

The Relationship Between Mothers' Knowledge of the Benefits of Infant Massage and the Frequency of Infant Massage Practice

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ABSTRACT

Introduction: Infant massage provides various benefits for infants, including supporting growth, improving sleep quality, and strengthening mother–infant bonding. Mothers' knowledge may influence how regularly infant massage is practiced. **Novelty:** This study examines the relationship between mothers' knowledge of infant massage benefits and the frequency of practice in Medan Sunggal. Its novelty lies in emphasizing the consistency of infant massage practice within a community setting, an aspect rarely addressed in studies. **Methods:** This study used a correlational design with a cross-sectional approach. The population consisted of all mothers with infants in Medan Sunggal, totaling 94 people. The sampling technique used was purposive sampling, with 48 respondents who met the inclusion and exclusion criteria. Data were collected using questionnaires and analyzed using the chi-square test. **Results:** The results showed that mothers with good knowledge who regularly performed infant massage were 4.2%, while those who did not perform it regularly were 4.2%. Mothers with sufficient knowledge who regularly performed infant massage were 22.9%, while those who did not perform it regularly were 27.1%. Meanwhile, mothers with poor knowledge who regularly performed infant massage were 4.2%, while those who did not perform it regularly were 37.5%. The statistical test showed an Asymp. Sig. (2-sided) value of $0.027 < 0.05$, indicating a significant relationship between mothers' knowledge of the benefits of infant massage and the frequency of infant massage practice. **Conclusion and Suggestions:** Mothers should improve their knowledge of infant massage, while health workers should provide regular education to support correct and consistent practice.

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INTRODUCTION

Child growth and development is a continuous process that needs to be monitored regularly to detect any early disorders or deviations in physical growth, developmental abilities, and children's mental and emotional conditions. Growth abnormalities may include nutritional problems such as undernutrition, severe malnutrition, or height that is not appropriate for age. Developmental deviations may be indicated by delays in certain abilities, such as speech delay, while mental and emotional disorders may include concentration problems or hyperactive behavior. Growth and development monitoring aims to assess children's overall condition so that appropriate interventions can be provided immediately when abnormalities are identified

(Merida, 2022) The World Health Organization (WHO) states that child growth and development problems remain an important concern because they may affect children's future physical, social, and motor abilities. Growth and developmental disorders can generally be identified from infancy, particularly when children experience nutritional problems or delays in social and motor development. also reported that the South-East Asia Region (SEAR) continues to have a high prevalence of growth and developmental problems among children under five. Indonesia is among the countries with a relatively high prevalence, reaching 28.7%, and ranks third in terms of growth and developmental disorders among children under five (WHO, 2020)

Optimal infant development requires secure attachment between infants and their caregivers. Such attachment can be established through empathetic interaction, attention, and appropriate responses to the infant's needs. However, childbirth represents a major life transition for mothers and may cause anxiety and concern. Infant massage is a form of parent–child interaction that expresses affection through gentle touch on the infant's skin. This touch provides various benefits, including creating a sense of comfort and stimulating the infant's growth and development (Handayani, 2024) These conditions may influence the emotional relationship between mother and infant, including the mother's ability to recognize and respond to signals shown by the infant. During early life, parents are also often faced with infantile colic, a condition in which infants cry excessively, appear restless, groan, or show signs of discomfort without a clear cause (Loi, 2024)

Infant massage is a form of touch stimulation that provides various benefits for infants and toddlers. These benefits include helping to strengthen the immune system, promoting relaxation, improving sleep quality, and supporting digestive and respiratory function. In the past, infant massage was commonly performed by traditional birth attendants. However, it can now also be performed by parents, particularly mothers, using appropriate techniques. A

mother's touch through infant massage not only provides comfort but also serves as sensory stimulation and supports infant brain development (Sri, 2022)

Infant massage not only provides comfort but may also support children's psychomotor and mental development. A study by Procianoy, Mendes, and Silveira (2009) showed that massage therapy in infants with very low birth weight could improve psychomotor development when evaluated at two years of age. Therefore, parents need to have a good understanding of the benefits of infant massage and the stages of child growth and development. This understanding can be improved through health promotion. Health promotion plays an important role in community empowerment by providing knowledge and skills that are appropriate to local sociocultural conditions, enabling communities to become more independent in maintaining the health of children and families (Masruroh, 2022)

The age period of 0–24 months is considered both a golden and critical period in a child's life because growth and development occur very rapidly during this stage. A child is considered healthy when growth and development progress optimally according to age-related stages. Child development includes several important aspects, namely gross motor skills, fine motor skills, personal-social abilities, and language development.

Infant growth and development are influenced by various factors, including genetics, sex, hormones, and the environment. Environmental factors may occur from pregnancy until after birth, including maternal nutritional status during pregnancy, birth history, postnatal nutritional intake, stimulation, trauma, disease, and other factors. One type of stimulation that may support infant growth and development is tactile stimulation through infant massage and infant exercise. Such stimulation helps activate the muscles, bones, and organ systems so that they develop and function optimally (Fauziah Y. N., 2025)

Infants born through normal delivery naturally receive tactile stimulation while passing through the birth canal, where various forms of pressure provide stimulation to their bodies (Retnaningsih, 2023) After birth, touch stimulation can be continued through infant massage performed using correct and safe techniques (Ambasari, 2017) To ensure that infant massage is performed appropriately, mothers need health education regarding its benefits and correct techniques. Midwives play an important role as healthcare professionals who provide this education. Proper health education can improve mothers' knowledge, develop positive attitudes, and encourage them to perform infant massage independently (YULIANTI, 2023)

Knowledge is an important factor in shaping individual behavior. Behavior based on adequate knowledge tends to result in more appropriate actions, including in infant care practices. In the context of infant massage, mothers' knowledge regarding its benefits may influence how frequently they perform massage on their infants. Mothers who understand that infant massage can improve comfort, sleep quality, body weight, and overall growth and development

are more likely to develop greater awareness and perform infant massage regularly. Therefore, it is important to investigate the relationship between mothers' knowledge of the benefits of infant massage and the frequency of infant massage practice as an effort to support optimal infant growth and development.

METHOD, DATA, AND ANALYSIS

This study employed an analytical correlational design with a cross-sectional approach. The population consisted of all mothers with infants in the Medan Sunggal area, totaling 94 individuals. The study sample comprised 48 respondents selected based on the inclusion and exclusion criteria. A non-probability sampling technique using purposive sampling was applied.

The research instrument was a questionnaire developed in accordance with the study objectives and distributed to the respondents. Prior to its use, the questionnaire underwent validity and reliability testing. The validity test showed that, out of 20 question items, 15 were declared valid, while 5 invalid items were removed. The reliability test conducted on the 15 valid items showed that all items were reliable, as the Cronbach's alpha value of 0.9 was higher than the minimum criterion of 0.6.

Data were analyzed using univariate and bivariate analyses. Univariate analysis was used to describe each variable in the form of frequency distribution and percentage tables. Meanwhile, bivariate analysis was conducted to determine the relationship between mothers' knowledge of the benefits of infant massage and the frequency of infant massage practice. The Chi-square test was used because the study variables were categorical.

RESULT AND DISCUSSION

Research data were collected using a structured questionnaire administered to the respondents. The instrument contained questions developed based on the study variables to obtain data on mothers' knowledge levels and the frequency of infant massage practice.

Table 1. Frequency Distribution of Mothers' Knowledge Levels Regarding Infant Massage

No	Mothers' Knowledge Level	Frequency	Percentage (%)
1	Good	4	8.3
2	Moderate	24	50.0
3	Poor	20	41.7
	Total	48	100.0

Notes: Based on these data, most respondents had a moderate level of knowledge, accounting for 50%.

Meanwhile, only a small proportion had a good level of knowledge, representing 8.3%.

Table 2. Frequency Distribution of Infant Massage Practice

No	Infant Massage Practice	Frequency	Percentage (%)
1	Yes	15	31.3
2	No	33	68.8
3	Total	48	100.0

Based on these data, most mothers did not perform infant massage regularly, accounting for 68.8%. Meanwhile, nearly one-third of the respondents performed infant massage regularly, representing 31.3%.

Table 3. Relationship Between Mothers' Knowledge of the Benefits of Infant Massage and Infant Massage Practice

No	Mothers' Knowledge Level	Regular Infant Massage Practice	Irregular Infant Massage Practice	Total
Knowledge	Good	4.2%	4.2%	8.4%
	Moderate	27.1%	22.9%	50.0%
	Poor	37.5%	4.2%	41.7%
	Total	68.8%	31.3%	100.0%

CONCLUSION AND SUGGESTION

Based on the data, two respondents (4.2%) with good knowledge did not perform infant massage regularly, while another two respondents (4.2%) with good knowledge performed it regularly. Among respondents with moderate knowledge, 13 respondents (27.1%) did not perform infant massage regularly, whereas 11 respondents (22.9%) performed it regularly. Among respondents with poor knowledge, nearly half did not perform infant massage regularly, totaling 18 respondents (37.5%). Meanwhile, only two respondents (4.2%) with poor knowledge performed infant massage regularly.

The Chi-Square test examining the relationship between mothers' knowledge of the benefits of infant massage and the frequency of infant massage practice in Medan Sunggal obtained a Chi-Square value of 7.234 and an Asymp. Sig. (2-sided) value of 0.027. Since the

significance value of 0.027 was lower than 0.05, the alternative hypothesis (H₁) was accepted. This result indicates a significant relationship between mothers' knowledge of the benefits of infant massage and the frequency of infant massage practice.

The post-test results reported by (Gati, 2025) showed an increase in respondents' knowledge, with 73% of respondents classified as having good knowledge. These findings indicate that the infant massage training was effective in improving respondents' knowledge. In addition, the training had a positive effect on mothers' understanding of the benefits and practice of infant massage. This result is supported by (Nuraida, 2022), who found that infant massage education provided to health cadres and mothers of infants and toddlers significantly improved participants' knowledge and skills.

The findings of demonstrated that infant (Fauziah, 2025) massage had a significant effect on increasing infant body weight. The average body weight increased from 4.00 kg before massage to 5.80 kg after infant massage, with a p-value of 0.001. This result indicates that infant massage may serve as an effective intervention to support weight gain among infants aged 6–24 months. The increase in body weight may be associated with the physiological effects of infant massage, including stimulation of the vagus nerve, increased gastrointestinal activity, and enhanced production of digestive hormones such as gastrin and insulin. These mechanisms may improve nutrient absorption and optimize infant metabolism. Most mothers in the study had never attended infant massage training, totaling 17 respondents (94%), while only one respondent (6%) had previous experience. This condition indicates that mothers' knowledge and skills regarding infant massage remained limited, making the education relevant for improving their understanding and ability to perform infant massage (Suja, 2025) The increase in scores suggests that the educational materials successfully improved mothers' understanding of the concepts, benefits, and techniques of infant massage.

This finding was also supported by the fact that most respondents had never attended previous training; therefore, the intervention became their primary source of information regarding the correct practice of infant massage (Nurhayati, 2025). The Chi-Square test results showed that the alternative hypothesis (H₁) was accepted. This means that there was a significant relationship between mothers' level of knowledge regarding the benefits of infant massage and the regularity of infant massage practice.

The findings indicate that mothers' knowledge is an important factor influencing infant massage practice. Mothers with adequate knowledge of its benefits are more likely to understand the importance of infant massage in improving comfort, sleep quality, body weight, and infant growth and development. Therefore, mothers' knowledge should be improved through health education concerning the benefits of infant massage, appropriate massage techniques, and safe and proper times for performing infant massage.

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