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Mothers' knowledge before and after receiving education about baby massage in the workplace

Enggar Juliana^{1✉}, Emy Yulianti¹, Dini Fitri Damayanti¹

¹Department of Midwifery, Politeknik Kesehatan Kementerian Kesehatan Pontianak, Pontianak, West Kalimantan, Indonesia

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Abstract

Baby massage is a form of comfortable communication between mothers and infants that provides health benefits, including supporting weight gain. A preliminary study showed that mothers' awareness and practice of baby massage were still low, and the procedure was mostly performed by traditional healers. This study aimed to analyze the difference in mothers' knowledge before and after receiving counseling on baby massage in the working area of the Perumnas II Pontianak Community Health Center. Using a pre-experimental one-group pre-test–post-test design, this study involved 30 respondents selected through consecutive sampling, and data were analyzed using the Wilcoxon test. The results showed a significant increase in mothers' knowledge after counseling ($p = 0.000$). In conclusion, counseling on baby massage effectively improved maternal knowledge and is recommended as a health education strategy in community settings.

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Corresponding Author:

✉ Enggar Juliana

Department of Midwifery, Politeknik Kesehatan Kementerian Kesehatan Pontianak, Pontianak, West Kalimantan, Indonesia

Email: enggar_juliana@yahoo.com

INTRODUCTION

Infancy is both a golden age and a critical period of human development (Gee, & Cohodes, 2021; Graf, Biroli, & Belsky, 2021; Yao et al., 2021; Ames, Lotoski, & Azad, 2023; Gross, 2023). It is considered a critical period because during this time, babies are highly sensitive to their environment, and a golden age because infancy is short and cannot be repeated (Sutapa et al., 2021; Dini, 2022; Fajzrina, Ngaisah, & Pratamasari, 2022; Jura, & Naray, 2023; Nadhiroh, Ayuningtyas, & Salsabil, 2024). When discussing infant growth and development, the concepts of growth and development cannot be separated. Many factors influence infant growth; therefore, maintaining an age-appropriate weight is essential through adequate nutrition, a supportive environment with good sanitation, proper health services such as immunization, and continuous stimulation (Roesli, 2016). One form of stimulation that parents can provide is baby massage, which is defined as a comfortable form of communication between mother and baby. Baby massage offers various health benefits, including positive physical effects such as weight gain (Fatmawati, Zulfiana, & Pratiwi, 2021; Fauzia, Budihastuti, & Adriani, 2022; Mrljak et al., 2022; Sirait, & Simatupang, 2024). This is supported by Field and Scafidi's research from the University of Miami, showing that 20 premature infants experienced a 20–47% daily weight gain after receiving massage therapy three times a day for 15 minutes over 10 days. Full-term infants aged 1–3 months who were massaged for 15 minutes twice weekly for 6 weeks also showed higher weight gain compared to those who were not massaged (Roesli, 2016).

In Indonesia, infant massage is still largely performed by traditional birth attendants, accounting for 30.4% of cases (Ministry of Health of Republic of Indonesian, 2013). Traditional birth attendants are perceived as experts, skilled, and trusted by the community, leading many mothers to prefer their services over performing baby massage independently (Kassie et al., 2022). However, baby massage can now be done by mothers themselves, as a variety of books and resources provide information and guidelines on proper massage techniques (Roesli, 2016). Based on an interview with a midwife at the Perumnas II Community Health Center, it was found that counseling or health promotion related to baby massage had never been conducted. A preliminary survey of eight visitors to the KIA Polyclinic at Perumnas Community Health Center II revealed that four mothers were knowledgeable about baby massage, while the other four were not. Among them, two mothers reported that their babies had been massaged by a traditional healer, two had massaged their babies themselves, and four had never practiced baby massage at all.

Despite evidence showing the benefits of baby massage, there is still a lack of structured education for mothers, especially in primary health care settings such as the Perumnas II Community Health Center. Studies on mothers' knowledge improvement through counseling in this area are also limited, creating a research gap. The novelty of this study lies in evaluating the effectiveness of baby massage counseling specifically within the working area of Perumnas II Pontianak Community Health Center, where such interventions have not been previously implemented. Therefore, this study aims to analyze differences in mothers' knowledge before and after receiving baby massage counseling in the working area of the Perumnas II Pontianak Community Health Center.

METHOD

This study employed a quantitative approach using a pre-experimental one-group pre-test–post-test design. This design was selected based on the available time and the objective of analyzing differences in mothers' knowledge before and after receiving counseling on baby massage in the working area of the Perumnas II Pontianak Community Health Center in 2019. The research population consisted of 304 individuals, from which a sample of 30 respondents was obtained.

The sampling technique used in this study was non-probability sampling with a consecutive sampling approach. Primary data were collected through questionnaires completed by the mothers of the infants. The data were analyzed using non-parametric statistical methods, specifically the Wilcoxon test, to assess differences in knowledge before and after the counseling intervention.

RESULTS AND DISCUSSION

Table 1. Frequency Distribution of Respondent Characteristics in the Work Area of the Perumnas II Pontianak Community Health Center.

Characteristics	Frequency (n=30)	Percentage (%)
Age		
< 20 years	3	10.0
20-35 years	14	46.7
> 35 years old	13	43.3
Education		
Elementary School	13	43.3
Secondary Education	15	50.0
Higher Education	2	6.7
Occupation		
Not Working	23	76.7
Employed	7	23.3

Based on Table 1, the majority of respondents were in the age group of 20–35 years (46.7%), followed by those older than 35 years (43.3%). Most respondents had a secondary education level (50%), and nearly half had only completed elementary education (43.3%). In terms of occupation, the majority of respondents were not employed (76.7%), while only a small proportion were employed (23.3%).

Table 2. Distribution of Mothers' Knowledge Before Receiving Counseling on Baby Massage Score.

Distribution of Mothers Knowledge	Score Total	Median (Minimum-Maximum)
Knowledge before the counseling session (n=30)	316	11 (6-14)

Table 2 shows that of the 30 respondents, the total knowledge score of mothers before and after counseling was 316 with a median value (11), minimum value (6), and maximum value (14).

Table 3. Distribution of Mothers' Knowledge After Receiving Counseling on Baby Massage Score.

Distribution of Mothers' Knowledge	Score Total	Median (Minimum-Maximum)
Knowledge before the counseling session (n=30)	380	13 (10-15)

Table 3 shows that of the 30 respondents, the total knowledge score of mothers before and after counseling was 380 with a median value (13), minimum value (10), and maximum value (15).

Table 4. Difference in Mothers' Knowledge Before and After Receiving Counseling on Baby Massage.

Treatment	n	Median (Minimum-Maximum)	p-value
Knowledge before counseling	30	11 (6-14)	0.000
Knowledge after counseling	30	13 (10-15)	

Table 4 above uses the Wilcoxon test, showing that the value of $p = 0.000$, meaning ($p < \alpha$), so H_0 is rejected and H_a is accepted. Therefore, it can be concluded that there is a difference in knowledge before and after counseling on infant massage in the working area of the Perumnas II Pontianak Community Health Center.

DISCUSSION

Based on Table 2, the knowledge of 30 mothers before receiving counseling on infant massage showed a total score of 316, with a median value of 11, a minimum value of 6, and a maximum value of 14. According to Notoadmodjo (2010), knowledge is the result of "knowing," which occurs after a person perceives a particular object, and is influenced by several factors such as age, education, and occupation. The findings indicate that before the counseling session, mothers' knowledge was still low, particularly on questionnaire items 13 and 15, where only 13 respondents answered correctly. These items were related to the procedures and side effects of baby massage, which shows that mothers had not yet mastered essential aspects of infant massage.

Massage is described as the oldest and most popular touch therapy known to humans, involving manipulation of body tissues or organs for therapeutic purposes. In infant massage, the technique includes massaging the entire surface of the baby's body using the hands to relax muscles and improve blood circulation. The recommended procedure for baby massage is to repeat each movement six times for 10 seconds on each body part, performed for five minutes, beginning from the feet, abdomen, chest, hands, face, and finally the back (Roesli, 2016). Roesli (2016) also explains that improper massage techniques may cause trauma or bruising of the skin and muscles, pain leading to fussiness, muscle and bone injuries, swelling, and increased irritability. However, when performed correctly and gently, infant massage is considered safe and beneficial.

After the provision of counseling, the mothers' knowledge showed improvement, as reflected in the post-test scores presented in Table 3. The total score increased to 380, with a median of 13, a minimum value of 10, and a maximum value of 15. This improvement indicates that the information provided during the counseling session was effectively communicated. The most notable increases were observed in questionnaire item number 13, with 23 respondents answering correctly, and item number 15, with 18 respondents answering correctly, suggesting that the health education delivered successfully enhanced mothers' understanding of infant massage.

The results of the statistical analysis further confirm the effectiveness of the counseling intervention. The Wilcoxon test yielded a value of $p = 0.000$ ($p < \alpha$), indicating a significant difference between mothers' knowledge before and after receiving counseling on baby massage in the working area of the Perumnas II Pontianak Community Health Center. This finding demonstrates that the counseling, delivered using PowerPoint media, had a meaningful impact on increasing the respondents' knowledge. Overall, the study highlights the importance of targeted health education in improving mothers' understanding and skills related to infant massage.

CONCLUSION

The study concludes that mothers' knowledge about infant massage increased after receiving counseling in the working area of the Perumnas II Pontianak Community Health Center. This finding demonstrates that health education plays an important role in improving mothers' understanding of proper infant massage techniques. It is recommended that infant massage be integrated as a routine component of infant care programs to help support and optimize healthy growth and development.

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