

The Relationship Between Academic Stress and Sleep Quality in Nursing Students at the Indonesian Muslim University

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Abstract

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Background: Stress is a common part of student life due to various academic and personal demands. Academic stress, if not properly managed, can negatively impact sleep, a vital physiological process that supports physical, psychological, social, and cognitive functions.

Objective: This study aimed to examine the relationship between academic stress and sleep quality among nursing students.

Methods: An analytical descriptive study with a cross-sectional design was conducted among 51 nursing students from the class of 2024 at the Indonesian Muslim University. Academic stress and sleep quality were measured using validated questionnaires, and data were analyzed using the Chi-square test.

Results: Among respondents, 33 students (64.7%) with mild academic stress reported poor sleep quality, while 10 students (19.6%) with mild stress had good sleep quality. Eight students (15.7%) with severe academic stress reported poor sleep quality, and no respondents with severe stress reported good sleep quality. Statistical analysis showed a significant association between academic stress and sleep quality (χ^2 , $p = 0.000 < 0.05$).

Conclusion: Academic stress is significantly associated with sleep quality among nursing students at the Indonesian Muslim University. It is recommended that students receive education on stress management strategies to reduce academic stress and its negative impact on sleep.

Keywords: Academic stress; nursing students; sleep quality

Introduction

One of the major health problems affecting academic performance is academic stress, as students are a vulnerable group to stress originating from academic life (Hamzah & Rahmawati, 2020). Academic demands, which students must continually face, are a frequent source of stress at both school and university levels (Lumban Gaol, 2016). Students are particularly vulnerable to academic stress during transitions at individual and social levels (Hamzah & Hamzah, 2020). Academic stress can be defined as stress arising from academic activities (Tarwiyah, Mayasari, & Pratama, 2020) and occurs when academic demands exceed an individual's adaptive resources (Afifah & Wardani, 2019). It also involves the interaction between environmental stressors, cognitive appraisal, coping mechanisms, and physiological or psychological responses (Arslan, 2015). Stress has thus become an inherent part of student life due to multiple internal and external demands (Hamzah & Hamzah, 2020).

Academic stress is caused by several factors, including workload, extensive material to study, need for achievement, exam anxiety, multiple assignments, poor test scores, bureaucratic challenges, career and major decisions, time management, and cultural factors (Ika, 2019). Stress levels are also influenced by students' semester levels (Suwartika, Nurdin, & Ruhmadi, 2015). The World Health Organization has described stress as the "Health Epidemic of the 21st Century" (American Psychological Association, 2017), with approximately 800,000 annual suicides globally, including cases linked to academic stress among young people (WHO, 2019). Studies indicate that the prevalence of student stress ranges from 38–

71% worldwide, 39.6–61.3% in Asia, and 36.7–71.6% in Indonesia (Ambarwati, Pinilih, & Astuti, 2017). In the United States, 60% of students experience increased stress, 40% report dysfunction due to depression, 60% experience severe anxiety, and 13% report suicidal thoughts (American College Health Association, 2018). Additionally, a study by Lemma, Gelaye, Berhane, Worku, and Williams (2012) found that 0.8% of students had symptoms of depression, 58% had anxiety symptoms, 34.1% experienced stress, and 55.8% reported poor sleep quality (Wahyuni, 2018). Similar findings were reported in highly competitive programs in Saudi Arabia, where stressors such as academic overload and language barriers increased the risk of stress-related complications (Alsulami et al., 2018).

In Indonesia, academic stress among students is increasing annually. The National Commission for Child Protection (2012) reported a 98% monthly increase in cases of stress among children in 2011 compared to the previous year (Barseli et al., 2020). At the University of Muhammadiyah Magelang, a preliminary study of ten final-year students found that seven experienced stress symptoms, including irregular sleep, decreased appetite, anxiety, restlessness, and fear (Ambarwati et al., 2017). Unmanaged stress can negatively affect sleep, which is crucial for maintaining physical, psychological, social, and cultural functions (Cates et al., 2015).

Sleep is a vital process that provides rest to the mind and body while maintaining the functioning of vital organs such as the heart, lungs, liver, and circulatory system. Sleep quality depends on factors such as age, activities, and health conditions (Reza, Berawi, Karima, & Budiarto, 2019). It encompasses both quantitative (duration) and qualitative (depth, continuity) aspects and is considered good if no signs of sleep deprivation are present (Bloemen, Handayani, Salikunna, & Towidjojo, 2020; Nilifda, Nadjmir, & Hardisman, 2016). Poor sleep quality among students can impair concentration, learning motivation, critical thinking, physical health, and academic performance (Tjang & Arista, 2017; Eliasson & Lettieri, 2016). Sleep disorders are common among adolescents and young adults, with prevalence estimates ranging from 15% to 35% in the general population (Haryati & Yunaningsi, 2018; Fenny & Supriatmo, 2016). In Indonesia, approximately 20% of adults report experiencing sleep disorders (Wicaksono, Yusuf, & Widyawati, n.d.).

Based on preliminary interviews with 51 nursing students of the class of 2024, 20 reported experiencing academic stress, and 22 reported sleep problems. These observations highlight the need to investigate the relationship between academic stress and sleep quality. Therefore, this study aims to examine the relationship between academic stress and sleep quality among nursing students, particularly at the Indonesian Muslim University, addressing a significant gap in understanding how academic pressures affect student well-being.

Methods

Study Design

This study employed a descriptive-analytical method with a cross-sectional design to examine the relationship between academic stress (independent variable) and sleep quality (dependent variable) among nursing students.

Samples

The study population included all active nursing students of the class of 2021 at the Muslim University of Indonesia, Faculty of Community Health. Total sampling was used to include all eligible students. Inclusion criteria were: (1) active enrollment in the nursing program, and (2) willingness to participate as respondents. Exclusion criteria were: (1) students on academic leave, and (2) students experiencing significant health problems within one month prior to data collection that could interfere with participation.

Instruments

Academic stress was measured using the Academic Stress Scale (ASS) developed by Kohn and Frazer (2015), consisting of 40 items on a 4-point Likert scale (1 = strongly disagree, 4 = strongly agree). The reliability of the ASS in this study was 0.88. Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI) developed by Smyth (2012), which includes 18

items across seven components: subjective sleep quality, sleep latency, sleep duration, habitual sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. Higher PSQI scores indicate poorer sleep quality, and its reliability in this study was 0.88.

Data Collection

Primary data were collected through online questionnaires administered via Google Forms and shared through WhatsApp. Each participant completed both the ASS and PSQI questionnaires. The data collection procedure ensured that respondents understood the study objectives and procedures before participation.

Data Analysis

Data analysis included univariate analysis to describe each variable and bivariate analysis using the Chi-square test to examine the relationship between academic stress and sleep quality. Data were processed and analyzed using computerized statistical software.

Ethical Considerations

Ethical approval was obtained prior to the study. Informed consent was secured from all participants, and the confidentiality of personal data was strictly maintained. Information obtained was used solely for research purposes.

Results

Respondent Characteristics

Table 1 presents the distribution of respondents based on gender. The majority of respondents were female (88.2%), while male respondents accounted for 11.8%. This indicates that the study population is predominantly female, reflecting the typical composition of nursing students at the Indonesian Muslim University.

Table 1. Frequency Distribution of Respondent Characteristics Based on Gender in the Nursing Study Program, Indonesian Muslim University

Gender	n	%
Female	45	88.2
Male	6	11.8

Source: SPSS Processed Data, 2024

Academic Stress

Table 2 shows the frequency distribution of respondents according to academic stress levels. Most students experienced mild academic stress (84.3%), while a smaller portion reported severe academic stress (15.7%). This indicates that academic stress is common among the nursing students, but severe stress is less frequent.

Table 2. Distribution of Respondent Frequencies Based on Academic Stress in the Nursing Study Program, Indonesian Muslim University

Academic Stress	n	%
Mild	43	84.3
Severe	8	15.7

Source: SPSS Processed Data, 2024

Sleep Quality

Table 3 illustrates the distribution of respondents based on sleep quality. Only 10 students (19.6%) reported good sleep quality, whereas 41 students (80.4%) reported poor sleep quality. This shows that the majority of nursing students in the study experienced sleep disturbances, highlighting a potential impact of academic stress on sleep.

Table 3. Distribution of Respondent Frequencies Based on Sleep Quality in the Nursing Study Program, Indonesian Muslim University

Sleep Quality	n	%
Good	10	19.6
Poor	41	80.4

Source: SPSS Processed Data, 2024

Relationship Between Academic Stress and Sleep Quality

Table 4 shows the relationship between academic stress and sleep quality. Among students with mild academic stress, 10 students (19.6%) had good sleep quality, and 33 students (64.7%) had poor sleep quality. All students with severe academic stress (15.7%) reported poor sleep quality. The Chi-square test yielded a p-value of 0.000 (<0.05), indicating a statistically significant relationship between academic stress and sleep quality. This finding suggests that higher academic stress is associated with poorer sleep quality among nursing students.

Table 4. The Relationship Between Academic Stress and Quality Sleep in the Nursing Study Program Indonesian Muslim University

Academic Stress	Sleep Quality				Total		p
	Good		Poor		n	%	
	n	%	n	%			
Mild	10	19.6	33	64.7	43	84	0.000
Severe	0	0	8	15.7	8	16	$\alpha < 0.05$
Total	10	19.6	41	80.4	51	100	

Source: SPSS Processed Data, 2024

Discussion

Academic Stress

The study revealed that most nursing students of the 2021 class at the Muslim University of Indonesia experienced mild academic stress (84.3%), while a smaller portion experienced severe academic stress (15.7%). This finding aligns with Sulana, Sekeon, & Mantjoro (2020), who reported that the majority of students in their study experienced mild academic stress (67.5%). Similarly, Harahap (2020) found that most students had moderate academic stress (75%), while a smaller proportion had high or low stress levels. Academic stress is influenced by various internal and external factors, including heavy workload, extensive study material, performance expectations, exam anxiety, numerous assignments, bureaucratic processes, decisions regarding majors or careers, and time management challenges (Ika, 2019; Suwartika et al., 2015). The results indicate that academic stress remains a significant concern for students, particularly in highly competitive academic environments.

Sleep Quality

The study also found that most students experienced poor sleep quality (80.4%), while only a minority reported good sleep quality (19.6%). This result is consistent with previous studies, such as Fenny & Suppriatmo (2016), who found that 61.7% of students had poor sleep quality, and Sulana et al. (2020), where 83.1% of students reported poor sleep. Sleep quality is influenced not only by sleep duration but also by depth and continuity of sleep (Lisiswanti et al., 2019). Poor sleep can negatively affect physical and psychological health, leading to fatigue, reduced immunity, slow wound healing, stress, anxiety, depression, and decreased cognitive performance (Budyawati, Utami, & Widyadharma, 2019).

Relationship Between Academic Stress and Sleep Quality

The analysis showed a significant relationship between academic stress and sleep quality ($p = 0.000 < 0.05$). Most students with mild academic stress still experienced poor sleep quality (64.7%), while all students with severe academic stress had poor sleep quality (15.7%). These findings are consistent with Sulana (2020) and Maisa (2021), who found significant positive correlations between academic stress and poor sleep quality among students. Physiologically, stress increases hormones such as cortisol, epinephrine, and norepinephrine, which stimulate the central nervous system and reticular activating system, leading to heightened alertness and difficulty falling asleep (Firstika, Karim, & Woferst, 2020; Mayoral, 2016). Thus, students may experience sleep disturbances without being fully aware that stress is the underlying cause. Overall, this study confirms that academic stress is a major factor affecting students' sleep quality. Managing academic stress through counseling, time management training, and stress reduction strategies may help improve sleep quality and overall student well-being.

Conclusion

Based on the results of this study, most nursing students of the 2021 class at the Muslim University of Indonesia experienced mild academic stress (84.3%) and poor sleep quality (80.4%). A significant relationship was found between academic stress and sleep quality ($p = 0.000$), indicating that higher academic stress is associated with poorer sleep quality. These findings have practical implications for nursing education and student well-being. Universities and faculty should implement programs to help students manage academic stress, such as stress management workshops, counseling services, time management training, and mindfulness or relaxation interventions. Improving academic stress management may enhance students' sleep quality, overall health, and academic performance. For future research, longitudinal studies are recommended to explore the causal relationship between academic stress and sleep quality over time. Additionally, examining the effectiveness of specific stress-reduction interventions on sleep quality in nursing students could provide valuable evidence for policy and program development.

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