

The Effect Of Nature Sound Music Therapy On Adolescent Sleep Quality In Dasan Baru Hamlet

Nuri Handayani¹, Hikmah Lia Basuni¹

¹Program Studi Ilmu Keperawatan STIKes Hamzar Lombok Timur

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Corresponding Author :

Nuri Handayani

E-mail :

nurihandayani273@gmail.com

ABSTRACT

Background & Objective: Adolescents are females or males who fall between childhood and adulthood. According to the World Health Organization (WHO), the age range for adolescence is 10 to 19 years. According to the United Nations (UN), the age range for adolescence is 15 to 24 years. To determine the effect of nature sound music therapy on the sleep quality of An. H in Dasan Baru Hamlet. **Methods:** A case study design was conducted on a single participant, An. H (16 years old). The intervention consisted of repeated nature sound music therapy for 3 consecutive days, twice daily, for 30–45 minutes each session. Sleep quality was measured using the Pittsburgh Sleep Quality Index (PSQI) questionnaire before and after the intervention. **Results:** After receiving repeated nature sound music therapy for 3 days, there was an improvement in sleep quality, with the sleep quality score decreasing from 12 (poor) to 7 (good). The adolescents also reported better sleep quality, feelings of greater relaxation, and a reduction in headaches caused by insufficient sleep. **Conclusion:** Nature sound music therapy has a positive effect on improving sleep quality in adolescents. Nature sound music therapy can serve as a nursing intervention that can be performed independently because it is easily accessible and simple to implement.

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Introduction

Sleep is one of the basic needs that must be fulfilled by every individual, requiring a certain amount of time according to age to achieve good sleep quality (Baihaq et al., 2019). Sleep is a state of unconsciousness in which a person can still be awakened by providing sensory stimulation. Sleep is an active process, not merely a

loss of consciousness. The level of activity in the brain is not entirely reduced during sleep. During certain stages of sleep, O₂ uptake by the brain increases beyond normal levels during wakefulness (Rizal & Afriandi, 2022).

Sleep quality is a condition in which the sleep performed by an individual produces freshness and fitness upon awakening, and factors that can affect a person's sleep quality include illness, fatigue, lifestyle, emotional stress, and medication (Irfan et al., 2020). Sleep can restore and rest the physical body, reduce stress and anxiety, and improve concentration ability; therefore, if sleep quality is not fulfilled or is disrupted, it can affect human sleep needs (Keswara et al., 2019).

According to the National Sleep Foundation, normal sleep needs for adolescents are 8–10 hours, and healthy sleep needs for adolescents can produce better rest. For children and adolescents, fulfilling sleep time is expected to support growth and development and maintain concentration at school; therefore, everyone must meet sleep needs with duration adjusted to age (P2PTM Kemenkes RI, 2019).

The prevalence of sleep disorders in adolescents from various research sources shows varying results. According to the Centers for Disease Control and Prevention (CDC) in 2017, the prevalence of sleep disorders among adolescents in the United States was 68.8%. Research by Okada (2018) in Japan explained that the prevalence of sleep disorders in adolescents was 19%, with problems in sleep-wake transition. The prevalence of sleep disorders in Brazil was 25.5% among adolescents aged 13–19 years, caused by mobile phone use and playing video games before bedtime (Geciely, 2019). The prevalence of sleep disorders in adolescents has actually not been widely conducted in Indonesia. In Indonesia in 2018, the prevalence of insomnia was 10%; out of 238 million Indonesian population, approximately 23 million people suffered from insomnia (FER, 2018). In Riau Province, the incidence of insomnia in adolescents was 45.6%, caused by several factors, namely social media use, work, and other activities (Nanda, 2021).

The results of research by Nashori & Diana (2015) revealed that sleep quality can affect learning achievement and self-control. Therefore, adequate and quality sleep time is very beneficial for every individual. Sleep disorders are among the adverse effects reported by patients; in general, nighttime sleep disorders can cause several problems such as insomnia, abnormal sensation movements during sleep or when awake in the middle of the night, and excessive drowsiness during the day. This can be influenced by several factors including physiological and psychological factors; therefore, various types of spiritual-physical interventions such as music therapy are considered usable when starting to experience sleep disorders to help relaxation (Putri & Utomo, 2021).

Music therapy is a therapy that uses methods of melody, rhythm, and sound harmonization appropriately. There are various types of music genres/streams such as classical music, blues, R&B, pop, rock, funk, and nature sound. However, not all types of music can be used as alternative therapy because they are unpleasant to hear. In some places or regions, not all types of music can be accepted because they contradict local beliefs, religion, and culture (Siregar et al., 2022). One type of music that has been applied by professional therapists and is clinically proven to reduce anxiety levels and help the body relax is nature sound.

The mechanism of nature sound music therapy in affecting sleep quality in humans begins with music heard through the ears, which is then transmitted to the brain through vibrations in the eardrum and subsequently channeled through the

cochlear nerve. Music therapy, especially nature sound, is universal and calming music; therefore, this music is suitable for all age groups (Lestari, 2023). Nature sound music therapy is one of the complementary therapies or health therapies that achieves satisfactory results, including improvement in sleep quality, physical condition, and mental condition for the individual (Wijayanti et al., 2016).

Based on the results of a brief interview with adolescents in Dasan Baru Hamlet on July 27, 2025, it was found that most adolescents in the area experienced sleep quality disorders due to addiction to playing mobile phones and several applications such as TikTok and online games. Sleep quality disorders caused sleep hours to be less than normal needs, ranging from 4–5 hours at night. This was characterized by lack of focus during study, frequent drowsiness during the learning process, weakness, sore eyes, red eyes, and headaches.

One of the most prominent adolescents was An. H (16 years old), who complained of difficulty initiating sleep at night, insufficient sleep hours, drowsiness in class, and headaches and sore eyes. According to her account, An. H had difficulty initiating sleep because she did not feel sleepy and preferred to open her mobile phone to play online games. An. H admitted that due to busy daytime activities and the habit of playing mobile phones before bedtime, she could only start sleeping after 22.00 at night, resulting in frequent headaches in the morning and drowsiness during study. Until now, no specific intervention has been carried out to help improve the sleep quality disorders experienced.

An. H also stated that she needed a method to reduce the sleep quality disorders experienced, a method that could be done simply and easily without the use of medication. One method she wanted to apply was the use of nature sound music therapy because this therapy can be done easily, is quickly obtained, and does not require special medical personnel. Based on this condition, a case study was conducted regarding The Effect of Nature Sound Music Therapy on Sleep Quality in An. H in Dasan Baru Hamlet as a nursing intervention effort.

Objective

To determine the effect of nature sound music therapy on the sleep quality of An. H in Dasan Baru Hamlet.

Method

This study used a case study design with a descriptive approach to evaluate the effect of nature sound music therapy on the level of sleep quality in adolescents. The study was conducted in Dasan Baru Hamlet in August 2025. The research subject was An. H, a 16-year-old adolescent selected based on the results of a preliminary study using a brief interview method. Subject selection was carried out purposively with inclusion criteria, namely: adolescents aged 16–18 years, experiencing sleep quality disorders, with sleep category of poor to very poor on the Pittsburgh Sleep Quality Index (PSQI) questionnaire, able to follow instructions, and willing to become respondents.

The intervention provided was nature sound music therapy repeatedly for 3 consecutive days, with a frequency of twice a day: in the morning, listened to from 06.00–07.00 before An. H left for school, and at night at 20.00–21.00 when starting to sleep. Each therapy session lasted 30–45 minutes, conducted at the respondent's home

with instruction assistance from the researcher. Before the intervention, the researcher provided education and demonstration on how to perform the therapy correctly.

Data collection was carried out using the Pittsburgh Sleep Quality Index (PSQI) questionnaire to measure the respondent's sleep quality level before and after the intervention. This questionnaire consists of 7 assessment components divided into subjective sleep quality, sleep medication, sleep duration, sleep disturbance, sleep latency, habitual sleep efficiency, and daytime dysfunction. Additional data were obtained through structured interviews and direct observation of the respondent's condition, including changes in sleep quality and emotional expression during the research process.

Data analysis was carried out by comparing the sleep quality level scores before and after the intervention. The results of the decrease in sleep quality disorder levels were analyzed descriptively in the form of tables and graphs to facilitate interpretation. In addition, the respondent's subjective responses such as feeling more comfortable, reduced headaches and sore eyes, and improved sleep quality were also recorded as data on the effect of nature sound music therapy.

This study has obtained permission from relevant parties, including respondent consent through an informed consent form. The confidentiality of the respondent's identity is maintained in accordance with research ethics principles including autonomy, beneficence, non-maleficence, and justice.

Results

TABLE 1. Pre-test and Post-test Results for Sleep Quality of Patient H

Day/Date	Measurement	Sleep Quality Level Score (PSQI)	Category
Thursday, August 7, 2025	Pre-Test	12	Poor
Saturday, August 9, 2025	Post-Test	7	Good

Based on the table above, the sleep quality level score of An. H before the nature sound music therapy intervention was 12, which falls into the poor sleep quality category. After being given repeated nature sound music therapy for 3 days, the sleep quality level score improved to 7, which falls into the good sleep quality category.

This improvement in sleep quality indicates that the repeated nature sound music therapy intervention was effective in improving the sleep quality level in adolescents. In addition, An. H also expressed a change in her feelings, becoming more relaxed and rarely experiencing headaches every morning, reduced drowsiness during study, and being able to initiate sleep earlier, resulting in better sleep quality after the nature sound music therapy intervention was carried out.

Discussion

The results of the study showed that An. H, a 16-year-old adolescent in Dasan Baru Hamlet, experienced sleep quality disorders with a pre-test score of 12 based on measurement using the PSQI questionnaire, which falls into the poor sleep quality category. After the nature sound music therapy intervention was carried out repeatedly for three consecutive days with a frequency of twice a day, An. H's sleep quality level improved to 7, which falls into the good sleep quality category. This improvement in sleep quality level was accompanied by a subjective statement from An. H that she felt more relaxed, found it easier to initiate sleep, and experienced

reduced headaches every morning due to insufficient sleep hours after applying nature sound music therapy.

The results of this study are in line with research conducted by Annisa Rahmawati (2020), which found that after the administration of nature sound music therapy, the results obtained were changes in sleep quality from very poor to poor, and from poor to good.

Nature music therapy is one of the complementary therapies in the management of patients experiencing sleep disorders. The action of administering music therapy has an effective influence in reducing symptoms such as depression in patients with different medical diagnoses at different age levels. There are no restrictions for users of this therapy, and it can be given to all patients with sleep disorders (Waruru et al., 2019).

The improvement in sleep quality has a positive impact on reducing tension and anxiety and provides relaxation capable of improving the sleep quality of An. H in Dasan Baru Hamlet.

This assumption is in line with research conducted by Eka Yulia Fitri and Dhona Andhini (2016), which stated that there is a significant difference between pre-test and post-test sleep quality when listening to nature sound music therapy because of the sedative effect of nature sound therapy, which causes a decrease in tension, anxiety, pain, and promotes relaxation and breathing patterns.

The success factors of the intervention on An. H were influenced by several things; it can be concluded that the improvement in sleep quality was influenced by the administration of nature sound music therapy and also by lifestyle change factors and the habits of the adolescent herself, such as starting to sleep earlier and reducing the duration of mobile phone use. There was also education and demonstration provided by the researcher before the intervention, and a quiet home environment that supported the relaxation process. This is in line with research by Kurnia Wati et al. (2016), which stated that nature sound music therapy as one of the medical actions and in accordance with SOP can be applied in the care of patients experiencing sleep disorders.

Although the results of this study show the effect of nature sound music therapy on improving sleep quality in An. H, this study has limitations. One of the main limitations in this study is the use of a questionnaire to assess the sleep quality level, and the intervention in this study was carried out for only 3 days, so it was not possible to observe in detail the sleep quality level of An. H over a certain period of time. Nevertheless, it is hoped that the results of this case study on the use of nature sound music therapy can be applied on various occasions because it can provide a calming effect and can relax the body and is able to reduce anxiety levels. Adolescents are expected to be able to change the habit of playing mobile phones for too long, which can disrupt sleep quality.

Conclusion

Nature sound music therapy was found to improve the sleep quality of An. H, a 16-year-old adolescent in Dasan Baru Hamlet, as shown by the PSQI score decreasing from 12 (poor category) in the pre-test to 7 (good category) in the post-test after a 3-day intervention with a frequency of twice daily. This therapy can be recommended as a nursing intervention to help reduce sleep quality disorders in adolescents because

it is easy to perform, safe, and inexpensive, particularly in rural areas such as Dasan Baru Hamlet. However, further research is needed to develop studies on nature sound music therapy for improving adolescent sleep quality by incorporating different variables so that it can contribute to nursing science.

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