

The Effect of Al-Quran Murottal Audio Therapy on Sleep Quality in Infants Aged 3-6 Months at the Ananda Klinik Keurukuh

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ABSTRACT

Background: Sleep quality is one of the essential determinants of infant growth and development because approximately 75% of growth hormone secretion occurs during sleep. Poor sleep quality may negatively affect neurological maturation, cognitive development, immune function, and physical growth. Non-pharmacological interventions, including listening to the recitation of the Holy Qur'an (murottal), have been increasingly used as complementary therapies to promote infant relaxation and improve sleep quality. Objective: This study aimed to determine the effect of Al-Qur'an murottal audio therapy on sleep quality among infants aged 3–6 months at Ananda Clinic, Keurukuh, North Aceh. Methods: A quantitative pre-experimental study with a one-group pretest–posttest design was conducted among 32 infants aged 3–6 months selected using total sampling. Sleep quality was assessed using a modified Sleep Diary questionnaire with a Guttman scale before and after seven consecutive days of Al-Mulk Surah murottal therapy administered for 30 minutes before bedtime. Data were analyzed using descriptive statistics, the Shapiro–Wilk normality test, and the Wilcoxon Signed Rank Test. Results: Before intervention, 59.4% of infants had poor sleep quality,

while 40.6% had good sleep quality. After intervention, good sleep quality increased to 93.8%, whereas poor sleep quality decreased to 6.3%. Wilcoxon analysis demonstrated a statistically significant improvement in sleep quality after therapy (mean score 1.41 vs. 1.94; $p=0.000$). Conclusion: Al-Qur'an murottal audio therapy significantly improves sleep quality among infants aged 3–6 months and may serve as a safe, simple, and effective complementary intervention in maternal and child health services.

ABSTRAK

Kualitas tidur merupakan salah satu faktor penting yang memengaruhi pertumbuhan dan perkembangan bayi. Gangguan tidur pada bayi dapat berdampak terhadap perkembangan fisik, fungsi kognitif, serta sistem kekebalan tubuh. Salah satu terapi komplementer yang dapat digunakan untuk meningkatkan kualitas tidur bayi adalah terapi audio murottal Al-Qur'an. Penelitian ini bertujuan untuk menganalisis pengaruh terapi audio murottal Al-Qur'an terhadap kualitas tidur bayi usia 3–6 bulan di Klinik Ananda Keurukuh Aceh Utara. Penelitian menggunakan desain pre-experimental dengan pendekatan one group pretest-posttest. Sampel penelitian berjumlah 32 bayi usia 3–6 bulan yang dipilih menggunakan teknik total sampling. Kualitas tidur diukur menggunakan kuesioner sebelum dan sesudah pemberian terapi audio murottal Al-Qur'an. Analisis data dilakukan secara univariat dan bivariat. Uji normalitas menggunakan Shapiro–Wilk menunjukkan data tidak berdistribusi normal, sehingga analisis perbedaan dilakukan menggunakan uji Wilcoxon. Hasil penelitian menunjukkan bahwa sebelum intervensi terdapat 19 bayi (59,4%) dengan kualitas tidur buruk dan 13 bayi (40,6%) dengan kualitas tidur baik. Setelah pemberian terapi audio murottal Al-Qur'an, kualitas tidur meningkat menjadi 30 bayi (93,8%) dengan kualitas tidur baik dan hanya 2 bayi (6,3%) yang masih memiliki kualitas tidur buruk. Hasil uji Wilcoxon menunjukkan nilai rata-rata meningkat dari 1,41 menjadi 1,94 dengan $p\text{-value} = 0,000$ ($p < 0,05$), yang menunjukkan adanya pengaruh signifikan terapi audio murottal Al-Qur'an terhadap peningkatan kualitas tidur bayi usia 3–6 bulan. Terapi audio murottal Al-Qur'an dapat direkomendasikan sebagai terapi komplementer yang aman, mudah diterapkan, dan efektif untuk meningkatkan kualitas tidur bayi.

INTRODUCTION

Sleep is a crucial physiological need during infancy because it plays a role in growth, brain development, nervous system maturation, and growth hormone secretion. During sleep, approximately 75% of growth hormone is produced, making sleep quality a key indicator of infant growth and development. Infants aged 3–6 months generally require around 13–15 hours of sleep

per day. Sleep disturbances in infants can lead to decreased immunity, impaired physical and cognitive development, and increase the risk of fussiness and difficulty concentrating in later stages of development. (Lutfiasari, 2020)

The World Health Organization (WHO) reports that approximately 33% of infants experience sleep disorders, characterized by a nightly sleep duration of less than nine hours, frequent awakenings of more than three times, and waking periods of more than one hour per night. In Indonesia, approximately 32% of mothers report that their infants experience recurring sleep disorders, which can potentially hinder optimal growth and development. This situation indicates that infant sleep quality remains a significant concern in maternal and child health services.. (Kemenkes, 2023)

Various interventions have been used to improve infant sleep quality, both pharmacological and non-pharmacological. Non-pharmacological approaches are preferred because they are relatively safe, easy to implement, and have minimal side effects. One complementary therapy that is increasingly being developed is Quranic recitation audio therapy. This therapy utilizes the recitation of Quranic verses in a tartil manner, producing a relaxing effect through central nervous system stimulation. Sound waves received through the auditory system affect the limbic system and hypothalamus, reducing sympathetic nervous activity, increasing endorphin secretion, creating a sense of comfort, and helping improve infant sleep quality. (Aryani et al, 2022)

Several previous studies have shown that Quranic recitation therapy effectively improves infant sleep quality. A study by Yesi Ermawati and Rita Riyanti, using a one-group pretest-posttest design, showed that seven days of Surah Al-Mulk recitation significantly increased infant sleep duration with a p-value <0.05. Similarly, a study by Amalu et al. reported a significant effect of murottal therapy on infant sleep quality after intervention using the Wilcoxon test.

However, research on the effectiveness of murottal audio therapy for infants aged 3–6 months in Aceh, particularly at the Ananda Keurukuh Clinic in North Aceh, remains very limited. Differences in sociocultural characteristics, parenting patterns, and environmental conditions can contribute to variations in intervention success. Therefore, research is needed to provide scientific evidence regarding the effectiveness of murottal audio therapy as a complementary therapy in improving infant sleep quality in primary healthcare settings.

The novelty of this research lies in the application of audio therapy of the Al-Qur'an recitation of Surah Al-Mulk as a complementary intervention for infants aged 3–6 months at the Ananda Clinic in Keurukuh, North Aceh, and the evaluation of its effectiveness using a pre-experimental one-group pretest-posttest design. The results of this study are expected to be the basis for the development of non-pharmacological interventions that are easy to implement by health workers and parents to improve the quality of infant sleep.

RESEARCH METHOD

This study employed a quantitative pre-experimental design using a one-group pretest-posttest approach to determine the effect of Al-Qur'an murottal audio therapy on sleep quality among infants aged 3–6 months. This design was selected to compare sleep quality before and after the intervention in the same group of participants without the use of a control group.

The research was conducted at Ananda Clinic, Keurukuh, North Aceh, from December 2025 to January 2026. The study population consisted of all infants aged 3–6 months who visited the clinic during the study period. A total sampling technique was employed, resulting in 32 infants who met the inclusion criteria and agreed to participate in the study. The inclusion criteria were healthy infants aged 3–6 months, mothers who owned a smartphone, and mothers who provided informed consent. Infants with hearing impairment or non-Muslim families were excluded from the study.

The intervention consisted of Al-Qur'an murottal audio therapy using Surah Al-Mulk. Parents were instructed to play the recorded recitation through a smartphone for 30 minutes before bedtime every night for seven consecutive days. Prior to the intervention, mothers received instructions regarding the implementation of the therapy to ensure uniformity during

the intervention period. Sleep quality was measured before the intervention (pretest) and again on the eighth day after completion of the intervention (posttest).

Sleep quality was assessed using a Sleep Diary questionnaire adapted from Carney et al. (2012) and modified using the Guttman scale, in which sleep quality was categorized as good or poor. Demographic variables collected included infant age, sex, environmental conditions, and maternal education level. Primary data were obtained directly from respondents through questionnaires, while secondary data regarding the number of eligible infants were obtained from the clinic records.

Data processing consisted of editing, coding, data entry, cleaning, and tabulation prior to statistical analysis. Descriptive (univariate) analysis was used to summarize respondent characteristics and the distribution of sleep quality before and after intervention. Inferential (bivariate) analysis was performed to determine differences in sleep quality before and after therapy. Normality was assessed using the Shapiro–Wilk test because the sample size was fewer than 50 participants. Since the data were not normally distributed ($p < 0.05$), the Wilcoxon Signed Rank Test was applied to evaluate the effectiveness of the intervention. Statistical significance was established at $\alpha = 0.05$.

The study was conducted in accordance with research ethics principles, including voluntary participation, confidentiality of respondent information, and informed consent from the parents of participating infants before data collection and intervention.

RESULT

A total of 32 infants aged 3–6 months participated in this study. Most respondents were 3 months old (56.3%), while 43.8% were 6 months old. Based on sex, 53.1% of infants were male and 46.9% were female. Regarding environmental conditions, 59.4% of respondents lived in environments categorized as moderately influential on infant sleep quality, whereas 40.6% lived in highly influential environments. Maternal education was dominated by higher education (40.6%), followed by junior high school (37.5%) and senior high school (21.9%). These characteristics indicate that the respondents represented infants with relatively diverse demographic backgrounds.

Table 1. Characteristics of Respondents (n = 32)

Variable	Category	n	%
Infant age	3 months	18	56.3
	6 months	14	43.8
Sex	Male	17	53.1
	Female	15	46.9
Environmental condition	Moderately influential	19	59.4
	Highly influential	13	40.6
Maternal education	Junior High School	12	37.5
	Senior High School	7	21.9
	Higher Education	13	40.6

Sleep Quality Before and After Murottal Audio Therapy

Before receiving Al-Qur'an murottal audio therapy, 19 infants (59.4%) experienced poor sleep quality, while only 13 infants (40.6%) had good sleep quality. After seven consecutive days of intervention, the proportion of infants with good sleep quality increased substantially to 30 infants (93.8%), whereas poor sleep quality decreased to only 2 infants (6.3%). These findings indicate a marked improvement in infant sleep quality following the intervention.

Table 2. Distribution of Sleep Quality Before and After Intervention

leep Quality	Before n (%)	After n (%)
Good	13 (40.6)	30 (93.8)
Poor	19 (59.4)	2 (6.3)

Normality Test

The Shapiro–Wilk test demonstrated that both pretest and posttest data were not normally distributed ($p = 0.000$). Therefore, a non-parametric statistical test was considered appropriate for hypothesis testing. The Wilcoxon Signed Rank Test was subsequently used to evaluate differences in sleep quality before and after the intervention.

Table 3. Shapiro–Wilk Normality Test

variable	SD	p-value
Pretest	0.625	0.000
Posttest	0.265	0.000

Effect of Al-Qur'an Murottal Audio Therapy on Sleep Quality

The Wilcoxon Signed Rank Test showed that the mean sleep quality score increased from 1.41 ± 0.499 before intervention to 1.94 ± 0.246 after intervention. The statistical analysis produced a p-value of 0.000, indicating a statistically significant improvement in infant sleep quality following Al-Qur'an murottal audio therapy. Therefore, the study hypothesis stating that murottal audio therapy improves sleep quality among infants aged 3–6 months was accepted.

Table 4. Wilcoxon Signed Rank Test Results

Variable	Mean $\pm$ SD	p-value
Pretest	1.41 ± 0.499	0.000
Posttest	1.94 ± 0.246	

DISCUSSION

The findings demonstrate that Al-Qur'an murottal audio therapy significantly improved sleep quality among infants aged 3–6 months. Before the intervention, most infants experienced poor sleep quality; however, after seven days of therapy, nearly all infants exhibited good sleep quality. These results suggest that exposure to Qur'anic recitation before bedtime effectively promotes relaxation and improves sleep patterns in infants. Physiologically, the calming effect of murottal audio may be explained through auditory stimulation that influences the limbic system and hypothalamus, resulting in reduced sympathetic nervous system activity and enhanced release of endorphins. This relaxation response may decrease infant restlessness, facilitate sleep onset, and reduce nighttime awakenings. Since growth hormone secretion reaches its peak during deep sleep, improved sleep quality is expected to contribute positively to infant growth and neurological development.

This study also emphasizes that around 75% of growth hormone is produced during sleep, so good sleep quality is an important factor in supporting baby's growth and development. The present findings are consistent with previous studies. Yesi Ermawati and Rita Riyanti Kusumadewi reported that listening to Surah Al-Mulk before bedtime significantly increased infant sleep duration after seven consecutive days of intervention. Similarly, Amalu et al. demonstrated that murottal therapy significantly improved infant sleep quality using the Wilcoxon test. These consistent findings strengthen the evidence supporting Al-Qur'an murottal as an effective complementary intervention for improving infant sleep quality.

In addition to the intervention, respondent characteristics such as age, sex, environmental conditions, and maternal education also showed statistically significant associations with infant sleep quality. Environmental factors, including room temperature and surrounding noise, may influence infants' ability to maintain uninterrupted sleep. Likewise, higher maternal educational attainment may contribute to better knowledge regarding infant sleep hygiene and implementation of bedtime routines, thereby supporting healthier sleep patterns.

The clinical implication of this study is that Al-Qur'an murottal audio therapy can be incorporated into complementary midwifery and maternal-child health services as a safe, inexpensive, culturally acceptable, and easy-to-implement intervention. Midwives can educate

parents to routinely play Surah Al-Mulk before bedtime as part of infant sleep management. Nevertheless, this study has several limitations. The absence of a control group and the relatively small sample size limit the generalizability of the findings. Future studies employing randomized controlled trial designs with larger sample sizes are recommended to strengthen the evidence regarding the effectiveness of murottal therapy.

CONCLUSION

This study demonstrated that Al-Qur'an murottal audio therapy significantly improved sleep quality among infants aged 3–6 months at Ananda Clinic, Keurukuh, North Aceh. Prior to the intervention, most infants experienced poor sleep quality (59.4%), whereas after seven consecutive days of listening to Surah Al-Mulk for 30 minutes before bedtime, the proportion of infants with good sleep quality increased to 93.8%.

The Wilcoxon Signed Rank Test revealed a statistically significant difference between sleep quality before and after the intervention ($p = 0.000$), indicating that Al-Qur'an murottal audio therapy effectively improves infant sleep quality. In addition, respondent characteristics including infant age, sex, environmental conditions, and maternal education were also associated with variations in sleep quality.

These findings suggest that Al-Qur'an murottal audio therapy may be considered an effective complementary, non-pharmacological intervention to improve infant sleep quality. The intervention is simple, safe, inexpensive, and can be implemented independently by parents at home with appropriate guidance from health professionals..

RECOMMENDATION

Based on the findings of this study, several recommendations are proposed:

- a. For Midwives and Health Professionals : Al-Qur'an murottal audio therapy may be incorporated into maternal and child health services as a complementary intervention for improving infant sleep quality. Health professionals should educate parents regarding the appropriate duration, frequency, and implementation of murottal therapy at home.
- b. For Parents : Parents are encouraged to establish a consistent bedtime routine by playing Surah Al-Mulk for approximately 30 minutes before the infant sleeps. A comfortable sleeping environment, adequate room temperature, and minimal noise should also be maintained to optimize infant sleep quality.
- c. For Health Institutions : Maternal and child health clinics are encouraged to integrate complementary therapies, including murottal audio therapy, into health promotion and counseling programs aimed at improving infant well-being.
- d. For Future Researchers : Future studies are recommended to employ randomized controlled trial (RCT) designs with larger sample sizes and longer intervention periods. Additional variables such as breastfeeding patterns, maternal anxiety, nutritional status, and infant developmental outcomes should also be investigated to provide stronger scientific evidence regarding the effectiveness of murottal therapy..

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