

RELATIONSHIP BETWEEN SLEEP QUALITY AND ACADEMIC PERFORMANCE AMONG NURSING STUDENTS OF SWAT

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INTRODUCTION

Sleep is fundamental for humans, crucial for both our physical and mental health. Adequate rest boosts productivity, safeguards mental wellness, and enriches overall life quality. Not only it stabilizes but also better a wide range of memories.^{1,2} Not only does sleep deprivation impair memory consolidation, but it also hinders the very formation of memories. Diverse factors, from age and profession to social dynamics, mental well-being, and unique bodily attributes, influence our sleep rhythms, crafting a complex tapestry of rest patterns.^{3,4} Student sleep patterns and habits directly impact academic outcomes. Across various fields, including medicine and biology, it's well-acknowledged that a restful night's sleep is pivotal for maintaining emotional balance, motivation, memory, and cognitive functions. It's during sleep that the brain processes new information and weaves intricate connections.^{5,6} Insufficient sleep can result in challenges with verbal communication, along with

psychological and neurocognitive issues. Numerous experts across fields concur that adults typically require approximately eight hours of sleep to function optimally and maintain overall well-being.⁸ Studies indicate that limited sleep among college students can hinder their academic success. Additionally, research suggests a link between students with academic prowess and those experiencing poor sleep quality, both facing challenges in acclimating to college life.⁹ The link between university academic achievements and subsequent career success is a pressing concern for students and parents alike. High academic performance often translates to stellar entrance exam scores and enhanced career prospects. Motivation and a supportive home atmosphere further bolster academic success. However, poor sleep can impede the learning process and diminish academic outcomes.^{10,11} While poor sleep quality and insufficient rest are prevalent among young adults and college students, recent research indicates that university students face sleep challenges at nearly double the rate of the broader population.¹² Over time,

ABSTRACT

OBJECTIVES

This study aims to explore the relationship between academic achievements and sleep quality in nursing students.

METHODOLOGY

This descriptive cross-sectional study was conducted across five distinguished nursing colleges in Swat, a sample size of 161 nursing students was purposefully selected using a convenience sampling approach. Data collection encompassed a triad of instruments, commencing with an initial set of socio-demographic inquiries. Subsequently, the Pittsburgh Sleep Quality Index (PSQI) was employed for a comprehensive assessment of sleep patterns, and the Academic Performance Scale (APS) was utilized to measure and document the academic proficiency of the participating students.

RESULTS

The study revealed that out of total, a nearly half were female (51.6%) with 3rd-year students leading at 40.4%, followed by 1st and 2nd years at 20.5% each, and 4th year at 18.6%. Almost half (48%) reported sleeping 6-7 hours nightly, 25.5% claimed 5-6 hours, and 10.6% slept under 5 hours. Most (45.3%) took 31-60 minutes to drift off. Importantly, better sleep quality was positively linked with academic performance, evidenced by a Pearson correlation test of $r=0.508$, $p<0.05$.

CONCLUSION

Students with a PSQI score above 5, signifying subpar sleep quality, showcased diminished academic results. A restful sleep is pivotal for nursing students, not just for daily rejuvenation, but also for optimized learning and retention. It's imperative for both students and educators to recognize the academic repercussions of sleep deprivation and actively promote healthier sleep habits for enhanced academic outcomes.

KEYWORDS: Sleep Quality, Academic Performance, Nursing Student

sleep duration among students has seen a decline. In 1969, students averaged 7.5 hours of sleep, but by 1989, this decreased to 6.5 hours. While 2001 maintained the 1989 average, dissatisfaction rose to 71% from 68% in 1992, a significant increase from just 24% in 1978.¹³ Poor sleep and its subsequent effect on academic performance predominantly impact females. About a third experience pronounced daytime drowsiness and psychological distress, which in turn, correlates with diminished academic outcomes.¹⁴ Our study seeks to unravel the intricate relationship between sleep quality and academic prowess among nursing students. Venturing beyond mere correlations, we aim to discern how a student's performance intertwines with their sleep quality, spotlighting influential factors like creativity and motivation.

METHODOLOGY

In a meticulously designed quantitative, cross-sectional study spanning five distinct nursing colleges in the Swat region. The research involved 161 participants, chosen using an epidemiological calculator with a 95% confidence level and a 5% confidence interval. Our multifaceted questionnaire encompassed three dimensions: socio-demographic details, the revered Pittsburgh Sleep Quality Index (PQSI), and academic performance gauged via GPA. Ensuring the robustness of our research, we employed the well-established PQSI questionnaire, crafted by luminaries like Buysse, Reynolds, Monk, Berman, and Kupfer in 1989. Impressively, the overall reliability coefficient (Cronbach's Alpha) stood at a commendable 0.83, attesting to the studies rigor.¹⁵ Ethical approval was secured from the esteemed ERC of Royal College of Nursing, Swat. With utmost respect for participant autonomy, informed consents were diligently acquired, complemented by permissions granted by the principal figures of the chosen colleges.

RESULTS

The distribution of students according to socio-demographics variables are shown in Table 1. The majority of the students are between 18 and 22 years old, with only 3 students older than that. The gender distribution is almost balanced, with slightly more female (51%) students than male students. The most common year of study is the 3rd year (40.4%), followed by the 1st (20.5) and 2nd year (20.5%), and the least common is the 4th year (18.6%) respectively.

Table 1: Shows Socio-Demographic Variables Distribution

Variable	Options	Frequency	%Age
Age	18-22	158	98.1
	23-26	03	1.9
Gender	Male	78	48.4
	Female	83	51.6
Year	1st year	33	20.5
	2nd year	33	20.5
	3rd year	65	40.4
	4th year	30	18.6

The distribution of students according to sleep characteristics. Table 2 shows distribution of students according to sleep characteristics including (period in minutes' student take to fall sleep each night, period of actual sleep, student's subjective assessment of his or sleep quality). Describe each findings of study properly of table 2 in description.

Table 2: The Distribution of Students According to Sleep Characteristics

Period taken to fall sleep (in minutes)	N	%Age
1- 15 minutes	23	14.3
16-30minutes	42	26.1
31-60 minutes	73	45.3
>60minutes	23	14.3
Total	161	100
Sleep duration (in hours)		
>7 Hours	26	16.1
6-7 hours	77	47.8
5-6 hours	41	25.5
<5 hours	17	10.6
Total	100	100
Subjective sleep assessment		
very good	85	52.8
fairly good	47	29.2
fairly bad	22	13.7
very bad	07	4.3
Total	100	100

Mean time for actual sleep (in hours) was (6.75±1.84). Mean time for student to fall sleep in minutes was (28.00±15.44). Mean Differences of Age and Gender According to Quality of Sleep Table 3 delineates the mean variations based on age and gender in relation to sleep quality. The findings revealed no notable discrepancies in age or gender concerning sleep quality. Write results in proper format with t test value, mean and SD and p –value.

Table 3: Mean Differences of Age and Gender According To Sleep Quality

P-Value	t-test	Mean ± SD	N	Sleep Quality	Variable
0.385	0.734	20.22 ± 1.02	98	Poor(>5) 0.411	Age (years)
		20.88 ± 1.04	63	Good (≤5)	
0.385	0.734	20.66 ± 0.7	84	Poor(>5) 0.411	Gender (M/F)
		20.58 ± 0.55	77	Good (≤5)	

*p value ≤ 0.05 was significant

The Association between Quality of Sleep and Academic performance, Table 4 illustrates the relationship between sleep quality and academic performance in alignment with students' initial course results. A noteworthy connection emerged, with 56.8% of students facing poor sleep quality experiencing failure in one or more subjects while 64.9% of students having poor sleep quality but having success in all subjects.

Table 4: Association between Sleep Quality and Academic Performance

Sleep Quality	Academic performance		Total	χ^2	P-value	Odds ratio	95% CI
	Success in all subjects	Fail in one or more subjects					
Poor (>5)	76 (64.9)	25 (56.8)	101(62.7)	4.421	0.029*	2.83	1.635-3.318
Good (\leq 5)	41 (35.1)	19 (43.2)	60 (37.3)				
Total	117 (100.0)	44 (100.0)	161 (100.0)				

The table 5 presents a Pearson correlation coefficient between APS and PSQI scores. A notable coefficient of 0.508 emerges, underscored by a significant value of 0.000. This hints at a moderate positive association between the two scores. Simplified, better sleep quality (reflected by higher PSQI scores) corresponds to improved academic performance (higher APS scores). Essentially, as students sleep better, they perform better academically.

Table 5: Correlation between Overall Sleep Quality and Academic Performance

PSQI	Pearson Correlation Sig. (2-tailed) N	01	0.508
		161	161
APS	Pearson Correlation Sig. (2-tailed) N	0.508**	01
		161	161

DISCUSSION

This research was conducted across five diverse nursing colleges in Swat, spanning both public and private sectors. The study aimed to evaluate sleep quality among these students and understand how sleeps quality and duration, especially during exam preparation, influence their academic outcomes. The average actual sleep duration was approximately (6.75±1.84) hours, with 47.8% of students achieving at least 6 hours of nighttime sleep. On average, students took about (28.00±15.44) minutes to drift off, with 45.3% requiring 30 minutes or longer to enter slumber. In a comparable study conducted in Saudi Arabia, 44.7% of students managed to get at least 6 hours of

sleep at night, while a significant 78.1% experienced delays in falling asleep right away.¹⁶ For optimal academic performance, it's essential that students allocate sufficient time for rest, ideally between 7 to 9 hours nightly. This ensures they're refreshed and mentally prepared for their studies.¹⁷ Getting less sleep can result in stress, impaired focus, physical exhaustion, and reduced coordination, making it essential to prioritize adequate rest for overall well-being and effectiveness.¹⁸ In this recent study, just 16.1% reported sleeping over 7 hours. This aligns with findings from Kenya, where only 31.6% of undergraduate students achieved 7 or more hours of sleep nightly.¹⁹ Our findings align with other studies which indicate that more than 50% of college students report experiencing poor sleep quality and sleep interruptions.^{20,21} A study in Northwest Ethiopia mirrored our findings, revealing that 70% of university students experienced subpar sleep quality.²² The elevated prevalence of suboptimal sleep quality in nursing students might stem from their prolonged, intense study schedules, clinical responsibilities, and tasks that could disrupt regular lifestyles and sleeping patterns.²³ our study identified a notable link between sleep quality and academic outcomes, with 56.8% of students who failed in one or more subjects reporting poor sleep quality. Another related study indicated that both insufficient and sufficient sleep significantly impacted academic performance. Sufficient sleep showed a strong positive association with good academic results (r=0.769), while insufficient sleep negatively correlated (r=-0.518), suggesting it contributes to lower academic achievements.²⁴ Some of the findings are quite similar to a study conducted in Iran during COVID-19 in which they identified a notably elevated rate of depression and subpar sleep quality among medical and nursing students undergoing clinical rotations.²⁵

LIMITATIONS

The study strongly suggests few limitations. This study, centered on the territory of Swat, offers insights limited to that region and may not represent nursing students elsewhere. Being cross-sectional, it provides a momentary snapshot, potentially missing evolving sleep and academic patterns. Relying on self-reported sleep data, rather than objective tools like polysomnography, may affect data accuracy. Additionally, external factors such as mental health conditions, medication, or lifestyle habits weren't considered, potentially influencing results. Lastly, a limited sample size might constrain the study's ability to pinpoint significant trends or correlations.

CONCLUSIONS

As we conclude this research endeavor, the message is unequivocal-nurturing healthy sleep habits is not merely a prescription for physical well-being but a potent elixir for unlocking the dormant potential within each nursing student, paving the way for a brighter academic journey. In the realm of academia, a good night's sleep emerges as an invaluable ally, a secret weapon waiting to be harnessed for unparalleled success.

CONFLICT OF INTEREST: None

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