5 and 4.0 (20 individuals)

In 2% students (only 4 students) sleep quality and duration seen normal having PSQI score (0). Mild Poor sleep quality and duration PSQI score witnessed in 42.5% students (85) students with PSQI score (1-7). Moderate sleep disturbance is in 52.5% (105) students with PSQI score (8-14). And 3% (6 students) are those students who are suffering from Severe sleep disturbance have PSQI score (15-21) extremely poor sleep.

All seven components of PSQI were compared with average CGPA of the students . Most of the students with lower CGPA (2.0-2.7) had very bad subjective sleep quality (28.5%) students, sleep latency of 16-30 minutes (29.05%) students, sleep duration of <5-7 hours (29.4%) 58 students ,and sleep efficiency Of 75%-84% (27.8%) students. Most of these students experienced sleep disturbance once or twice a week (29.5%), had not used sleep medication in the past month (87.14%) , but experienced daytime dysfunction almost every day (37.7%) . the comparison of their sleep quality and parameters to group with higher CGPAs is shown in table..

Chi square was calculated for correlation between PSQI score and CGPA. A p value of 0.6 as taken as significant.

Table 1.1

Table 1.1 Sleep quality as assessed by PSQI in medical students correlated with their CGPAs (n=200).

COMPONENTS OF PSQI	CGPA 2.0 TO 2.7 N=60 (30%)	CGPA 2.8 TO 3.4 N=112 (60%)	CGPA 3.5 TO 4.0 N=20 (10%)
1 SUBJECTIVE SLEEP.			
Very good	19 (31.66%)	35 (27.56%)	7 (35%)
Fairly good	14 (23.33%)	25 (19.87%)	7 (35%)
Fairly bad	14 (23.33%)	25 (19.87%)	4 (20%)
Very bad	13 (21.66%)	27 (22.76%)	2 (10%)
2 SLEEP LATENCY.			
< 15 Minutes	16 (26.66%)	27 (22.76%)	5 (25%)
16-30 minutes	26 (43.33%)	29 (24.36%)	5 (25%)
31-60 minutes	10 (16.66%)	28 (25%)	4 (20%)
>60 minutes	8 (13.33%)	28 (25%)	6 (30%)

3 SLEEP DURATION.			
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>7 hours	44 (73.33%)	16 (13.46%)	2 (10%)
6-7 hours	7 (11.66%)	31 (27.56%)	7 (35%)
5-6 hours	6 (10%)	39 (34.29%)	5 (25%)
<5 hours	3 (5%)	26 (24.68%)	6 (30%)

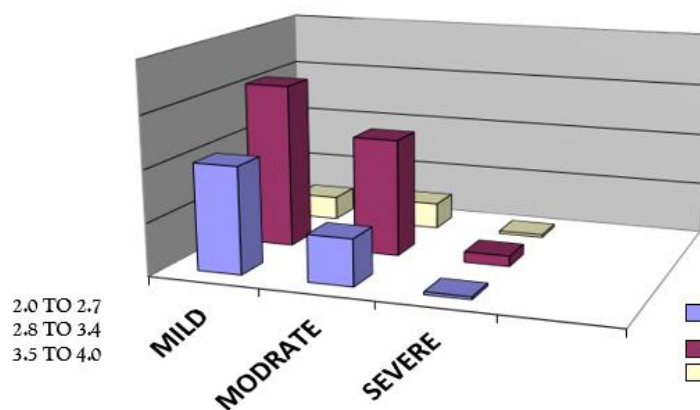
4 HABITUAL SLEEP EFFICIENCY.			
>85%	40 (66.66%)	20 (16.99%)	3 (15%)
75-84%	13 (21.66%)	36 (32.69%)	6 (30%)
65-74%	6 (10%)	26 (23.72%)	6 (30%)
<65%	1 (1.6%)	30 (26.60%)	5 (25%)

5 SLEEP DISTRUBENCE.			
Not during past month.	13 (21.66%)	33 (29.17%)	5 (25%)
Less than once a week.	12 (20%)	32 (28.81%)	7 (35%)
Once or twice a week.	15 (25%)	22 (19.23%)	5 (25%)
Three or more times a week.	20 (33.33%)	25 (23.40%)	3 (15%)

6 USE OF SLEEP MEDICATION.			
Not during past month.	49 (81.66%)	97 (86.86%)	18 (94.67%)
Less than once a week.	1 (1.66%)	11 (8.97%)	1 (5%)
Once or twice a week.	6 (10%)	4 (3.85%)	1 (5%)
Three or more times a week.	4 (6.66%)	0 (0.00%)	0 (0.00%)

7 DAYTIME DYSFUNCTION.			
1-2 DAYS.	15 (25%)	28 (25.96%)	6 (30%)
3-4 DAYS.	14 (23.33%)	26 (24.36%)	6 (30%)
5-6 DAYS.	11 (18.33%)	27 (23.40%)	5 (25%)
EVERYDAY.	20 (33.33%)	30 (26.28%)	3(15%)

GRAPH OF THE SAMPLES.



Level of sleep disturbance according to PSQI score

6 Discussion

Sleep efficiency and quantity are critical for memory and learning. For students to do well academically, getting enough sleep is essential. The study's findings are extremely concerning. The majority of students with lower average CGPAs had very poor subjective sleep quality, 16–30 minute sleep latency, 5–7 hours of sleep length, 75%–84% sleep efficiency, and nearly daily dysfunction during the day.

The study offers strong proof that sleep disorders are linked to a pattern of deteriorating mean CGPA levels. But the study is not without flaws. Other elements that can lead to subpar academic achievement, such as exam stress and difficulty, have not been considered or have been left out.

Furthermore, because it was limited to students of two medical institutions, results cannot be extrapolated to the whole population. This is a cross-sectional study that has not shown causality; rather, it has just demonstrated a relationship.

Despite our best efforts, we were unable to locate any published local data. Nonetheless, there is strong evidence from other nations on how sleep deprivation impairs pupils' ability to think clearly and succeed academically. Sleep difficulties such as insomnia, frequent awakenings, and falling asleep after 30 minutes of bedtime were common among Saudi medical students. Similarly, Indian students who slept for shorter periods of time reported worse memory and attention along with poorer CGPAs.

According to research conducted by Philips in 2017, there is a 0.10 improvement in GPA for every ten points increase in the sleep regularity index. Moreover, it has been noted that there are negative linear relationships between CGPA and the times of waking, mid-sleep, and sleep initiation. The total quality of sleep, subjective sleep rating, bedtime after midnight, sleep latency, and dysfunction during the day were significantly different among Sudanese medical students who had a "A" on their tests compared to those who received a "C." Compared to the "C" scoring group, the "A" scoring group slept for an average of longer. According to PSQI, 85% of Iranian medical students with a CGPA of 2.99 or lower had

trouble sleeping. When combined, the outcomes.

This is the biggest and most likely representative systematic study and meta-analysis on the prevalence of sleep disruption and how it affects medical students' academic performance globally. About one-third of the students had excessive daytime sleepiness, inadequate sleep length, and poor-quality sleep. Furthermore, there was a strong correlation between academic performance and both the quality and duration of sleep, but not the duration of sleep.

It is plausible to assume that the daytime sleepiness, low attention levels and impaired memory/decision making that follow a lack of proper sleep are the explanation for poor academic performance in medical students with sleep disorders.

Our study also showed that a significant percentage of medical students were short sleepers (30.7%). A cross-sectional survey of approximately 50,000 Norwegian college and university students showed that both sleeping less than 5 h and more than 10 h were associated with failing exams compared with those sleeping seven to 9 h. Short sleep duration and poor sleep quality among medical students could be ascribed to their huge academic load, professional attitudes and habits, and poor awareness of sleep hygiene. The consequences of such behavior can be detrimental to cognitive and behavioral performances.

This study has a few limitations that should be mentioned approximately one-third of all registered medical students were included in the analysis. Although this may create a non-response bias, studies have shown that the average response rate of email-based surveys ranges between 25 and 30%. There is high percentage of participants from one college in comparison to the other (846 (81%) from JUST versus 195 (19%) from YU); this could be attributed to the different population size in these colleges (2517 at JUST versus 984 at YU). Although SLEEP-50 is a validated screening tool for the most prevalent DSM-IV-TR sleep disorders (sleep apnea, insomnia, RLS, PLMD, CRD, and nightmares), its predictive validity for SSM, narcolepsy, and affective disorder is

limited.. Moreover, SLEEP-50 is not a confirmatory diagnostic test for the evaluated sleep disorders. Further studies that utilize more definitive diagnostic tools (e.g., polysomnography) are needed to better investigate the association between sleep disorders and academic performance.

The findings of the study are invaluable for college administrators, healthcare promoters, and health counselors to draw their attention to common sleep problems among medical students. The results of this study encourage the medical schools to increase awareness of the negative impact of sleep disorders on academic performance. Despite the need for further research to establish a cause-effect association, the responsible professionals for students' health can take action to improve the sleep patterns of medical students. It is worth to inform medical students of the

consequences of bad sleep habits and sleep disorders through awareness programs, and encourage students to consult with sleep physicians to diagnose and manage any suspected sleep disorders .

7 Conclusion And Recommendation.

Medical students are always under a lot of pressure to perform well academically. For them to feel rejuvenated each day and to support learning and memory processing, they must get enough sleep. Medical students often experience sleep difficulties, which negatively impacts their academic performance. Medical students and those who assist them should be aware of the detrimental effects sleep deprivation has on academic performance and take appropriate action to enhance students' sleep quality.

List of abbreviations.

S.No	Abbreviation	Description
1	OSA	Obstructive sleep apnea
2	WHO	World health organization.
3	PSQI	Pittsburgh sleep quality index.
4	SPSS	Statistical package for social sciences.
5	CGPA	Cumulative grade point average.
6	INSOMNIA	asleep condition

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