Original Article

Prevalence of Insomnia among Undergraduate Nursing Students in Peshawar

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ABSTRACT

Background: Insomnia is a prevalent sleep disorder that significantly impacts the quality of life and academic performance of individuals, particularly among university students. Understanding the prevalence and characteristics of insomnia in this demographic, especially in nursing students who face unique academic and clinical stressors, is crucial for developing effective interventions.

Objective: This study aims to determine the prevalence of insomnia among undergraduate nursing students in Peshawar and to analyze its association with demographic factors like gender, age, marital status, academic year, and socio-economic status.

Methods: A descriptive cross-sectional study was conducted over six months from July to December 2023 at Private Nursing Institutes in Peshawar. The study included 377 participants aged between 18 to 25 years. Participants with medical conditions affecting sleep, those on sedatives or hypnotics, and those currently engaged in clinical rotations or internships were excluded. Data on demographics, socioeconomic status, and insomnia were collected using the Athens Insomnia Scale (AIS). SPSS version 26.0 was used for data analysis.

Results: Out of 377 participants, 70.3% were male and 29.7% were female, with a mean age of 21.5±3.5 years. In terms of marital status, 9.8% were married and 90.2% were unmarried. The prevalence of insomnia among the participants was found to be 52.8%, with higher occurrence in males (35.5%) than females (17.3%). The frequency of insomnia varied across academic years, with the highest prevalence in the third year (25.5%).

Conclusion: The study highlights a significant prevalence of insomnia among nursing students in Peshawar, with various demographic factors influencing its occurrence. These findings underscore the need for targeted sleep health interventions in nursing education to improve the overall well-being and academic performance of nursing students.

Keywords: Insomnia, Nursing Students, Prevalence, Sleep Disorders, Athens Insomnia Scale, Undergraduate.

INTRODUCTION

Insomnia, a prevalent sleep disorder characterized by difficulty in initiating or maintaining sleep, early awakenings, and non-restorative sleep, is a significant health concern in the industrialized world (1). This condition, which affects the quality and quantity of sleep, is intricately linked to our circadian system, influenced by physiological functions, work schedules, and various health conditions, including genetic factors (3). Young adults, according to the National Sleep Foundation and the American Academy of Sleep Medicine and Sleep Research Society, are recommended to achieve 7-9 hours of sleep to maintain optimal health and cognitive function (4)(5).

A substantial proportion of college students, particularly those in demanding fields like nursing, report poor sleep quality and general sleep difficulties, such as frequent awakenings, difficulty initiating sleep, and low total sleep time. Approximately 10% of college students meet the DSM-5 diagnostic criteria for insomnia, with 12% to 13% experiencing clinically significant levels of this sleep disorder (5). Notably, the prevalence of insomnia among university students varies, with studies reporting rates between 9.4% and 38.2%, and the weighted mean prevalence of poor sleep quality in this demographic is 18.5%, significantly higher than the general

population's 7.4% (6). This heightened prevalence is particularly concerning given that up to 60% of college students suffer from poor sleep quality (7), and the age range of university students, typically 18 to 23 years, is a critical period of personal, social, and academic development (8).

The relationship between sleep and academic performance is well-established, with numerous studies highlighting a positive correlation between poor sleep and academic challenges, including lower grades and negative academic outcomes (4). Factors contributing to poor sleep hygiene among students are multifaceted, encompassing lifestyle choices such as caffeine and energy drink consumption, use of stimulants and alcohol, and pre-sleep technology use. Environmental factors like uncomfortable sleeping conditions, academic workload, gender differences, and worrying in bed also play significant roles. Additionally, sleep disorders like obstructive sleep apnea and restless legs syndrome further exacerbate insomnia patterns in this population (6).

Nursing students, in particular, are at an elevated risk for sleep disorders. Studies suggest that 30% of nursing students have poor sleep habits, and one in four reports symptoms of insomnia (9). The rigorous academic workload, strict deadlines, and high expectations inherent in nursing programs contribute to chronic stress, anxiety, and poor sleep quality (7)(11). Academic stress, a prominent factor in insomnia among nursing students, is compounded by the demands of coursework, clinical rotations, and work schedules, leading to a high incidence of sleepless nights. Additionally, poor time management skills, like procrastination and ineffective study strategies, further contribute to the development of insomnia and poor sleep quality in this group (12).

In summary, insomnia is a significant problem among university students, with nursing students being particularly susceptible due to the unique challenges and stressors of their academic and clinical training. The prevalence and impact of poor sleep quality in this population underscore the need for targeted interventions and support systems to improve sleep hygiene and overall well-being.

MATERIAL AND METHODS

In this descriptive cross-sectional study, conducted over a six-month period from July to December 2023, a total of 377 participants of both genders were recruited from Private Nursing Institutes in Peshawar. The inclusion criteria for participants were an age range of 18 to 25 years and enrollment in nursing programs. Exclusion criteria were stringent: individuals engaged in clinical rotations or internships, those diagnosed with medical conditions that could affect sleep patterns, such as chronic pain or neurological disorders, and those using sedatives or hypnotics were excluded from the study.

Prior to data collection, detailed demographics of each participant were meticulously recorded, following the procurement of written consent. This process was essential to ensure ethical compliance and the voluntariness of participation. The officials of the respective classes were informed in advance about the session's timing and location, facilitating the organization of the lecture theater to accommodate all participants. The study's objectives, methodology, and instructions for completing the questionnaire were clearly communicated to all participants. The adherence to ethical guidelines was paramount, with the assurance that participation was voluntary and that all data gathered would be used solely for the purposes of this study.

The primary tool for data collection was the Athens Insomnia Scale (AIS), which was employed to calculate the frequency of insomnia among the participants. Additional data regarding socioeconomic and marital status were also collected. The data collection procedure was conducted in an organized and systematic manner, ensuring the accuracy and reliability of the data obtained.

Following the completion of data collection, the data was analyzed using the Statistical Package for the Social Sciences (SPSS), version 26.0. This analysis involved a comprehensive examination of the collected data, with a focus on identifying patterns and correlations relevant to the study's objectives. The utilization of SPSS version 26.0 enabled a robust and detailed analysis, contributing significantly to the reliability and validity of the study's findings.

RESULTS

In the study conducted to assess the prevalence of insomnia among undergraduate nursing students in Peshawar, the demographic characteristics of the participants, as depicted in Table 1, reveal a notable gender disparity. Out of 377 participants, a significant majority, 70.3% (n=265), were male, while females comprised 29.7% (n=112) of the sample. The mean age of participants was 21.5 years, with a standard deviation of ±3.5 years. Regarding marital status, the majority of the participants, 90.2% (n=340), were unmarried, while a small fraction, 9.8% (n=37), were married. Notably, there were no divorced or widowed participants in the study. The distribution of participants across different academic years showed variability. The first-year Bachelor of Science in Nursing (BSN) students accounted for 19.1% (n=72), second-year students for 29.4% (n=111), third-year students formed the largest group at 39.3% (n=148), and fourth-year students constituted 12.2% (n=46) of the total. Socio-economic status, categorized by monthly income, indicated that 43.0% (n=162) of participants earned between Rs. 5,000 to 10,000, 28.1% (n=106) earned Rs. 11,000 to 15,000, and 28.9% (n=109) had an income ranging from Rs. 16,000 to 20,000.

Table 1: Demographic characteristics

Variables	Frequency	Percentage
Gender		
Male	265	70.3
Female	112	29.7
Mean age	21.5±3.5	
Marital status		
Married	37	9.8
Unmarried	340	90.2
Divorced	0	0
Widowed	0	0
Academic year		
BSN first year	72	19.1
BSN second year	111	29.4
BSN third year	148	39.3
BSN fourth year	46	12.2
Socio-economic status		
Rs. 5,000-10,000 per month	162	43.0
Rs. 11,000-15000 per month	106	28.1
Rs. 16,000-20,000 per month	109	28.9
Other	0	0

Table 2: Frequency of insomnia among undergraduate nursing students (Sex-distribution)

Variables	Frequency (n=377)	Percentage (%)
Insomnia		
No insomnia	178	47.2
Insomnia	199	52.8
Sex-distribution		
Female	65	17.3
Male	134	35.5

Table 2 presents the frequency of insomnia among the participants, segmented by gender. Of the total participants, 52.8% (n=199) reported experiencing insomnia, while 47.2% (n=178) did not have insomnia. A breakdown by gender showed that among those with insomnia, females accounted for 17.3% (n=65) and males for 35.5% (n=134).

Table 3: Frequency of insomnia among undergraduate nursing students (Academic year distribution)

Variables	Frequency (n=377)		Percentage
Insomnia status (Academic year distribution)	No insomnia	Insomnia	
BSN first year	50	22	5.9
BSN second year	58	53	14.0
BSN third year	52	96	25.5
BSN fourth year	18	28	7.4
Total	178	199	52.8

The distribution of insomnia across different academic years, as detailed in Table 3, further elucidates the prevalence of insomnia among the participants. In the first year, 22 students (5.9%) reported insomnia, while 50 did not. The second year had a higher incidence, with 53 students (14.0%) experiencing insomnia and 58 not. The third year showed the highest frequency of insomnia, with 96 students (25.5%) affected and 52 not. Lastly, in the fourth year, 28 students (7.4%) reported insomnia, with 18 not experiencing it. The overall percentage of participants with insomnia was 52.8% (n=199).

These results highlight the significant prevalence of insomnia among undergraduate nursing students, with notable variations across gender, academic year, and socio-economic status. The higher rates of insomnia in certain academic years and among male

participants point to the need for targeted interventions and further research to understand the underlying causes and implications of these patterns.

DISCUSSION

The investigation into the prevalence of insomnia among undergraduate nursing students in Peshawar provided significant insights, aligning with the broader body of research that underscores insomnia as a major public health issue. Consistent with previous studies, the research revealed that insomnia significantly impacts both individuals and society, with prevalence rates varying widely, typically between 10% and 30% (13)(14). This variability in incidence estimates highlights the complexity of defining and measuring insomnia across different populations and settings.

Our study discovered an insomnia prevalence rate of 52.8%, which is in line with or even higher than previous research conducted in various university settings (13,14,16,17). This high prevalence might be attributed to the unique stressors faced by nursing students, including rigorous academic requirements and clinical demands. It is interesting to note that our study indicated a higher prevalence of insomnia among male participants, which differs from some other studies. For instance, a study at the Kyoto Prefectural University of Medicine found a 27% prevalence of insomnia among nursing students, with the DSM-5 criteria identifying 51.9% of participants as insomniac (18). Similarly, research in Egypt reported a 33.4% prevalence of insomnia among the elderly in Alexandria (19), while a study by Park et al. in Korea found that 79.8% of nurses experienced low sleep quality (15).

Our research utilized the Athens Insomnia Scale (AIS), revealing that 199 (52.8%) participants experienced insomnia, with a higher proportion of males (134, 35.5%) compared to females (65, 17.3%) (Table 1). This gender discrepancy in insomnia prevalence within our study could be attributed to the lower participation of female students. Additionally, the AIS results indicated that more than half of the nurses surveyed experienced moderate to severe levels of insomnia (20), aligning with other studies that reported varying prevalence rates of chronic insomnia among college students (21).

When assessing the severity of insomnia across different academic years, we found that 178 (47.2%) participants did not exhibit symptoms of insomnia. The distribution of insomnia across academic years showed that higher years tended to have higher rates of insomnia, with 96 (25.5%) participants in the BSN third year experiencing insomnia compared to 22 (5.9%) in the BSN first year (Table 3). This trend could be related to increasing academic and clinical pressures as students progress through their nursing education.

The study's findings emphasize the substantial prevalence of insomnia among undergraduate nursing students and its potential negative impact on their well-being, happiness, and academic performance. Factors such as college-related stress, irregular schedules, challenging courses, clinical rotations, and gender disparities contribute to sleep disturbances. Given the unique sleep-related challenges faced by nursing students, it is imperative to develop and implement targeted therapies and support programs.

In terms of strengths, the study's comprehensive approach and the use of a validated tool like AIS for measuring insomnia are notable. However, the study is not without limitations. The sample is restricted to a single geographic area and one field of study, which may limit the generalizability of the findings. Additionally, the cross-sectional design of the study precludes the establishment of causality. Future research should focus on a broader population and consider longitudinal designs to better understand the causal relationships. Furthermore, exploring the effectiveness of interventions and preventive measures in reducing insomnia prevalence in this demographic is an essential area for future investigation.

CONCLUSION

This study conclusively demonstrates a high prevalence of insomnia among undergraduate nursing students in Peshawar, underscoring its significant impact on their well-being, academic performance, and overall quality of life. The findings highlight the need for targeted interventions and support mechanisms, considering factors like academic stress, irregular schedules, and the rigorous demands of nursing education. These insights bear crucial implications for educational institutions and healthcare policymakers, emphasizing the importance of incorporating sleep health into student wellness programs and curricula. Addressing these challenges is vital for fostering a healthier, more productive learning environment for nursing students, ultimately contributing to the betterment of future healthcare professionals.

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Insomnia Among Nursing Students in Peshawar
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