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# Sleep Hygiene, Digital Media Use, and Sleep Quality Among Preschool-Aged Children

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Abstract:
Sleep is a basic need that has a great impact on the physical and mental development of children, especially in the early phases of life. This study aims to examine the impact of digital media on children's sleep patterns and examine the application of sleep hygiene as a solution. The methodology used is a quantitative survey involving parents and educators as respondents, who collect information through questionnaires, observations, and structured interviews. The findings show that exposure to digital media before bed has a negative effect on children's sleep quality, leading to insomnia and irregular sleep patterns. The implementation of good sleep hygiene, such as limiting the use of digital media and establishing a regular sleep routine, has been proven to be effective in improving children's sleep quality. This research provides valuable insights for parents and educators in encouraging better sleep habits in the digital age.

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## INTRODUCTION

Sleep is a basic need that plays an important role in human life, especially in childhood. In this developmental phase, optimal sleep quality plays a significant role in children's physical and mental growth. Various studies have shown that children who get enough quality sleep tend to have better cognitive abilities and are more effective in managing emotions and behavior (Owens et al., 2014). Therefore, healthy sleep practices, or what is known as sleep hygiene, are crucial in supporting children's development processes.

However, in today's digital era, the use of devices such as televisions, mobile phones, and tablets often disrupt children's sleep habits, especially when used close to bedtime. Research by Gao (2023) revealed a significant relationship between high use of digital media and increased sleep disorders in children. This finding emphasizes the importance of raising awareness of the negative impacts of digital media on children's sleep patterns.

The lack of understanding from parents and educators regarding healthy sleep patterns in the context of digital media use often creates a gap between theory and practice. Many parents are not yet aware that exposure to digital media before bed can disrupt children's circadian rhythms, which in turn causes sleep disorders. This study aims to analyze the influence of digital media on children's sleep habits and explore the application of sleep hygiene as a solution to overcome this problem. This study offers novelty by integrating aspects of sleep hygiene and the influence of digital media, which have often been studied separately. Through this approach, it is hoped that effective strategies can be found to improve children's sleep quality by reducing the negative impacts of digital media. The results of this study are expected to provide useful insights for parents, educators, and health workers in promoting better sleep quality in the digital era.

## RESEARCH METHOD

The research design applied in this study is quantitative with a cross-sectional survey approach. This research was carried out at a learning companion and therapy support institution for early childhood aged 3-6 years in one of the cities in East Java.

The sources of information in this study consisted of the main respondents being parents and child companions. Children play a key role in the subject, while parents and teachers make an important contribution to the collection of accurate data on children's sleep habits. The data collection process was carried out through a combination of questionnaires, observations, and structured interviews. This approach is designed to collect quantitative data as well as relevant qualitative information. By utilizing various data collection techniques, the validity of the research results can be significantly improved, providing a clearer picture of the relationship between the factors being studied. Data analysis is carried out through several stages, including data condensation.

## RESULT AND DISCUSSION

### Sleep Hygiene

Sleep hygiene includes routines and practices that support sleep quality in early childhood. The use of digital media, such as tablets and mobile phones, affects this routine. Exposure to digital media before bed can cause sleep difficulties, reduce sleep duration, and decrease the quality of a child's sleep. Children who are exposed to digital media before bed are more likely to experience insomnia, wake up at night, or have irregular sleep patterns. To support optimal *sleep hygiene*, it is necessary to limit the use of digital media before bed and educate parents about the importance of a healthy sleep routine.

Inconsistencies in sleep habits and lack of a bedtime routine make it difficult for children to go to bed on time. Based on a survey of 20 parents, the majority of children under the age of 6 start their bedtime preparations after 10:00 p.m. Children are often reluctant to stop playing and get ready for bed. The importance of education about *sleep hygiene* for parents to reduce exposure to digital media at night and improve the quality of children's sleep.

## Use of Digital Media

Exposure to digital media devices has the potential to affect the hormone melatonin which plays a role in regulating children's sleep. Through interviews with parents, it was revealed that "when the television or mobile phone is turned off, the child becomes crying, so electronic devices are still given to avoid disturbances for grandparents or close neighbors." Therefore, the use of digital media before bedtime should be limited so that children get optimal and consistent sleep duration.

Activities with digital devices before bed tend to activate the brain, which can inhibit the process of relaxation before bed. "Before going to bed, my grandson often jumps around or runs around while watching cartoons and listening to songs on television," said one parent. The use of digital media before bed has a negative effect on healthy sleep habits and reduces the quality of children's sleep.

The presence of digital devices in the bedroom can increase distractions and disrupt sleep patterns. "My son often asks to sleep with his father in the parents' room. His father often plays videos late at night and falls asleep," said parent B. Eliminating digital devices from the bedroom can improve the effectiveness of rest and sleep quality in early childhood.

## Children's Sleep Quality

*Poor sleep hygiene* exacerbates the negative impact of digital media use on sleep quality. Uncertainty in sleep routines and a lack of a supportive environment further complicate sleep problems. One parent said, "I have a hard time taking my children to bed at 7:00 p.m. or 8:00 p.m. because of my busy work. Often, the child refuses to change clothes before bedtime. Several times, I found the child suddenly asleep in a chair." The application of good *sleep hygiene* practices can contribute to improving the quality of children's sleep.

The longer a child uses digital devices in a day, the greater the risk of decreased sleep quality. Parents report that within one week, the child often wakes up at night shortly after falling asleep. "Around 02.00-03.00, the child woke up whining for no apparent reason. When offered milk or snacks, they are sometimes refused and fall asleep after crying exhaustion." The implementation of *sleep hygiene* routines, such as changing nightclothes, reading books, or reducing digital activities before bed, can improve children's sleep quality.

' Adopting *a sleep hygiene* routine can reduce the negative effects of digital media. A consistent sleep schedule and soothing activities before bed can improve sleep quality. *Sleep hygiene,* which includes regular bedtime and a calming routine before bed, plays an important role in improving sleep quality. Structured *sleep hygiene* practices are crucial to maintain sleep health in preschool children who are exposed to digital media.

## Discussion

Matricciani defines sleep as one of the activities that takes up part of the time in 24 hours a day (2024). Quality sleep in childhood is a complex issue, influenced by various biological, environmental, and psychosocial risk factors. Children's physical,

social, and cognitive development is greatly influenced by the duration of sleep they get. The quality of sleep is formed through the habits and daily routines that are lived. Children who had a baseline sleep time of less than 81/2 hours per night tended to get more optimal sleep benefits from earlier sleep times maintained over the course of a week, which experimentally showed that earlier bedtime contributed to improved sleep quality.

In a study conducted in China, it was revealed that not all children can sleep independently. It was found that 331 children started sleeping accompanied by their parents, 59 children needed milk from a bottle to start sleeping, 27 children needed to be carried, and another 9 children were swung around (Lin, 2024). In addition, exposure to electronic devices is also experienced by children who sleep with their parents. Meanwhile, children who consume milk before bed tend to wake up in the middle of the night.

Sleep duration is negatively affected by sleep time, frequency of naps, and use of digital media. In contrast, earlier wake-up times and the frequency of excessive fluid consumption showed a positive relationship with sleep duration (McAlpine, 2024). The body's reaction indicates that sleeping late at night, waking up too early, lack of sun exposure, poor ventilation, and uncomfortable environmental conditions before bed contribute negatively to sleep duration.

Ghasemi, (2024), several studies have reported an increase in the use of digital media in children Some studies have shown an increase in the use of digital media among preschoolers and its association with sleep disorders. The use of digital media before bedtime has a negative effect on healthy sleep habits and reduces the quality of children's sleep. Limiting the use of digital media can reduce the risk of insomnia and support the formation of healthy sleep habits in children. Therefore, it is necessary to intervene to limit the use of digital media at night in order to improve the quality of children's sleep.

Sleep hygiene refers to a series of preparatory activities carried out before bedtime. This concept includes behavior, environmental factors, and control aspects. In particular, this includes the habit of exercising or doing physical activity, sleep time, light exposure, duration of naps, noise levels, temperature, and stress management. Research shows that children who practice sleep hygiene tend to have better sleep quality compared to those who do not (Owens et al., 2014). This shows that sleep hygiene can play an important role in overcoming sleep problems experienced by children in the digital age.

One of the crucial aspects of sleep hygiene is creating a consistent sleep routine. Children who have the same sleep and wake time each day tend to feel more refreshed and more ready for activities. According to research by Mindell et al. (2015), children who follow a regular sleep routine have a lower chance of having sleep disorders. This routine also helps regulate the child's circadian rhythm, which contributes to better sleep quality.

A comfortable sleep environment is also a key factor in sleep hygiene. Research shows that temperature, lighting, and noise can affect a child's sleep quality (Hirshkowitz et al., 2015). Therefore, creating a calm and comfortable sleep

environment is essential to support quality sleep. For example, reducing overly bright lighting and keeping the room temperature cool can help children fall asleep faster.

Most toddlers start sleeping with parental assistance and tend to be exposed to electronic media before bedtime. The increased frequency of waking up at night is often related to sleep initiation carried out through breastfeeding or bottle milk (Lin, 2024).

Ricci, (2024), revealed that reading books can be used as an effective intervention to improve sleep quality in children who have difficulty sleeping. Given that reading books is considered a safe alternative, the existing evidence may be strong enough to support recommendations in this regard.

Weighted blankets are a non-pharmacological intervention that can be applied to address sleep problems and anxiety in children with attention-deficit/hyperactivity disorders. The results of the study show that weighted blankets can improve children's sleep quality and can be an alternative to pharmacological-based sleep interventions (Yu, 2024).

## CONCLUSION

Children's sleep quality is influenced by a variety of factors, including sleep habits, sleep environment, and digital media use. Consistent bedtime routines, implementation of sleep hygiene practices, and creating a comfortable sleep environment play an important role in improving children's sleep quality. Factors such as going to bed late, exposure to digital media before bed, and initiation of sleep with parental guidance or bottle feeding negatively contribute to sleep quality. In contrast, interventions such as reading books before bed and using weighted blankets have been shown to be effective in helping children who have difficulty falling asleep. By understanding these factors, parents and caregivers can take appropriate steps to support healthier, better sleep for their children.

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