THE EFFECT OF BABY MASSAGE ON THE SLEEP QUALITY OF BABIES AGED 3-6 MONTHS WITH ISPA

Erni Ratna Suminar[1]*, Diyanah Kumalasary[2], Pesona Riyanti Wahyu[3]

[1'2'3]Universitas Muhammadiyah Ahmad Dahlan Cirebon
Correspondence email: erniratnasuminar02@gmail.com

ABSTRAK : PENGARUH PIJAT BAYI TERHADAP KUALITAS TIDUR BAYI USIA 3-6 BULAN DENGAN ISPA

Latar Belakang : Tingginya kesenjangan antara prevalensi ISPA dan presepsi orang tua mengenai masalah tidur bayi menggambarkan perlunya perhatian khusus mengenai masalah tidur pada bayi dengan gejala ISPA. Berdasarkan hasil studi pendahuluan yang dilakukan di TPMB Bdn.Sumarni,S.Keb,CHTT melalui data kunjungan pasien bayi usia 3–6 bulan pada bulan Januari– Desember 2023 terdapat 137 bayi usia 3-6 bulan yang berkunjung dan 56 diantaranya mengalami ISPA yang menyebabkan tidur menjadi tidak nyenyak.

Tujuan penelitian : Penelitian ini bertujuan untuk mengetahui pengaruh pijat bayi terhadap kualitas tidur bayi usia 3-6 bulan dengan ISPA di TPMB Bdn.Sumarni,S.Keb,CHTT Tahun 2024.

Metode penelitian : Dalam penelitian ini peneliti menggunakan metode kuantitatif dengan rancangan Pra-Eksperimental desain dan pendekatan one group pre-test pos-test desain. Sampel dalam penelitian ini yaitu bayi usia 3-6 bulan dengan ISPA berjumlah 30 responden, teknik pengambilan sampel dalam penelitian ini yaitu Accidental Sampling. Teknik anlisa data menggunakan uji T-test.

Hasil penelitian yang dilakukan kualitas tidur bayi sebelum diberi pijat 16 responden (53.3%) mayoritas memiliki masalah ringan pada kualitas tidurnya. Setelah diberi pijat 24 responden (80%) mayoritas tidak ada masalah pada kualitas tidurnya. Hasil uji statistik T-test didapatkan yaitu p value = 0.000 ($p < 0.05$).

Kesimpulan : Berdasarkan hasil penelitian dapat diketahui bahwa ada pengaruh pijat bayi terhadap kualitas tidur bayi usia 3-6 bulan dengan ISPA diterima. artinya ada pengaruh yang signifikan pijat bayi terhadap kualitas tidur bayi usia 3-6 bulan dengan ISPA.

Saran : Diharapkan bidan dan tenaga kesehatan lain dapat menerapkan pijat bayi sebagai terapi pelengkap pada bayi 3-6 bulan dengan ISPA untuk memperbaiki kualitas tidurnya.

Kata Kunci : Pijat Bayi, Kualitas Tidur, ISPA

ABSTRACT

Background : The high gap between the prevalence of ARI and parents' perceptions regarding infant sleep problems illustrates the need for special attention regarding sleep problems in babies with ARI symptoms. Based on the results of a preliminary study conducted at TPMB Bdn.Sumarni, S.Keb, CHTT through patient visit data for babies aged 3-6 months in JanuaryDecember 2023, there were 137 babies aged 3-6 months who visited and 56 of them experienced ARI which caused sleep becomes restless. The aim of this research was to determine the effect of baby massage on the sleep quality of babies aged 3-6 months with ARI at TPMB Bdn. Sumarni, S. Keb, CHTT in 2024.

In this research, researchers used quantitative methods with a preexperimental design and a one group pre-test post-test design approach. The sample in this study was babies aged 3-6 months with ISPA totaling 30 respondents. The sampling technique in this study was Accidental Sampling. The data analysis technique uses the T-test.

The results of research conducted on the quality of baby's sleep before being given a massage, 16 respondents (53.3%) the majority had mild problems with the quality of their sleep. After being given a massage, the majority of 24 respondents (80%) had no problems with their sleep quality. The results of the T-test statistical test were p value = 0.000 ($p < 0.05$).

Based on the research results, it can be seen that there is an influence of baby massage on the sleep quality of babies aged 3-6 months with ARI. This means that there is a significant effect of baby massage on the sleep quality of babies aged 3-6 months with ARI. It is hoped that midwives and other health workers can apply baby massage as a complementary therapy for babies 3-6 months with ISPA to improve their sleep quality.

Keyword : Baby Massage, Sleep Quality, ARI.

INTRODUCTION

Infant mortality is one of the indicators included in the Sustainable Development Goals (SDGs) for 2030. The SDGs target for neonatal mortality is 12 per 1,000 live births by 2030 (Aliska et al., 2023), while the National Medium-Term Development Plan (RPJMN) of Indonesia for 2020–2024 sets a target for the infant mortality rate (IMR) at 16 per 1,000 live births by 2024 (Ministry of Health Regulation, 2020). In West Java, the IMR in 2023 was recorded at 13.56 per 1,000 live births—a significant decrease from 26 per 1,000 over the past decade—and is below the national average (Faradiba, 2023).

In 2022, there were 72 reported infant deaths at community health centers (Puskesmas) in Cirebon Regency, consisting of 69 neonatal deaths (0–28 days) and 3 post-neonatal deaths (29 days–11 months). The leading causes of neonatal death were low birth weight (LBW) at 35 cases (50.72%), asphyxia 21 cases (30.43%), infections 4 cases (5.8%), congenital abnormalities 4 cases (5.8%), and other causes 5 cases (7.25%). For post-neonatal deaths, pneumonia accounted for 1 case (33.3%) and other causes for 2 cases (66.7%). These figures represent cases reported to Puskesmas (Cirebon, 2022).

One form of Acute Respiratory Infection (ARI) is non-pneumonia ARI, commonly known as influenza. According to WHO recommendations, the treatment for non-pneumonia ARI in infants should be supportive therapy only—such as fluid rehydration, providing comfort through massage, sun exposure, and the use of specific aromatherapy—without the need for antibiotics. The main viral pathogens causing non-pneumonia ARI include rhinovirus, adenovirus, influenza virus, respiratory syncytial virus (RSV), and coronavirus (Sintama & Nasifah, 2022). In Indonesia, ARI with symptoms such as cough and cold occurs at a frequency of 3 to 6 times per year, averaging 4 times annually in infants and toddlers (Akseer, 2020). Inadequate management of ARI may lead to serious complications such as pulmonary infections, decreased consciousness, respiratory failure, and even death in infants and young children (Desa & Tebih, 2023)).

Infants showing symptoms of ARI have a 44.2% prevalence of sleep disturbances, such as frequent nighttime awakenings due to airway obstruction caused by mucus, nighttime sleep duration of less than 9 hours, more than three nighttime awakenings, and prolonged wakefulness lasting over an hour. Meanwhile, 55.8% of infants with ARI do not experience sleep disturbances. Sleep deprivation weakens the immune system, making infants more susceptible to illness. However, 42.3% of parents do not perceive this as a problem (Siti Suciati, 2023). Among parents, 29.9% consider it a minor issue, while 27.8% regard it as a matter needing special attention (Siahaan & Juniah, 2023). The significant gap between the prevalence of ARI and parental perception of infant sleep problems highlights the need for greater attention to sleep disturbances in infants with ARI symptoms.

In the modern era, a variety of therapeutic approaches have been developed to address infant sleep problems, including pharmacological and non-pharmacological therapies. One example of pharmacological therapy is the administration of melatonin. However, due to its potential risks and limited safety data, melatonin is not recommended for infants, making non-pharmacological interventions a preferred approach. One such intervention is infant massage (Choiriah, 2019). According to the Nursing Intervention Classification (NIC), for patients with ARI experiencing sleep disturbances, interventions aimed at promoting comfort—such as massage, touch, and appropriate positioning—are recommended to improve sleep quality (Siti Suciati, 2023).

Research conducted by Sukmawati (2019) demonstrated the effectiveness of infant massage in improving sleep quality, with 73.3% of participants experiencing improved sleep (Sukmawati & Nur Imanah, 2020). Massage therapy stimulates natural antibodies, enhancing the body's ability to fight infection and optimize organ function. A specific massage technique used for infants with ARI symptoms is the "clapping and vibrating" technique, which involves tapping the chest with a C-shaped hand and vibrating the back to mobilize mucus from the larger airways, facilitating its expulsion through coughing or stool. This helps clear the airways and improve breathing, thereby enhancing sleep quality (Nurjanah & Pratiwi, 2020).

RESEARCH METHODS

The research method employed in this study is a pre-experimental one-group pretest-posttest design**,** with samples selected through accidental sampling. The population in this study consisted of all infants aged 3–6 months diagnosed with Acute Respiratory Infection (ARI) at TPMB Bdn. Sumarni, S.Keb, CHTT. The study was conducted from May to June 2024, with a total sample size of 30 participants.

Infant massage was administered once, with each session lasting 30 minutes, performed by a trained therapist in the afternoon before the infants'

bath time. Then in the morning, sleep quality was measured using the BISQ infant sleep quality questionnaire when they woke up. The data were analyzed using both univariate and bivariate statistical methods. The bivariate analysis was conducted using the *Paired T-Test* to determine the effectiveness of the intervention.

RESEARCH RESULTS

Univariate

Table 1
Frequency Distribution of Sleep Quality Among Infants Aged 3–6 Months with ARI

Infant Sleep Quality	Frequency	Percentage (%)
No problem	14	46.7
Minor problem	16	53.3
Serius problem	0	0

Based on table 1 the majority of babies have mild problems with their sleep quality, namely 16 respondents (53.3%).

Table 2
Frequency Distribution of Sleep Quality in Infants Aged 3–6 Months with ARI after being given massage

Infant Sleep Quality	Frequency	Percentage (%)
No problem	24	80
Minor problem	6	20
Serius problem	0	0

Based on Table 2, the results showed that the majority of babies had no problems with their sleep quality, namely 24 respondents (80%)

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Table 3
Uji Normalitas Data

Respondent	Pretest	Postest
Babies aged 3-6 months	0.062	0.103

Based on table 3, it shows that the significance value of the pretest is 0.062 and the posttest is 0.103. So P> 0.05 so it can be concluded that the data of the tested variables are normally distributed. So the influence test used is the T-test.

Table 4
The Effect of baby massage on sleep quality of babies aged 3-6 months with ARI

Infant Sleep Quality	Frequency Before	Frequency After
No problem	14	24
Minor problem	16	6
Serius problem	0	0

Based on table 4, the results of the T-test statistical test obtained were p value = 0.000 (p <0.05), then Ha was accepted, meaning that there was an effect of baby massage on the sleep quality of babies aged 3-6 months with ARI at TPMB Bdn. Sumarni, S.Keb, CHTT in 2024 was accepted.

DISCUSSIONS

This study aimed to describe the sleep quality of infants aged 3–6 months suffering from Acute Respiratory Infections (ARI) before receiving baby massage intervention at TPMB Bdn. Sumarni, S.Keb, CHTT. Sleep is a fundamental physiological need that plays a vital role in the physical and cognitive development of infants, particularly during the early months of life. Infants with ARI often experience discomfort such as nasal congestion, coughing, and breathing difficulties, which may significantly interfere with their sleep quality. Based on the data presented in Table 11, it was found that the majority of infants, specifically 16 respondents (53.3%), experienced mild sleep disturbances. Although categorized as mild, such disturbances are important to address, as poor sleep quality in infancy can affect not only growth and brain development but also the emotional well-being of the infant and the caregiver.

Common symptoms of mild sleep disturbances include frequent night awakenings, restlessness, and difficulty initiating or maintaining sleep, which may reflect the infant's physical discomfort due to ARI. These findings highlight the need for safe, non-pharmacological interventions to improve sleep, one of which is baby massage. Recent studies have indicated that baby massage has a positive impact on sleep quality. Sihombing et al. (2024) reported a significant improvement in infant sleep scores following a two-week massage intervention. Similarly, Siregar et al. (2024) demonstrated an increase in the proportion of infants experiencing good sleep quality—from 13% to 78.3%—after receiving routine massage therapy at TPMB Rosliana. Additionally, a study by Purba (2024) found that massage with lavender

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aromatherapy significantly enhanced both sleep duration and quality compared to regular massage.

Given that over half of the infants in this study experienced mild sleep disturbances, baby massage presents itself as a promising intervention to improve sleep quality and overall well-being. Baby massage not only induces relaxation but also improves circulation, supports immune function, and alleviates muscle tension—potentially easing discomfort associated with ARI. Therefore, this research serves as a foundational step in developing holistic, evidence-based care practices for infants, particularly those with respiratory conditions. Through gentle and nurturing touch, baby massage offers not only physical relief but also emotional reassurance for both the infant and their caregivers.

Following the implementation of baby massage therapy at TPMB Bdn. Sumarni, S.Keb, CHTT, the results presented in Table 12 show that the majority of infants aged 3–6 months with Acute Respiratory Infections (ARI) experienced notable improvements in sleep quality. A total of 24 out of 30 respondents (80%) were reported to have no sleep disturbances after receiving the massage intervention. This finding indicates a significant improvement compared to the pre-intervention condition, where many infants experienced mild sleep problems.

This improvement may be attributed to the physiological benefits of baby massage, which has been shown to stimulate the parasympathetic nervous system, promote relaxation, reduce stress hormone levels (such as cortisol), improve blood circulation, and relieve respiratory discomfort associated with ARI. Additionally, massage can reduce muscle tension and increase overall physical comfort, allowing infants to sleep more deeply and for longer periods.

Several recent studies support these findings. Lita and Susanti (2024) reported that baby massage significantly improved sleep quality, appetite, and weight gain in infants aged 6–12 months. Similarly, Ginting (2022) observed an increase in good sleep quality from 37.8% to 75.7% after massage was given to infants aged 2–12 months. Silaban et al. (2024) also confirmed that baby massage effectively enhances both sleep quality and motor stimulation in infants aged 3–12 months. These studies affirm that baby massage is a safe, cost-effective, and evidence-based non-pharmacological intervention that can significantly enhance infant sleep—especially for those experiencing respiratory illness.

On a humanistic level, baby massage at TPMB Bdn. Sumarni provides not only physical healing for the infant but also strengthens emotional bonds between the baby and the caregiver. Gentle, affectionate touch fosters a sense of safety and comfort that contributes to deeper, more restful sleep. The fact that 80% of infants in this study achieved optimal sleep quality after receiving massage therapy is strong evidence that this simple intervention can have a profound positive impact

Based on the statistical analysis shown in Table 14, the T-test yielded a *p* value of **0.000** ($p < 0.05$), indicating that the alternative hypothesis (Ha) is accepted. This means there is a significant effect of baby massage on the sleep quality of infants aged 3–6 months with Acute Respiratory Infections (ARI) at TPMB Bdn. Sumarni, S.Keb, CHTT in 2024.

Baby massage acts as a non-pharmacological intervention that stimulates the parasympathetic nervous system, promoting relaxation, improving blood circulation, reducing cortisol levels, and aiding in the regulation of sleep cycles (Manullang et al., 2024). In infants with ARI, massage can also help relieve respiratory symptoms such as nasal congestion and coughing, thereby enhancing physical comfort and allowing for more restful and prolonged sleep.

This finding is supported by previous studies. Silaban et al. (2024) reported that baby massage significantly improved both sleep quality and motor stimulation in infants aged 3–12 months ($p = 0.002$). Similarly, Sinaga (2019) found that the average sleep duration of infants increased from 11 hours to 15 hours per day after receiving massage therapy ($p = 0.000$). Kusniyanto et al. (2024) observed that 93.3% of infants aged 5–6 months showed improved sleep quality after receiving massage therapy over a three-week period, also with a *p* value of 0.000.

The results of this study, with a *p* value of 0.000, provide strong statistical evidence that baby massage has a significant positive impact on sleep quality in infants. This aligns with physiological theories involving parasympathetic activation and is reinforced by empirical findings from other recent studies. Thus, baby massage can be recommended as a simple, effective, and safe intervention in maternal and child health services, especially for infants experiencing ARI.

CONCLUSION

There is an influence of baby massage on the quality of sleep of babies aged 3-6 months with ISPA at TPMB Bdn. Sumarni, S.Keb, CHTT in 2024

SUGGESTIONS

It is expected that further researchers can conduct research using the Quasi-experimental/true experimental method so that there is a comparison group, this is because whether baby massage is effective for baby sleep quality. In addition, the sampling technique and the number of samples are greater. And for the frequency of giving baby massage therapy with a longer frequency.

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