

Literature Review: The Effects of Infant Massage on Infant Sleep Quality

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Article Info	Abstract
Article History Submitted, 2026-05-13 Accepted, 2026-06-24 Published, 2026-06-30	Sleep disturbances in infants are common problems that may affect infant growth and development as well as parental well-being. Infant massage is a non-pharmacological intervention that is believed to promote relaxation and improve sleep quality in infants. This study aimed to analyze the effects of infant massage on sleep patterns and sleep quality among infants aged 0–12 months. This study employed a literature review design. Articles were systematically searched through Google Scholar, PubMed, ScienceDirect, and ProQuest databases published between 2019 and 2026. The article selection process was conducted using the PICO framework. Inclusion criteria included quantitative research articles available in full text and published in English or Indonesian. A total of 10 articles met the inclusion criteria. The findings consistently demonstrated that infant massage has significant positive effects on infant sleep patterns and sleep quality, including increased sleep duration, reduced frequency of nighttime awakenings, faster sleep onset, and improved infant relaxation. Physiologically, infant massage may stimulate the release of serotonin and melatonin hormones while reducing cortisol levels, thereby supporting better sleep regulation. Infant massage is an effective non-pharmacological intervention for improving sleep patterns and sleep quality in infants. Therefore, infant massage may be recommended as part of routine infant care to support optimal growth and development.
Keywords: Infant massage, sleep quality, sleep patterns, infants.	

Introduction

Infancy is a critical period in human growth and development characterized by rapid physical, neurological, and cognitive maturation. During this stage, adequate sleep plays a fundamental role in supporting optimal growth and development. Sleep is essential for restoring energy, regulating metabolism, enhancing brain development, and stimulating growth hormone secretion. Deep sleep, especially during the Non-Rapid Eye Movement (NREM) phase, is associated with increased secretion of growth hormone, which contributes significantly to tissue repair, brain maturation, and immune. Therefore, maintaining good sleep quality in infants is essential for ensuring healthy development and overall well-being. (Besedovsky, Lange and Born, 2012)

However, sleep disturbances remain a common problem among infants. Many infants experience difficulty initiating sleep, frequent nighttime awakenings, short sleep duration, and restless sleep patterns. Poor sleep quality in infants may negatively affect emotional regulation, physical growth, cognitive development, and immune function. Furthermore, infant sleep problems can also increase parental stress, fatigue, and anxiety, thereby affecting family well-being and parent–infant interactions. (Mindell et al., 2010)

Various interventions have been developed to improve infant sleep quality, including pharmacological and non-pharmacological approaches. One of the most widely used non-pharmacological interventions is infant massage. Infant massage is a tactile stimulation technique involving gentle and rhythmic touch applied to the infant’s body. Massage therapy is believed to promote relaxation, improve blood circulation, enhance oxygen delivery, stimulate the nervous system, and increase the secretion of serotonin and melatonin hormones

while reducing cortisol levels. These physiological effects help infants become calmer, more comfortable, and able to sleep longer and more soundly. (Bennett, Underdown and Barlow, 2013)

Several previous studies have demonstrated the positive effects of infant massage on infant sleep quality and sleep patterns. Research conducted by (Ifalahma and Lutfia Rahma Dwi Cahyani, 2019) showed that the duration and frequency of infant massage significantly influenced infant sleep quality. Infants who received massage more frequently demonstrated better sleep quality compared to those receiving less frequent massage. Similarly, (Asnita Sinaga and Natalia Laowo, 2010) found that infant massage significantly improved sleep quality among infants aged 0–6 months, with infants becoming more relaxed, less fussy, and experiencing longer sleep duration after massage therapy.

In addition, (Saputro and Choriidhatul Bahiya, 2021) reported that infant massage improved sleep duration and reduced sleep disturbances among infants aged 1–7 months. (Pebrianthy et al., 2023) also found significant improvements in infant sleep patterns after massage intervention, including reduced time needed to fall asleep, longer nighttime sleep duration, and decreased frequency of nighttime awakenings. Other studies conducted by (Endang Hartutik and Suhartini, 2023; Eka Faizaturrahmi and Nurannisa Fitria Aprianti, 2024; Kintan Annisa and Reni Hariyanti, 2024), as well as (AP, Purnamayanthi and Pande Putu Novi Ekajayanti, 2025), consistently reported that infant massage positively affects infant sleep quality and sleep patterns.

Furthermore, a literature review conducted by (Sulasdi and Ismarwati, 2023) concluded that infant massage is an effective non-pharmacological intervention for improving sleep duration and sleep quality in infants aged 1–12 months. Infants receiving massage therapy were found to sleep longer, wake up less frequently at night, and demonstrate improved relaxation and comfort. These findings indicate that infant massage may serve as an effective complementary therapy to support infant health and development.

Despite the growing evidence regarding the benefits of infant massage, variations still exist among studies in terms of research design, sample characteristics, massage duration and frequency, and outcome measurements. Therefore, a comprehensive literature review is needed to analyze and synthesize the findings from previous studies regarding the effects of infant massage on infant sleep quality and sleep patterns. This literature review aims to evaluate the effectiveness of infant massage in improving infant sleep quality and identify consistent findings reported across previous studies. The findings of this review are expected to provide scientific evidence and practical recommendations for healthcare providers and parents regarding the use of infant massage as a supportive intervention for infant sleep and development.

Methods

This study employed a literature review design to analyze the effects of infant massage on infant sleep patterns and sleep quality among infants aged 0–12 months. The literature review method was chosen to synthesize and evaluate findings from previous studies related to infant massage interventions and sleep outcomes.

A systematic search of the literature was conducted using several electronic databases, including Google Scholar, PubMed, ScienceDirect, and ProQuest. The search process was carried out for articles published between 2019 and 2026. The keywords used in the search process included: “infant massage,” “baby massage,” “sleep quality,” “sleep patterns,” “infant sleep,” and “infants.” Boolean operators such as AND and OR were applied to refine the search strategy. The initial search yielded a total of 19 articles, of which 10 articles were selected for final inclusion based on the eligibility criteria.

The article selection process was conducted using the PICO framework: Population (P): infants aged 0–12 months, Intervention (I): infant massage, Comparison (C): infants before massage intervention or without massage intervention, Outcome (O): sleep quality and sleep patterns. The inclusion criteria in this study were: quantitative research articles discussing the effects of infant massage on infant sleep quality or sleep patterns, full-text articles published between 2019 and 2026, articles written in English or Indonesian, experimental, quasi-experimental, pre-experimental, cross-sectional, or literature review studies, studies involving infants aged 0–12 months. The exclusion criteria included: articles not available in full text, thesis papers, dissertations, conference abstracts, or unpublished studies, duplicate articles, studies not specifically discussing infant massage and sleep outcomes.

The selected articles were screened based on titles, abstracts, and full-text eligibility. Data extracted from the selected studies included author names, publication year, study design, sample characteristics, intervention methods, and main findings related to infant sleep quality and sleep patterns. The collected data were analyzed descriptively by comparing similarities, differences, and main findings across the selected studies. The results were then synthesized narratively to identify the effectiveness of infant massage as a non-pharmacological intervention for improving infant sleep quality and sleep patterns.

Results and Discussion

A literature review was conducted on 10 selected articles. The publications ranged from 2019 to 2026. The results of the journal analysis are presented in Table 1 as follows:

Table 1. Results of Journal Analysis

No	Research	Method	Results
1.	The Effect of Baby Massage on Baby's Sleep Quality (Based on the duration and frequency of the baby's massage) (Ifalahma and Lutfia Rahma Dwi Cahyani, 2019)	This research was conducted in Kadipiro District Banjarsari Regency, Surakarta. It belongs to the experimental Research with quasi-experimental and experimental design design that has a high level of precision. Experimental The research was conducted to uncover the cause-and-effect relationship by involving control groups other than randomly selected Experimental Group	The results of the study also revealed that that there is a difference in the quality of the baby's sleep based on frequency of massage in a week (once, three times, and six times times) with $p = 0.005 < 0.05$). Research shows that There is a significant interaction between baby massage duration and frequency on the quality of the baby's sleep. It is as evidenced by the results of two-factor variance analysis ($p = 0.001 < 0.05$)
2.	Pengaruh Pijat Bayi Terhadap Kualitas Tidur Bayi Usia 0-6 Bulan Di BPM Pera Kecamatan Medan Tuntungan Tahun 2019 (Asnita Sinaga and Natalia Laowo, 2010)	This type of research is a <i>quasi-experimental study</i> , with a One Group Pretest and Post Test Design research design approach in infants 0-6 months	Wilcoxon test results Obtained from 10 respondents before massaging fussy babies, difficulty sleeping, often waking up at night, and the average sleep quality of respondents was 11 hours/day. Where the amount of good sleep quality of the baby must be 13 hours-16 hours/day. And after the massage there is a significant difference in where the baby becomes relaxed, fit when he wakes up and not fussy, From the results <i>of the paired t-test</i> , a value of $P = 0.000$ was obtained where $p = \leq 0.05$ where there was a significant influence between baby massage on the quality of infant sleep with <i>a value of $p = 000$</i> less than a value of ≤ 0.05 , so from the data it can be concluded that there is an effect of baby massage on the sleep quality of babies aged 0-6 months at BPM Pera, Medan Tuntungan District in 2019
3.	The Effects of Baby Massage to Sleep Quality in Infant Age 1-7 Months (Saputro and Choridhatul Bahiya, 2021)	This study used a quasi-experimental design with a non-equivalent control group approach. The study involved 20 infants aged 1–7 months, divided into intervention and control groups using purposive sampling. Infant massage was provided to the intervention group, and sleep quality was measured before and after the intervention	The study found that infant massage significantly improved infant sleep quality. Infants who received massage therapy experienced better sleep duration, improved relaxation, and reduced sleep disturbances compared to the control group. The findings indicated that infant massage can help infants sleep more soundly and comfortably
4.	The Effects of Baby Massage on Babies Sleep Patterns: A Pseudo-Experimental Study (Pebrianthy <i>et al.</i> , 2023)	The design used in this study is a quasy experiment (one group of pre-test and post-test design). The population in this study was all mothers who had babies of that age 3-12 months in the working area of <i>the Batunadua Health Center</i> , Padangsidimpuan City. The sampling technique used in this study is total sampling with total sample 33 babies	Statistical test results show that there is a significant difference in sleep Position of the baby before and after the massage where the time is needed for the baby To Fall Asleep was 18.33 minutes (p value = 0.001), the baby's total sleep in 24 hours was 13.36 hours (p value = 0.008), the number of hours of sleep for babies during the day was 3.76 hours (p value = 0.008), the number of hours of

			sleep for babies at night was 9.78 hours (p value = 0.015), the frequency of the baby waking up at night is 3 times (p value = 0.008), and the majority of babies who woke up did not cry (p value = 0.000). The results of this study prove that baby massage has an effect on the baby's sleep pattern
5.	Pengaruh Pijat Bayi Terhadap Pola Tidur Bayi Usia 0 – 12 Bulan Di Desa Pakuniran Kecamatan Pakuniran Kabupaten Probolinggo (Endang Hartutik and Suhartini, 2023)	Analytical research design with correlational type with <i>cross-sectional design</i> . A sample of 90 people was obtained by <i>simple random sampling</i> technique. This study used a <i>chi-square</i> analysis test.	The result of this Studies prove that baby massage has an effect on the baby's sleep patterns. Therefore, it is important for midwives to inform and teach infant massage techniques to baby's parents so that it helps to overcome their baby's sleep problems
6	Pengaruh Pijat Bayi Terhadap Kualitas Tidur Bayi Di PMB Febra Ayudiah, SST., MH (Kintan Annisa and Reni Hariyanti, 2024)	This research is Types of Pre-Experimental Research One Group Pretest-Posttest Design. Research held in February until with May 2024. Population used In this study, the mothers who have a 3-6 month infant who is in Febra Ayudiah Clinic has 30 babies. The research sample amounted to 30 trimester mothers III was taken using total sampling	From this study, it is known that most of the Respondents after being given a baby massage, all babies experienced good sleep quality. Meanwhile, with the bivariate test, there was a significant influence between the administration of massage babies with the quality of baby sleep with a P value of < 0.000. The conclusion of this study is There is an effect of baby massage on the quality of sleep of babies 3-6 months
7	Pengaruh Pijat Bayi terhadap Kualitas Tidur Bayi Usia 0 - 11 Bulan (Eka Faizaturrahmi and Nurannisa Fitria Aprianti, 2024)	This study uses a pre-experimental research design. Pre-experimental research is a design that includes only one group or class given pre- and post-test	The results showed that there was a relationship between baby massage and the quality of infant sleep with a p value of 0.004 ($\alpha=0.05$). This means that there is an effect of baby massage on the quality of the baby's sleep The conclusion in this study is that baby massage can improve sleep quality
8	Pengaruh Pijat Bayi Terhadap Kualitas Tidur Bayi Usia 0 – 3 Bulan Di Biarose Baby Spa (AP, Purnamayanthi and Pande Putu Novi Ekajayanti, 2025)	This study used a pre-experimental design with <i>the One Group Pretest-Posttest Design approach</i> , where there was only one intervention group without a control group. This study aims to determine the effect of baby massage on sleep quality in infants aged 0-3 months	The results of the Wilcoxon test showed a p value of 0.000 (< 0.05), which indicates that there was a significant difference between before and after giving the baby massage. Thus, it can be concluded that baby massage has an effect on improving the sleep quality of babies aged 0-3 months
9	The Effectiveness of Baby Massage on Sleep Duration for Infants Aged 1-12 Months (Sulasdi and Ismarwati, 2023)	This study employed a scoping review design using the PRISMA-ScR framework. Articles were searched through several databases, including PubMed, Wiley Online Library, ScienceDirect, and the National Library database. A total of 10 selected articles discussing infant massage and sleep duration in infants aged 1–12 months were analyzed	The review showed that infant massage effectively improved sleep duration and sleep quality in infants. Most studies reported that infants became calmer, experienced longer sleep duration, and had fewer nighttime awakenings after receiving massage therapy. The study concluded that infant massage is an effective non-pharmacological intervention to improve infant sleep quality and support infant development.
10	Pengaruh Pijat Bayi Terhadap Kualitas Tidur Bayi Usia 1-3 Bulan	This type of research is a <i>pre-experiment</i> with a <i>pretest-posttest design approach for one group</i> . The independent variable	The results of the Wilcoxon statistical test were obtained with a significant probability number or value (0.001) much

(Abbas, Hidayanti and Merben, 2026)	of this study is infant massage and the dependent variable is the sleep quality of babies aged 1-3 months. The research location was conducted at TPMB Jamilah, Pesanggrahan District, South Jakarta	lower than the significant standard of 0.05 or a $p < \alpha$ value then the H_0 data was rejected and H_1 was accepted, which means that there is an effect of baby massage on the sleep quality of babies aged 0-6 months.
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The Effect of Infant Massage on Infant Sleep Quality

Based on the analysis of the ten reviewed articles, infant massage consistently demonstrated positive effects on infant sleep quality and sleep patterns. Most studies reported that infants who received massage therapy experienced improved sleep duration, reduced frequency of nighttime awakenings, easier sleep initiation, and better overall sleep quality. These findings indicate that infant massage is an effective non-pharmacological intervention to support infant relaxation and healthy sleep behavior.

Research conducted by (Ifalahma and Lutfia Rahma Dwi Cahyani, 2019) found that both the duration and frequency of infant massage significantly affected infant sleep quality. Infants who received massage more frequently showed better sleep outcomes compared to those receiving massage less often. The study also demonstrated a significant interaction between massage duration and frequency, indicating that regular and appropriately timed massage contributes to better sleep regulation in infants.

Similarly, (Asnita Sinaga and Natalia Laowo, 2010) reported significant improvements in sleep quality among infants aged 0–6 months after massage intervention. Before massage therapy, many infants experienced difficulty sleeping, frequent crying, and nighttime awakenings. After the intervention, infants became calmer, less fussy, and demonstrated longer sleep duration. The statistical analysis showed a significant effect of infant massage on sleep quality ($p \leq 0.05$).

These findings are consistent with the study conducted by (Saputro and Choridhatul Bahiya, 2021), which found that infant massage significantly improved sleep duration and reduced sleep disturbances among infants aged 1–7 months. Infants receiving massage therapy were observed to sleep more soundly and comfortably than those who did not receive massage. Massage therapy promotes relaxation through tactile stimulation, which can help stabilize infant physiological responses and improve sleep regulation.

Improvements in Infant Sleep Patterns

Several studies specifically discussed the effects of infant massage on infant sleep patterns. (Pebrianthy et al., 2023) demonstrated significant improvements in various aspects of infant sleep patterns after massage intervention. The study reported shorter sleep onset latency, longer total sleep duration within 24 hours, increased nighttime sleep duration, reduced frequency of nighttime awakenings, and fewer episodes of crying after waking. These findings suggest that infant massage not only improves sleep quality but also positively influences overall sleep behavior.

Likewise, (Endang Hartutik and Suhartini, 2023) found that infant massage significantly influenced sleep patterns among infants aged 0–12 months. Their study emphasized the importance of educating parents regarding infant massage techniques as part of infant care practices. The authors suggested that proper massage techniques may help parents manage infant sleep problems more effectively.

The improvements in sleep patterns observed across studies may be explained by the physiological effects of massage therapy. Gentle tactile stimulation during massage is believed to stimulate the parasympathetic nervous system, increase blood circulation, and promote the release of serotonin and melatonin hormones while reducing cortisol levels. These hormonal changes contribute to relaxation, emotional comfort, and improved sleep regulation in infants (Saputro and Choridhatul Bahiya, 2021).

Consistency of Findings Across Different Study Designs

Although the reviewed studies used different research designs, including quasi-experimental studies, pre-experimental studies, cross-sectional studies, and literature reviews, the findings consistently supported the positive effects of infant massage on infant sleep quality. Most studies employed pretest-posttest approaches and reported statistically significant differences before and after massage intervention.

For example, (Kintan Annisa and Reni Hariyanti, 2024) found that infants aged 3–6 months experienced significantly improved sleep quality after receiving infant massage, with all respondents demonstrating good sleep quality following the intervention. Similarly, (Eka Faizaturrahmi and Nurannisa Fitria Aprianti, 2024) reported a significant relationship between

infant massage and sleep quality, with a p-value of 0.004. These findings further strengthen the evidence that massage therapy positively affects infant sleep outcomes.

Furthermore, (Abbas, Hidayanti and Merben, 2026) also demonstrated significant improvements in sleep quality among infants aged 1–3 months following massage intervention. The Wilcoxon statistical test showed a significant p-value of 0.001, indicating that infant massage effectively improved infant sleep quality.

In addition to primary research studies, literature review studies also supported these findings. (Sulasdi and Ismarwati, 2023), through a scoping review of ten selected articles, concluded that infant massage effectively improves infant sleep duration and sleep quality. Their review found that infants receiving massage therapy generally experienced better relaxation, fewer nighttime awakenings, and improved sleep comfort.

Similarities and Differences Among the Reviewed Studies

The reviewed studies share several similarities. First, all studies concluded that infant massage positively affects infant sleep quality and sleep patterns. Second, most studies used intervention-based research designs, particularly quasi-experimental and pre-experimental approaches. Third, the majority of studies reported statistically significant improvements in sleep outcomes after massage intervention.

However, several differences were also identified among the studies. The age range of infant participants varied from 0–3 months to 0–12 months. Differences were also observed in sample size, massage frequency, massage duration, and outcome measurements. Some studies focused primarily on sleep quality, while others assessed broader sleep patterns, including sleep duration, sleep onset, nighttime awakenings, and infant behavior during sleep.

Additionally, methodological differences were identified. Some studies used control groups, while others employed only one-group pretest-posttest designs without comparison groups. These variations may influence the strength of evidence and generalizability of findings. Nevertheless, despite methodological differences, the overall findings consistently indicate that infant massage provides beneficial effects on infant sleep.

Implications for Nursing and Midwifery Practice

The findings of this literature review have important implications for healthcare practice, particularly in nursing and midwifery care. Infant massage can be recommended as a safe, simple, low-cost, and non-pharmacological intervention to improve infant sleep quality. Healthcare professionals, especially midwives and nurses, play an important role in educating parents regarding proper infant massage techniques and the benefits of regular massage therapy.

Regular infant massage may not only improve infant sleep quality but also strengthen parent–infant bonding, reduce infant stress, and support optimal growth and development. Therefore, integrating infant massage education into maternal and child healthcare services may contribute to better infant health outcomes and improved family well-being.

Conclusion and Suggestions

Based on the review of ten selected articles, infant massage has consistently shown positive effects on infant sleep quality and sleep patterns. The findings indicate that infant massage can improve sleep duration, reduce the frequency of nighttime awakenings, shorten sleep onset time, and enhance overall sleep quality in infants aged 0–12 months. Most studies reported statistically significant improvements in infant sleep after massage intervention, demonstrating that infant massage is an effective non-pharmacological therapy to support infant relaxation and healthy sleep behavior.

The reviewed studies also revealed that the effectiveness of infant massage may be influenced by the duration and frequency of massage sessions. Regular infant massage contributes to better physiological relaxation by stimulating blood circulation, improving comfort, and promoting the release of serotonin and melatonin hormones, which are associated with improved sleep regulation.

Despite variations in study design, sample characteristics, and measurement methods, the overall evidence consistently supports the beneficial effects of infant massage on infant sleep quality. Therefore, infant massage may serve as a simple, safe, cost-effective, and beneficial complementary intervention to support infant growth and development.

Healthcare professionals, particularly midwives and nurses, are encouraged to provide education and training to parents regarding proper infant massage techniques and the benefits of regular infant massage for improving infant sleep quality. Infant massage education may be integrated into maternal and child healthcare services as part of routine infant care programs. Parents are also encouraged to perform infant massage regularly using appropriate techniques and comfortable environmental conditions to maximize the benefits for infant relaxation and sleep quality.

Future researchers are recommended to conduct studies with larger sample sizes, randomized controlled trial designs, and standardized massage protocols to strengthen the scientific evidence regarding the effectiveness of infant massage. Further studies are also needed to explore the long-term effects of infant massage on infant growth, neurological development, emotional well-being, and parent–infant bonding

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