

RELATIONSHIP AND IMPACT OF SLEEP PATTERNS ON MENTAL, PHYSICAL HEALTH, RISK OF CHRONIC DISEASES

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Abstract

Healthy sleep patterns are an important component in maintaining physical, mental, and emotional health. Poor sleep patterns, such as insufficient sleep duration or irregular sleep, have been shown to have significant impacts on various aspects of health, including mental health, blood pressure, risk of chronic disease, and physical balance. This study used a literature study method to analyze various studies covering populations of adolescents, young adults, college students, and the elderly. The results of the analysis showed that poor sleep patterns in adolescents are associated with an increased risk of anxiety and depression. In college students, irregular sleep patterns affect gastrointestinal health and academic performance. Local research shows that lack of sleep contributes to increased blood pressure, while poor sleep patterns in the elderly population increase the risk of falls and fractures. In addition, research using wearable devices revealed that irregular sleep patterns increase the risk of obesity, hypertension, and mental health disorders.

Keywords: *Sleep patterns, Mental health, Blood pressure, Chronic diseases, Sleep quality.*

Introduction

Sleep is one of the basic human needs that plays an important role in maintaining physical, mental, and emotional health. Good sleep patterns not only affect daily productivity but also play a role in preventing various chronic diseases. The recommended sleep duration by the American Academy of Sleep Medicine (AASM) and the Sleep Research Society (SRS) is for adults to sleep for 7 hours or more per night. However, in the modern era, fast-paced lifestyles, work pressure, exposure to technology, and stress have caused sleep pattern disorders in various age groups. Research on sleep patterns and their impact on health has been widely conducted, both in adolescents, young adults, students, and the elderly. These studies provide important insights into how poor sleep patterns can affect various aspects of health, such as mental health, blood pressure, risk of chronic disease, and nervous system balance. This study aims to provide a comprehensive picture of the relationship between sleep patterns and health based on various studies that have been conducted.

Background

Healthy sleep patterns are defined as adequate, consistent, and quality sleep. Poor sleep patterns, such as sleeping late, not getting enough sleep, or having irregular sleep, have been linked to a variety of health problems. In adolescents, poor sleep patterns are often caused by academic pressure, technology use, and biological changes. In young adults and college students, sleep patterns are often disrupted by lifestyle, work pressure, and staying up late. Meanwhile, in the elderly population, sleep disorders can be caused by physiological factors, chronic diseases, or environmental influences. Various studies have shown that poor sleep patterns can affect mental

health, increase the risk of cardiovascular disease, worsen chronic disease conditions, and even affect academic performance. Therefore, understanding the relationship between sleep patterns and health is important for developing effective intervention strategies.

Theoretical Study

Sleep patterns are influenced by various factors, including age, social environment, diet, and stress levels. Theoretically, quality sleep requires sufficient duration, consistent sleep time, and a conducive sleep environment. Lack of sleep or irregular sleep can increase sympathetic nerve activity, which has an impact on increased blood pressure, psychological stress, and metabolic disorders. This study uses descriptive analysis methods and literature studies to understand the relationship between sleep patterns and health.

This literature review includes several important findings:

1. The impact of sleep patterns on mental health: Studies show that poor sleep patterns can increase the risk of anxiety and depression, especially in adolescents and young adults.
2. Sleep patterns and blood pressure: Insufficient or poor quality sleep can lead to increased blood pressure, which ultimately increases the risk of hypertension.
3. Sleep patterns and chronic disease: Sleep disturbances have been linked to the risk of obesity, diabetes, and cardiovascular disease.
4. Sleep patterns in the elderly: Elderly people with healthy sleep patterns have a lower risk of falling or breaking bones.

Research methods

This study uses a literature study method with descriptive analysis of various relevant studies and describes sleep patterns and their impact on health based on available data. The data collected covers various population groups, such as adolescents, students, young adults, the elderly, with a focus on physical and mental health. This study includes an analysis of various studies that have been conducted previously, evaluating and combining various relevant information.

Research Results and Discussion

1. Teenagers and Mental Health

Research by Orchard et al. showed that adolescents with poor sleep patterns were at higher risk for anxiety and depression. At age 15, adolescents with sleep disturbances reported more severe depressive symptoms compared to adolescents with healthy sleep patterns. These findings highlight the importance of sleep duration and quality during adolescence for long-term mental health.

2. Students and Academic Performance

A study by Toscano-Hermoso et al. showed that poor sleep patterns in college students not only affect physical health but also academic performance. College students with irregular sleep patterns reported increased gastrointestinal symptoms, such as gastritis and GERD, which can affect concentration and academic productivity.

3. Blood Pressure and Sleep Patterns

Local research by Maryono et al. in Jambon Village, Pulokulon District, showed that lack of sleep can increase sympathetic nerve activity, which ultimately leads to increased blood pressure. This study shows a significant relationship between poor sleep patterns and hypertension.

4. Chronic Diseases and Sleep Patterns

Research by Zheng et al. using wearable devices showed that irregular sleep patterns increase the risk of obesity, hypertension, and mental health disorders. The use of wearable technology allows for more objective and continuous data collection, providing deeper insights into the relationship between sleep patterns and health.

5. Elderly Population

Elderly people with healthy sleep patterns have a lower risk of falls and fractures, as reported in a study by Zhou et al. Regular sleep patterns contribute to better physical balance and bone health.

6. Autonomic nervous balance and sleep patterns

The results show that poor sleep pattern disorders have a negative impact on health, namely an imbalance in the autonomic nervous system or in other words, there is no relationship between sleep pattern disorders and the balance of the nervous system in young adults.

7. Blood pressure and sleep patterns

The results of the study showed that most medical students at Universitas Prima Indonesia in 2023 had poor sleep patterns (57.6%) and prehypertensive blood pressure (41.2%). In addition, there is a relationship between sleep patterns and blood pressure.

Conclusion

Sleep patterns have a significant impact on many aspects of health, including mental health, blood pressure, chronic disease risk, and physical balance. This study underscores the importance of healthy and consistent sleep patterns in maintaining long-term health. It is important for individuals, especially adolescents and young adults, to understand the impact of sleep patterns on their health. Interventions such as education about the importance of sleep, stress management, and reducing exposure to technology before bedtime can help improve sleep quality and overall health.

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