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Sleep Quality And Mental Health Among Junior High School Students

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ABSTRACT

Introduction: *Inadequate sleep among young people is on the rise and has a negative impact on mental health, such as stress, anxiety, and depression. However, the majority of existing studies have been conducted in high-income countries, while data on Indonesian adolescents, especially those in rural or semi-urban areas, is still very limited. Preliminary findings from SMP PGRI 01 Wagir, Malang Regency, show that 40% of students experience sleep problems and 60% report symptoms of anxiety or depression. This gap highlights the importance of research on the relationship between sleep quality and mental health among junior high school students in this context.*
Methods: *This cross-sectional study involved 120 seventh-grade students from five classes (7A–7E) at Junior High School PGRI 01 Wagir, Malang Regency, using total sampling. A total of 120 questionnaires were distributed and all were returned completed. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI, 19 items), while mental health was assessed using the Depression Anxiety Stress Scale-21 (DASS-21, 21 items). Data collection was conducted in May 2025, and the results were analysed using Spearman's rank correlation test.*
Results: *A total of 120 respondents participated in this study. Most respondents (69.4%) had moderate sleep quality, followed by 25.6% with good sleep quality and 4.1% with poor sleep quality. Regarding mental health status, 51.7% were classified as normal, 42.5% as moderate, and 5.8% as severe. Cross-tabulation analysis revealed that 60% of respondents with poor sleep quality fell into the severe mental health category, while 83.9% of those with good sleep quality were classified as normal. Furthermore, there was a significant relationship between sleep quality and mental health in adolescents, with a correlation coefficient of $r = 0.647$ ($p < 0.001$).*
Conclusions: *Sleep quality has a significant impact on mental health among junior high school students. Therefore, nurses should design interventions targeting sleep improvement, which should be included in mental health promotion and prevention programs carried out in schools.*

Introduction

Sleep is one of the basic human needs that plays an important role in maintaining physiological and psychological balance, especially during adolescence, which is a complex transitional phase of development marked by significant biological, psychological, and social changes (Crowley et al., 2019). During this stage, adolescents often encounter multiple stressors, including academic pressures, social dynamics, and family expectations, all of which can disrupt sleep patterns. Sleep problems in this group, not only affect their physical condition, such as fatigue and decreased concentration, but also affects their mental health by increasing the likelihood of anxiety, depression, and stress (Johri et al., 2025). Therefore, poor sleep quality

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among adolescents represents a critical public health issue requiring collaborative from healthcare professionals, schools, and families (Delfmann et al., 2025) .

Globally, the prevalence of sleep problems among adolescents is quite high, with over 30% experiencing poor sleep quality, characterized by insufficient duration, prolonged sleep latency, and night time awakenings (Medic et al., 2017). pThis issue is prevalent not only in high income countries but also in low and middle income countries, such as Indonesia. A study by (Werner et al., 2024) found that 70.6% of adolescents in rural Indonesia reported sleep disturbances during the COVID-19 pandemic, which were closely associated with emotional difficulties and mental health problems. According to (Idris & Tuzzahra, 2023), 34.9% of Indonesian adolescents suffer from mental health conditions such as depression, anxiety, and stress, most of which are linked to poor sleep quality. Preliminary observations at SMP PGRI 01 Wagir, Malang Regency, revealed that 40% of students reported sleep difficulties, such as trouble falling asleep and frequent night awakenings, while 60% experienced symptoms of anxiety or depression. These local findings strengthen the evidence that sleep quality and mental health are interconnected, and highlight the urgent need for targeted interventions in this population.

Poor sleep quality is closely related to mental health, as lack of sleep can put teenagers at greater risk of depression, anxiety, and signs of stress (Alfonsi et al., 2020). Conversely, mental health problems can further impair sleep, creating a bidirectional and self-perpetuating cycle (Ghilotti et al., 2020). Longitudinal study from (Chai & Bian, 2024) confirms that poor sleep quality in adolescence may predict long-term psychological disorders, including clinical depression and anxiety disorders in adulthood. This suggests that sleep quality not only influences mental health, but also shapes future psychological development.

Previous studies across various countries have shown a significant association between sleep quality and mental health in adolescents (Peltz & Rogge, 2019) . However, most of these studies were conducted in high income countries, whose social and cultural conditions differ from those in Indonesia. Studies in Indonesia remains limited, often focusing on university students or adolescents in urban areas, with few studies examining adolescents in rural or semi-urban areas (Walidah & Syakarofath, 2025). Given that environmental, cultural, and social factors have a significant impact on sleep patterns and mental health among young people, this study aims to bridge the gap in research by exploring the relationship between sleep quality and mental health among junior high school students in Malang Regency, an area with distinctive sociocultural characteristics. The results of this study are expected to provide recommendations for concrete actions, such as school-based sleep hygiene education programs, stress management initiatives, and family involvement approaches, which can be incorporated into mental health promotion and prevention efforts for adolescents.

It is expected to inform promotive and preventive interventions in pediatric nursing, particularly in improving sleep and psychological well-being. Additionally, the results of this study may guide schools and families in developing supportive policies and programs, thereby creating an environment conducive to optimal adolescent development (Snyder, 2020). Through collaboration between healthcare professionals, schools, and families, sleep and mental health challenges in adolescents can be minimized, enabling their optimal growth across physical, emotional, and social domains (Bachman et al., 2024). Therefore, the objective of this study is to examine the relationship between sleep quality and mental health among junior high school students in Malang Regency.

Methods

This study employed a cross-sectional design to assess the relationship between sleep quality and mental health among junior high school students. The study population included all students at Junior High School PGRI 01 Wagir in Malang Regency, totaling 120 respondents. A total sampling technique was applied, ensuring all students were included as participants.

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Data were collected using validated and standardized instruments. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI), which evaluates seven components: sleep duration, sleep latency, sleep efficiency, sleep disturbances, use of sleep medication, daytime dysfunction, and subjective sleep quality. The PSQI has demonstrated good internal consistency (Cronbach's alpha > 0.70, with $\alpha = 0.83$ in the original study and significant construct validity ($p > 0.05$), confirming its suitability for use in diverse populations. The PSQI has been proven to have good reliability and validity in assessing sleep quality in various populations, including adolescents (Beattie et al., 2015). Mental health status was assessed using a validated instrument for adolescents. The instrument demonstrated good internal consistency (Cronbach's alpha > 0.70) and acceptable construct validity ($p > 0.05$), confirming its reliability for use in adolescent populations (Hidayati et al., 2021).

Meanwhile, mental health is measured using a scale called DASS-21. This scale is a way of self-assessment and has 21 questions divided into three sections: depression, anxiety, and stress. Each section has seven questions. The DASS-21 has been proven effective in various recent studies, with good consistency and the same structure across many groups of people (e.g., healthcare workers and adults in general) (Kaligis et al., 2022) . The depression section assesses symptoms such as feeling constantly sad, feeling hopeless, lacking feelings of happiness, feeling tired, and losing energy. The anxiety section measures physical reactions and symptoms associated with panic, such as dry mouth, difficulty breathing, shivering, feeling afraid for no apparent reason, and rapid heartbeat. The stress section assesses tension, difficulty relaxing, irritability, excessive emotional reactions, and excessive worry. Each question is rated on a four-point Likert scale ranging from 0 (never) to 3 (very often), where a higher score indicates more severe symptoms.(Luo et al., 2025).

Questionnaires were distributed in classrooms following approval from the school and informed consent from the parents and the students. Researchers were present to explain the procedure, clarify questions, supervise responses, and ensure data accuracy. The validity and reliability of the instrument had been tested beforehand through a pilot study, showing a Cronbach's Alpha value >0.7, indicating acceptable internal consistency (Taber, 2018).

Collected data underwent editing, coding, entry, and tabulation. Data normality was assessed using the Shapiro–Wilk test, which indicated that sleep quality data were non-normally distributed ($p=0.019$), as were mental health data ($p=0.003$). Statistical analysis was performed using Spearman's rank correlation test, as the data were ordinal and non-normally distributed. Results were presented using frequency distributions, descriptive categories, and correlation coefficients to provide a comprehensive overview of the association between variables.

Results

The respondents in this study consisted of 120 adolescents, with the majority aged 13 years old, accounting for 70%. More than half were male (56.7%) and 23.3% were in class 7B (Table 1).

Table 1 Demographic Characteristics of Respondents

Characteristic	Category	Frequency (n)	Percentage (%)	Cumulative percentage (%)
Age	12	21	17.5%	17.5%
	13	84	70.0%	87.5%
	14	14	11.7%	99.2%
	15	1	0.8%	100.0%

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Gender	Male	52	43.3%	43.3%
	Female	68	56.7%	100.0%
	7A	20	16.7%	16.7%
	7B	28	23.3%	40.0%
Class	7C	24	20.0%	60.0%
	7D	27	22.5%	82.5%
	7E	21	17.5%	100.0%
Total		120	100.0	100.0

Among the 120 respondents, the majority, 84 respondents (69.4%) had moderate sleep quality, 31 (25.6%) had good sleep quality, and 5 (4.1%) had poor sleep quality. Regarding mental health status, more than half, 62 respondents (51.7%) were classified normal, 51 respondents (42.5%) were in the moderate category, and only 7 (5.8%) fell into the severe category (Table 2).

Table 2 Descriptive of Sleep Quality and Mental Health

Variables	Frequency (n)	Percentage (%)
Sleep Quality		
Good	31	25.6%
Moderate	84	69.4%
Poor	5	4.1%
Mental Health	120	100.0
Normal	62	51.7%
Moderate	51	42.5%
Severe	7	5.8%

The cross-tabulation analysis showed that most students with good sleep quality had normal mental health (83.9%). Students with moderate sleep quality were predominantly in the moderate mental health category (52.4%). In contrast, all students with poor sleep quality experienced mental health problems, with (60.0%) classified as severe. These findings indicate a clear trend in which poorer sleep quality is associated with greater severity of mental health problems (table 3).

Table 3 Cross-Tabulation Of The Relationship Sleep Quality And Mental Health Among Junior High School Students

			Mental Health			
			Normal	Moderate	Severe	Total
Sleep Quality	Good	Frequency (n)	26	5	0	31
		%	83.9%	16.1%	0.0%	100.0%
	Moderate	Frequency (n)	36	44	4	84
		%	42.9%	52.4%	4.8%	100.0%
	Poor	Frequency (n)	0	2	3	5
		%	0.0%	40.0%	60.0%	100.0%

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Total	Frequency (n)	62	51	7	120
	%	51.7%	42.5%	5.8%	100.0%

Spearman's rho correlation analysis between sleep quality and mental health revealed a positive and strong relationship, with a correlation coefficient of 0.647. This indicates that better sleep quality is associated with better mental health. This result was statistically significant , supppoted by a p-value of 0.000 ($p<0.05$). Therefore, sleep quality is a significant contributing factor to the mental health of junior high school students in Junior High School PGRI 01 Wagir.

Table 4 Correlation Between Sleep Quality and Mental Health Among Junior High School Students

Variable	**Mental Health**	
	r	**p-value**
Sleep Quality	0.647	0.000

Discussion

Sleep Quality Among Junior High School Students

A total of 69.4% of respondents experienced moderate sleep quality, 25.6% were recorded as having good sleep, while only 4.1% showed poor sleep quality. This shows that although the majority of adolescents have relatively good sleep quality, there is still a significant percentage who face sleep problems. According to (Dewi et al., 2021) , 70.6% of adolescents in rural areas of Indonesia experienced significant sleep problems during the COVID-19 pandemic, which was associated with increased emotional difficulties. The sleep problems experienced by adolescents can include insufficient sleep duration, excessive sleep time, or frequent waking during the night, all of which have a negative impact on daily functioning such as the ability to concentrate in class, excessive fatigue, and decreased cognitive ability. Although the proportion of adolescents with poor sleep quality at SMP PGRI 01 Wagir was lower than that reported by (Beattie et al., 2015), it remains a concern because poor sleep quality is a major risk factor for mental health problems. The classification of 69.4% respondents into the moderate category was primarily influenced by several PSQI components, including prolonged sleep latency (taking more than 30 minutes to fall asleep), insufficient sleep duration (less than 7 hours per night), frequent sleep disturbances (waking up at night due to noise or worry), and daytime dysfunction (sleepiness and reduced concentration during class), which elevated their PSQI scores into the moderate range. These findings suggest that many adolescents are unable to achieve restorative sleep not because of severe disturbances but due to irregular sleep schedules and difficulty initiating sleep, which can accumulate into significant psychological strain over time. This interpretation is supported by the theory of sleep regulation, which emphasizes that both sleep duration and latency are critical determinants of overall sleep quality and directly influence emotional regulation and cognitive functioning (Wang et al., 2024), as well as by the theory of emotional regulation, which posits that inadequate sleep disrupts the brain's ability to manage stress and emotions, thereby increasing susceptibility to anxiety and depression (Tomaso et al., 2021). Previous studies have consistently shown that even moderate sleep disturbances are associated with reduced academic performance and heightened psychological distress (Peltz & Rogge, 2019). Therefore, schools should not only focus on students with severe sleep problems but also pay attention to those with moderate sleep quality, as they are at risk of developing mental health issues over time;

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preventive measures such as sleep hygiene education, counseling, and family involvement are essential to address these challenges early.

Mental Health Among Junior High School Students

A total of 51.7% of the respondents fell into the normal category, while 42.5% and 5,8% experienced mental health problems. This is in line with the findings of a study from (G & Tarokh, 2024), which states that students who do not sleep well are more likely to experience mental health problems, especially depression and anxiety. It also reinforces the link between sleep disorders and psychological problems. The high rate of mental health problems among adolescents in this study can be explained by various pressures, such as schoolwork, expectations from others, and family problems. In various literature, this is often referred to as a cause of stress and emotional difficulties in adolescents (Walidah & Syakarofath, 2025) . These factors show how important it is to intervene in mental health as early as possible in school. This is necessary not only to address existing problems, but also to prevent psychological stress from becoming more serious. These interventions can take the form of planned counseling services, peer support programs, and the inclusion of mental health education in the school curriculum. All of this aims to make students stronger and improve their overall well-being (Vithana et al., 2023).

The Association Between Sleep Quality and Mental Health Among Junior High School Students

This study shows a significant positive relationship between sleep quality and mental health among students at PGRI 01 Wagir Junior High School. Poor sleep quality appears to be associated with an increase in psychological disorders. The results of the cross-analysis support these findings, showing that most respondents with poor sleep quality were in the category of having moderate to severe mental health problems. Conversely, those who slept well were generally in the normal category. Students who had average sleep quality tended to report moderate levels of depression, anxiety, or stress, indicating that even mild sleep disorders can contribute to psychological challenges. These findings are in line with emotion regulation theory, which states that sleep deprivation interferes with the brain's ability to manage emotions and stress, potentially increasing the risk of mental health problems (Johri et al., 2025). This is also supported by long-term evidence showing that poor sleep can be a predictor of psychological problems later in life (Li et al., 2025). Some inconsistencies were observed, such as respondents with poor sleep quality but relatively good mental health. This may be explained by protective factors such as strong family support or individual resilience. On the other hand, there were also students with good sleep quality who still reported mental health problems due to external pressures such as academic workload. These findings emphasize the importance of sleep quality as an early indicator of adolescent mental health. According to the researchers, moderate sleep problems should be taken seriously because they can develop into more serious psychological conditions if left unaddressed. Therefore, educational institutions and health workers should include education on good sleep habits, stress management, and family involvement in mental health programs to reduce this risk.

Conclusion

This study aims to explore the relationship between sleep quality and mental health among students at PGRI 01 Wagir Junior High School, Malang Regency. Data obtained from 120 respondents shows that the majority of students have moderate sleep quality, while more than half of them experience mental health problems. Statistical data analysis shows a positive and significant relationship between sleep quality and mental health, supporting the hypothesis that poor sleep quality is associated with higher levels of psychological distress in adolescents. Based on these findings, nurses and school officials are encouraged to develop interventions focused on

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improving sleep quality that can be incorporated into ongoing mental health promotion and prevention programs, such as education on sleep hygiene, workshops on stress management, and strategies involving families. On the other hand, policymakers and educators are advised to add an understanding of sleep and mental health to the school curriculum. Future research is encouraged to reach a more diverse population and apply a longitudinal design to explore the causal relationship between sleep quality and mental health outcomes.

Ethics approval and consent to participate

This study was approved by the Health Research Ethics Committee of Institute of Technology Science and Health dr. Soepraoen, Malang under certificate number KEPK-EC/343/X/2025. All procedures were conducted in accordance with the principles of the Declaration of Helsinki on research involving humans. Prior to data collection, the researchers obtained official permission from school, written consent (informed consent) from all parents and adolescents. Respondents were given an explanation of the purpose of the study, its benefits, and their right to refuse or withdraw from participation at any time without negative consequences. The confidentiality of all personal and identifying information was strictly maintained throughout the study.

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