The Correlation between Sleep Hygiene and Sleep Disorders among Adolescents in Tangerang

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Abstract

Sleep difficulties are prevalent among adolescents and can impact physical and mental health, along with academic performance. Prior research has demonstrated a correlation between sleep hygiene, a set of measures designed to create a regular sleep regimen, and sleep problems. This study seeks to ascertain the correlation between sleep hygiene and sleep problems in teenagers. This study employed a quantitative research design utilizing a cross-sectional technique and was done with 50 adolescents at a school in Tangerang. The sampling was conducted with a simple random sampling method facilitated by a spinner program. Data were collected by the administration of the Sleep Hygiene Index (SHI) and the Children's Sleep Habits Questionnaire (CSHQ), and subsequently analyzed utilizing a chi-square test. The findings indicated a correlation between sleep hygiene and sleep problems in teenagers ($\alpha = 0.008$). A significant proportion of respondents exhibited inadequate sleep hygiene and sleep disorders, with rates of 86% and 80%, respectively. The psychological state of teenagers transitioning to adulthood also influences sleep hygiene and sleep disorders. Parents, educators, and school health professionals must educate teenagers about managing sleep disorders through the enhancement of sleep hygiene practices.

Keywords: Adolescents, Hygiene, Sleep Disorders

Introduction

Sleep is an essential human requirement for rejuvenating and replenishing the body's energy (Ardern & Kanagasabai, 2019). Moreover, sleep contributes to the repair, fortification, and restoration of vital chemicals in the body, hence facilitating proper brain function. The National Sleep Foundation states that adolescents require approximately eight to ten hours of sleep each day, and sustaining a good sleep regimen will enhance their sleep quality (National Sleep Foundation, 2025). Sleep quality is characterised by an individual's contentment with their sleep, mitigating sensations of exhaustion, restlessness, lethargy, periorbital dark circles, oedematous eyelids, conjunctival hyperaemia, ocular discomfort, impaired concentration, cephalalgia, and recurrent yawning or somnolence (Febrian et al., 2024).

Sleep disorders are conditions that can impair many physiological activities, including diminished concentration, trouble in focussing, heightened stress, and elevated blood pressure. They are sometimes referred to as chronic sleep deprivation. Persistent sleep difficulties, awakening fatigue, or regular drowsiness constitute a significant issue. Nonetheless, intermittent sleep disturbances are typical (Lo Martire et al., 2020).

School children encounter sleep issues such as difficulty in beginning and sustaining sleep, respiratory complications during sleep, challenges with awakening, trouble transitioning to wakefulness, excessive sleep duration, and sleep hyperactivity (Wahyuningrum, 2021). Currently, numerous factors affect teenage sleep patterns. Excessive use of electronic devices, particularly smartphones and laptops, is a primary contributor to sleep disturbances (Han et al., 2024). The blue light emitted by gadget screens can interfere with the synthesis of melatonin, a hormone that governs sleep cycles. Additionally, the National Sleep Foundation indicates that social pressures, academic stressors, and hormonal fluctuations are contributing reasons to sleep issues in adolescents (Pan et al., 2025).

Sleep issues can significantly affect an individual's life. Sleep hygiene comprises a set of actions designed to maintain a regular sleep schedule, develop a consistent sleep pattern, and foster a conducive sleep environment (De Pasquale et al., 2024). This also encompasses the maintenance of a healthy environment. The body's circadian rhythm has various cycles, including body temperature, which affect the ease of falling asleep (Szymusiak, 2018). Therefore, this study intends to ascertain the correlation between sleep hygiene and sleep problems in adolescents.

Research Method

This quantitative study employed a non-experimental observational approach to examine the relationship between sleep hygiene and sleep problems among adolescents. A cross-sectional design was used, in which data for both independent and dependent variables were collected simultaneously at a single point in time. The study was conducted in Tangerang, from January to May 2025.

The study's population comprised 60 pupils from a school in Tangerang. The employed sampling strategy was probability sampling, utilizing a basic random sampling procedure via a lottery spinner program. The entire population was reduced by excluding the initial 10 drawn kids, yielding a sample size of 50 students, as determined by the Slovin formula with a 5% margin of error. The inclusion criteria for this study comprised students who consented to participate, completed an informed consent form, secured parental permission, and were available to complete the questionnaire.

The independent variable in this study was sleep hygiene, defined as behaviors and practices that support healthy sleep, while the dependent variable was sleep problems, including difficulty initiating sleep, frequent nocturnal awakenings, and poor sleep quality. Data were collected using three instruments: a demographic questionnaire (age and gender), the Sleep Hygiene Index (SHI), and the Children's Sleep Habits Questionnaire (CSHQ). The SHI questionnaire, developed by Hilmana Putri (2020), consists of 13 items measured on a Likert scale ranging from 0 to 4 and is categorized into poor (0–27), moderate (28–40), and good (>40) sleep hygiene. The

CSHQ comprises 33 items assessing sleep problems, with three response options, and is classified into mild (0–21), moderate (22–42), and severe (>42) sleep problem categories.

The SHI instrument has been subjected to validity testing, yielding a computed r value of 0.371–0.458 and a Cronbach's Alpha reliability of 0.71 ($p < 0.01$), whereas the CSHQ demonstrates a validity value of $r > 0.4973$ and a reliability of 0.971. Data were gathered via an online questionnaire utilizing Google Forms, following the acquisition of permits # 345/FIK-UCA/E.21/III/2025 and 400.3.5/087/SMPN5TGRS/V/2025, together with consent from respondents and their guardians. The processes of data gathering encompass acquiring permits, collaborating with educational institutions, identifying samples, completing informed consent forms, and administering questionnaires.

Data processing involved several stages, including data editing to ensure completeness, coding to convert responses into numerical form, data entry into statistical software, and data cleaning to correct inaccuracies. Univariate analysis was performed to describe the frequency distribution of each variable, while bivariate analysis employed the chi-square test to examine the relationship between sleep hygiene and sleep problems. Statistical significance was set at $p < 0.05$.

Results

Table 1 shows that the majority of respondents were 14 years old, accounting for 26 students (52.0%), followed by those aged 13 years with 20 students (40.0%), and 15 years with 4 students (8.0%). In terms of gender distribution, the respondents were evenly divided between boys and girls, with 25 male students (50%) and 25 female students (50%), as presented in Table 1.

Table 1. Characteristic of Respondents (n=50)

Characteristics		f	%
Age	13	20	40
	14	26	52
	15	4	8
Gender	Male	25	50
	Female	25	50

The statistics shown in table 2 indicate that the predominant number of respondents fell into the poor sleep hygiene category, specifically 43 children (86%) (Table 2).

Table 2. Frequency Distribution of Sleep Hygiene among Respondents (n=50)

Sleep Hygiene	f	%
Good	0	0
Moderate	7	14
Poor	43	86

The statistics in table 3 indicate that the predominant group among respondents was moderate sleep problem, with 40 children (80%) falling into this classification (Table 3).

Table 3. Frequency Distribution of Sleep Disorders among Respondents (n=50)

Sleep Disorders	f	%
Mild	10	20
Moderate	40	80
Severe	0	0

According to table 4, among children with moderate Sleep Hygiene, 4 (57.1%) experienced mild sleep disorders, while 3 (42.9%) encountered moderate sleep disorders. Conversely, among children with poor Sleep Hygiene, 6 (14%) had mild sleep disorders, and 37 (86%) suffered from moderate sleep disorders. The statistical tests employing chi-square yielded a p-value of 0.008 ($p < 0.05$), indicating a correlation between Sleep Hygiene and sleep disorders among adolescents (Table 4).

Discussion

The participants in this study were aged 13 to 15, with the predominant age being 14 (52%). This illustrates the traits of early adolescents undergoing the transition from infancy to maturity in physical, psychological, and social dimensions. Barel & Tzischinsky (2022) identifies the age range of 13–15 as early adolescence, a phase susceptible to numerous changes, including alterations in sleep patterns that are intricately linked to sleep quality. Individuals have distinct psychological growth and identity patterns from childhood to adulthood, first exhibiting significant socioeconomic reliance on

Table 4. Correlation between Sleep Hygiene and Sleep Disorders among Respondents

		Sleep Disorders						Total	p Value (Chi-Square Test)
		Mild		Moderate		Severe			
		n	%	n	%	n	%		
Sleep Hygiene	Good	0	0	0	0	0	0	0	0.008
	Moderate	4	57.1	3	42.9	0	0	7	
	Poor	6	14	37	86	0	0	43	
Total		10		40		0		50	

parents and relatives until attaining relative independence (Wood et al., 2017).

The findings of this study correspond with those of Purnama (2019), indicating that teenagers aged 13–15 frequently encounter sleep difficulties attributable to inadequate sleep hygiene. In his study, sleep hygiene exhibited a negative correlation with sleep disturbances, indicating that superior sleep hygiene practices corresponded to reduced sleep disturbances among adolescents.

The survey revealed that adolescent boys and girls constituted equal numbers, each comprising 50%. Amaral et al. (2016) indicate that girls are more likely to encounter sleep disruptions than boys. This may result from fluctuations in ovarian hormones in girls commencing puberty, which can influence mood. The reduction of estrogen prior to menstruation may induce sleep problems in females (Alzueta & Baker, 2023). Whilst, study by James et al. (2020) demonstrates that male adolescents display poorer sleep hygiene practices than their female counterparts, characterized by frequent device usage before sleep and irregular sleep patterns.

In this study, a significant proportion of adolescents exhibited moderate sleep hygiene (86%). Hysing et al. (2015)asserted that inadequate sleep hygiene in adolescents may result from contemporary lifestyle conditions, including prolonged gadget usage at night and a deficiency in understanding the significance of quality sleep. Additionally, Singh et al. (2025)indicated that inadequate sleep hygiene in adolescents may be affected by inconsistent sleep patterns, coffee intake, and mental or physical activities that disrupt sleep before to bedtime. The primary reasons contributing to inadequate sleep hygiene in adolescents include scholastic pressure, insufficient information regarding healthy sleep practices, and the impact of social media.

This study indicates that the majority of adolescents encounter moderate sleep difficulties (80%). Tarokh et al. (2016) assert that sleep is an essential human requirement for physical and cognitive growth and development, particularly in adolescents, whose needs fluctuate with age. In the contemporary era, adolescents' sleep is interrupted by electronic devices, rendering sleep problems commonplace. Sleep difficulties frequently result from detrimental behaviours and are influenced by various elements, including adolescent personality and development, alongside environmental, emotional, and social impacts (Harmoniati et al., 2016).

Liu et al. (2025) asserts that the quality of sleep is significantly affected by various critical elements of sleep hygiene, such as sleep schedule, bedtime ritual, bedroom atmosphere, and daytime behaviour. A consistent sleep schedule aids in the regulation of the body's circadian rhythm, the biological clock governing sleep-wake cycles, metabolism, body temperature, and hormonal functions. When these beats synchronise, the body attains homeostasis, or internal equilibrium. A consistent sleep regimen, such as reading or engaging in relaxation for approximately 30 minutes before to bedtime, might prompt the body to initiate rest, while alleviating tension and expediting the onset of sleep.

Talaia et al. (2025) study indicates a negative correlation between sleep hygiene behaviours and sleep disruptions. This indicates that improved sleep hygiene practices correlate with a reduced sleep disturbance score. An example of effective sleep hygiene is refraining from engaging in activities other than sleep in bed. The environment is a determinant of sleep quality. Sleep hygiene is simple to adopt, has no.

hazards, and necessitates no specialised equipment. Establishing healthy sleep practices can enhance physical and mental well-being, productivity, and overall life quality. Sleep hygiene can create a durable routine, hence promoting healthy behaviours (De Pasquale et al., 2024). Researchers identified a substantial correlation between sleep hygiene and sleep disruptions among adolescents.

Conclusion

The study findings indicate that most respondents were 14 years old, with an even gender distribution between males and females. The majority of adolescents exhibited inadequate sleep hygiene and encountered moderate sleep disturbances. The investigation revealed a correlation between sleep hygiene and sleep disorders among adolescents at SMP Negeri 5 Tigaraksa, indicating that the quality of sleep hygiene significantly influences the prevalence of sleep disorders in this demographic. These findings underscore the necessity for focus and initiatives to enhance sleep hygiene, hence improving sleep quality in adolescents.

The findings of this study have ramifications for multiple stakeholders. Educational institutions are encouraged to enhance their reference and learning materials concerning sleep disorders, particularly by promoting effective sleep hygiene practices, to elevate student knowledge and comprehension. Educational institutions are anticipated to focus more on kids exhibiting symptoms of sleep disorders during school hours. This can be achieved by enhancing guidance and counselling services and urging homeroom instructors to proactively identify pupils with sleep difficulties and coordinate with parents for more effective treatment. Future researchers are anticipated to do intervention studies to tackle sleep hygiene concerns and utilise a bigger sample size, so enhancing the robustness of the findings and expanding understanding of the correlation between sleep hygiene and sleep problems in adolescents. Simultaneously, it is essential for the community to commence the adoption of effective sleep hygiene practices in everyday routines as a proactive strategy to preserve sleep quality and overall well-being.

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