



CASE STUDY THE EFFECT OF COMBINATION OF BABY MASSAGE AND LULLABY MUSIC THERAPY ON BABY SLEEP QUALITY



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ABSTRACT

Introduction: Good sleep is an important need for infant growth, because during sleep the baby's brain growth reaches its peak. Babies who do not get enough sleep will have their immune system lowered so that they are susceptible to disease. In addition, growth hormones will be disrupted, so that the baby's growth will also be disrupted. Efforts that can be used to meet the need for sleep in infants have developed, one of which is by combining baby massage with lullaby music therapy. **Purpose:** This study aims to determine the effect of the combination of infant massage and music therapy on the quality of sleep on infants. **Methods:** The writing of this scientific paper uses a case study method. This case study uses a nursing process approach on 3 healthy infant clients aged 0-12 months but have mild sleep problems. **Discussion:** The results of the study showed that after the intervention, the infant became more active during the day, looked more restful to sleep, the baby was easier to sleep and the baby cried but not as long as before. All mothers admitted that there was a change in their child's sleep pattern. After the combination of infant massage and lullaby music therapy, it was found that all infants experienced an increase in sleep quality to no problems. **Conclusion:** The combination of baby massage and lullaby music therapy has an effect on improving the quality of infant sleep.

Keywords: Baby sleep quality, baby massage, lullaby music therapy

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INTRODUCTION

A good night's sleep is essential for baby growth because during sleep the baby's brain grows the most. Babies require roughly 14 hours of sleep each day. In Indonesia, 44.2% babies suffer from sleep disturbances, which appear as frequent overnight awakenings. Baby screaming and waking up frequently during the night are regarded normal and must be experienced by all babies. More than 72% of parents believe that baby sleeping issues are unimportant or insignificant (Nugroho, Hartini & Kurniawati, 2023).

Babies who do not get enough sleep will lower their immune system, making them susceptible to disease. In addition, growth hormones will be disrupted, so the baby's growth will also be disrupted. Therefore, babies must get quality sleep so that the brain maturation process is not disturbed. During sleep, the baby's body will repair

brain cells and there will be a production of growth and development hormones by approximately 75% (Wahyuni et al., 2024). To soothe the baby, parents frequently hold it by softly rubbing its back or buttocks. Although this may have an impact on the infant's autonomous sleep habits, parents are unaware of strategies for helping the baby sleep. Non-pharmacological therapies, such as baby massage and lullaby music therapy, can help with sleep issues. In Indonesia, baby massage has long been part of the baby care culture, particularly in traditional communities. However, this practice is not frequently used, and some individuals only perform baby massage with the help of a traditional healer for the first week after birth.

According to research, combining lullaby music with other therapies, such as baby massage, can enhance sleep quality in infants aged 6-12 months, with a strong link

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between these interventions and beneficial sleep outcomes (Rohmah et al., 2024). This case highlights effect of combined baby massage and lullaby music therapy.

METHOD

The writing of this study uses a case study method with a nursing care process approach. Baby massage was administered to infants aged 1-12 months while listening to lullaby music therapy for four consecutive days, infants' sleep quality, as determined by pre-test and post-test averages. The study was conducted in Banteran Village, Sumbang Subdistrict in October 2024 from October 8-12, 2024. This study involved 3 families with healthy infants aged 0-12 months who became research subjects. In this case study, several criteria were applied, namely infants aged 0-12 months, healthy infants not taking drugs that affect the gastrointestinal tract and parents of infants who were willing to be respondents. Data were collected through observation and interviews with parents to understand the experiences and changes experienced by infants related to sleep patterns. Sleep quality was measured using a questionnaire that included sleep duration, frequency of night waking, and comfort level of the infant during sleep using the Brief Infant Sleep Quality (BISQ) questionnaire. Data collection was conducted before and after the intervention.

RESULT

Based on measurements using the brief infant sleep quality questionnaire on each baby, a total score are 8, 7, and 7. According to interviews

with parents, they believe that baby can sleep at any time and the important is that babies can sleep and will improve with age. The truth is that babies who don't get enough sleep weaken their immune systems, making them more susceptible to sickness. Before the intervention the baby was often fussy, difficult to start sleeping, long to fall back asleep, crying when going to sleep and waking up, the baby had different sleeping hours and the baby had to be carried for a long time until the baby could sleep soundly and could be put to bed. However, after the intervention the baby became more active during the day, seemed to sleep better, the baby was easier to sleep and the baby cried but not as long as before. All mothers claimed there was a change in their child's sleep pattern. One mother said that after sleeping well, her baby seemed to have a good mood with the characteristics of the baby often smiling and being more responsive when asked to joke/play. The baby looked refreshed and actively played.

Before the combined action of baby massage and lullaby music therapy, all babies had mild sleep quality problems. While after the intervention, it was found that all babies experienced an increase in sleep quality to no problems.

The duration of infant sleep at night increased from an average of 7 hours of sleep to 10.3 hours. The average number of awakenings during night sleep decreased from 4 times to 2 times and the duration of wakefulness also decreased with an average of 56 minutes of wakefulness. Infants became more punctual with a difference in sleep time of <1 hour from the previous sleep time. However, the baby's average nap was still the same at 3 hours.

Table 1. Infant Sleep Quality

Sleep Quality Category	Before		After	
	Frequency	Percentage	Frequency	Percentage
No Problem	0	0	3	100
Mild Problem	3	100	0	0
Severe Problem	0	0	0	0
Total	3	100	3	100

Table 2. Indicators of sleep quality based on BISQ before and after the combined intervention of infant massage and lullaby music therapy.

Indicator	Before	After
Average duration of night sleep	7 hours	10.3 hours
Average duration of afternoon naps	3 hours	3 hours
Average number of awakenings during night sleep	4 times	2 times
Average sleep on time	3 Hours Difference	Difference < 1 Hour

Indicator	Before	After
Average duration of wakefulness during night hours	3.8 hours	56 minutes

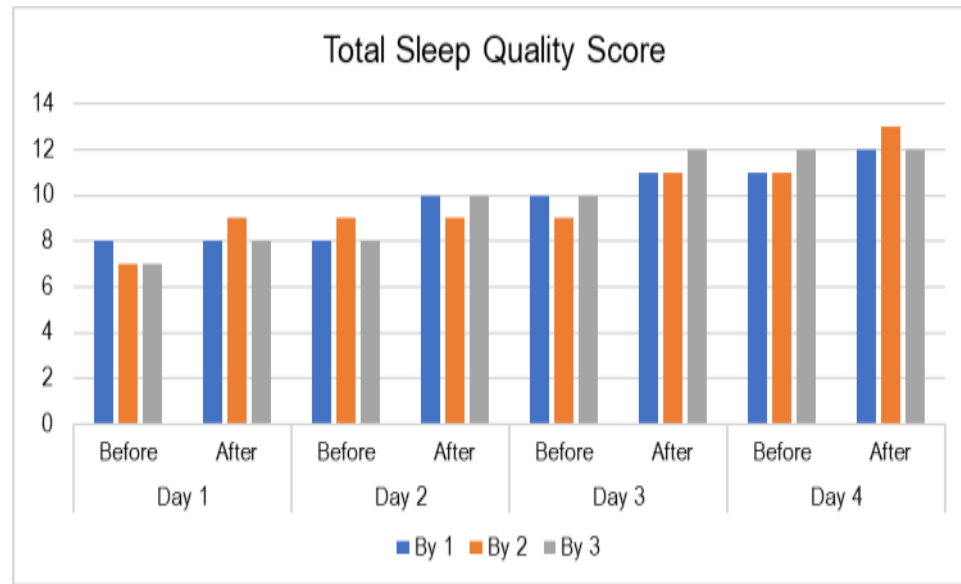


Figure 1. Graph of the three infants' sleep quality scores

Based on figure 1, it shows that there is an increase in sleep quality scores after giving a combination of infant massage and lullaby music therapy to the second and third infants on the first day of evaluation. On the second day of evaluation, only the second baby did not experience an increase. On the third day of evaluation, all babies experienced an increase in scores and on the last day of evaluation, the first and second babies experienced an increase in scores.

DISCUSSION

Baby massage movements are performed on several body organs such as gentle strokes on the forehead and cheeks which can promote calmness and improve facial muscle tone, aiding expression and emotional communication (Rosalina, Novayelinda & Lestari, 2022). In addition, stroking and squeezing the arms and legs stimulates blood flow and muscle development, which is essential for physical growth (Wahyuni et al., 2024). Meanwhile, lullaby music therapy is a type of music with soft, harmonious tones and predictable dynamics. This music stimulates the release of endorphin hormones to provide a relaxing effect, reduce stress and physical tension, and support cardiovascular health. Music also helps to balance the body's chemical system and metabolism, allowing the baby to sleep longer and wake less often at night (Abidah, Alfiyanti & Samiasih, 2024).

The combination of baby massage and lullaby music therapy prolonged the duration of night sleep in all three infants. According to Table 2, the three infants who previously slept an average of 7 hours now slept for 10.3 hours per night. The longer sleep duration was attributed to the higher release of serotonin during the massage procedure. Serotonin is the main neurotransmitter involved in the creation of sleep. The released serotonin suppresses the reticular activation system and other brain functions (Muayah et al., 2024; Setiawati et al., 2022). Serotonin is produced from the amino acid tryptophan which is first converted into 5-hydroxytryptophan (5-HTP), then into N-acetylserotonin, which is finally converted into melatonin. Melatonin plays an important role in prolonging and deepening sleep at night. Melatonin production increases in dark conditions when light exposure is reduced to the eyes (Setiawati et al., 2022).

Based on information from the three mothers, it was known that previously the babies often had difficulty falling asleep, showing symptoms of fussiness and crying for a long time before falling asleep. However, after the combined infant massage intervention, the infants fell asleep more easily and quickly, and cried less. Infant massage also stimulates the release of the hormone oxytocin, which is produced by the hypothalamus and secreted through the pituitary gland. Oxytocin helps create a feeling of calm

and comfort in the baby, thus reducing the frequency of crying (Setiawati et al., 2022). When doing baby massage while listening to lullaby music, the baby's brain actively sends signals through the nerves to stimulate the release of endorphins. This hormone functions as a natural reliever that gives a feeling of happiness, makes the baby calmer and sleeps better, so that the duration of sleep can increase (Nugroho, Hartini & Kurniawati, 2023).

Figure 1. shows that there was an increase in sleep quality scores calculated by the BISQ questionnaire. However, each infant had a different score increase. Baby A had the most increase in score among the other two babies. Every day, the improvement was different and there were even days when there was no increase in the score. This difference can be caused by several other factors that can also affect infant sleep. One of them is age. Babies aged 6-12 months experience rapid development, such as learning to crawl and walk, which can lead to faster fatigue and affect their sleep patterns. At 10-11 months, babies tend to be more active and may have difficulty falling into deep sleep (Setiawati, Wardiyah, et al., 2022).

CONCLUSION

Baby massage and lullaby music therapy have been shown to be effective in improving the quality of infant sleep. Massage stimulation helps improve blood circulation, relieve tension, and provide a sense of comfort to the baby. Lullaby music, on the other hand, creates a calm atmosphere that can help babies fall asleep more easily.

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