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Impact of Sleep Quality and Patterns on Academic Performance among College Students

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ABSTRACT

Sleep is essential to academic success, profoundly influencing various cognitive functions that underlie effective learning. During sleep, the brain engages in vital processes that solidify memories formed throughout the day, enhancing retention and comprehension of information. The present study was planned to determine the impact of sleep quality on student's academic performance. A sample size of 120 students from college living in hostels and with families. Sleep quality scale (SQS) was used to measure the six domains: daytime sleepiness, restoration after sleep, problem initiating and maintaining sleep, difficulty waking, and sleep satisfaction among college students. Academic performance was calculated through CGPA. For data analysis, the Pearson correlation coefficient and t-test were employed.

Keywords: Sleep patterns, Sleep quality, Sleep deprivation, REM sleep, Cognitive function, Study habits, Hostelers, Memory consolidation

INTRODUCTION

The quality of sleep is an important variable that directly influences the academic performance of college students. In their quest for higher education, students often encounter mounting academic pressures, such as heavy coursework, looming deadlines, and social obligations that may lead to unfortunate sleep deprivation. The malevolent cycle of poor sleep not only affects the total hours of rest acquired but also their quality, which is very important for good cognitive performance and general academic excellence.

A full sleep cycle typically lasts around 90 minutes and consists of several stages, broadly divided into non-REM sleep and REM sleep.

The relationship between academic achievement and sleep is complex and interdependent. Whereas the need to excel in academics and subsequent performance impacts sleep, it may also be that the quality and time of sleep impact academic outcomes. The pressure to perform in academics, such as due dates, and tests, and seeking excellent grades, contributes to heightened anxiety and stress. Whenever students start complaining about their poor performance in class, the inhibition to relax and fall asleep may be impaired, leading to delayed periods before sleep onset and poor quality of sleep. Generally, students have inappropriate sleep patterns because of different study schedules, late-night assignments, and engaging in social activities. Mostly, students who prioritize studying or engage in extra work at night go to bed later at night, thereby interfering with their circadian rhythm and leading to sleep deprivation. The period preceding examinations frequently results in students forfeiting sleep to engage in additional study, a behavior commonly identified as "all-nighters." This temporary lack of sleep can result in immediate reductions in cognitive performance, further negatively impacting outcomes due to hindered memory

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consolidation and difficulties with attention

Hypotheses:

H1: There will be no significant impact of sleep quality on academic performance among college students.

H2: There will be significant impact of sleep quality on academic performance among college students.

H3: There will be a significant difference between sleep quality and academic performance among hosteller students and students living with family.

H4: There will be no difference between sleep quality and academic performance among male and female students.

Objectives :

- To study the effect of sleep quality on academic performance among college students.
- To study the difference between sleep quality and academic performance among male and female students.
- To study the difference between sleep quality and academic performance among hostellers and students living with their families.

Review of Literature:

The connection between the quality of sleep and academic performance has been extensively investigated, showing stable correlations among various demographic groups. El Hangouche *et al.* (2018) established that inadequate sleep quality and psychological distress were significant predictors of diminished academic success among medical students in Morocco. Likewise, Maheshwari and Shaukat (2020) in Pakistan observed that students with poor sleep patterns exhibited lower GPAs, thereby highlighting the detrimental impact of disrupted sleep on cognitive processes such as learning and memory. Adelantado-Renau *et al.* (2024) stressed that enhanced sleep quality is related to better academic performance among students; they also acknowledged internet use as a mediator variable. Studies in Saudi Arabia (Bahammam *et al.*, 2024) and Ethiopia (Lemma *et al.,* 2014) provided additional evidence for these findings; they concluded that sleep quality, rather than sleep time itself, is a significant predictor of academic performance. Studies, by Toscano-Hermoso *et al.* (2020) and from Rwanda, pointed out how gender differences and contextual features, such as academic workload and stress, affect poor sleep, which increases dysfunction during clinical rotations, so several studies show it is necessary to approach both with interventions that promote sleep hygiene as well as reduce stress, making both student well-being as well as academic performance recommendations needed for educational and behavioral revisions within the student population.

Such findings from analyzed research emphasize the significant impacts that academic stress causes on mental well-being, sleep quality, and the general outcome of academic activities among students in universities. Both of the studies, therefore, present recurring themes such as how increased stress impacts rigorous periods of academic pursuit, accompanying psychological challenges, and the immediate need for intensive interventions to redress those difficulties.

Bouloukaki *et al.* (2023) assessed the quality of sleep and degree of fatigue among university students before and during examination periods, with a significant decrease in sleep quality and an increase in fatigue levels during the examination periods. It found certain variables that affected these factors such as age, gender, depressive symptoms, and changes in lifestyle, like physical activity, smoking, and caffeine consumption. These findings emphasize the physiological and behavioral changes students experience under academic stress, reinforcing the need for specific wellness strategies during periods of high pressure.

Similarly, Madani *et al.* (2024) explored the experiences of Moroccan medical students and found high levels of perceived stress that were significantly correlated with increased anxiety, poor sleep quality, and lower academic performance. These findings highlight the psychological and educational pressures that come with stress, particularly in demanding fields like medical education. Moreover, they highlight the role of stress as a critical factor that impacts students' mental health and academic performance The research by various scholars from 2020 to 2023 offers essential insights into the link between sleep quality and student academic performance in different educational contexts.

Jalali *et al.* (2020) investigated the relationship between sleep quality and academic performance at Kermanshah University of Medical Sciences using the Pittsburgh Sleep Quality Index (PSQI). Their cross-sectional study indicated no notable differences in sleep quality between high and low academic achievers, though

sleep disturbances were common in both groups. The authors stressed the need for further extended research to investigate the intricate connection between sleep and academic success.

Likewise, Alotaibi *et al.* (2020) researched medical students at a Saudi medical college and discovered a significant association between poor sleep quality and increased stress levels. However, while a correlation between poor sleep and high stress was noted, no direct effect on academic performance was confirmed. The study underscored the necessity for further exploration of the interaction between stress and sleep and their impact on academic results, suggesting that additional factors may explain the need for more significant findings regarding sleep quality and academic performance.

Thabit and Alsulami (2023) concentrated on pharmacy students in Saudi Arabia, highlighting the negative impact of disrupted sleep patterns, particularly shorter sleep before exams and the use of insomnia medication. Their study established a clear link between these factors and course failures. Importantly, they found that each extra hour of sleep on exam nights reduced the chances of failing, while insomnia medications raised the risk of failure. Their findings emphasized the need for good sleep hygiene to enhance academic performance, advocating for institutional support in fostering healthy sleep habits. Okano *et al.* (2019) conducted a study using wearable activity trackers among college chemistry students, finding that improved sleep quality, longer sleep duration, and regular sleep patterns correlated with better academic performance, especially in quizzes and midterms. The study showed that sleep factors accounted for about 25% of the variance in academic performance, supporting that long-term sleep quality is a better predictor of academic success than sleep the night before a test.

Finally, Suardiaz-Muro *et al.* (2023) assessed the effects of sleep quality and deprivation during exam periods at the Universidad Autónoma de Madrid. Their study identified a positive correlation between sleep quality and academic performance. Students reported sleeping less than desired on weekdays and weekends, with weekday sleep deprivation adversely impacting their academic performance perceptions. Despite this, most students believed better sleep would improve their academic results. The study further noted that poor sleep quality and deprivation were prevalent during academic stress periods, negatively affecting performance.

These studies reveal the intricate link between sleep quality, deprivation, and academic performance. While results differ, key themes arise: sleep quality, duration, and consistency significantly influence academic success, and sleep disruptions harm performance. However, some studies, like those by Alotaibi *et al.* (2020) and Jalali *et al.* (2020), indicate that other factors, such as stress and personal lifestyle may influence sleep's direct impact on academic results. The overall findings highlight the need for more research, especially longitudinal studies, to clarify these connections and examine the mechanisms affecting sleep's role in academic performance.

METHODOLOGY

Material and Method Used:

The research investigation involved a total sample of 120, comprising both male and female collegiate students. To achieve a representative allocation across diverse demographic categories, random sampling was used through Google Forms, which facilitated the acquisition of data that illustrates a range of attributes within the student demographic.

The Sleep Quality Scale is used to analyze sleep quality through standardized measurements of the different aspects of sleep. It covers duration, sleep efficiency, disturbances, and satisfaction. Therefore, the scale provides a complete picture of how well students slept and whether that could have provided a reason for negative impacts on their daily functioning.

Besides this, sleep quality was monitored, while academic performance was measured through the overall CGPA of students during the study. The CGPA is an objective measure of the student's academic achievements and outcomes of the student across the college period. The research tried, therefore, to establish significant correlations between the habits of sleeping among university students and their academic achievements by integrating the two metrics: sleep quality and CGPA. Such findings would finally guide interventions designed to enhance both sleep hygiene and academic performance.

RESULTS AND DISCUSSION

The demographic data indicates the balanced and symmetrical distribution on the basis of gender and living conditions of the individuals. The equal distribution enhances the generalizabilty and avoids sampling bias

Table 1 : Demographic Details of the Respondents		
Demographic Details	Category	Percentage
Gender	Male	50.0 %
	Female	50.0%
Living Condition	Hostelers	50.0%
	With Family	50.0%

(Table 1).

The Pearson correlation coefficient (r=-.055) indicates a weak negative correlation between SQS and CGPA. The significance level is 0.549 which is much greater than 0.05 shows there is no significant relationship between the SQS and CGPA. The weak correlation indicates that there is no linear relationship between two variables. The r^2 value is 0.0030 which represents that only 0.30% of the variance in CGPA can be explained by the variable SQS in the dataset (Table 2).

Table 2 : Pearson Correlation between SAS (Sleep Quality Scale) Score and CGPA		
Pearson Correlation	CGPA	Significance level (p<0.05)
SQS	-.055	0.549 (No)
CGPA	-.055	0.549 (No)

The t value (-1.092) shows the significant difference between individuals living in hostels and individuals living with their families. The p-value (.004) indicates that the difference between hostelers and individuals living with families is statistically significant. The t-value for both groups is shown as 1.092, indicating that the mean value for Hostelers is slightly lower than the mean for those Living with Family. The difference shows that students living with families tend to have higher sleep and academic performance than hostelers.

Table 3 : Independent Sample t-test Based on Living Condition		
	t value	Significance level (p<0.05)
Hostelers	-1.092	.004 (Yes)
With Family	-1.092	.004(Yes)

The t value (.109) and significance level (.726) indicate that there is no statistically significant difference between males and females in terms of sleep and academic performance.

Table 4 : Independent Sample t-test Based on Gender		
	t value	Significance level (p<0.05)
Male	.109	-.726
Female	.109	-.729

Conclusion:

The Pearson correlation coefficient indicates a weak negative correlation between the variable of sleep quality (SQS) and academic performance, hence accepting the null hypothesis. The difference was noted as being statistically significant, regarding the variable of students staying in hostels in contrast to those living with family. The student performances are superior, as the subjects have stayed with their family members in contrast to their counterparts in hostels. Thus, it suggests the living environment impacts student's performances and their well-being as well.

No significant differences were found between the male and female respondents concerning their sleep habits and performance in school. This suggests that gender is not an influencing factor in these areas of the sample population, though other studies that involve other factors might give a different impression.

REFERENCES

Adelantado-Renau, M., Diez-Fernandez, A., Beltran-Valls, M.R., Soriano-Maldonado, A. and Moliner-Urdiales, D. (2019). The effect of sleep quality on academic performance is mediated by Internet use time: DADOS study. *J. Pediatr. (Rio J).*, **95**(4):410-418.

Alotaibi, A.D., Alosaimi, F.M., Alajan, A.A. and Bin Abdulrahman, K.A. (2020). The relationship between sleep quality, stress, and academic performance among medical students. *J. Family Community Med.,* **27**(1) : 23-28.

Bahammam, A.S., Alaseem, A.M., Alzakri, A.A., Almeneessier, A.S. and Sharif, M.M. (2012). The relationship between sleep and wake habits and academic performance in medical students: a cross-sectional study. *BMC Medical Education*, 1-6.

Bouloukaki, I., Tsiligianni, I., Stathakis, G., Fanaridis, M., Koloi, A., Bakiri, E., Moudatsaki, M., Pouladaki, E. and Schiza, S. (2023). Sleep Quality and Fatigue during Exam Periods in University Students: Prevalence and Associated Factors. *Healthcare*, **11**(17) : 1-11.

El Hangouche, A.J., Jniene, A., Aboudrar, S., Errguig, L., Rkain, H., Cherti, M. and Dakka, T. (2018). Relationship between poor quality sleep, excessive daytime sleepiness and low academic performance in medical students. *Adv. Med. Educ. Pract.,* **9**:631-638. 10.2147/AMEP.S162350.

Jalali, R., Khazaei, H., Paveh, B. K., Hayrani, Z. and Menati, L. (2020). The Effect of Sleep Quality on Students Academic Achievement. *Adv. Med. Educ. Pract*., **11**:497-502.

10.2147/AMEP.S261525.

Lemma, A. (2014) Minding the Body: the body in psychoanalysis and beyond. London: Routledge.

Madani, H.E., Aarab, C., Tachfouti, N., Fakir, S.E., Aalouane, R. and Berraho, M. (2024). Correlates of perceived stress with anxiety symptoms sleep quality and academic performance among Moroccan students. *Educación Médica,* **25** (6): 1-9.

Maheshwari, G. and Shaukat, F. (2019). Impact of Poor Sleep Quality on the Academic Performance of Medical Students. *Cureus*, **11**(4):e4357.

Okano, K., Kaczmarzyk, J. R., Dave, N., Gabriel, J. D.E. and Grossman, J. C. (2019). Sleep quality, duration, and consistency are associated with better academic performance in college students. *npj Sci. Learn,* **4**(1): 1-5.

Suardiaz-Muro, M., Ortega-Moreno, M., Morante-Ruiz, M., Monroy, M., Ruiz, M.A., Martín-Plasencia, P. and Vela-Bueno, A. (2023). Sleep quality and sleep deprivation: relationship with academic performance in university students during examination period. *Sleep Biol Rhythms*, **21**(3):377-383.

Thabit, A. K. and Alsulami, A. A. (2023). Impact of Sleep Pattern of Pharmacy College Students on Academic Performance. *Sleep Vigil.*, 43-47.

Toscano-Hermoso, M.D., Arbinaga, F., Fernández-Ozcorta, E.J., Gómez-Salgado, J. and Ruiz-Frutos, C. (2020). Influence of Sleeping Patterns in Health and Academic Performance Among University Students. *Internat. J. Environ. Res. Public Health,* **17**(8):2760

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