

The Correlation Between Sleep Quality and the Occurrence of Academic Burnout Among Medical Students

Charyn*, Tri Lidya Anggraini, Ali Napiah Nasution

Universitas Prima Indonesia, Indonesia

Email: Yangcharyn675@gmail.com*, trilidyaanggraini@unprimdn.ac.id,
alinapiahnasution@unprimdn.ac.id

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ABSTRACT

Academic burnout is a condition characterized by emotional exhaustion, high levels of cynicism, and a decline in personal achievement among students, with a global prevalence ranging from 44.2% to 71%. These high rates are influenced by various lifestyle factors, particularly poor sleep habits, which can negatively impact physical health, cognitive function, social interactions, and psychological well-being. Symptoms include fatigue, confusion, mood swings, agitation, depression, and an increased risk of chronic degenerative diseases. This research aims to identify the relationship between sleep quality and the incidence of academic burnout among 2025-cohort medical students at Universitas Prima Indonesia (UNPRI). A cross-sectional design was employed, involving 2025-cohort medical students at FK UNPRI. Sleep quality and academic burnout were assessed using the Pittsburgh Sleep Quality Index (PSQI) and Copenhagen Burnout Inventory-Student Survey (CBI-SS) questionnaires, distributed online. The majority of students (82%) were found to have poor sleep quality, and more than half (56.4%) exhibited symptoms of academic burnout. Bivariate analysis confirmed a significant association student with poor sleep quality were 1.84 times more likely to experience academic burnout compared to those with good sleep quality ($p=0.012$; $PR=1.84$; 95% $CI=1.02-3.31$). This study concludes that there is a significant association between sleep quality and the incidence of academic burnout among 2025-cohort medical students at UNPRI. These findings highlight the importance of improving sleep quality as a preventive measure against academic burnout in medical students.

INTRODUCTION

Burnout is "a syndrome that arises from chronic work stress that is not managed properly," according to the World Health Organization (WHO). This condition has three main characteristics: students feel very tired and depleted of energy, begin to be cynical about their studies, and feel incompetent in carrying out their academic roles (Ryan et al., 2023). College students tend to be more prone to experiencing academic burnout because of the demands of learning that provide high pressure and require concentration, attention, and effort to redouble, compared to students at the primary and secondary education levels (Kaggwa et al., 2021).

The rate of academic burnout among students turns out to be much higher than many assume. Various surveys noted that the prevalence ranged from 44.2% to 71% in students from various majors and locations (Safitri et al., 2025). This condition is even more striking in the

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medical education environment cross-country studies report that the incidence of burnout in medical students varies greatly, ranging from 9.9% to 75% (Veni Fidia Mandasari Putri et al., 2021).

In Indonesia, this phenomenon has not escaped the attention of researchers. Mulyono and Alif (2024) found that more than half of medical students at Tarumanegara University (62.1%) and University of North Sumatra (56.8%) have felt the impact (Bendesa et al., 2025). Furthermore, academic pressure seems to be increasingly high as the COVID-19 pandemic hit. A study at the Faculty of Medicine, Trisakti University revealed that 62.5% of students experienced mild burnout, while another 32.7% were already at moderate to severe levels a picture that reflects how vulnerable medical students are when the learning system is shaken (Tjhin et al., 2025).

Burnout not only impacts academic performance, but also threatens overall mental health. This condition is closely related to the emergence of mood disorders, anxiety, and depression. Individuals who experience it tend to withdraw from the environment, feel unappreciated, are easily ignited by emotions, have difficulty concentrating, and lose enthusiasm to carry out daily activities (M. Ramadhan et al., 2022). It doesn't stop there, burnout also leaves traces on physical conditions ranging from headaches, muscle pain, indigestion, to decreased appetite. If left untreated, the risk of cardiovascular disease will also increase significantly (Purnama Sari et al., 2023). The triggering factors for academic burnout in students are very diverse, including study load pressure, personality characteristics, learning environment conditions, availability of social support, physical activity levels, and inadequate sleep quality (Amelia et al., 2023).

The density of academic and social demands faced by students often takes up their rest time, leading to sleep disturbances. This is in line with various research findings that consistently show that the sleep quality of medical students is below good standards. A meta-analysis study that summarized data from 54,894 medical students found that more than half (55.64%) had suboptimal sleep quality (Binjabr et al., 2023). This condition has even worsened during the COVID-19 pandemic research at the Faculty of Medicine, University of North Sumatra noted that 38.2% of college students have difficulty starting sleep, while another 66.4% have moderate to poor sleep patterns (Amelia et al., 2023).

A person's sleep quality can be influenced by a variety of factors, including environmental, physiological, psychological, habit, and physical aspects (Nelson et al., 2022). Noisy sleeping environments, uncondusive lighting, and unhygienic conditions can directly interfere with sleep comfort. Likewise, there are health problems such as nervous disorders, hormonal imbalances, and insomnia, plus a high workload and psychological stress experienced on a daily basis.

The short-term effects of poor sleep quality include decreased memory, concentration, and learning capacity, as well as increased susceptibility to stress, anxiety, and depression which can ultimately be a gateway to academic burnout. If this condition lasts for a long time, the risk of developing degenerative diseases such as diabetes and cardiovascular disorders is increasingly negligible (Tristianingsih & Handayani, 2021).

The gap between ideal conditions and reality faced by medical students is evident on the one hand they are required to perform healthy and productive, but on the other hand they are faced with high rates of academic burnout and poor sleep quality that both worsen each

other, both in terms of health and academic achievement. The relevance of this issue has prompted a number of researchers to study it in more depth. Zakiei et al. (2025), for example, conducted a study on students of Kermanshah University of Medical Sciences and found that good sleep quality is related to lower levels of emotional fatigue, while poor sleep quality tends to lead to higher emotional fatigue, cynical attitudes, and low professional efficiency. These findings are in line with similar studies that have been conducted in Indonesia, which consistently show a link between sleep quality and academic saturation (Zakiei et al., 2025).

Referring to the characteristics of these studies, this study also adopted a cross-sectional design in its data collection. In addition to being in line with the approach commonly used on similar topics, this design was chosen because it allows the data collection process to be carried out at one time, making it more efficient in terms of cost and implementation time.

First-year medical students were chosen as research participants because, according to academics, this stage is a crucial transition period from secondary education to college. At this stage, students begin to face heavier learning loads, more challenging lecture materials, and the need to adapt to the medical school environment. Compared to students in the middle or end of their studies, first-year students are more susceptible to psychological disorders and academic burnout due to this situation (March-Amengual et al., 2022). By focusing on the most vulnerable population first-year medical students the study offers a new perspective on how fatigue is affected by sleep quality during critical periods in medical school.

Although this phenomenon is quite common, studies examining the relationship between sleep quality and academic burnout in medical students in Indonesia are still rare, especially outside the Java Island area. This is important considering that each region has its own uniqueness in terms of learning culture, social environment, and academic challenges faced by students, which are likely to also affect how sleep quality impacts their academic fatigue levels. In addition, this study is an effort to prevent the worsening of academic burnout in the future by improving the sleep quality of medical students.

This study aims to find out the picture of sleep quality in medical students and analyze the relationship between sleep quality and the incidence of academic burnout. Through an analytical study with a cross-sectional design, this study was conducted to assess how large and strong the relationship between sleep quality and academic burnout levels in medical students is. In addition, this study also aims to evaluate whether worsening sleep quality can increase the incidence of academic burnout. The results of the research are expected to provide benefits for medical students and the community in increasing understanding of the importance of sleep quality, becoming a reference for future researchers, and becoming a consideration for health practitioners and the government in efforts to prevent academic burnout in medical students.

METHOD

Types and Research Designs

The type of research applied in this study was observational analytics using a cross-sectional design. The place where the research was carried out was at the Faculty of Medicine, Prima Indonesia University Medan. This research was carried out starting in January 2025 and lasted until February 2025.

Population and Sample

1. Population

- a. Target population: Students of the Faculty of Medicine in the city of Medan.
- b. Accessible population: Students of the Faculty of Medicine at Universitas Prima Indonesia, Medan City.

2. Sample

This research involves the use of a sample in the form of students of the Faculty of Medicine class of 2025 who are studying at Universitas Prima Indonesia. The cluster sampling technique is used in sampling, where the population is divided into several groups and all members of the group are selected to be sampled. The selection of samples is also based on the characteristics and phases of education undergone by medical students, especially for those who are in the early semester. In this phase, students are often trapped in a stasis with repetitive stress due to learning, so it is considered representative to ensure the consistency of research results and allow for more accurate observations of academic burnout.

3. Inclusion criteria

- a. Student of the Faculty of Medicine, Prima Indonesia University, Class of 2025.
- b. Students who are willing to be research respondents, in the sense of being willing to fill out a questionnaire.

4. Exclusion criteria

- a. Not a student of the Faculty of Medicine, Universitas Prima Indonesia, Class of 2025.
- b. Not students who are willing to be research respondents, in the sense that they are not willing to fill out questionnaires.

Data Analysis

The data analysis for this title uses the statistical analytical method, where data is collected to see whether or not there are differences, correlations, and influences between predetermined variables, according to what is contained in the 'Problem Formulation'. The categorization of data is adjusted based on the type of data, the Shapiro-Wilk Test is used to test the normality of the data, while the Levene Test is used to test the homogeneity of the data. Furthermore, data were processed using the SPSS program version 27 with Spearman correlation, for bivariate relationship analysis.

Data Collection Techniques

The variables "Sleep Quality" and "Academic Burnout" were collected using the Pittsburgh Sleep Quality Index (PSQI) questionnaire and the Copenhagen Burnout Inventory - Student Survey (CBI-SS) which have strong validity and reliability, and have been internationally standardized, so they have been widely used in other previous studies.

RESULT AND DISCUSSION

Research on the relationship between sleep quality and the incidence of academic burnout in medical students of the class of 2025 at Universitas Prima Indonesia has been carried out on January 9, 2026 directly on site, through the google form website. The research conducted has received approval from the Ethics Committee of FK UNPRI with number 049/KEPK/UNPRI/XI/2025 and data collection involved 133 respondents who were willing to fill out the PSQI and CBI-SS questionnaires.

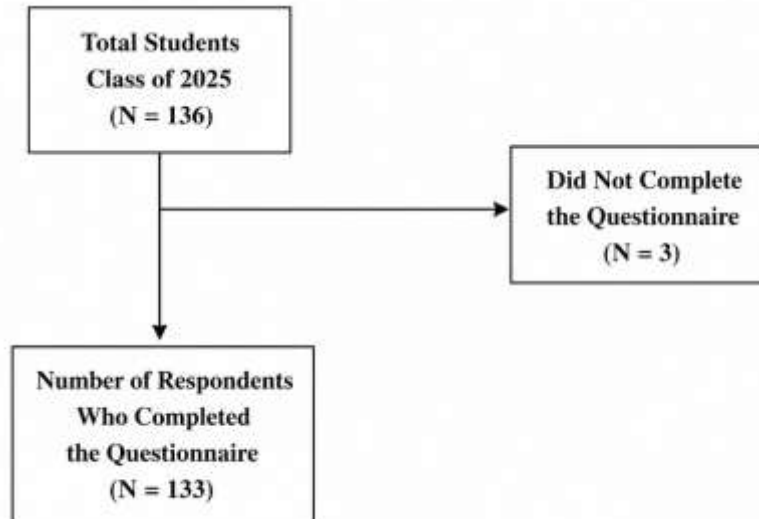


Figure 1. Number of Research Subjects
Source: Primary Data, Processed (2026)

Table 1. Characteristics of respondents

Features	Quantity	Presses
Gender		
- Men	33	24,8
- Women	100	75,2

Source: Primary Data, Processed (2026)

Table 1 presents the characteristics of respondents, the majority of whom are women, with a total of 100 people (75.2%). The rest were men, with a total of 33 people, or 24.8% of the total respondents.

Table 2. Overview of the sleep quality of medical students of Universitas Prima Indonesia Class of 2025

Gambaran	Frequency	Presses
Sleeping Pill Use		
- Never	111	83,5
- 1x a week	13	9,8
- 2x a week	7	5,3
- $\geq 3x$ a week	2	1,5
Feeling Sleepy During the Day		
- Never	37	27,8
- 1x a week	32	24,1
- 2x a week	37	27,8
- $\geq 3x$ a week	27	20,3
A Feeling of Difficulty Staying Energized		
- Not difficult	31	23,3
- A little difficult	59	44,4
- Quite difficult	29	21,8
- Very difficult	14	10,5
Sleep Latency		

- ≤ 15 minutes	36	27,1
- 16-30 minutes	47	35,3
- 31-60 minutes	37	27,8
- > 60 minutes	13	9,8
Sleep Duration		
- <5 jam	22	16,5
- 5-6 jam	65	48,9
- 7 jam	36	27,1
- >7 jam	10	7,5
PSQI Score Results		
- Good	24	18,0
- Bad	109	82,0

Source: Primary Data, Processed (2026)

An overview of the sleep quality of the respondents is contained in table 2, showing that as many as 82.0% of respondents have poor sleep quality. Twenty percent of students feel sleepy during the day ≥ 3 times a week, with 44.4% of all students finding it a little difficult to stay enthusiastic about their studies.

Table 3. Overview of academic burnout of medical students of Universitas Prima Indonesia class of 2025

Gambaran	Frequency	Presses
Burnout Personal		
- Low	34	25,6
- Medium	67	50,4
- Height	32	24,1
Study-Related Burnout		
- Low	41	30,8
- Medium	70	52,6
- Height	22	16,5
Burnout Linked to Friends		
- Low	83	62,4
- Medium	41	30,8
- Height	9	6,8
Lecturer-Related Burnout		
- Low	84	63,2
- Medium	44	33,1
- Height	5	3,8
CBI-SS Results		
- Academic Burnout	75	56,4
- Tidak Academic Burnout	58	43,6

Source: Primary Data, Processed (2026)

Based on Table 3, more than half of the respondents (56.4%) were identified as experiencing academic burnout. When examined by subdimension, personal burnout was the most dominant with a proportion of 24%, followed by study-related burnout at 16.5%, and peer-related burnout at 6.8%. The high level of teacher-related burnout was recorded as the subdimension with the lowest number, which was only found in 3.8% of all students studied.

Table 4. Cross-tabulation and prevalence ratio results

Sleep Quality	Academic Burnout		Quantity	Rosio Prevalent	I 95%
	Ya	No			
Bad	67	42	109	1,84	1,02 – 3,31
Good	8	16	24		
Quantity	75	58	133		

Source: Primary Data, Processed (2026)

Table 4 shows the value of the prevalence ratio > 1 , which is 1.84 with a 95% confidence interval that does not include the number 1 so that poor sleep quality is proven to cause a person to experience an incidence of academic burnout 1.84 times greater than those who have good sleep quality.

In this study, it was found that 67 students experienced poor sleep quality and academic burnout at the same time, while 42 students experienced poor sleep quality but did not experience academic burnout. Eight students in the good sleep quality group experienced academic burnout, but the remaining 16 students did not. This distribution pattern suggests that a person's susceptibility to academic burnout over a period of time is related to lower sleep quality.

According to research findings, medical students at Universitas Prima Indonesia who have poor sleep quality are 1.84 times more likely to experience academic burnout compared to those who have good sleep quality. The results of this study are in line with previous research by Fakhr et al., which found that the risk of academic burnout due to poor sleep quality increased 2.47 times (Fakhr et al., 2025). Academic fatigue is 3.4 times more common in people with poor sleep quality, according to another study (Amaral et al., 2021).

The study showed that most first-year medical students had poor sleep quality (82%). This high number is due to the transition phase from high school to college in the form of adjusting to the new curriculum, more intense academic activities, independent learning, new social network exploration, and the students' own personal daily routines. As a result, freshmen often experience unsatisfactory sleep and end up feeling increased sleep latency and daytime dysfunction (Messina et al., 2025).

College students who don't get enough sleep are more susceptible to stress because it affects their ability to regulate their emotions and thoughts. In addition, poor sleep quality increases cortisol levels through the activation of the hypothalamus – pituitary – adrenal axis, so it can worsen stress and disrupt sleep. The basic elements of burnout, namely emotional exhaustion, cynicism, and decreased personal achievement are driven by a continuous, two-way cycle: poor sleep leads to greater stress and eventually worsening fatigue and cynicism. Therefore, in order to break the path and minimize the risk of burnout, management that improves sleep hygiene and reduces stress is felt to be very important (Zakiei et al., 2025).

More than half of first-year students at UNPRI were found to have experienced physical and emotional fatigue at a meaningful level, amounting to 56.4%. Personal burnout reflects a general burnout that is not limited to the academic context alone, but rather relates to the overall physical and psychological condition of the individual. The high proportion of personal burnout can be caused by an imbalance between academic activities and personal life, poor sleep

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quality, low levels of self-efficacy, poor academic achievement, as well as poor coping mechanisms. In addition, psychological factors such as anxiety and depression also affect the high incidence of academic burnout (Pawlicka et al., 2024; Oluwadiya et al., 2024).

The degree to which academic responsibilities are perceived to be overloading one's energy is known as study-related burnout. The dominance of the moderate group in this study (52.6%), showed that even though students were still able to complete their routine academic tasks, they began to experience stress and fatigue that may lead to severe burnout. These results support research showing that long-term academic burnout is mostly caused by heavy learning loads, strict curriculum, and high academic performance standards (Dika Lesmana & Yunita, 2025).

According to the study's findings, the percentage of respondents who experienced significant levels of fatigue in the peer-related category and interaction with lecturers was very small (62.4% and 63.2%, respectively). These results show that the main cause of academic burnout in the study group is not the dynamics of interaction with peers and teachers. It is thought that having a social support system from friends and good academic interaction with instructors serves as a protective factor against academic burnout. However, some respondents still fall into the category of moderate fatigue, so it is important to consistently maintain the quality of academic interactions to predict increased levels of fatigue (GIANJACOMO et al., 2025).

It was found that the high prevalence of academic burnout in this study was related to the dominance of burnout in the personal and academic dimensions, showing a significant proportion in the medium to high categories, respectively. Therefore, these findings suggest that the main cause of academic burnout is the individual's internal stress and academic expectations, rather than relational factors such as interactions with lecturers and classmates.

Although research has been conducted systematically, there are some limitations that may affect the way data is interpreted. First, there are still 3 out of 136 total students who do not fill out the research questionnaire so that the total sample target is not met. In addition, this study aims to determine whether academic burnout and one of the risk factors, namely sleep difficulties, are interconnected. This study focuses on these two variables so that it does not include other risk factors that have the potential to have an impact, such as psychological aspects, medical problems, time management skills, and coping methods owned by students.

CONCLUSION

Based on the results of the analysis of sleep quality and its relationship with academic burnout in medical students of the class of 2025 at Universitas Prima Indonesia, there are three main findings that directly answer the purpose of this study. First, poor sleep quality dominated the condition of the students who became respondents. Second, the symptoms of academic burnout have been evident since the first year of college. Third, there is a strong trend that students with poor sleep quality are more prone to academic burnout pattern that has been shown to be statistically significant. A prevalence ratio value of 1.84 indicates that students with inadequate sleep quality have almost twice the risk of experiencing academic burnout compared to those with good sleep quality. Referring to the findings and conclusions of this study, several recommendations can be made. For universities and academic institutions, it is recommended to implement educational programs on sleep hygiene and stress management,

particularly during the first-year transition period, and to provide accessible counseling services for students experiencing burnout symptoms. For medical students, it is advisable to maintain healthy sleep patterns, manage academic workload effectively, and seek social support when experiencing fatigue or stress. For future research, follow-up studies should use a longitudinal approach with a wider range of subjects, involving medical students across all academic years who have been identified as experiencing academic burnout. In addition, other risk factors that may contribute to the incidence of academic burnout such as psychological aspects, medical problems, time management skills, coping mechanisms, social support, and academic workload need to be studied more deeply through multivariate analysis to obtain a more comprehensive picture.

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