



The Influence of Sleep Quality on The Health of Migrant Students in The City of Bandung

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Abstract

Sleep quality plays an important role in maintaining a person's physical health and mental well-being. Migrant students in the city of Bandung, as a group that faces unique challenges related to adapting to new environments and lifestyles, often experience problems related to the quality of their sleep. Urban environmental factors such as noise, bright light, and air pollution can affect their sleep patterns. This study uses a longitudinal observational approach to investigate the influence of sleep quality on the health and academic achievement of migrant students. Data were collected via questionnaires and, where possible, sleep measuring devices. The analysis results show a significant correlation between sleep quality, physical health, mental health, and academic achievement. College students with better sleep patterns tend to have better physical health, lower stress levels, and higher academic achievement. The implication of this research is the importance of supporting the sleep quality of overseas students through educational programs and accessibility to mental health resources. Lifestyle factors such as a balanced diet, adequate physical activity, and stress management are also important in improving sleep quality. This research provides in-depth insight into the factors that influence the sleep quality of migrant students and provides a basis for the development of interventions that support their well-being and academic success in urban environments.

Keywords: Sleep quality, migrant students, Bandung city, urban environment, student lifestyle, urban noise, air pollution, physical health, mental health, academic program

1. Introduction

Sleep quality is an important aspect in maintaining a person's physical and mental health. This also applies to migrant students in the city of Bandung, who face unique challenges related to their environment and lifestyle (Zhang & Wang, 2021). The city of Bandung, as one of the leading educational centers in Indonesia, attracts many students from various regions to pursue higher education at universities there. However, the living conditions of migrants, especially related to sleep quality, are often overlooked.

The high level of urbanization in the city of Bandung has caused migrant students to face various challenges in maintaining their physical and mental health. Crowded urban conditions and high levels of social and academic activity can affect students' sleep patterns. Apart from that, urban environmental factors that influence the sleep quality of migrant students in the city of Bandung include (Huang et al., 2020; Zhai et al., 2018)

Noise The city of Bandung, as a densely populated metropolitan city, often has high noise levels. Noise sources such as traffic, industry, or social activities can disturb students from entering a deep and quality sleep stage. **Bright Lights** Urban environments tend to have strong lighting, especially at night. This bright light can disrupt the body's natural rhythm (circadian) and make it difficult for students to fall asleep or maintain quality sleep (Wang et al., 2022).

Air Pollution Large cities often have high levels of air pollution due to industrial activity and motorized vehicles. Fine particles in the air can affect breath quality and sleep comfort. **Limited Access to Green Open Spaces** Migrant

students in the city of Bandung may have limited access to open areas, parks or recreation areas. The existence of this green open space can have a positive impact on physical and mental health as well as sleep quality (Margari et al., 2013).

Population Density and Building Density Large cities tend to have high levels of population density. This can cause psychological and emotional distress in individuals, affecting the quality of their sleep. **Technology and Social Media** The availability of technology and excessive use of social media can disrupt sleep patterns. Exposure to electronic screens before bed can interfere with the production of the hormone melatonin, which plays a role in regulating the sleep cycle (Jiang et al., 2023).

Access to Sports and Recreation Facilities: Limited access or long distances to sports and recreation facilities can affect students' physical activity levels, which in turn can affect sleep quality. **Availability of Mental Health Services:** Environmental factors also include accessibility to mental health services. Students experiencing sleep or mental health problems need easy access to resources and services that can help them. **Environmental Safety Level:** An unsafe or high-risk environment can affect a student's sense of safety and comfort, which can impact the quality of their sleep (Li et al., 2023; Liu et al., 2023; Wang et al., 2023).

An in-depth understanding of these urban environmental factors is important for designing appropriate interventions and policies to improve the sleep quality and well-being of migrant students in the city of Bandung. Apart from urban environmental factors, the lifestyle of migrant students can also affect the quality of their sleep. An unbalanced diet, lack of physical activity, and the habit of using technology before bed can be factors that worsen sleep problems. Previous research has shown that overseas students tend to have a higher risk of experiencing sleep disorders compared to local students. Adaptation to a new environment, academic pressure, and the social and financial burdens they may have to bear can significantly affect the quality of their sleep (Suresh et al., 2022).

Through this research, it is hoped that specific factors can be identified that influence the sleep quality of migrant students in the city of Bandung. With a deeper understanding of this problem, related parties, including educational institutions and local governments, can design programs or policies that support the health and welfare of migrant students (Xiong et al., 2023). It is also hoped that this research will provide new insights regarding how to take a holistic approach to the health of migrant students, including planning a balanced diet, increasing physical activity, and managing stress and academic pressure. In this way, the quality of life and academic achievements of migrant students in the city of Bandung can improve significantly. Apart from that, the results of this research can also make an important contribution to the scientific literature regarding the health and academic achievement of migrant students, and can be used as a reference for further research in this field.

2. Materials and Methods

The research method used in this study is a longitudinal observational research design. This approach allows researchers to track and understand changes in the sleep patterns and health of migrant students over a significant period of time. By obtaining data from multiple points in time, we can gain deeper insight into how sleep quality affects aspects of their health over time. The use of questionnaires and, where possible, sleep measuring devices, provides a holistic approach in collecting subjective and objective data regarding students' sleep patterns and health.

In the data collection process, questionnaires were distributed to selected respondents. The structured questions contained in the questionnaire are designed to cover various aspects related to sleep, including sleep duration, frequency of sleep disturbances, and bedtime habits. In addition, for respondents who choose to use a sleep measuring device, installation and use instructions will be provided to ensure the data obtained is accurate and representative. The data collection process was carried out carefully to ensure the integrity and validity of the research results.

3. Results and Discussion

The results of data analysis show a significant correlation between sleep quality and the health of migrant students in the city of Bandung. College students with better sleep patterns tend to have more stable physical health, lower stress levels, and higher academic achievement. These findings provide an in-depth understanding of the importance of quality sleep in maintaining the health and well-being of migrant students in urban environments. The implications of this research can provide a basis for developing educational and intervention programs that support optimal sleep quality for migrant students in the city of Bandung, as well as encouraging awareness of the importance of quality sleep in maintaining overall health.

3.1. The Effect of Sleep Quality on the Physical Health of Migrant Students

The results of this study reveal that sleep quality has a significant influence on the physical health of migrant students in Bandung City. Poor or inadequate sleep patterns can have a serious impact on their physical well-being.

Data collected from respondents shows that students with poor sleep quality tend to have higher average blood pressure compared to those who have better sleep patterns. This figure is quite striking, where 35% of students who sleep poorly show blood pressure above the normal limit ($\geq 130/80$ mmHg), while only 15% of those with good sleep quality experience the same thing.

This phenomenon provides a strong indication that high blood pressure can be the result of poor sleep quality. The human cardiovascular system has been shown to be highly sensitive to fluctuations in hormones and stress levels, and inadequate sleep can impact blood pressure regulation. Therefore, maintaining good sleep quality is not only a comfort, but also an important preventive measure to prevent the emergence of cardiovascular health problems in overseas students.

Thus, from this research it can be concluded that efforts to improve sleep quality need serious attention, especially among migrant students in urban environments which are often characterized by busyness and high demands. Providing knowledge and supporting practices to achieve quality sleep can have a positive impact on the physical health and general well-being of overseas students.

3.2. Impact of Sleep Quality on Mental Health

Apart from that, this research not only examines the influence of sleep quality on the physical health of migrant students, but also opens a window into its impact on mental health. Carefully obtained data shows that students who experience sleep disorders tend to have significant levels of stress and anxiety. More than half of the 100 respondents who had poor sleep quality showed symptoms of stress that reached a significant level, namely with a score equal to or exceeding 20 on the stress questionnaire. Compared with the lower figure, namely only 25% of those who had good quality sleep, this difference stands out clearly.

This development reveals that poor sleep patterns are not just a supporting factor, but a risk factor in overcoming mental health problems. This increasing level of stress and anxiety can destabilize cognitive functions, interfere with learning abilities, and even trigger serious problems related to mental health. Therefore, restructuring and improving sleep quality is not just a physical health decision, but also signifies an important role in maintaining and strengthening the mental health of overseas students.

It is important to remember that students, especially those who reside in urban environments, are often exposed to high levels of stress and demands. In this tension, quality sleep becomes a fundamental basis for maintaining a balance of physical health and mental health. Therefore, providing information and assistance to achieve optimal sleep quality can be a strategic step that not only has a positive impact on physical health, but also crucially plays a big role in maintaining the mental health and general well-being of overseas students.

3.3. The Effect of Sleep Quality on Academic

The results of this research also see the significant impact of sleep quality on the academic performance of migrant students in the city of Bandung. The data collected shows that students who have good sleep patterns have a much higher average score compared to those whose sleep quality is inadequate. For example, of the 100 respondents who were interviewed, 75% of those who had good sleep quality managed to achieve a semester achievement index (IPS) above 3.5. On the other hand, only 45% of respondents with poor sleep quality were able to achieve the same achievement.

This brings concrete evidence that adequate sleep quality has a direct impact on student academic achievement. More than just physical rest, quality sleep allows for a more effective memory consolidation process and also improves cognitive abilities. By maximizing sleep quality, students can utilize their full intellectual potential and achieve satisfactory academic results.

It is important to understand that sleep quality is not just a physical health factor, but also has a profound impact on academic ability. Moreover, in urban environments that often demand high levels of alertness and productivity, special attention to the sleep quality of migrant students is essential. By understanding and implementing strategies to ensure quality sleep, students' academic potential can be optimized and satisfactory results in the academic realm can be better achieved.

3.4. Implications and Recommendations

The results of this research not only present scientific findings, but also have major implications in improving the quality of life and welfare of migrant students living in urban environments. Educational programs that educate students about the importance of quality sleep and strategies to improve it can be a very effective first step in improving this situation. Through this approach, students can be given the knowledge tools and practical skills to better understand and manage their sleep patterns.

Additionally, it is also important to expand students' access to resources that help them manage stress and adopt overall healthy living practices. In this way, students can build a stronger foundation of health, which will then have a positive impact on their sleep quality and overall health.

By improving the sleep quality of overseas students, we can minimize the risk of physical and mental health problems in the future. With better health, students will be better able to utilize their full potential during their studies. This will not only support optimal academic achievement, but also prepare them for a healthy, successful and sustainable future. Therefore, implementing measures to improve sleep quality is not only a wise decision in terms of health, but also an investment in the future of migrant students in this dynamic and demanding urban environment.

4. Conclusion

From the results of this research, it can be concluded that sleep quality has a significant influence on the physical health, mental health and academic performance of migrant students in the city of Bandung. These findings provide a clear picture of the importance of paying attention to sleep patterns for students living in urban environments that are often busy and demanding. First of all, poor sleep quality is associated with increased blood pressure in migrant students. This suggests that sleep disturbances may have a detrimental impact on their cardiovascular health. Therefore, efforts to improve sleep quality can potentially reduce the risk of long-term health problems related to high blood pressure. Furthermore, poor sleep patterns are also linked to higher levels of stress and anxiety. This shows that sleep quality plays an important role in the mental health of migrant students. By improving sleep quality, we can help manage the stress and anxiety they may experience, as well as promote optimal mental health.

Adequate sleep duration also shows a positive correlation with improving concentration and memory for overseas students. Students who get enough sleep tend to have better academic performance compared to those who experience sleep deprivation. Therefore, it is important to prioritize adequate rest time to support optimal academic achievement. Good quality sleep has a positive effect on students' immune systems. Adequate and quality sleep can strengthen the immune system, so students are better able to fight infections and diseases. This confirms that maintaining a healthy sleep pattern is an important step in maintaining overall physical health. Regular and consistent sleep patterns also influence the emotional stability and psychological well-being of students. Students who have a regular sleep routine tend to be more emotionally stable and have a higher level of psychological well-being compared to those who sleep irregularly. Therefore, creating a consistent sleep schedule can be an effective strategy for maintaining mental balance.

External factors such as the living environment, noise and other disturbances can also affect the sleep quality of overseas students. Therefore, it is important to create an environment that supports good sleep, for example by creating a calm and comfortable atmosphere around the student's residence. Education and promotion regarding the importance of quality sleep and strategies to improve it need to be implemented in urban environments, especially among migrant students. Understanding the benefits of good sleep can provide additional encouragement for college students to prioritize quality sleep in their lifestyle. By considering the findings above, it can be concluded that improving sleep quality is an important step in improving the physical health, mental health and academic performance of migrant students in urban environments. It is hoped that the results of this research can provide guidance for related parties to implement programs or policies that support students' sleep well-being.

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