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Woolwich massage to stimulate breast milk production in postpartum mothers at Jakarta Cempaka Putih Islamic Hospital

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ABSTRACT

Breast milk is a vital source of nutrition for infants, meeting all their essential needs. Insufficient breast milk intake increases an infant's susceptibility to illness. One method to enhance the smooth flow of breast milk production is the application of Woolwich massage for postpartum mothers. This study aimed to determine the effect of Woolwich massage on increasing breast milk production in postpartum mothers. A pre-experimental research method utilizing a one-group pretest-posttest design was employed; the sample consisted of 20 breastfeeding mothers (one month postpartum) at the Jakarta Cempaka Putih Islamic Hospital between July and August 2024. The results showed that the mean score for breast milk flow was 4.80 prior to the Woolwich massage and 13.40 following the massage. Statistical analysis using the paired t-test (p-value = 0.001, $\rho < 0.05$) revealed a significant difference in breast milk flow before and after the administration of Woolwich massage. These findings indicate that Woolwich massage has the potential to increase breast milk production in postpartum mothers.

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INTRODUCTION

Breast milk is the ideal source of nutrition for infants, containing nutrients perfectly suited to their needs as well as protective substances that help fight disease. The first two years of al child's life are crucial; optimal nutrition during this period lowers morbidity and mortality rates, reduces the risk of chronic diseases, and fosters better overall development. Consequently, optimal breastfeeding—specifically for children aged 0 to 23 months—is vital, as it has the potential to salve the lives of more than 820,000 children under the agel of five annually. According to Indonesian Government Regulation No. 33 of 2012, exclusive breastfeeding is defined as providing breast milk to an infant from birth for a period of six (6) months without the addition or substitution of any other foods or beverages (Azis & Herawati, 2023; Couto et al., 2025).

The World Health Organization (WHO) reported global data indicating that approximately 48% of infants aged 0–6 months wordwide were exclusively breastfed as of 2024, bringing the world closer to the 50% target set for 2025. Building on this progress, WHO member states adopted a resolution during the 78th World Health Assembly to raise the target to 60% and extend the timeframe to 2030 (World Health Organization, 2025). In Indonesia, the exclusive breastfeeding coverage target for 2024 was set at 80% under Presidential Regulation Number 72 of 2021, while the actual national achievement stood at 68.6% (Kementerian Kesehatan Republik Indonesia, 2024). The WHO and UNICELF continue to advocate for increasing this rate by strengthening health services. According to the 2024 DKI Jakarta Health Profile, exclusive breastfeeding coverage in DKI Jakarta has surpassed the national target, reaching 81.7%; the highest achievement was recorded in the Thousand Islands (87.8%) alnd thel lowest in North Jakarta (78.0%). However, many infants still do not receivel exclusive breastfeeding for the full six-month period—the duration required to derivel optimal health benefits (Pusat Data dan Informasi Kesehatan Daerah Dinas Kesehatan Provinsi DKI Jakarata, 2024).

Failure to practice exclusive breastfeeding leads to increased susceptibility to illness (for both child and mother), higher medical costs, cognitive deficits, and even lost individual income (Widiastuti et al., 2025). Obstacles to breastfeeding arise from limited milk flow on the first day postpartum; mothers may avoid breastfeeding initially due to anxiety and fear regarding insufficient milk flow, as well as a lack of knowledge about the breastfeeding process. Mothers often stop breastfeeding during the first postpartum month due to issues such as sore nipples, breast engorgement, difficulty achieving proper latch, and the perception that their milk supply is inadequate, causing them to doubt their ability to breastfeed (Hartati et al., 2024). A key challenge is the limited milk flow on the first day after delivery; mothers may refrain from breastfeeding at this stage due to anxiety and fear regarding insufficient milk supply and a lack of knowledge about the breastfeeding process (Hidayah et al., 2026).

Woolwich massage is an intervention that can be performed to assist with colostrum expression and facilitate breast milk flow in postpartum mothers. This technique involves massaging the lactiferous sinus area—specifically 1–1.5 cm above the areola—to express the milk contained within the lactiferous sinuses (Irwan Batubara et al., 2024). Woolwich massage stimulates nerve cells in the breast; this stimulus is transmitted to the hypothalamus and elicits a response from the anterior pituitary gland, triggering the release of the hormone prolactin. Prolactin is then transported via the bloodstream to the breast's myoepithelial cells to facilitate milk flow. The stimulus travels to the hypothalamus via the spinal cord, causing the hypothalamus to inhibit factors that suppress prolactin secretion while simultaneously stimulating factors that promote it. This process triggers the anterior pituitary to release prolactin, which subsequently stimulates the alveolar cells responsible for milk production (Mulyaningsih & Hiola, 2025).

The Woolwich massage method is based on the observation that the flow of breast milk is more critical than its secretion by the mammary glands. This method influences the autonomic nerves and subcutaneous tissues, relaxing the tissue and facilitating blood flow within the lactiferous duct system, thereby promoting smooth milk flow (Yulianto et al., 2022). Woolwich massage stimulates the myoepithelial cells surrounding the mammary glands; this stimulus is transmitted to the hypothalamus, triggering the anterior pituitary gland to produce the hormone prolactin. Additionally, this method helps prevent breast inflammation and engorgement (Fatimah et al., 2022). Research conducted by (Rajihah et al., 2026) revealed a significant difference in breast milk production before and after the administration of Woolwich massage; the Wilcoxon test yielded a p-value of 0.000 (< 0.05). This difference was evident in the mean values for breast milk output: the average was 2.03 prior to the intervention, rising to 6.20 following the Woolwich massage. Similarly, a previous study by Siregar (2024) reported an increase in mean breast milk production within the Woolwich massage group, rising from 55.00 ml before the massage to 365.00 ml afterwards, with a p-value of 0.000425 (< 0.05) (Siregar et al., 2024).

A preliminary study conducted at the Jakarta Cempaka Putih Islamic Hospital found that, among five postpartum mothers, four complained of poor breast milk flow and had never undergone Woolwich massage to facilitate milk flow; consequently, the researcher became interested in investigating the effect of Woolwich massage on breast milk flow among postpartum mothers at the hospital.

RESEARCH METHOD

This study employed a pre-experimental design, specifically a one-group pretest-posttest design. The study population consisted of all postpartum mothers at the Jakarta Cempaka Putih Islamic Hospital. A sample of 20 postpartum mothers was selected using purposive sampling. A pretest regarding the adequacy of breast milk supply was administered to the mothers prior to the intervention. Woolwich massage was then administered to the mothers for 15 minutes, twice daily, over a period of three weeks. A posttest was conducted following the intervention; data collection utilized a closed-ended questionnaire comprising 10 questions regarding the adequacy of breast milk production. A validity test was conducted using the product-moment test on the 10 items of the Breast Milk Production Flow questionnaire, and the items were deemed valid as the significance value (sig.) < 0.05. Meanwhile, a reliability test was also performed, yielding a Cronbach's alpha value of 0.722 > 0.6. The collected data were tabulated and processed using SPSS. Univariate analysis employed frequency distributions and percentages, while bivariate analysis utilized the paired t-test. A Shapiro-Wilk normality test was conducted as a prerequisite for the paired t-test.

RESULTS AND DISCUSSIONS

Univariate Analysis

The characteristics of the respondents—namely age, parity, education level, and occupation of the postpartum mothers—were analyzed using univariate analysis and are presented as categorical data in the following table:

Table 1. Characteristics of postpartum mothers based on age, parity, education, and occupation

Karakteristik	Kategori	Jumlah	Persentase (%)
Umur	<20 tahun	5	25
	21-35 tahun	11	55
	>35 tahun	4	20
	Total	20	100
Paritas	Primipara	6	30
	Multipara	9	45
	Grandemultipara	5	25
	Total	20	100
Pendidikan	Dasar	2	10
	Menengah	15	75
	Tinggi	3	15
	Total	32	100
Pekerjaan	Buruh	2	10
	IRT	13	65
	PNS	2	10
	Wiraswasta	3	15
	Total	20	100

Table 1 above shows that the majority of respondents (11 individuals or 55%) were aged 21–35 years, while 5 (25%) were under 20 years old and 4 (20%) were over 35 years old. Regarding parity, the majority were multiparous (9 individuals or 45%), whereas 6 (30%) were primiparous and 5 (25%) were grand multiparous. Most respondents had a secondary education (15 individuals

or 75%), while 2 (10%) had a primary education and 3 (15%) had a higher education. In terms of occupation, the majority were housewives (13 individuals or 65%), while 3 (15%) were self-employed, 2 (10%) were civil servants, and 2 (10%) were laborers.

The study results indicate that the majority of respondents were aged 21–35 years. Mothers aged 20 to 35—considered the healthy reproductive age range—can produce more breast milk than older or younger mothers. Mothers under the age of 20 face factors such as the ongoing development of reproductive organs (including the breasts), social demands, psychological maturity issues, and social pressures that increase the risk of depression; all of these can affect breast milk production. Furthermore, mothers in this age group often lack experience, leading to confusion and uncertainty regarding infant care and breastfeeding. Conversely, mothers over the age of 35 experience changes in reproductive organs—such as the breasts—that can impact their ability to breastfeed exclusively and their capacity for breast milk production (Berutu, 2021).

Regarding respondent characteristics based on parity, the majority were multiparous mothers; multiparous mothers produce twice as much breast milk compared to primiparous mothers. Research indicates that exclusive breastfeeding is more common among mothers with more than one child. This is attributed to the greater breastfeeding experience multiparous mothers possess, having learned from previous births. Multiparous mothers are better able to understand how to boost breast milk production, provided their prior breastfeeding experiences were positive and they are aware of the benefits of breastfeeding (Diah libry O, 2024).

Regarding respondent characteristics based on occupation, the majority were housewives. Mothers who do not work outside the home have ample time to focus on health-promoting practices for themselves and their infants, particularly during the postpartum period. Non-working mothers are considered to have more time for breastfeeding; the infant's suckling stimulus—which activates the hormones prolactin and oxytocin—thereby sustains increased breast milk production. Conversely, working outside the home can impact breast milk production if it leads to stress, tension, or prolonged delays in breastfeeding. Stress in working mothers can block the let-down reflex, inhibiting oxytocin from reaching its target myoepithelial cells and thus hindering breast milk production (Sari et al., 2022).

Regarding respondent characteristics based on education, the majority had a secondary education. A person's level of education facilitates the comprehension and understanding of information. Higher maternal education levels correlate with a better understanding of exclusive breastfeeding. Furthermore, higher education levels are associated with a greater likelihood of practicing exclusive breastfeeding, as highly educated mothers often possess a stronger curiosity regarding their infant's growth and development (Berutu, 2021; Dewi & Masruroh, 2022).

Bivariate Analysis

Table 2 Effect of Woolwich massage on the smooth flow of breast milk at Jakarta Cempaka Putih Islamic Hospital

Group	N	Mean	Min	Max	Standar Deviasi	p-Value
Pretest	20	4.40	4	7	1.229	0.001
Posttest	20	12.80	8	17	3.062	

Table 2 shows that the pre-test mean score for breast milk flow was 4.40, with a minimum value of 4, a maximum of 7, and a standard deviation of 1.229. Following the intervention—specifically, the administration of Woolwich massage to postpartum mothers—the mean post-test score for breast milk production was 12.80, with a minimum of 8, a maximum of 17, and a standard deviation of 3.062. Bivariate analysis using a paired t-test yielded a p-value of 0.001 ($p < 0.05$), indicating a significant difference in breast milk flow among postpartum mothers before and after the Woolwich massage intervention.

In breastfeeding postpartum mothers, prolactin levels rise as estrogen and progesterone levels decline and the infant stimulates the nipple through suckling. Prolactin levels return to normal between three months postpartum and the time of weaning; although infant suckling ceases during this period, milk secretion continues (Azis & Herawati, 2023).

A decline in breast milk production during the initial days postpartum may result from insufficient stimulation of prolactin and oxytocin, hormones that play a crucial role in ensuring smooth milk production (Florendia & Ulaa, 2026). Oxytocin stimulation causes the alveolar cells in the mammary glands to contract, forcing milk to flow through the small ducts of the breast and out of the nipple into the infant's mouth; this process is known as the "let-down reflex." The let-down reflex is strongly influenced by the mother's psychological state—such as thinking about, smelling, seeing, or hearing the baby. Conversely, factors that inhibit the let-down reflex include stress-related feelings such as restlessness, a lack of self-confidence, fear, and anxiety (Widiastuti et al., 2025).

Previous research has noted that prior to the implementation of the Woolwich massage, postpartum mothers experienced difficulties with breast milk expression (Dwi Fara & Tyas Mayasari, 2020). This issue stems from individual variations in the timing of milk let-down, necessitating breast stimulation to facilitate the process(Astarani & Idris, 2020; Naomi Parmila Hesti Savitri, 2022) . Furthermore, the respondents had not yet established a routine breastfeeding practice, believing that their milk had not yet come in. Yet, the act of breastfeeding itself serves as a method to stimulate milk production; the mechanical stimulus provided by the infant's suckling at the nipple triggers an increase in prolactin secretion by the pituitary gland, thereby boosting milk volume (Abdul & Olii, 2021; Alfanira et al., 2026).

One measure to stimulate the release of prolactin and oxytocin in postpartum mothers is to induce relaxation—specifically through the Woolwich massage. This technique stimulates nerve cells in the breast, sending signals to the hypothalamus that prompt the anterior pituitary gland to release prolactin; the hormone is then transported via the bloodstream to the breast's myoepithelial cells to stimulate breast milk production . Research findings indicate that combining the Woolwich massage with endorphin-stimulating techniques effectively increases prolactin levels and breast milk volume in postpartum mothers. The massage is administered in the morning for approximately 15 minutes over a three-day period, spanning the first three days postpartum (Astuti et al., 2025; Ritonga et al., 2024).

Woolwich massage is a technique performed on the lactiferous sinuses—specifically 1–1.5 cm above the areola—aimed at expressing the breast milk stored within those sinuses. This massage stimulates nerve cells in the breast; the stimulus is transmitted to the hypothalamus and triggers the anterior pituitary gland to release prolactin. This hormone travels via the bloodstream to the breast's myoepithelial cells, stimulating milk production, increasing milk volume, and preventing breast engorgement (Fatimah et al., 2022). Woolwich massage therapy is a contributing factor to increased breast milk expression. Additionally, it is crucial to consider factors during pregnancy; expectant mothers are advised to attend regular antenatal check-ups and take measures to prevent anemia and infections. Mothers must also be able to manage stress during pregnancy and breastfeeding, as stressful life events can negatively impact both mother and baby, including the initiation of breastfeeding. Postpartum mothers are encouraged to breastfeed, as breast milk is a proven source of essential nutrients (Retnawati et al., 2024).

Research by (Rajihah et al., 2026) demonstrated a significant difference in breast milk production before and after the administration of Woolwich massage; the Wilcoxon test yielded a p-value of 0.000 ($p < 0.05$). This difference was evident in the mean scores for breast milk expression: the average was 2.03 prior to the intervention and rose to 6.20 following the Woolwich massage. These findings align with previous studies indicating that Woolwich massage is an effective method for stimulating prolactin and oxytocin release in postpartum mothers by inducing a state of relaxation.

Previous research by (Siregar et al., 2024) indicates that breast milk production in the group receiving Woolwich massage increased from a mean of 55.00 ml before the massage to 365.00 ml after the massage (p-value = 0.000425 < 0.05). Based on the researcher's observations, the Woolwich massage administered to postpartum mothers is a highly significant factor in increasing breast milk output. Consequently, when postpartum mothers perform the Woolwich massage routinely, they need not worry about milk output or the adequacy of their baby's nutrition, as the resulting breast milk supply will naturally become abundant.

The benefits of Woolwich massage include: a) preventing ductal blockages, b) preventing inflammation or breast engorgement, and c) increasing breast milk production. Woolwich massage is administered to postpartum mothers twice daily—in the morning and afternoon—for a minimum of three days. The procedure involves performing circular massage movements with both thumbs over the lactiferous sinus area—specifically 1–1.5 cm outside the areola—for 15 minutes (Retnawati et al., 2024; Widiastuti et al., 2025).

CONCLUSION

There is a difference in the ease of breast milk flow before and after the administration of Woolwich massage; specifically, the massage has a significant effect on breast milk production, as confirmed by the paired t-test results (p-value = 0.001, ρ < 0.05). The average score for the ease of breast milk flow rose from 4.80 prior to the massage to 12.80 afterward. Family members—particularly husbands—are encouraged to perform the Woolwich massage twice daily for at least 15 minutes over three consecutive days to address breast milk production issues in nursing mothers.

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