





**Original Article**

**Effect of Infant Massage on Sleep Quality Of Baby 3-6 Months**

Dewi Taurisiawati Rahayu<sup>1</sup>

<sup>1</sup> Midwifery Study Program STIKES Karya Husada Kediri

ARTICLE INFO	ABSTRACT
<p>Article History:            Submit : Nov 3, 2022            Revised : Nov 6, 2022            Accepted : Dec 18, 2022</p> <p>Keywords:  <i>Sleep Quality, Baby 3-6 Months, Infant massage</i></p>	<p><b>Background:</b> One of the problems experienced by babies is poor sleep quality. This study aims to determine the description of sleep quality in infants who received infant massages. The purpose of this research was to Description Of Sleep Quality Of Babies Aged 3-6 Months After Infant Massage In Pmb Lilis Suryawati, Jombang Regency</p> <p><b>Methods:</b> The design used is descriptive. The population in this study was 54 infants aged 3-6 months, and a sample size of 36 was obtained. The sampling technique used was <i>purposive sampling</i>. The instrument used was a questionnaire about sleep quality. Infant massage is a routine procedure used at the research site, namely PMB Lilis Suryawati Jombang. This study was conducted on July 7 – August 29, 2021.</p> <p><b>Results:</b> The results of this study indicate that the sleep quality of infants who were massaged almost entirely (52.8%) had good sleep quality. Baby massage relaxes baby's body muscles and improves sleep quality.</p> <p><b>Conclusion:</b> <i>Education to get Good sleep quality in Baby massage relaxes baby's body muscles and can improve sleep quality.</i></p>
<p> <i>Corresponding Author</i> : Dewi Taurisiawati Rahayu</p> <p> <i>Affiliation</i> : Midwifery Study Program STIKES Karya Husada Kediri</p> <p> <i>Email</i> : deetaurisia@gmail.com</p> <p> <i>Cite this as</i> : Rahayu, D. T. (2022). Effect of Infant Massage on Sleep Quality Of Baby 3-6 Months. Journal of Applied Nursing and Health, 4(2), 224-230. <a href="https://doi.org/10.55018/janh.v4i2.105">https://doi.org/10.55018/janh.v4i2.105</a></p>	

**Introduction**

Sleep is the baby's number one priority because this is the time when brain nerves are repaired, and about 75% of growth hormone is produced. Therefore, it is necessary to maintain the quality of sleep in babies. Babies' sleep quality can be determined by how they sleep, feel, and sleep (Marni, 2019). Childhood is a golden period that requires special attention for the growth and development of children. One of the factors that affect the baby's growth and development is sleep and rest. Good sleep is essential for a baby's development because its brain growth reaches its peak during sleep (Carolin et al., 2020). In addition, during sleep, the baby's

body will produce three times more growth hormones than when the baby is awake (Alifia, 2021)

Based on the 2018 WHO (World Health Organization) data published in the pediatrics journal, about 33 people had difficulty sleeping. A survey conducted by (Cooper et al., 2017) in Melbourne, Australia, found that 32% of mothers repeatedly reported having difficulty sleeping together with their babies. This study shows that there are still many cases of sleep disorders in infants, and these events can last a long time or be repeated. Around 44.2% of infants experience sleep disturbances such as frequent awakenings. According to (Pratiwi, 2021), of the 285 respondents, the majority of infants, 51



babies, have sleep disorders, 42 babies sleep less than 9 hours a night, and the babies sleep more than three nights and above.

Based on the results of research conducted by (Erlawati, 2019) shows that the quantity of baby sleep after the massage is higher than before the massage, with an average increase of 1.29 hours/day, and it is concluded that there is an effect of baby massage on the sleep quantity of babies aged 3-6 months. In addition, based on the results of research (Esty Pamungkas et al., 2020) show that the sleep quality of infants aged 3-12 months before being given a massage is almost half enough, namely as many as 16 respondents (45.7%), and the sleep quality of infants aged 3-12 months after doing it included in the excellent category is most of the 21 respondents (60.0%) it means that there is an effect of massage on the sleep quality of infants aged 3-12 months. The results of the study (Rokayah & Nurlatifah, 2018) from the results of statistical analysis showed a statistically significant effect between infant massage and infant sleep duration ( $p: 0.047$  with an upper limit of 3.967 and a lower limit of 0.33). This longer sleep is because the body will release oxytocin and endorphins when the baby is massaged. Endorphins are pain-relieving hormones that can relieve discomfort and improve sleep quality. The results of the study (Nurlaily, 2018) concluded that there was a significant effect of massage frequency on infant sleep quality in Kadipiro Banjarsari Village, Surakarta ( $p\text{-value} = 0.005 < 0.05$ ). There is a significant (significant) interaction between the duration of time and the frequency of infant massage on the quality of infant sleep.

Baby massage naturally accompanies the birth of the human ability to perform massage therapy. Baby massage is also defined as soothing communication between mother and baby. Baby massage is

an expression of affection between parents and children by touching the skin. Mother's touch and hugs are basic needs of babies. All of these have a significant impact on your baby's development. The touch of a gentle massage on your baby is an essential stimulus for your child's growth and development. Children who receive directed and regular stimulation develop faster than those who receive little or no stimulation (Saddiyah Rangkuti, 2021). Infants instinctively respond to their mother's touch as an expression of protection, care, and love. You will find your baby very relaxed and calm to the touch. The more often you touch, the closer the inner connection that exists between the baby and the people closest to him. The touch given to the baby in the form of a gentle massage should be carried out by the closest people: mother, father, grandfather, and grandmother (Murtiningsih et al., 2019; Rosda, 2019).

One of the reactions seen with regular massage is the sleep response. Sleep is part of the healing, recovery, and physiological process that alternates with prolonged wakefulness. A good night's sleep is as essential to your health as recovery from illness. Half of the baby's total sleep time is spent in active or REM (*rapid eye movement*) sleep. Pediatricians say active sleep is vital for babies to build brain circuits. A baby's brain is more active when sleeping than when awake. Babies need adequate sleep to develop their muscles, hands, feet, and skeletal structure. Your baby must sleep well in a comfortable bed (Susila, 2017). Babies with sleep disorders experience the same disorders later in life, especially during growth. Infants aged 3 to 6 months have persistent sleep disturbances, and sleep disturbances appear in infants up to 12 months of age. A comfortable and safe baby's sleep is influenced by several factors, including adequate breastfeeding, the mother's skin-

to-skin contact, and baby pacifiers. (Marsaoly, 2018)

Solutions to reduce insomnia in infants include talking to doctors, counseling on how to deal with insomnia, and asking parents to massage their babies. Baby massage is one of the crucial approaches to increasing intimacy between mother and baby (Wungouw, 2017)

Given the importance of sleep in your baby's development, you need to ensure that your sleep needs are fully met so that your baby's growth and development are not hampered. One way to meet these needs is massage. Babies who receive massage can more easily wake up and sleep (Sari, 2014). The increase in the amount and length of sleep in massaged infants is due to the increased secretion of serotonin produced during the massage, which is the primary neurotransmitter in establishing sleep by inhibiting system activity and other brain activities. Serotonin, synthesized from the amino acid tryptophan, is converted to 5-hydroxytryptophan (5HTP), N-acetylserotonin, and melatonin. Melatonin plays a role in sleep, making night sleep longer and more profound (Pramita et al., 2021) because less light entering the eyes produces more melatonin in the dark. In addition, due to parents' lack of information and knowledge about massage due to social conditions, many parents believe that massage is not a scientific and unnatural treatment for babies. Most mothers believe that massage is only necessary when their child has a cold or gas and publicize proper baby massage techniques (Agustin et al., 2020)

## Methods

This research uses the descriptive research method. The population studied were all infants aged 3-6 months in PMB Lilis Suryawati, Jombang Regency, with 54

babies. The sample size in this study was 36. The variable in this study was the quality of infant sleep. The measurement of the baby's sleep quality is done by using a questionnaire. The research was carried out from July 7 – August 29, 2021, at PMB Lilis Suryawati, Jombang Regency. The data collection process was carried out by giving a questionnaire to the mother of the baby whose baby was massaged regularly at the research site. After that, the data obtained are presented in the form of a frequency distribution table. The research obtained ethical clearance from STIKES Karya HUsada Pare with No. 450/EC/LPPM/STIKES/KH/VIII/2021.

## Results

Table 1 Frequency Distribution of Respondents' Characteristics by Age

No	Age	Total	Percentage (%)
1	3 Months	8	22.2
2	4 Months	9	25
3	5 Months	15	41.7
4	6 Months	4	11.1
Total		36	100

Based on table 1 shows that of the 36 respondents, almost half of the respondents were five months old, and as many as 15 respondents (41.7%).

Table .2 Frequency Distribution of Characteristics of Respondents Based on Gender

No	Gender	Total	Percentage (%)
1	Male	15	41.7
2	Female	21	58.3
Total		36	100

Table 2 shows that most of the 36 respondents with female sex as many as 21 respondents (58.3%).

Table 3 Frequency Distribution of Respondents' Characteristics Based on Breastfeeding

No.	Breastfeeding	Total	Percentage (%)
1	Breast milk only	24	66.7
2	Breast milk and formula milk	12	33.3
Total		36	100

Table 3 shows that out of 36 respondents, some of the respondents gave only breast milk to their babies, as many as 24 respondents (66.7 %).

Table 5 Frequency Distribution of Respondents' Characteristics Based on Sleep

No	Quality	Total	Percentage (%)
1	Less	8	22.2
2	Enough	9	25
3	Good	19	52.8
Total		36	100

The table above shows that some 36 respondents had good sleep quality, as many as 19 respondents (52.8%).

## Discussion

The study results showed that most of the respondents had good sleep quality, as many as 19 respondents (52.8%). A baby aged 0-12 months needs about 14 hours of sleep daily and can sleep 7 hours at a time. Babies can nap once or twice a day, once in the morning and once in the afternoon. For babies aged 6 to 12 months, babies sleep about 12 hours each night and nap for 1 to 2 hours twice a day. At six months, babies begin essential developmental stages such as sitting, rolling, crawling, standing and walking. Babies at this age are so aware of their abilities that they may be too excited

to fall asleep or wake up in the middle of the night, usually just because they want to practice. Babies who cannot sleep peacefully tend to be fussy and need proper treatment to get back to sleep. (Kesehatan & Wiraraja, 2021)

The quality of your baby's sleep affects his physical development and behavior the next day. Babies who get enough sleep without waking up are often healthier and less fussy. If your baby sleeps less than 9 hours, wakes more than three times, or wakes more than 1 hour at night, your baby is having trouble sleeping. It is said that it is there. During sleep, the baby is always restless, cries, and has difficulty sleeping (Marni, 2019).

Babies around 3-4 months need about 18 hours of sleep a day, and the rest of the time is spent playing, chatting with mother and family, and doing other entertaining activities. However, other problems experienced by mothers are babies who very difficulty sleeping at night, behavior problems, growth and development, and brain disorders if not taken seriously (Dewi Astriana Putri & Ningsih, 2016). Given the importance of sleep in your baby's development, you need to ensure that your sleep needs are fully met so that your baby's growth and development are not hampered. Sleep activity is one of the stimuli for brain growth and development because growth hormone is released when the child is asleep. This growth hormone plays a role in stimulating bone and tissue growth. In addition, growth hormone allows the body to repair and renew every cell, from skin and blood cells to nerve cells in the brain. In addition, sleep helps psychological, cognitive, experiential, and intellectual development. Therefore, families must consider the need for sleep according to the baby's age. (Juwita et al., 2019). The results of this study follow research conducted at the *Touch Research Institute of America*, which showed that

children who were massaged for 2x15 minutes every week for four weeks slept more soundly so that when they woke up, their concentration was better. Better than before the massage. (Rahayu & Askabulaikhah, 2020).

. Based on the results of research conducted by Rosidi and Purnamasari (2021), this study aims to determine the effect of massage on infants with sleep quality for infants aged 0-6 months at Kartasura Health Center. This research method is analytic using *case control*. Collecting data using a questionnaire sheet, while data analysis using the Chi-Square test. The Chi-Square test results obtained a value of 2 counts of 20,417 (p-value = 0.001) and the Odd ratio (OR) value of the test of 15.00. The study concludes that baby massage affects the sleep quality of infants aged 0-6 months, where babies who get baby massage have a 15 times higher chance of having good sleep quality than babies who do not.

Based on the results of research conducted by Ferius et al., (2016), this study aimed to determine the effectiveness of infant massage on the sleep quality of infants aged 3-6 months. The research design used was a *pretest, posttest one-group design*. The population is all mothers of infants and infants aged 3-6 months, with a total sample of 21 infants. The instrument used is an observation sheet. The results were then analyzed using the *Wilcoxon* with an *alpha* of 0.05. The results showed that 71.4% of infants had good sleep quality, and as many as seven infants (33.3%) had improved sleep quality. *Wilcoxon* test obtained p value = 0.034 where p-value < (0.05) means H<sub>0</sub> is rejected, and H<sub>1</sub> is accepted, meaning that there is an effect of the effectiveness of baby massage on the sleep quality of babies aged 3-6 months. The study's results can be used as recommendations for mothers to use baby massage as an alternative to improving the

quality of their baby's sleep so that growth and development can be maximized.

Through baby massage, where touch is accompanied by gentle pressure on the baby, the nerve endings on the surface of the skin react to touch. Furthermore, these nerves send messages to the brain through a network of nerves in the spinal cord. This process can cause stimulation of peripheral sensory nerve receptors, primarily pressure receptors. This stimulation activates the parasympathetic nervous system. Stimulation of the parasympathetic nervous system that is primarily involved in the process of sleep in several areas of the *parasympathetic autonomic nervous system, the raphe nuclei* and *nucleus tractus solitarius*, which are *sensory regions of the medulla* and *pons* through which visceral sensory signals enter the brain via the *vagus* and *glossopharyngeal nerves*, as well as induce sleep. (Rahayu & Sagita, 2019).

## Conclusions

The results showed that most of the respondents had good sleep quality. Good quality sleep will affect the growth and development of the baby, who is getting better

## Authors Contributions

The author carries out tasks from data collection, data analysis, making discussions to making manuscripts

## Conflicts of Interest

There is no conflict of interest

## Acknowledgment

Thank you to the respondents and to those who have helped in this research

## References

- Agustin, I., Sekar Arum, K. A., & Noviadi, P. (2020). Pengaruh Pijat Bayi Terhadap Peningkatan Berat Badan Bayi Usia 1-3 Bulan. *Jurnal 'Aisyiyah Medika*, 5(2), 144-150. <https://doi.org/10.36729/jam.v5i2.396>
- Alifia, M. (2021). No 主観的健康感を中心とした在宅高齢者における健康関連指標に関する共分散構造分析Title. 7(1), 6.
- Carolin, B. T., Suprihatin, S., & Agustin, C. (2020). Pijat Bayi dapat Menstimulus Peningkatan Berat Badan pada Bayi. *Jurnal Ilmiah Kebidanan Indonesia*, 10(02), 28-33. <https://doi.org/10.33221/jiki.v10i02.478>
- Dewi Astriana Putri, & Ningsih, S. (2016). Hubungan Pijat Bayi Dengan Kualitas Tidur Bayi. *Jurnal Penelitian Kesehatan*, 1(1), 67-69.
- Erlawati. (2019). Hubungan Pijat Bayi Dengan Lama Waktu Tidur Pada Bayi. *Jurnal Kesehatan Metro Sai Wawai*, 10(1), 16-20.
- Esty Pamungkas, C., Amini, A., & Rahmawati, C. (2020). Sentuhan Kasih Ibu, Upaya Stimulasi Tumbuh Kembang Anak Dengan Pijat Bayi Pada Anak Usia 0-3 Tahun Di Desa Selebung Ketangga, Kecamatan Keruak Kabupaten Lombok Timur. *SELAPARANG Jurnal Pengabdian Masyarakat Berkemajuan*, 4(1), 356. <https://doi.org/10.31764/jpmb.v4i1.3223>
- Ferius, S., Efar, P., Mansur, S., & Gunardi, H. (2016). Pengaruh Pijat Bayi Menggunakan Minyak Mineral atau Minyak Kelapa terhadap Kenaikan Berat Badan pada Neonatus Aterm. *Sari Pediatri*, 10(4), 219. <https://doi.org/10.14238/sp10.4.2008.219-24>
- Juwita, S., Jayanti, N. D., ST, S., & KM, M. (2019). *Pijat Bayi*. Penerbit CV. SARNU UNTUNG.
- Kesehatan, F. I., & Wiraraja, U. (2021). *1497- Article Text-4683-1-10-20211004*. VI(1), 32-35.
- Marni, M. (2019). Pengaruh Pijat Bayi Terhadap Peningkatan Berat Badan Pada Bayi. *Jurnal Kebidanan Indonesia*, 10(1), 12. <https://doi.org/10.36419/jkebin.v10i1.240>
- Marsaoly, S. (2018). Knowledge and Mother Attitude about Baby Massage Behavior in Posyandu Kelurahan Maliaro Central Ternate City. *Jurnal Kesehatan Masyarakat*, 8(2), 179-185.
- Murtiningsih, M., Wijaya, I. P. D., & Permadi, A. W. (2019). Pijat Bayi Untuk Meningkatkan Motorik Kasar Duduk Dan Merangkak Mandiri Pada Bayi Usia 9 Bulan Di Upt Kesmas Sukawati I. *Jurnal Kesehatan Terpadu*, 3(1), 22-25. <https://doi.org/10.36002/jkt.v3i1.710>
- Nurlaily, A. P. (2018). Pengaruh Pelatihan Pijat Bayi Terhadap Perilaku Ibu Di Wilayah Kelurahan Plesungan. *Adi Husada Nursing Journal*, 4(1), 33. <https://doi.org/10.37036/ahnj.v4i1.117>
- Pramita, I., Diaris, N. M., & Samben, R. K. (2021). Pelatihan Deteksi Dini Tumbuh Kembang Dan Pijat Bayi Bagi Kader Posyandu Banjar Mungengan, Catur, Kintamani. *Jurnal Widya Laksana*, 10(1), 52. <https://doi.org/10.23887/jwl.v10i1.28859>
- Pratiwi, T. (2021). Pengaruh Pijat Bayi Terhadap Kualitas Tidur Pada Bayi Usia 1-6 Bulan. *J-KESMAS: Jurnal Kesehatan Masyarakat*, 7(1), 9. <https://doi.org/10.35329/jkesmas.v7i1.1921>

- Rahayu, D. T., & Askabulaikhah, A. (2020). Private Community Assistance in Antenatal Care at High Risk Pregnant Women in Public Health Center of Jelakombo Jombang. *Jurnal Kebidanan Midwiferia*, 6(1), 14–20.
- Rahayu, D. T., & Sagita, Y. D. (2019). POLA MAKAN DAN PENDAPATAN KELUARGA DENGAN KEJADIAN KEKURANGAN ENERGI KRONIK (KEK) PADA IBU HAMIL TRIMESTER II. *HOLISTIK JURNAL KESEHATAN*. <https://doi.org/10.33024/hjk.v13i1.847>
- Rokayah, Y., & Nurlatifah, L. (2018). Efektifitas Pijat Bayi Terhadap Pertumbuhan Dan Perkembangan Pada Bayi Usia 5-6 Bulan Di Desa Rangkasbitung Barat Tahun 2017. *Jurnal Medikes (Media Informasi Kesehatan)*, 5(2), 156–167. <https://doi.org/10.36743/medikes.v5i2.56>
- Rosda. (2019). Knowledge And Interest Of Pregnant Mother Towards Pregnant Mother's Implementation. *Journal of Applied Nursing and Health*, 1(2 SE-Articles), 48–52. <https://janh.candle.or.id/index.php/janh/article/view/84>
- Rosidi, I. Y. D., & Purnamasari, L. (2021). Sosialisasi dan Simulasi Tentang Pemijatan Bayi Untuk Mendukung Tumbuh Kembang Bayi. *To Maega : Jurnal Pengabdian Masyarakat*, 4(1), 63. <https://doi.org/10.35914/tomaega.v4i1.492>
- Saddiyah Rangkuti. (2021). Pengaruh Pendidikan Kesehatan Pijat Bayi terhadap Kualitas Tidur Bayi Usia 0-6 Bulan di BPM Dewi Suyanti Tahun 2020. *Jurnal Kesehatan Masyarakat (JURKESMAS)*, 1(1), 34–42. <https://doi.org/10.53842/jkm.v1i1.10>
- Sari, P. E. K. (2014). *Efektifitas Pijat Bayi terhadap Pertumbuhan dan Perkembangan Bayi Usia 6 Bulan di Kelurahan Bintaro, Jakarta. Skripsi Program Studi Ilmu Keperawatan, Fakultas Kedokteran. Ilmu Kesehatan, Universitas Islam Negeri Syarif. Jakarta. 0–87.*
- Susila, I. (2017). Pengaruh Teknik Pijat Bayi terhadap Kenaikan Berat Badan Bayi Usia 0-7 Bulan. *Jurnal Midpro*, 9(2), 14–19.
- Wungouw, H. J. L. (2017). Hubungan Stres Dengan Kejadian Insomnia Pada Ibu Hamil Di Puskesmas Bahu Kota Manado. *E-Journal Keperawatan*, 5, 1–8.