

EXPLORING THE IMPACT OF BABY MASSAGE ON SLEEP QUALITY: A STUDY AT PRATAMA AULIA MEDIKA CLINIC, CIREBON REGENCY

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Abstract

Sleep is an important adaptation process for babies as they adjust to their environment. According to 2018 World Health Organisation (WHO) data published in the journal Pediatrics, around 40% of infants experience sleep problems. One potential intervention to address this is infant massage. This study aims to explore the characteristics of infants, assess the quality of infant sleep before and after receiving massage, and evaluate the effect of infant massage on infant sleep quality at Klinik Pratama Aulia Medika Girinata. This study used a pre-experimental design with a one-group pretest-posttest approach. The sample consisted of 30 infants aged 0-12 months who were selected using purposive sampling. Data were analysed using univariate and bivariate analyses, with Wilcoxon test used for statistical evaluation. The results showed that before receiving infant massage, most infants (n=13.52%) were categorised as having poor sleep quality. In contrast, after the massage intervention, most infants (n= 14.56%) were classified as having good sleep quality. The Wilcoxon statistical test yielded a significant p-value of 0.000, which is smaller than the alpha level of 0.05, thus supporting the acceptance of the alternative hypothesis (Ha). The findings suggest infant massage has a positive influence on improving the sleep quality of infants aged 0-12 months at Pratama Aulia.

Keywords: Baby massage, babies sleep quality, Age 0-12 months

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1. Introduction

Infancy is crucial for children's growth and development, requiring special attention. Sleep plays a vital role in this process, influencing the quantity and quality of a baby's adaptation to their environment. Factors such as sleep habits, comfort, and patterns reflect the overall

quality and quantity of sleep for babies [1].

According to a 2018 WHO study published in Pediatrics, approximately 40% of babies face sleep issues. A 2012 study by Hiscock in Melbourne indicated that 32% of mothers reported ongoing sleep problems in their babies. These

findings highlight the prevalence and persistence of sleep difficulties in babies [2].

In Indonesia, a significant number of babies experience sleep problems, with approximately 44.2% suffering from sleep disorders such as frequent waking during the night. Research conducted in five major cities—Jakarta, Bandung, Medan, Palembang, and Batam—surveyed 385 respondents and found that 51.3% of babies experienced sleep disturbances, while only 42% had uninterrupted for less than 9 hours a night and woke more than three times, often for over an hour. Furthermore, 72.2% of parents viewed babies sleep problems as minor despite their potential impact on a child's growth and development [3].

According to Indonesia's Minister of Health Regulation Number 28 of 2017, Article 20, paragraph 5 allows midwives to monitor babies growth and development through stimulation and early detection. One common form of stimulation is baby massage [4]. Baby massage, a widely recognized form of touch therapy, has been practiced globally for generations, including in Indonesia. This traditional art involves nurturing touch applied by parents, caregivers, and therapists, utilizing specific massage movements and techniques. Performing touch and massage on newborns fosters continuous contact, promoting a sense of security [5]. Baby massage significantly promotes growth and development. It yields remarkable benefits when performed with love and attention to the baby's needs. The gentle touch improves blood circulation, enhancing organ functions. Regular massages provide babies security and comfort while stimulating sustainable growth in motor skills, speech, and intelligence. Consequently, babies become more relaxed and calm, gain weight, and enjoy better sleep, all contributing to their overall development [1].

A preliminary study at Clinic Pratama Aulia Medika, involving interviews with five parents of infants

aged 0-12 months, revealed that 60% of babies struggle to sleep at night, often waking for over an hour. Most infants sleep less than 9 hours at night, with total daily sleep averaging below 13 hours. Only 40% achieve the recommended sleep duration of 14 hours per day. Parents indicated massages are primarily given only when babies are sick or fussy. This data suggests that many infants need more hours of quality sleep.

This study was conducted at Pratama Aulia Medika Clinic in Dukupuntang District, Cirebon Regency, West Java. It aims to identify infant characteristics, assess sleep quality before and after massage, and evaluate the impact of infant massage on their sleep quality.

2. Method

This study employed a pre-experimental, one-group pretest-posttest design. This approach involved administering an initial test (pre-test), an intervention, and a subsequent measurement (post-test) to assess the intervention's effects accurately. Conducted from February to June 2023 at Pratama Aulia Medika Clinic, the study targeted 32 mothers with babies aged 0-12 months. A non-probability purposive sampling method was used, applying the Slovin formula with a 5% margin of error to achieve a sample size 30. Inclusion criteria comprised babies aged 0-12 months who visited the clinic and consented to participate, while exclusion criteria excluded sick babies who did not complete the study. The independent variable was baby massage, and the dependent variable was sleep quality. Data were gathered using a baby sleep quality questionnaire, adapted from Rohmawati's 2018 research, completed before and after the intervention. The researcher, assisted by a colleague, conducted a 10-15 minute baby massage. Analyzed using SPSS version 24, the data underwent normality tests followed by Wilcoxon tests to evaluate the effect of baby massage on infant sleep quality.

3. Result and Discussion

The data collected on respondent characteristics is summarized as follows :

Table 1. The Characteristics of Respondents

Characteristic	f	%
Age (month)		
0-3	5	20
4-6	5	20
7-9	7	28
10-12	8	32
Gender		
Boy	15	60
Girl	10	40
Health Status		
Health	25	100
Ill	0	0
Baby Massage History		
Health	25	100
Ill	0	0

Table 1 shows that among the 25 respondents, nearly half (32%) are in the 10-12 months age group, totaling eight babies. Gender data indicates that most are boys, with 15 babies (60%) compared to 10 girls (40%). All respondents (100%) reported that their babies are healthy. Additionally, the babies (100%) have yet to experience baby massage.

Table 2. The Frequency Distribution of Sleep Quality Before and After Massage

Sleep Quality	Before		After	
	f	%	f	%
Poor	13	52	0	0
Enough	8	32	11	44
Good	4	16	14	56

Table 2 illustrates infant sleep quality frequency distribution before and after massage. Before massage, sleep quality was rated as good by four respondents (16%), adequate by eight respondents (32%), and poor by 13 respondents (52%). Following the massage, the majority of infants, 14 respondents (56%), reported good sleep quality, while 11 respondents (44%) rated it as adequate, with no respondents indicating poor sleep. This shows a

significant improvement in sleep quality post-massage.

These findings support the theory that massage enhances sleep and concentration in infants. Massage promotes vasodilation, increasing oxygen, nutrients, and cardiac output. The improvement in sleep quality is linked to increased serotonin secretion during massage, a neurotransmitter essential for sleep formation that reduces the activity of the reticular activating system and other brain functions. Additionally, melatonin, produced in more significant quantities in darkness, contributes to more prolonged and deeper sleep at night [6].

Table 3. Impact of Baby Massage on Sleep Quality

Sleep Quality	Mean	SD	N	p-Value
<i>Pre</i>	1.64	0.757	25	0.000
<i>Post</i>	2.56	0.507	25	0.000

Table 3 indicates that the average quality of a baby's sleep increased from 1.64 before massage to 2.56 after. The Wilcoxon Test analysis yielded a p-value of 0.000 (<0.05), leading to the rejection of H0 and acceptance of Ha, confirming that baby massage significantly impacts sleep quality.

These findings align with Supriatin et al. 2022, whose study on "The Effectiveness of Baby Massage on the Sleep Quality of Babies Aged 0-6 Months" reported a significant effect on sleep quality, with a p-value of 0.000. [13] Similarly, Erlina et al. 2023 found that baby massage positively influenced sleep quality in infants aged 1-12 months in Langa Village, with a p-value of 0.000. [14] Research by Dewi et al. 2020 in "The Effect of Baby Massage on the Sleep Quality of Babies Aged 6-12 months at Roemah Mini Baby Kids and Mom Care Siak" found a significant impact of massage on sleep quality, with a p-value of 0.000 for infants aged 1-12 months in

Langa Village, Syamtalira Bayu District, North Aceh Regency [6].

Similarly, Altika & Ni'amah 2020, in their study "Analysis of the Sleep Quality of Babies Who Received Massage at Riu Mom & Baby Spa Sukoharjo Pati," reported that 60% of babies who received massages exhibited good sleep quality [15].

Baby sleep quality is determined by the infant's ability to rest sufficiently. [7,8] A baby is considered to have sleep disorders if they sleep less than 9 hours per night, wake up more than 3 times, or stay awake for over 1 hour. Signs of sleep issues include fussiness, frequent crying, and difficulty returning to sleep [8,9]. Quality sleep is crucial for a baby's growth and development, especially during the first 1,000 days. Many mothers face challenges with their babies' sleep, and baby massage can help enhance the quality and quantity of sleep. It promotes endorphin release, alleviates discomfort, induces relaxation, and reduces crying [10].

Inadequate sleep and poor sleep quality can result in physiological and psychological balance disorders. Physiological impacts include decreased daily activities, fatigue, weakness, poor neuromuscular coordination, slow healing process, and decreased immune system. Meanwhile, the psychological impacts include more unstable emotions, anxiety, lack of concentration, lower cognitive abilities, and the ability to combine experiences. Babies who experience sleep disorders will experience the same disorders in the future, especially during the growth period [11].

The gentle touch and pressure from baby massage causes the nerve endings on the skin's surface to react. This stimulation activates the parasympathetic nervous system, which plays the most active role in sleep. In addition, longer sleep duration is triggered by the release of oxytocin and endorphins when the baby is massaged. The endorphin hormone is a hormone that relieves pain and eliminates discomfort, while the

hormone oxytocin functions to reduce stress levels in the brain so that the baby becomes calm and comfortable and the quality of sleep increases [12].

The findings do not align with the research by Fauziyah and Wijayanti 2018, which examined "The Effect of Baby Massage on Weight Gain and Sleep Quality of Babies at the Jetis Health Center Yogyakarta." Their study revealed no impact of baby massage on weight gain or sleep quality. Notably, 19 babies who did not receive massages reported good sleep quality (86.4%), likely influenced by environment, nutrition, illness, and stimulation. The results indicate that environmental and nutritional factors significantly affect sleep quality in babies. Specifically, drinking milk before bed enhances sleep quality, while an uncomfortable crib and family crowding may detract from it [16].

4. Conclusion

Research indicates that baby massage positively affects the sleep quality of infants aged 0-12 months at the Pratama Aulia Medika Girinata Clinic in Cirebon Regency, 2023. This study encourages the establishment of baby massage services to enhance sleep quality, optimizing infants' growth and development.

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