بسم الله الرحمن الرحيم

كلية نبتة
NAPATA COLLEGE

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NAPATA COLLEGE

Medicine Program

Community Medicine Department

Sleep Quality and Its Association with Academic Performance among Medical Students at Napata College, 2026

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Abstract:

Background / Introduction:

Sleep quality is important for students' health, learning, and academic success. This study aimed to assess sleep quality and its association with academic performance among medical students at Napata College in 2026.

Methods:

A descriptive cross-sectional study was conducted among 203 medical students selected through proportional stratified sampling. Data were collected using a self-administered questionnaire that included demographic characteristics, academic performance, the Pittsburgh Sleep Quality Index (PSQI), and coping strategies. Data were analyzed using SPSS version 26. Chi-square test and Mann–Whitney U test were used, and a p-value of less than 0.05 was considered significant.

Results:

The mean age of participants was mainly between 18 and 22 years, and most were female and single. Poor sleep quality was found in 70.9% of the students, while only 29.1% had good sleep quality. Sleep quality was not significantly associated with age, gender, GPA, or marital status. However, it showed a statistically significant association with academic year, with poorer sleep more common among students in higher academic years ($p = 0.005$). The most commonly reported coping strategies were creating a comfortable sleep environment, following a regular sleep schedule, and managing study time to allow enough sleep. Among coping strategies, taking daytime naps and managing study time were significantly associated with sleep quality ($p = 0.021$ and $p = 0.033$, respectively).

Conclusion:

Poor sleep quality was highly prevalent among medical students at Napata College. The findings suggest that academic year and some coping strategies may influence sleep quality. This highlights the need for sleep hygiene awareness and support for medical students, especially those in higher academic years.

Keywords:

Sleep quality; Academic performance; Medical students; PSQI; Coping strategies.

مستلخص الاطروحة

الخلفية / المقدمة:

جودة النوم مهمة لصحة الطلاب وتعلمهم ونجاحهم الأكاديمي. هدفت هذه الدراسة إلى تقييم جودة النوم وعلاقتها بالأداء الأكاديمي بين طلاب كلية طب ناباتا في عام ٢٠٢٦.

طرق البحث:

أُجريت دراسة وصفية مقطعية شملت ٢٠٣ طالبًا وطالبة من طلاب الطب تم اختيارهم عن طريق أخذ العينات الطبقية النسبية. جُمعت البيانات باستخدام استبيان ذاتي شمل الخصائص الديموغرافية، الأداء الأكاديمي، مؤشر جودة النوم لبسبرغ (PSQI)، واستراتيجيات التكيف. تم تحليل البيانات باستخدام برنامج SPSS الإصدار ٢٦. وتم استخدام اختبار كاي-تربيع واختبار مان-ويتنيU ، واعتُبرت قيمة p أقل من ٠,٠٥ ذات دلالة إحصائية.

النتائج:

كان متوسط أعمار المشاركين بين ١٨ و ٢٢ سنة، وكانت الغالبية من الإناث وعازبات. وُجدت جودة نوم ضعيفة لدى ٧٠,٩٪ من الطلاب، بينما كانت جودة النوم جيدة لدى ٢٩,١٪ فقط. لم تظهر جودة النوم علاقة ذات دلالة إحصائية مع العمر أو الجنس أو المعدل التراكمي أو الحالة الاجتماعية. ومع ذلك، أظهرت علاقة ذات دلالة إحصائية مع السنة الدراسية، حيث كانت مشاكل النوم أكثر شيوعًا بين الطلاب في السنوات الدراسية العليا (p = ٠,٠٠٥).
كانت استراتيجيات التكيف الأكثر شيوعًا هي خلق بيئة نوم مريحة، اتباع جدول نوم منتظم، وإدارة وقت الدراسة بما يسمح بالحصول على قسط كافٍ من النوم. ومن بين استراتيجيات التكيف، ارتبط أخذ قيلولة نهارية وإدارة وقت الدراسة بشكل معنوي بجودة النوم (p = ٠,٠٢١ و p = ٠,٠٣٣ على التوالي.

الخلاصة:

كانت جودة النوم الضعيفة منتشرة بشكل كبير بين طلاب كلية طب ناباتا. تشير النتائج إلى أن السنة الدراسية وبعض استراتيجيات التكيف قد تؤثر على جودة النوم. وهذا يبرز الحاجة إلى التوعية بنظافة النوم وتقديم الدعم لطلاب الطب، وخاصة أولئك في السنوات الدراسية العليا.

الكلمات المفتاحية:

جودة النوم؛ الأداء الأكاديمي؛ طلاب الطب؛PSQI ؛ استراتيجيات التكيف

Table of content:

Contents	Page Number
Title page	
Acknowledgement	**I**
Abstract	
English	**II**
Arabic	**III**
Table of content	**IV**
List of tables	**VI**
List of figures	**VII**
List of abbreviation	**VIII**
Chapter One	**1-3**
1.1 Introduction and Background	1
1.2 Problem statement	2
1.3 Justifications	3
1.4 Research hypothesis	3
1.5 Objectives	3
Chapter Two: Literature review	4-10
Chapter Three: Materials and Methods	**11-15**
3.1 Study design	11
3.2 Study area	11
3.3 Study population	11
3.4 Study variables	11
3.5 Sampling Technique and sample size	**12-13**
3.7 Data collection methods and tools	**13-14**
3.8 Data analysis	**14-15**
3.9 Ethical considerations;	**15**
Chapter Four: Result	16-25

Chapter five: Discussion	**26-27**
Chapter Six:	
Conclusion	28
Limitation	29
Recommendation	30
References	31-35
Appendices	36-48

List of tables

No	Name	Page
1	**Demographic characters of medical students at Napata College in 2026 (N=203)**	**16**
2	**Association between sleep quality and academic performance among medical students at Napata College in 2026 (N=203)**	**19**
3	**Sleep quality among different age groups medical students at Napata College in 2026 (N=203)**	**20**
4	**Sleep quality among different gender of medical students at Napata College in 2026 (N=203)**	**21**
5	**Sleep quality among different academic year of medical students at Napata College in 2026 (N=203)**	**22**
6	**Sleep quality among different marital status of medical students at Napata College in 2026 (N=203)**	**23**
7	**Coping strategies to deal with poor sleep quality among medical students at Napata College in 2026 (N=203)**	**24**
8	**Association between coping strategies and sleep quality among medical students at Napata College in 2026 (N=203)**	**25**

List of figures

No	Name	Page
1	**Sleep quality among medical students at Napata College in 2026 (N=203)**	**18**

List of abbreviation

Abbreviations	Full term
PSQI	**Pittsburgh Sleep Quality Index**
GPA	**Grade Point Average**
HCWs	**Healthcare Workers**

Chapter One

1.1 Background

1.2 Problem statement

1.3 Justification

1.4 Research question

1.5 Objectives

1.1. **Background**

"A good laugh and a long sleep are the best cures in the doctor's book," - an Irish Proverb. Sleep is crucial for the proper functioning of human beings. Both the quantity and quality of sleep have a significant impact on overall well-being (1). Medical students, including doctors, nurses, radiology technicians, and other experts, play a vital role in our healthcare system. However, they are at a higher risk of experiencing fatigue, burnout, and sleep deprivation compared to the general population (2), (3).

Exposure to armed conflict and displacement has been shown to significantly worsen sleep quality. Studies conducted in conflict-affected populations report high prevalence of poor sleep outcomes, including insomnia, fragmented sleep, and trauma-related nightmares among civilians and students exposed to war conditions. For example, research among university students in Lebanon found that direct exposure to ongoing conflict was strongly associated with elevated global PSQI scores, indicating substantially poorer sleep quality compared with students who were not exposed to war trauma. (4) Furthermore, studies of adults living under prolonged conflict in the Gaza Strip have documented pervasive sleep disturbances linked to chronic insecurity and psychological distress. (5) These findings highlight that political instability, conflict, and displacement can contribute independently to sleep disruption, beyond occupational or academic stress. Given the ongoing conflict and social instability in Sudan, it is important to investigate sleep quality among Sudanese medical students, as impaired sleep may further compromise their cognitive functioning and academic performance in already challenging circumstances.

Sleep deprivation is typically measured by three factors: cognitive performance, motor performance, and mood (6), (7). Research has shown that sleep deprivation slows down responses and impairs performance (8). Healthcare workers (HCWs) face sleep disturbances due to rotating or extended-duration shifts and other challenging work situations (9). Burnout and fatigue have become significant concerns, highlighting the need for support systems and interventions tailored to the specific needs of medical students during crises (10). In a cross-sectional study conducted in China, 63.9% of clinical nurses reported sleep disturbances (11). In Iran, 53.1% of HCWs experienced sleep disturbances (12). Research in China has revealed a wide range in the prevalence of sleep disorders among healthcare practitioners, from 12.9% to a staggering 78% (13). However, there has been no investigation into the prevalence of sleep disorders among medical students in Sudan.

Sleep deprivation, long working hours, and night shifts have been found to contribute to medical errors, such as surgical complications, needlestick injuries, adverse drug events, and

misdiagnosis (14–17). Insufficient sleep among medical students impairs their neurobehavioral performance, which ultimately affects patient care. Extended working hours are associated with increased alcohol use and unethical behavior, while frequent night shifts and changes in working hours lead to psychological distress (18), (19). Identifying the factors contributing to sleep disorders is crucial, but it is equally important to implement targeted interventions that address the unique challenges faced by healthcare workers in different settings (20), (21).

Recognizing the importance of high-quality sleep for medical students is not only about personal well-being but also about improving patient care outcomes (22). As the demands on medical students continue to evolve, a comprehensive approach is needed to develop effective interventions and strategies that promote their well-being and improve the quality of healthcare delivery to the population they serve (19). Therefore, this study aims to comprehensively evaluate the sleep quality of Sudanese Medical students. We were identifying factors contributing to poor sleep quality within this demographic and examine the impact of inadequate sleep on their professional performance. By shedding light on these critical issues, our research aims to contribute to a healthier and more effective healthcare workforce, ultimately leading to improved healthcare delivery for the Sudanese population. We conducted this study to assess the importance of sleep quality and the effects of deprivation on medical students.

1.2. Problem Statement

Sleep is essential for maintaining cognitive function, emotional stability, and overall health. Poor sleep quality has been consistently linked to reduced attention, memory impairment, and lower academic performance among students globally (1,23). Medical students are particularly vulnerable due to heavy academic workloads, frequent exams, and irregular sleep habits (33**34** ،). Additionally, populations exposed to armed conflict, such as in Sudan, are at higher risk of sleep disturbances due to psychological stress and environmental instability (4**5**). Despite global evidence linking poor sleep quality to low academic performance, there is limited research on Sudanese medical students, especially in conflict-affected settings. Understanding the prevalence of poor sleep quality and its impact on academic outcomes is crucial to developing interventions that support students' well-being and learning. This study hypothesizes that poor sleep quality is negatively associated with academic performance (H1), demographic factors influence sleep quality (H2), and effective coping strategies improve sleep outcomes (H3).

1.3 Justification

This study addresses a critical gap in understanding sleep quality among Sudanese medical students, especially in conflict-affected settings. Poor sleep can impair cognitive function, reduce academic performance, and affect mental health (23,33,34). Investigating sleep patterns and coping strategies can inform interventions to improve student well-being and academic success. Findings may also guide policies to support future healthcare professionals in Sudan and similar contexts.

1.4 Research Hypothesis

H1: Poor sleep quality is negatively associated with academic performance among medical students.

H2: Demographic factors such as age, gender, and academic year are significantly associated with sleep quality.

H3: Medical students who use effective coping strategies have better sleep quality compared to those who do not.

1.5 Objectives

1.5.1 General Objective

- To study the sleep quality and the association between sleep quality and academic performance among medical students at Napata College in 2026.

1.5.2 Specific Objectives

1. To assess the sleep quality among medical students at Napata College in 2026.
2. To determine the association between sleep quality and academic performance among medical students at Napata College in 2026.
3. To assess sleep quality across different demographic characteristics among medical students at Napata College in 2026.
4. To identify coping strategies used by medical students at Napata College to manage sleep quality in 2026.

Chapter Two

Literature Review

2.1 General review

2.2 Focus review

2.3 Previous studies

1.2 General review:

Sleep is a universal and vital biological process that is essential to personal wellbeing, cognitive function, emotional control and physical health. The brain reorganizes information, improve the memory and restores physiological functions during sleep which is more than just a time of rest. Neural pathways involved in learning, memory development, problem solving and attention all essential for academic performance and daily functioning, so the brain can function at the best when it's gets enough sleep. Research indicates that sleep is essential for improving cognitive functions such as memory consolidation and executive function, so poor sleep quality can result in decreased academic performance and cognitive performance. (24)

The impact of sleep on cognitive function is explained by a different of mechanisms. During asleep the brain integrates and stabilizes recent learned information, particularly during the rapid eye movement (REM) and slow wave sleep stages. This improves learning efficiency and long-term memory formation. In contrast, the capacity of the brain thar process information is diminished by sleep deprivation which causes slower reaction times, shorter attention spans and more cognitive lapses. Physiological evidence identifies that inadequate or fragmented sleep modifies neural connectivity and lowers the effectiveness of synaptic processes that affect the memory and learning supports. the relationship between sleep and cognitive functioning is direct proportion. (25)

The impact of poor sleep quality on cognitive and academic performance is not subjective only, but has been confirmed with subjective and objective measures. Research reporting that consistent and high-quality sleep is positively associated with academic performance, while poor and fragmented sleep correlates with poorer academic performance. For example, research done among college students showed that variability in sleep patterns and poor sleep quality was predictive of lower academic scores. Underscoring the importance of regular and restorative sleep are important to achieve academic success. (26)

A systematic review reported the negative impact of inadequate sleep on academic performance across students with poor sleep quality. A review of multiple studies included university students revealed that poor sleep quality is associated with reduced academic performance, increased daytime sleepiness and decreased learning efficiency. These findings indicate the strong, negative relationship between sleep and academic performance across different educational levels and cultural settings. (27)

Sleep quality includes multiple dimensions regardless the sleep duration, including sleep latency, efficiency, disturbances, and daytime dysfunction. Sleep quality maybe poor even

when total sleep duration appears adequate, that has been shown to affect attention, daily function and critical components for academic tasks such as studying, taking exams and engaging in academic activities. (28)

Furthermore, sleep disturbances and irregular sleep patterns have been associated to emotional and mental health which may affect academic performance. Disruptions in sleep are associated with heigh stress, anxiety, depression and reduced emotional regulation. Factors that can independently compromise focus, memory recall, and learning capacity. The relation between sleep disorders and psychological wellbeing confirm the multidimensional influence of sleep on students' academic and personal functioning. (29)

Physiological studies indicate that chronic poor sleep not only affects cognitive performance in the short term but may have long term implications for brain health. Sleep disruption has been associated with metabolic changes, increased inflammation and neurodegenerative processes which impair the cognitive function more and more with sustained poor sleep patterns. (30)

Poor sleep quality not only affect the cognitive effects but also it associated with emotional instability, stress, anxiety and depressive symptoms. These psychological effects negatively affect learning and academic performance. Study among health sciences students found that poor sleep quality was related to increased psychological distress, which impacted to academic performance. (31)

The influence of sleep on educational outcomes appears to be both direct trough cognitive processes and indirect though emotional and psychological mechanisms.

While many studies report a negative association between poor sleep quality and academic performance. Some research indicates that sleep duration alone not always affect the performance when other factors like stress, lifestyle and study habits are considered, although quality measures have a stronger effect than simple duration measures. (32)

This indicates the need of comprehensive sleep assessments in research rather than relying solely on hours slept.

Overall, evidence from cognitive neuroscience, educational research, and physiological studies underscores the critical importance of high-quality sleep for optimal cognitive performance, learning, and academic achievement. Understanding the mechanisms and consequences of poor sleep is essential for developing effective strategies and interventions aimed at improving sleep hygiene, academic success, and overall student well-being.

2.2 Focusing review:

Medical students are a unique population, with high prevalence of poor sleep quality due to the nature of medical education as long study hours, frequent exams, clinical responsibilities and high psychological stress which significantly led to irregular sleep patterns and sleep deprivation. Studies have reported that medical students have a higher rate of poor sleep quality compared to the general population making sleep disturbances a common problem within this group. (33,34)

A cross-sectional study among medical students in Pakistan reported that, 64% of students had poor sleep quality with a negative significant association with academic performance. Students with poor sleep quality have a significantly lower grade point compared to those with good sleep quality, indicating the direct impact of sleep on academic performance. (33)

Similarly recent study in Egypt reported that, 86.9% of medical students have a poor sleep quality this high prevalence indicating the vulnerability in this population. The study also identifies a significant association with psychological distress, including depression, anxiety and stress which indirectly affect academic performance. (34)

Additionally, to high prevalence, several studies identify the direct relationship between sleep quality and academic performance among medical students. A study conducted in Babylon University found that more than 60% of students have a poor sleep quality and a significant association with academic failure. Students who failed one or more subjects were more likely to have poor sleep quality. (35)

These findings supported by research in European populations, where sleep quality was negatively correlated with GPA, students with higher PSQI scores which indicate a worse sleep quality reported lower academic performance, indicating that sleep quality is an important determinant of academic success across different cultural and educational contexts. (36)

The relationship between sleep and academic performance is not always strong and significant. Some studies found a weak or non-significant associations between sleep quality and academic performance indicating the present of other factors that mediate or modify this relationship. A study in health-related students found that while sleep duration on exam days was associated with academic performance, the overall PSQI score showed only a weak correlation with GPA. (37)

This indicates that academic performance is multifactorial not only affected by sleep quality alone, it's also affected by study habits, stress levels, time management and psychological wellbeing.

Academic pressure in one of the main factors affecting sleep quality among medical students which create a stressful environment that contributes to irregular sleep pattern and sleep deprivation. In many cases students reduce their sleep duration to meet study demands especially during exams periods which negatively affects both cognitive and academic performance. (38)

Lifestyle factors such as use of smartphones and electronic devices especially before bedtime delay sleep onset and reduce sleep quality. Additionally, the consumption of caffeine, irregular meal patterns and lack of physical activity led to poor sleep hygiene among students. These behaviors are common in medical students due to their academic overload.

To manage poor sleep quality students resorts to coping strategies. Some of them may be helpful while others may be ineffective. The effective coping strategies include maintaining a regular sleep time, practicing good sleep hygiene, engaging in physical activity and using relaxation techniques such as meditation and deep breathing, these have been associated with improved sleep quality. While ineffective coping strategies such as excessive caffeine intake, irregular sleep patterns and use sleep medications may be helpful in short term use but with long term use they increase the poor sleep quality. The effectiveness of coping strategies differs among individuals and may influence the strength of the relationship between sleep quality and academic performance. (39,40)

Another important factors that affecting the sleep quality and academic performance is the psychological distress which mediating the relationship between sleep and academic performance. A study has reported that poor sleep quality has a strongly association with high levels of stress, anxiety, and depression among medical students. These psychological factors are negatively affecting the concentration, motivation and academic performance, indicating a complex relation between sleep, mental health, and academic outcomes. (41)

Also, an environmental factor must be considered when studying sleep quality particularly in conflict affected settings. Exposure to war and displacement has a significant effect on sleep patterns due to increased psychological stress and environmental disturbances. Instead of this importance and the significant association between these factors, there are lack of research specifically among medical students in such settings, evidence from conflict-affected populations suggests that sleep disturbances are more prevalent and severe under these conditions. (4,5)

In the Sudan where ongoing conflict and displacement may affect daily life. Medical students may face additional challenges that affects their sleep quality. These challenges include safety concerns, unstable living conditions and psychological stress which may disrupt the

sleep quality.

Instead of this importance and the significant association between these factors, there are lack of research specifically among medical students in such settings.

Therefore, this study aims to study these gaps by examining sleep quality among medical students at Napata College, investigating its association with academic performance and to identify the of coping strategies.

2.3 Previous studies:

Globally:

A substantial body of global research has examined sleep quality among medical students using the Pittsburgh Sleep Quality Index (PSQI), with most studies indicating a high prevalence of poor sleep quality.

Recent evidence from a systematic review and meta-analysis conducted by Chaabane et al. (2025) in the Middle East and North Africa (MENA) region demonstrated that approximately 59.1% of medical students experienced poor sleep quality, suggesting that inadequate sleep is a common issue in this population. Likewise, Rao et al. (2020), in a large-scale meta-analysis including 50 studies with a total of 24,884 participants, reported a pooled prevalence of 52.7%, confirming that poor sleep quality is a widespread global concern among medical students. (23,42)

At the level of primary studies, Ballenas et al. (2024) reported that medical students in the Philippines had an average PSQI score of 6.42, reflecting generally poor sleep quality. The study also noted that differences in sleep quality across academic levels were not statistically significant. Similarly, Vidović et al. (2025) found that nearly two-thirds (67.9%) of medical students in Croatia were classified as poor sleepers based on PSQI scores above 5.

In Pakistan, Maheshwari and Shaukat (2019) observed that over 60% of medical students had poor sleep quality. Importantly, their findings showed that students with poorer sleep had significantly lower academic performance compared to those with better sleep quality, as reflected by lower mean GPA scores. This highlights the potential negative impact of sleep disturbances on academic outcomes. (33,32,44)

Earlier research has reported comparable findings. Corrêa et al. (2016) reported that a considerable proportion of students perceived their sleep quality as poor, although the study did not explore its relationship with academic performance.

Ahlberg et al. (2012) found that more than half of students experienced poor sleep quality during examination periods, with average PSQI scores exceeding the threshold for poor sleep.

Additionally, the study identified a statistically significant relationship between poorer sleep quality and reduced academic performance. (45,46)

On the other hand, some studies have primarily focused on the prevalence of poor sleep without examining its association with academic outcomes.

Overall, global evidence consistently indicates that poor sleep quality is highly prevalent among medical students, with rates frequently exceeding 50%. While several studies demonstrate a clear negative association between sleep quality and academic performance, others emphasize prevalence alone, reflecting some variability in the focus and findings of existing research.

Internationally:

A number of international studies have investigated sleep quality among medical students using the Pittsburgh Sleep Quality Index (PSQI), with most findings indicating a high prevalence of poor sleep quality, although the association with academic performance remains inconsistent.

Recent studies continue to demonstrate a high burden of poor sleep among medical students. In Egypt, Selim et al. (2026) reported one of the highest prevalence rates, with 86.9% of students classified as poor sleepers. Despite this, no statistically significant association was found between sleep quality and GPA, as poor sleep was common across all academic performance categories.

For instance, Talaia et al. (2025) in Egypt reported that approximately 71.2% of students experienced poor sleep quality. Similarly, Khaled et al. (2025) in Saudi Arabia found that 88.1% of participants had poor sleep quality, with a mean PSQI score of 9.1 ± 3.91, indicating severe sleep disturbance. The study further identified several contributing factors, including stressful lifestyle, academic workload, class schedules, caffeine intake, and social media use. (34,47,48)

In another Saudi study, Hassan et al. (2025) observed that academic performance appeared to influence sleep quality, as all students with below-average grades reported poor sleep. However, regression analysis revealed that GPA was not a statistically significant predictor of sleep quality, while age showed a significant association. The study also highlighted common causes of sleep disturbances such as nocturnal awakenings, breathing difficulties, and environmental discomfort. (49)

In Tunisia, Baati et al. (2024) reported a median PSQI score of 6, with 55.8% of students classified as poor sleepers. Likewise, Almalki et al. (2024) in Saudi Arabia found that 78.5%

of medical students had poor sleep quality. Despite this high prevalence, no significant association was found between sleep quality and academic GPA. (41,50)

Similarly, Aderinto et al. (2024) in Nigeria demonstrated variability in sleep quality across different academic performance groups. Students with excellent academic performance were more likely to report good or excellent sleep quality, whereas those with lower academic performance had a higher proportion of poor sleep quality, suggesting a potential relationship between sleep and academic outcomes. (51)

Earlier studies have reported comparable findings. Wondie et al. (2021) in Ethiopia found that 62% of medical students had poor sleep quality, and a statistically significant association was observed between sleep quality and cumulative GPA. In contrast, Alotaibi et al. (2019) in Saudi Arabia reported that 77% of students had poor sleep quality; however, no significant relationship was identified between sleep quality and academic performance. (52,53)

Similarly, Almojali et al. (2017) reported that 76% of medical students experienced poor sleep quality, with a mean PSQI score of 7.11 ± 3.84, further confirming the high prevalence of sleep disturbances in this population. (54)

Nationally:

In Sudan, limited but important evidence suggests a strong link between sleep quality and academic performance among medical students. A case–control study conducted by Mirghani et al. (2015) using the Pittsburgh Sleep Quality Index found that students with better academic performance reported significantly better sleep quality, shorter sleep latency, and more nightly sleep hours compared with their peers ($p < 0.001$). Nearby, Zafar et al. (2020) reported that a high prevalence of poor sleep quality (82.5%) was associated with poor academic outcomes and related factors such as shorter sleep duration and daytime sleepiness. These findings underscore the relevance of sleep quality to academic success in the Sudanese medical student context, though research remains limited (55,56)

Chapter Three

Methodology

3.1 Study Design

Descriptive cross-sectional study was used

3.2 Study Area

This study was conducted at Napata College, a private higher education institution located in Khartoum State, Sudan. The college offers several health-related programs including Bachelor of Medicine and Bachelor of Surgery (MBBS), Bachelor of Pharmacy, and Bachelor of Medical Laboratory Sciences. The total number of students is estimated to be about 1000–1500 students, and the total number of medical students is 429 students

3.3 Study Population

The study population was consisting of medical students at Napata college during the study period from Jan to March 2026

3.3.1 Inclusion Criteria:

1. Undergrad medical student in the second years to fifth year
2. Students who consent to participate in the study

3.3.2 Exclusion Criteria

1. Individuals who are not officially affiliated with the university.

3.4 Variables under the Study

3.4.1 Dependent Variable:

1. Academic performance

3.4.2 Independent Variable:

1. Sleep quality
2. Coping strategies

3.4.3 Background Variable:

1. Age
2. Gender
3. Academic year
4. Marital status

3.5 Sample Technique and Sample size

3.5.1 Sample Technique

Stratified convinces Sampling was used to selecting the participants from all included population. The population was divided into five strata based on academic year (1st, 2nd, 3rd, 4th and 5th year students). The number of students selected from each stratum was proportionally to the size of that academic year in the overall population.

3.5.2 Sample size

The sample size was calculated using Cochran's formula with a 95% confidence level and 5% margin of error, followed by finite population correction. Proportional allocation was used to distribute the sample across academic years.

$$n = \frac{Z^2 P(1-P)}{d^2}$$

Where:

n = required sample size

Z = Z value at 95% confidence level (1.96)

p = estimated proportion of adequate knowledge (50% used due to lack of local data)

d = margin of error (5%)

Using this formula:

$$n = \frac{1.96^2 0.5\ (1-0.5)}{0.05^2} = \frac{3.8416\ \times 0.5\ \times 0.5}{0.0025} = \frac{0.9604}{0.0025} \approx 384$$

Then using finite population correction

$n = (N \times n_0) / (n_0 + N - 1)$

n = sample size after correction

n_0 = initial sample size (for infinite population)

N = total population size

$n = (429 \times 384) / (384 + 429 - 1) = 164736 / 812 \approx 203$

The calculated sample size is 203 participants.

The total number of undergraduate medical students enrolled in the Faculty of Medicine at Napata collage during the academic year 2026 was 429 students, distributed across the first to fifth academic years.

The sample size was 203 students. To achieve representativeness, the sample was proportionally allocated to each academic year based on the relative number of students. Accordingly, 24 students were selected from the first year (out of 50 students), 59 students from the second year (out of 125 students), 31 students from the third year (out of 66 students), 37 students from the fourth year (out of 78 students), and 52 students from the fifth year (out of 110 students). This proportional allocation ensured that the final sample accurately reflected the distribution of the student population across different academic levels.

year	Total number	Proportion	Sample size
Frist	50 students	11.7%	24 students
Second	125 students	29.1%	59 students
Third	66 students	15.4%	31 students
Fourth	78 students	18.2%	37 students
Fifth	110 students	25.6%	52 students
Total	429 students	100%	203 students

3.6 Data Collection Techniques and Tools

3.6.1 Data Collection Techniques

Data was collected using a structured, self-administered questionnaire developed after reviewing relevant literature.

Data collection was conducted during the period from 20 march 2026 till 31 march 2026. The questionnaire was distributed as Google form in deferent platforms or use papers to fill it from the surrounding place, the participate was voluntary, and informed consent was obtained from all participants. Confidentiality and anonymity were maintained throughout the study.

3.6.2 Data Collection Tools

3.6.2.1 Questionnaire:

The questionnaire consists of the following sections:

- Section A: Demographic characteristics and academic performance

This section includes questions related to participants' background information such as: Age, Gender, Academic year, Marital status, in addition, academic performance was assessed using the last semester Grade Point Average (GPA) as reported by the students.

- Section B: Sleep quality assessment

Sleep quality was assessed using the Pittsburgh Sleep Quality Index.

This is a standardized and validated tool that evaluates sleep quality over the past month. It consists of multiple items assessing:

Sleep duration, Sleep latency, Sleep disturbances, Use of sleep medication, Daytime dysfunction

A global score was calculated, where higher scores indicate poorer sleep quality.

- Section C: Coping strategies for sleep management

This section includes questions developed based on previously reported sleep hygiene practices in the literature. It assesses the strategies used by students to improve or manage their sleep quality.

3.7 Data Management and Analysis

collected data was entered into Microsoft Excel for cleaning and coding, and then imported into SPSS version 26 for statistical analysis. Data was checked for completeness, consistency, and missing values.

Descriptive statistics was used to summarize the data, where categorical variables such as gender, academic year, marital status, and coping strategies was presented as frequencies and percentages. Sleep quality was assessed using the Pittsburgh Sleep Quality Index, and a global score was calculated, The Pittsburgh Sleep Quality Index (PSQI) includes 19 self-rated questions. These questions are grouped into 7 components, each scored from 0 (no difficulty) to 3 (severe difficulty). The scores of the 7 components are summed to produce a Global PSQI Score ranging from 0 to 21, where higher scores indicate poorer sleep quality. In most

studies, a Global Score ≤5 is considered good sleep quality, while a score >5 is considered poor sleep quality.

Inferential statistics was applied to assess associations between variables, where the Chi-square test was used to examine the relationship between sleep quality and categorical variables, and the independent t-test or Mann–Whitney U test was used to compare means between groups depending on the normality of the data. The association between coping strategies and sleep quality was analyzed using the Chi-square test. A p-value of less than 0.05 was considered statistically significant.

3.8 Ethical Considerations

-Written consent was obtained from each participating person, Appendices 2

-Ethical approval was obtained from the community medicine department at Faculty of medicine, Napata.

Chapter Four

Result

Table No (1): Demographic characters of medical students at Napata College in 2026 (N=203)

Demographic Characteristics		N (%)
Age		
	18-22	105 (51.7%)
	23-27	86 (42.4%)
	More than 27	12 (5.9%)
	Total	203 (100%)
Gender		
	Male	86 (42.4%)
	Female	117 (57/6%)
	Total	203 (100%)
Academic year		
	1st	24 (11.8%)
	2nd	59 (29.1%)
	3rd	31 (15.3%)
	4th	37 (18.2%)
	5th	52 (25.6%)
	Total	203 (%)
Marital status		
	Single	178 (87.7%)
	Married	17 (8.4%)

	Engaged	7 (3.4%)
	Divorced	1 (0.5%)
	Total	203 (100%)
GPA		
	0 - 1.9	0
	2.0-2.9	82 (40.4%)
	3.0-4.0	105 (51.7%)
	Total	203 (100%)

A total of 203 medical students participated in the study. Most students (51.7%) were aged 18–22 years, followed by 23–27 years (42.4%), and a small proportion were older than 27 years (5.9%). Regarding gender, 57.6% were female and 42.4% were male. Participants were distributed across academic years, with the highest proportion in the 5th year (25.6%) and the lowest in the 1st year (11.8%). Most students were single (87.7%), while smaller percentages were married (8.4%), engaged (3.4%), or divorced (0.5%). Academic performance measured by GPA showed that over half of the students (51.7%) had a GPA between 3.0–4.0, 40.4% had a GPA of 2.0–2.9, and none had a GPA below 2.0.

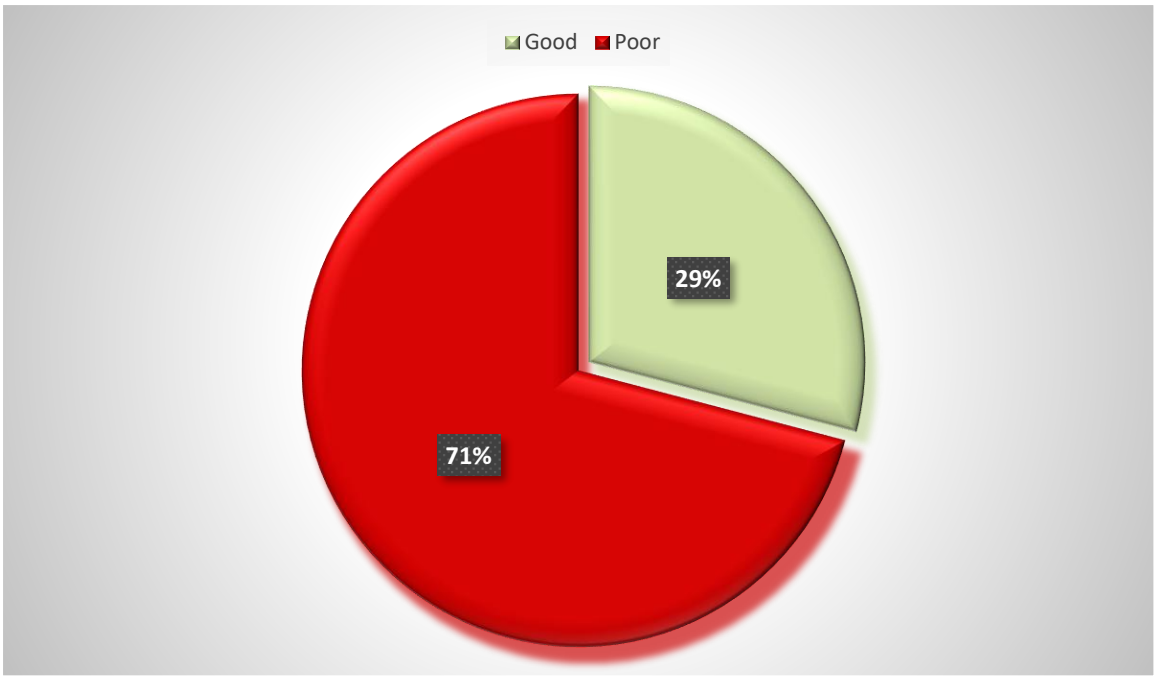


Figure No (1): Sleep quality among medical students at Napata College in 2026 (N=203)

Among the 203 medical students, the majority (70.9%) reported poor sleep quality, while only 29.1% had good sleep quality. This indicates that most students experienced difficulties with sleep.

Table No (2): Association between sleep quality and academic performance among medical students at Napata College in 2026 (N=203)

		Sleep Quality		
		Good	**Poor**	**Total**
Academic performance (GPA)	2.0–2.9	26 (44.1%)	72 (50%)	98 (48.3%)
	3.0–4.0	33 (55.9%)	72 (50%)	105 (51.7%)
	Total	59 (100%)	134 (100%)	203 (100%)
P value				0.442

The association between sleep quality and academic performance was analyzed using a chi-square test.

Among the 203 medical students, 98 students (48.3%) had a GPA of 2.0–2.9, and 105 students (51.7%) had a GPA of 3.0–4.0. Good sleep quality was reported by 26 students (44.1%) in the 2.0–2.9 GPA group and 72 students (50%) in the 3.0–4.0 GPA group. Poor sleep quality was reported by 33 students (55.9%) in the 2.0–2.9 GPA group and 72 students (50%) in the 3.0–4.0 GPA group.

The association between academic performance (GPA) and sleep quality was not statistically significant ($p = 0.442$).

Table No (3): Sleep quality among different age groups medical students at Napata College in 2026 (N=203)

		Sleep Quality		
		Good	**Poor**	**Total**
Age	**18-22 year**	34 (57.6%)	71 (49.3%)	105 (51.7%)
	23-27 year	21 (35.6%)	65 (45.1%)	86 (42.4%)
	More than 27	4 (6.8%)	8 (5.6%)	12 (5.9%)
	Total	59 (100%)	159 (100%)	209 (100%)
P value				0.457

The association between sleep quality and age groups was analyzed using a chi-square test.

Among the 209 medical students, 105 students (51.7%) were aged 18–22 years, 86 students (42.4%) were aged 23–27 years, and 12 students (5.9%) were older than 27 years. Good sleep quality was reported by 34 students (57.6%) in the 18–22 age group, 21 students (35.6%) in the 23–27 age group, and 4 students (6.8%) in the >27 age group. Poor sleep quality was reported by 71 students (49.3%), 65 students (45.1%), and 8 students (5.6%) in the same age groups, respectively.

Overall, 59 students (28.2%) had good sleep quality, while 159 students (71.8%) had poor sleep quality.

The association between age and sleep quality was not statistically significant ($p = 0.457$).

Table No (4): Sleep quality among different gender of medical students at Napata College in 2026 (N=203)

		Sleep Quality		
		Good	**Poor**	**Total**
Gender	Male	23 (39%)	63 (43.8%)	86 (8.1%)
	Female	36 (61%)	81 (56.3%)	117 (31.3%)
	Total	59 (100%)	144 (100%)	203 (100%)
P value				0.533

The relationship between sleep quality and gender was examined using a chi-square test. Among the 203 medical students, 86 were male and 117 were female. Good sleep quality was reported by 23 males (39%) and 63 females (43.8%), while poor sleep quality was reported by 36 males (61%) and 81 females (56.3%). Overall, 59 students (29.1%) had good sleep quality, and 144 students (70.9%) had poor sleep quality.

The association between gender and sleep quality was not statistically significant ($p = 0.533$).

Table No (5): Sleep quality among different academic year of medical students at Napata College in 2026 (N=203)

		Sleep Quality		
		Good	**Poor**	**Total**
Academic year	1st year	14 (23.7%)	10 (6.9%)	24 (11.8%)
	2nd year	17 (28.8%)	42 (29.2%)	59 (29.1%)
	3rd year	4 (6.8%)	27 (18.8%)	31 (15.3%)
	4th year	12 (20.3%)	25 (17.4%)	37 (18.2%)
	5th year	12 (20.3%)	40 (27.8%)	52 (25.6%)
	Total	59 (100%)	144 (100%)	203 (100%)
P value (X^2)				0.005

The association between sleep quality and academic year was analysed using a chi-square test.

A total of 203 medical students participated in the study. Sleep quality was significantly across academic years (p = 0.005). Among 1st-year students, 14 (23.7%) had good sleep quality, while 10 (6.9%) had poor sleep quality. In the 2nd year, 17 (28.8%) reported good sleep and 42 (29.2%) reported poor sleep. Third-year students had 4 (6.8%) with good sleep and 27 (18.8%) with poor sleep. Fourth-year students included 12 (20.3%) with good sleep and 25 (17.4%) with poor sleep. Fifth-year students showed 12 (20.3%) with good sleep and 40 (27.8%) with poor sleep. Overall, 59 students (29.1%) reported good sleep quality, whereas 144 students (70.9%) reported poor sleep quality.

Table No (6): Sleep quality among different marital status of medical students at Napata College in 2026 (N=203)

		Sleep Quality		
		Good	**Poor**	**Total**
Marital status	Single	53 (89.8%)	125 (86.6%)	178 (87.7%)
	Married	2 (3.4%)	15 (10.4%)	17 (8.3%)
	Engaged	4 (6.8%)	3 (2.1%)	7 (3.4%)
	Divorced	0 (0%)	1 (0.7%)	1 (0.5%)
	Total	25 (100%)	159 (100%)	209 (100%)
P value (X^2)				0.133

The relationship between sleep quality and marital status was examined using a chi-square test.

Among the 203 medical students, the majority were single 178 (87.7%), followed by married 17 (8.3%), engaged 7 (3.4%), and divorced 1 (0.5%). Good sleep quality was reported by 53 single students (89.8%), 2 married (3.4%), and 4 engaged (6.8%), while no divorced students reported good sleep. Poor sleep quality was reported by 125 single students (86.6%), 15 married (10.4%), 3 engaged (2.1%), and 1 divorced student (0.7%).

The association between marital status and sleep quality was not statistically significant ($p = 0.133$).

Table No (7): Coping strategies to deal with poor sleep quality among medical students at Napata College in 2026 (N=203)

Strategy	N (%)		Total
	Yes	No	N (%)
regular sleep schedule	139 (68.5%)	64 (31.5%)	203 (100%)
reduce smartphone or electronic device use before bedtime	122 (60.1%)	81 (39.9%)	203 (100%)
avoid drinking caffeine (coffee, tea, energy drinks) in the evening	131 (64.5%)	72 (35.5%)	203 (100%)
take daytime naps to compensate for poor night sleep	115 (56.7%)	88 (43.3%)	203 (100%)
manage study time to allow enough sleep.	139 (68.5%)	64 (31.5%)	203 (100%)
practice physical exercise to improve my sleep.	92 (45.3%)	111 (54.7%)	203 (100%)
use relaxation techniques before sleep (such as deep breathing or meditation).	82 (40.4%)	121 (59.6%)	203 (100%)
create a comfortable sleep environment (quiet, dark, and comfortable room).	156 (76.8%)	47 (23.3%)	203 (100%)
listen to music or calming sounds to help me fall asleep.	62 (30.5%)	141 (69.5%)	203 (100%)
use medications or sleep aids to help me sleep.	58 (28.6%)	145 (71.4%)	203 (100%)

The most commonly used coping strategies for improving sleep among students were creating a comfortable sleep environment (76.8%), following a regular sleep schedule (68.5%), and managing study time to allow enough sleep (68.5%). Other frequent strategies included avoiding caffeine in the evening (64.5%), maintaining a reduced use of smartphones or electronic devices before bedtime (60.1%), and taking daytime naps to compensate for poor night sleep (56.7%). Less commonly used strategies were practicing physical exercise (45.3%), using relaxation techniques such as deep breathing or meditation (40.4%), listening to music or calming sounds (30.5%), and using medications or sleep aids (28.6%).

Table No (8): Association between coping strategies and sleep quality among medical students at Napata College in 2026 (N=203)

Strategy	Median (IQR)		P value
	Yes	No	
regular sleep schedule	8 (5-11)	8 (5-13)	0.295
reduce smartphone or electronic device use before bedtime	8 (5-11)	8 (5-11.5)	0.800
avoid drinking caffeine (coffee, tea, energy drinks) in the evening	7 (5-7)	9 (5-12)	0.115
take daytime naps to compensate for poor night sleep	9 (6-11)	7 (4-10.75)	0.021
manage study time to allow enough sleep.	7 (5-11)	9 (5.25-11)	0.033
practice physical exercise to improve my sleep.	8.5 (6-11)	7 (5-11)	0.156
use relaxation techniques before sleep (such as deep breathing or meditation).	8 (5.75-10)	8 (5-11)	0.961
create a comfortable sleep environment (quiet, dark, and comfortable room).	8 (5-11)	9 (6-12)	0.061
listen to music or calming sounds to help me fall asleep.	8 (6-10)	8 (4.5-11)	0.645
use medications or sleep aids to help me sleep.	8 (5-11)	8.5 (6-(12.25)	0.052

The association between coping strategies and sleep quality (PSQI score) was assessed using the Mann–Whitney U test. Taking daytime naps to compensate for poor night sleep ($p = 0.021$) and managing study time to allow sufficient sleep ($p = 0.033$) were significantly associated with sleep quality. Students who reported these strategies showed different sleep quality scores compared to those who did not. In contrast, maintaining a regular sleep schedule ($p = 0.295$), reducing smartphone use before bedtime ($p = 0.800$), avoiding caffeine in the evening ($p = 0.115$), practicing physical exercise ($p = 0.156$), using relaxation techniques ($p = 0.961$), creating a comfortable sleep environment ($p = 0.061$), listening to calming sounds ($p = 0.645$), and using sleep medications ($p = 0.052$) were not significantly associated with sleep quality.

Chapter Five

1. Discussion

Discussion:

This cross-sectional descriptive study was conducted among 203 medical students at Napata College in 2026 to assess sleep quality and its association with academic performance.

The present study showed that poor sleep quality was common among medical students at Napata College, affecting 70.9% of the participants. This is a worrying finding because it means that most students were not sleeping well, which may affect their concentration and daily performance. This result is consistent with global evidence, where poor sleep quality among medical students has been widely reported, with prevalence estimates of 52.7% globally and 59.1% in the MENA region (23,42).

When compared with previous studies, the prevalence in this study appears relatively high. For example, Maheshwari and Shaukat reported poor sleep quality in 64.24% of students, while Ahrberg et al. found that 59% of students had poor sleep during exam periods. Other studies, such as those conducted in the Philippines and Croatia, also reported high but slightly lower rates. However, studies from the region, including Egypt and Saudi Arabia, have reported similarly high or even higher prevalence rates, suggesting that contextual factors such as stress and academic pressure may contribute to worse sleep quality (32-33,44-49).

In this study, no significant association was found between sleep quality and age, gender, GPA, or marital status. This suggests that poor sleep affects students across different demographic groups. Similar findings were reported in several studies, including those by Selim et al., Khaled et al., and Almalki et al., which also found no significant relationship between sleep quality and GPA. However, other studies, such as Maheshwari and Shaukat, Ahrberg et al., and the Sudanese study by Mirghani et al., reported a significant association between sleep quality and academic performance (32-34,41,44-50,55-56). This inconsistency may indicate that the relationship between sleep and academic performance is complex and influenced by multiple factors.

Academic year was the only variable significantly associated with sleep quality in this study. Poor sleep was more common among students in higher academic years, particularly in the fifth and third years, while first-year students reported better sleep quality. This may be explained by increased academic workload, clinical responsibilities, and stress in advanced years. Similar patterns have been observed in previous studies, where sleep quality worsened during periods of high academic demand, such as examinations and clinical training (34,45-53).

Regarding coping strategies, most students reported using practical approaches such as maintaining a comfortable sleep environment, following a regular sleep schedule, and managing study time. However, only two strategies—taking daytime naps and managing study time—showed a statistically significant association with sleep quality. The association with study time management suggests that better planning may help students maintain healthier sleep patterns. On the other hand, daytime napping may reflect a compensatory behavior among students who already experience poor nighttime sleep. Similar findings have been reported in studies linking poor sleep with academic stress, lifestyle factors, and irregular sleep habits (34,47-50).

Other coping strategies, including reducing smartphone use, avoiding caffeine, physical exercise, relaxation techniques, and using sleep aids, were not significantly associated with sleep quality. This may indicate that these strategies alone are not sufficient to improve sleep, or that their effects depend on consistency and combined use with other behaviors. Previous studies have also highlighted that sleep quality is influenced by multiple interacting factors rather than a single behavior (51-54).

Overall, the findings of this study highlight that poor sleep quality is highly prevalent among medical students and is more strongly associated with academic demands than with demographic factors. These results emphasize the importance of addressing sleep as a key component of student well-being, particularly in demanding academic environments. The findings are also supported by Sudanese studies, which have shown a link between sleep quality and academic outcomes, further highlighting the relevance of this issue in the local context (55,56).

Chapter Five

1. **Conclusion**
2. **Limitations**
3. **Recommendation**

Conclusion:

This study found that poor sleep quality is highly prevalent among medical students at Napata College, affecting more than two-thirds of participants. Sleep quality was not significantly associated with age, gender, GPA, or marital status, but showed a significant relationship with academic year, with poorer sleep observed in higher levels. Among coping strategies, only managing study time and taking daytime naps were significantly associated with sleep quality. Overall, the findings highlight that poor sleep is a common problem among medical students and is more related to academic demands than demographic factors.

Limitation

This study has several limitations that should be considered when interpreting the results. First, the cross-sectional design does not allow for establishing causality between sleep quality and associated factors. Second, the data were self-reported, which may introduce recall bias or subjective interpretation. Third, the study was conducted in a single institution, which may limit the generalizability of the findings to other settings. Additionally, some variables that may influence sleep quality, such as psychological stress and mental health status, were not assessed.

Recommendation

Based on the findings of this study, the following recommendations are suggested:

- Medical students should be encouraged to adopt better time management strategies to protect their sleep and reduce academic stress.
- Medical students should be guided to use effective coping strategies rather than relying on compensatory behaviors such as daytime naps.
- Universities should provide awareness programs about sleep hygiene and the importance of good sleep for academic performance and mental health.
- Academic schedules should be reviewed to reduce excessive workload, especially in higher academic years.
- Further studies are recommended to explore other factors affecting sleep quality, including psychological stress, lifestyle habits, and environmental conditions.

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Annexes

1. **Questionnaire**
2. **Informed consent**
3. **Map**
4. **Picture**

1. Study questionnaire (English version)

Sleep Quality and Its Association with Academic Performance among Medical Students at Napata College, 2026

Section A: Demographic characters, Academic performance

1.Age (by years): _____

2. Gender:

Male

Female

3. Academic year

Frist year

Second year

Third year

Fourth year

Fifth year

4. Marital state:

Single

Married

Engaged

Divorced

5. Your last semester grades (Last semester's GPA): _____

Section B: Pittsburgh Sleep Quality Index (PSQI)

This section uses the Pittsburgh Sleep Quality Index. (PSQI)

The following questions relate to your usual sleep habits during the past month only. Your answers should indicate the most accurate reply for the majority of days and nights in the past month.

During the past month, what time have you usually gone to bed at night? (in 24hours form)

During the past month, how long (in minutes) has it usually takes you to fall asleep each night?

- <15 minutes
- 16-30 minutes
- 31-60 minutes

- >60 minutes

During the past month, what time have you usually gotten up in the morning? (In 24-hour, format)

During the past month, how many hours of actual sleep did you get at night?

(Note: This may be different than the number of hours you spent in bed)

During the past month, how often have you had trouble sleeping because you cannot get to sleep within 30 minutes:

During the past month, how often have you had trouble sleeping because you wake up in the middle of the night or early morning?

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how often have you had trouble sleeping because you have to get up to use the bathroom?

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how often have you had trouble sleeping because you cannot breathe comfortably?

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how often have you had trouble sleeping because you cough or snore loudly:

Not during the past month (0)

Less than once a week (1)

Once or twice a week (2)

Three or more times a week (3)

During the past month, how often have you had trouble sleeping because you feel too cold?

- Not during the past month (0)

- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how often have you had trouble sleeping because you feel too hot?

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how often have you had trouble sleeping because you have bad dreams?

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how often have you had trouble sleeping because you have pain?

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how often have you had trouble sleeping because of other reason(s):

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

If you had other reason(s), please describe:

During the past month, how would you rate your sleep quality overall?

- Very Good (0)
- Fairly Good (1)
- Fairly Bad (2)
- Very Bad (3)

During the past month, how often have you taken medicine to help you sleep (prescribed or over the counter)

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how often have you had trouble staying awake while driving, eating meals, or engaging in social activity:

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

During the past month, how much of a problem has it been for you to keep up enough enthusiasm to get things done?

- Not during the past month (0)
- Less than once a week (1)
- Once or twice a week (2)
- Three or more times a week (3)

Section C: Coping strategies to manage the sleep quality:

I try to maintain a regular sleep schedule (going to bed and waking up at the same time).

Yes

No

I reduce smartphone or electronic device use before bedtime.

Yes

No

I avoid drinking caffeine (coffee, tea, energy drinks) in the evening.

Yes

No

I take daytime naps to compensate for poor night sleep.

Yes

No

I manage my study time to allow enough sleep.

Yes

No

I practice physical exercise to improve my sleep.

Yes

No

I use relaxation techniques before sleep (such as deep breathing or meditation).

Yes

No

I create a comfortable sleep environment (quiet, dark, and comfortable room).

Yes

No

I listen to music or calming sounds to help me fall asleep.

Yes

No

I use medications or sleep aids to help me sleep.

Yes

No

I use other strategy _____

2 .الإستبيان

جودة النوم وعلاقتها بالأداء الأكاديمي بين طلاب الطب في كلية نبتة، ٢٠٢٦

القسم (أ): الخصائص الديموغرافية والأداء الأكاديمي

١. العمر (بالسنوات): _____

٢. الجنس:

☐ ذكر

☐ أنثى

٣. السنة الدراسية:

☐ السنة الأولى

☐ السنة الثانية

☐ السنة الثالثة

☐ السنة الرابعة

☐ السنة الخامسة

٤. الحالة الاجتماعية:

☐ أعزب

☐ متزوج

☐ مخطوب

☐ مطلق

٥. درجاتك في آخر فصل دراسي (المعدل التراكمي للفصل الأخير): _____

القسم (ب): مقياس جودة النوم في بيتسبرغ

يستخدم هذا القسم مقياس جودة النوم في بيتسبرغ.

تتعلق الأسئلة التالية بعادات نومك المعتادة خلال الشهر الماضي فقط. يجب أن تعكس إجاباتك الوضع الأكثر دقة لمعظم الأيام والليالي خلال الشهر الماضي.

خلال الشهر الماضي، في أي وقت كنت تذهب عادةً إلى السرير ليلاً؟

بنظام ٢٤ ساعة: _____

خلال الشهر الماضي، كم من الوقت (بالدقائق) كنت تحتاج عادةً لتغفو كل ليلة؟

☐ أقل من ١٥ دقيقة

☐ من ١٦ إلى ٣٠ دقيقة

☐ من ٣١ إلى ٦٠ دقيقة

☐ أكثر من ٦٠ دقيقة

خلال الشهر الماضي، في أي وقت كنت تستيقظ عادةً في الصباح؟

بنظام ٢٤ ساعة: _____

خلال الشهر الماضي، كم عدد ساعات النوم الفعلية التي كنت تحصل عليها ليلاً؟

ملاحظة: قد يختلف ذلك عن عدد الساعات التي تقضيها في السرير

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم لأنك لم تتمكن من النوم خلال ٣٠ دقيقة؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب الاستيقاظ في منتصف الليل أو في الصباح الباكر؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب الحاجة للذهاب إلى الحمام؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب عدم القدرة على التنفس بشكل مريح؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب السعال أو الشخير بصوت عالٍ؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب الشعور بالبرد الشديد؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب الشعور بالحر الشديد؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب الأحلام المزعجة؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب الألم؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في النوم بسبب أسباب أخرى؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

إذا كانت هناك أسباب أخرى، يرجى ذكرها: _____

خلال الشهر الماضي، كيف تقيم جودة نومك بشكل عام؟

☐ جيدة جداً – ٠

☐ جيدة إلى حد ما – ١

☐ سيئة إلى حد ما – ٢

☐ سيئة جداً – ٣

خلال الشهر الماضي، كم مرة تناولت أدوية لمساعدتك على النوم (بوصفة طبية أو بدون وصفة)؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، كم مرة واجهت صعوبة في البقاء مستيقظاً أثناء القيادة أو تناول الطعام أو الأنشطة الاجتماعية؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

خلال الشهر الماضي، إلى أي مدى كانت لديك مشكلة في الحفاظ على الحماس الكافي لإنجاز الأمور؟

☐ لم يحدث خلال الشهر الماضي – ٠

☐ أقل من مرة في الأسبوع – ١

☐ مرة أو مرتين في الأسبوع – ٢

☐ ثلاث مرات أو أكثر في الأسبوع – ٣

القسم (ج): استراتيجيات التكيف لإدارة جودة النوم

أحاول الحفاظ على جدول نوم منتظم (النوم والاستيقاظ في نفس الوقت).

☐ نعم

☐ لا

أقلل من استخدام الهاتف الذكي أو الأجهزة الإلكترونية قبل النوم.

☐ نعم

☐ لا

أتجنب تناول الكافيين (القهوة، الشاي، مشروبات الطاقة) في المساء.

☐ نعم

☐ لا

آخذ قيلولة نهارية لتعويض قلة النوم الليلي.

☐ نعم

☐ لا

أنظم وقت دراستي للسماح بالحصول على نوم كافٍ.

☐ نعم

☐ لا

أمارس التمارين الرياضية لتحسين نومي.

☐ نعم

☐ لا

أستخدم تقنيات الاسترخاء قبل النوم (مثل التنفس العميق أو التأمل).

☐ نعم

☐ لا

أهيئ بيئة نوم مريحة (هادئة، مظلمة، ومريحة).

☐ نعم

☐ لا

أستمع إلى الموسيقى أو الأصوات الهادئة لمساعدتي على النوم.

☐ نعم

☐ لا

أستخدم أدوية أو مساعدات للنوم.

☐ نعم

☐ لا

استخدم طرق أخرى

3.**Written content**

Participation in this research is entirely voluntary. All information provided in response to the attached questionnaire will be handled confidentially and in an organized manner to ensure participants' privacy. This includes the use of serial numbers only, without recording any direct personal identifiers such as names, phone numbers, or home addresses.

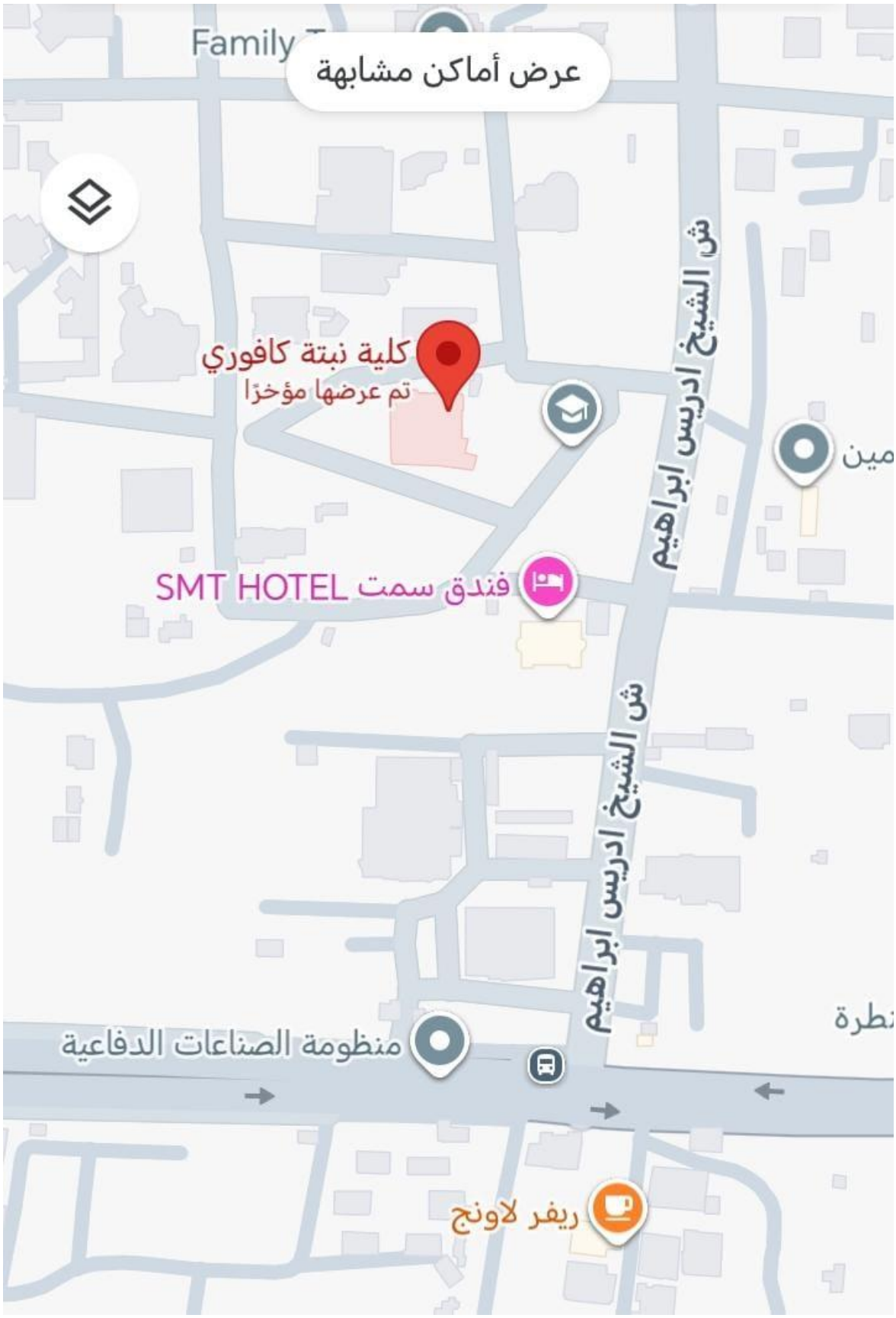
Participants have the right to be informed of the results of the study. We confirm that there are no risks to participants involved in this research after obtaining approval from the relevant authorities. There are no financial benefits associated with participation in this study.

All participants have the right to withdraw from the study at any time without providing any reason.

Thank you for your cooperation and participation.

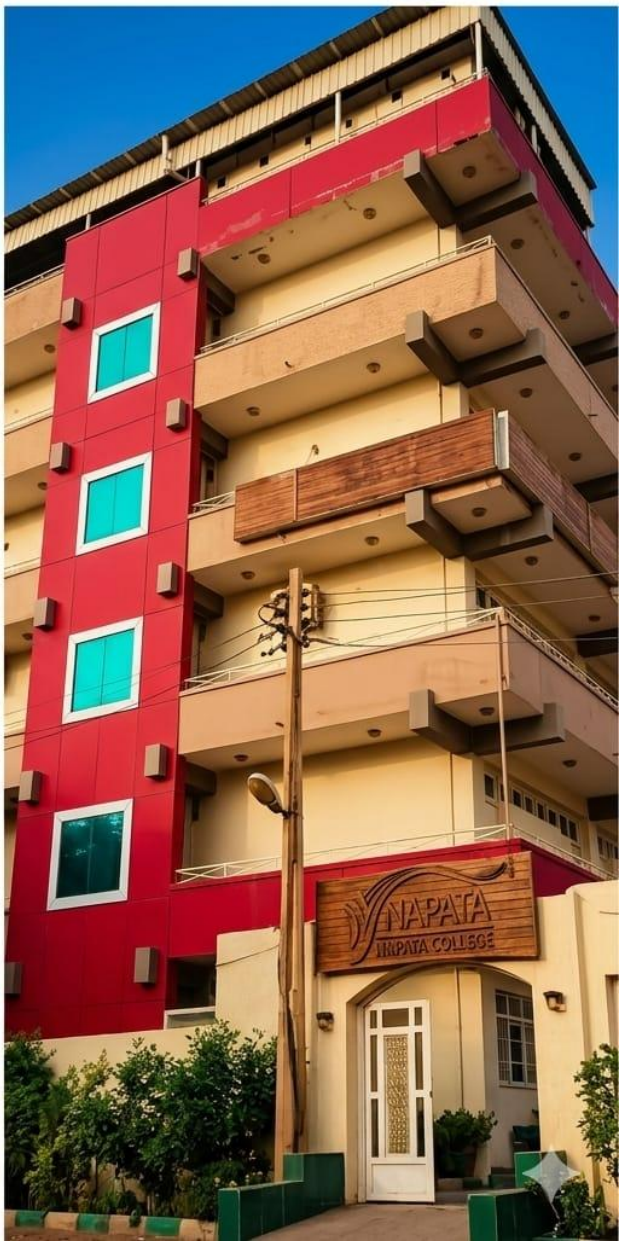
Signature of consent: _____.

4**. Maps**


عرض أماكن مشابهة
كلية نبتة كافوري
تم عرضها مؤخرًا
فندق سمت SMT HOTEL
ش الشيخ ادريس ابراهيم
ش الشيخ ادريس ابراهيم
منظومة الصناعات الدفاعية
ريفر لاونج

5. Picture:


كلية نبتة
NAPATA COLLEGE
كلية نبتة
NAPATA COLLEGE


NAPATA
NAPATA COLLEGE