

THE EFFECTS OF OXYTOCIN MASSAGE AND BREAST CARE ON LACTATION OUTCOMES AMONG POSTPARTUM MOTHERS

Dewi Fajar Wati¹⁾, Syarini Novita²⁾

Email: dewifajar1824@gmail.com, syarininovita85@gmail.com²⁾

^{1,2)}Bachelor of Midwifery Program, Universitas Bhakti Pertiwi Indonesia, Jakarta, Indonesia

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Abstrak

Poor breast milk production is the main reason why mothers do not breastfeed early on, as they feel unable to meet their babies' needs and support adequate weight gain. One effective way to increase breast milk production is by caring for the breasts, maintaining hygiene, and performing oxytocin massage. This study aims to determine the effect of oxytocin massage and breast care on the smooth flow of breast milk in postpartum mothers at the PP Hospital in Jakarta. The research method is descriptive analytical using an experimental design with a two-group pretest-posttest design, in which measurements of the smooth flow of breast milk production are carried out using oxytocin massage and breast care. Data collection was conducted from December 2024 to April 2025 with a total sample size of 60 respondents using primary data and the Shapiro-Wilk test for normality, as well as hypothesis analysis using the Mann-Whitney test. Research results: The Mann-Whitney statistical test yielded a p-value of $0.000 < \alpha 0.05$. Conclusion: Oxytocin massage and breast care have an effect on breast milk production in postpartum mothers in the Maternity Ward at PP Hospital Jakarta. Recommendation: It is hoped that PP Hospital Jakarta can expand the knowledge of health workers in an effort to increase mothers' understanding of the effect of oxytocin massage and breast care on breast milk production.

Keywords: Oxytocin Massage, Breast Care, Breast Milk Production, Postpartum

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Correspondence:

Dewi Fajar Wati, Bachelor of Midwifery Program, Universitas Bhakti Pertiwi Indonesia, Jakarta, Indonesia 12620.
dewifajar1824@gmail.com

1. Introduction

UNICEF and the World Health Organization (WHO) have emphasized the importance of strengthening support for breastfeeding mothers in Indonesia, particularly during the first week after childbirth, as early initiation of exclusive breastfeeding plays a critical role in infant survival and development. In recent years, Indonesia has shown encouraging progress, with the proportion of mothers providing exclusive breastfeeding during the first six months increasing from 52% in 2017 to 68% in 2023. Despite this

improvement, breastfeeding practices during the early postnatal period continue to face substantial challenges [1].

National data indicate that exclusive breastfeeding coverage has consistently fallen short of established targets. In 2016, the coverage rate was 52.3%, well below the Strategic Plan (Renstra) target of 80%. This figure declined further in 2017, when only 35.73% of infants were exclusively breastfed until six months of age, while 46.74% received exclusive breastfeeding between 0–5 months. These trends

suggest that progress in breastfeeding practices remains uneven and fragile. Several structural and social factors contribute to this situation, including limited workplace and community support for breastfeeding mothers, insufficient maternal knowledge regarding exclusive breastfeeding, and the widespread promotion of infant formula. Consequently, sustained efforts from policymakers, health professionals, and communities are required to strengthen breastfeeding support systems and ensure that mothers are adequately supported throughout the first six months of their infant's life [2].

Breastfeeding challenges frequently arise during the early postpartum period, particularly among first-time mothers. Anxiety and fear particularly concerns about insufficient milk production are among the most commonly reported barriers to successful breastfeeding. Such concerns may lead mothers to introduce supplementary feeding prematurely or discontinue breastfeeding altogether. Psychological support, therefore, becomes an essential component of breastfeeding success. When mothers receive consistent encouragement and guidance from health professionals, partners, and family members, they are more likely to develop confidence and sustain exclusive breastfeeding practices [3].

Alongside psychological support, effective breastfeeding also depends on the physiological regulation of lactation, which governs both milk production and milk ejection. Milk production is primarily regulated by the hormones prolactin and oxytocin. However, not all postpartum mothers are able to initiate adequate milk production immediately after childbirth, as lactation involves a complex interaction between physical stimulation, such as infant suckling, the nervous system, and hormonal responses. To facilitate milk ejection, mothers can stimulate prolactin and oxytocin release through early initiation of breastfeeding, feeding on demand, regular breast care, and oxytocin massage. These practices

not only support optimal milk production but also strengthen mother–infant bonding [4].

Oxytocin plays a central role in the breastfeeding process by inducing contraction of the myoepithelial cells surrounding the milk ducts, thereby facilitating milk ejection and making breast milk readily available for the infant. Beyond its role in milk let-down, oxytocin massage provides multiple benefits for postpartum mothers. This intervention not only supports milk production but also helps reduce breast engorgement, prevents milk duct obstruction, and promotes maternal relaxation and comfort. In addition, oxytocin massage may help maintain stable milk production, particularly when the mother or infant is experiencing illness, ensuring that the infant's nutritional needs continue to be adequately met [5].

Evidence from empirical studies further supports the effectiveness of oxytocin massage in enhancing lactation outcomes. A study by Nelina and Maria (2024) reported a significant increase in average breast milk volume among postpartum mothers on days 4–7 following oxytocin massage. Prior to the intervention, the mean milk volume was 47.03 cc/ml, which increased to 142.59 cc/ml after massage, representing a 95.47% increase. These findings indicate that oxytocin massage is an effective method for improving breast milk production during the early postpartum period [6].

Similarly, previous research has demonstrated that lactation massage, defined as a combination of back massage and breast care, can accelerate the onset of milk secretion. In mothers who received lactation massage, breast milk was expressed within 24 hours postpartum, whereas in those who did not receive massage, milk secretion typically began on the third or fourth day. These findings further reinforce the role of massage and breast care interventions in facilitating both milk production and milk ejection among postpartum mothers [7].

Consistent with these findings, clinical observations at Pertamina Central Hospital Jakarta over the past two to three years have identified several cases of severe breast engorgement requiring intensive management, including hospital readmission after discharge, to ensure resolution and continuation of exclusive breastfeeding. In addition, cases of mastitis progressing to breast abscess have been reported, necessitating further surgical intervention by specialist surgeons. Based on these clinical challenges, this study was conducted to examine the effect of oxytocin massage and breast care on the smoothness of breast milk ejection among postpartum mothers at Pertamina Central Hospital Jakarta. The objective of this study is to determine whether oxytocin massage and breast care significantly influence breast milk flow in postpartum mothers receiving care at the hospital.

2. Method

This study employed a descriptive analytical design using a non-equivalent control group approach. [8] A two-group pretest–posttest design was utilized to evaluate breast milk production following oxytocin massage and breast care interventions. The effectiveness of milk ejection was assessed using structured observation checklists; however, breast milk production observation forms were used as the primary outcome measure for data analysis.

Data were collected between December 2024 and April 2025 in the postpartum ward of Pertamina Central Hospital, Jakarta. The study population comprised all postpartum mothers admitted during the study period. Total sampling was applied, yielding a sample of 60 participants, who were equally allocated into the intervention group (n = 30) and the control group (n = 30) [9]. Primary data were obtained directly from study participants. Data normality was assessed using the Shapiro–Wilk test and indicated non-normal distribution. Accordingly, hypothesis testing was

conducted using the Mann–Whitney U test.

3. Results and Discussion

Table 1. Oxytocin Massage and Breast Care Interventions

Intervention Status	Frequency (n)	Percentage (%)
Performed	30	50
Not performed	30	50
Total	60	100

Table 1 shows the distribution of respondents based on the provision of oxytocin massage and breast care. Of the 60 postpartum mothers included in the study, 30 respondents (50%) received oxytocin massage and breast care, while the remaining 30 respondents (50%) did not receive these interventions.

Table 2. Breast Milk Ejection Among Postpartum Mothers Based on Intervention Status

Breast Milk Ejection	Not Performed		Performed		Total	
	n	%	n	%	N	%
Adequate	4	13,3	30	100	34	56,6
Inadequate	26	86,6	0	0	26	43,3
Total	30	100	30	100	60	100

Table 2 presents the distribution of breast milk ejection outcomes among postpartum mothers according to the intervention status. Among respondents who did not receive oxytocin massage and breast care, the majority—26 respondents (86.67%)—experienced inadequate breast milk ejection, while only 4 respondents (13.33%) demonstrated adequate milk flow. In contrast, all respondents who received oxytocin massage and breast care (30 respondents; 100%) experienced smooth and adequate breast milk ejection. Overall, 34 respondents (56.67%) demonstrated smooth milk ejection, whereas 26 respondents (43.33%) experienced difficulties.

Table 3. Normality Test of Breast Milk Ejection Data

Group	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Oxytocin Massage and Breast Care	0,514	30	0,000	0,420	30	0,000
No Intervention	0,348	30	0,000	0,718	30	0,000

Prior to hypothesis testing, the distribution of the data was examined to determine the appropriate statistical approach. As shown in Table 3, the Shapiro–Wilk test revealed that breast milk production data in both groups were not normally distributed. Specifically, the group receiving oxytocin massage and breast care demonstrated a Shapiro–Wilk significance value of $p = 0.000$, while

the non-intervention group showed an identical result ($p = 0.000$). Because the p-values for both groups were below the conventional threshold of 0.05, the assumption of normality was violated. Consequently, a non-parametric analytical method was selected to ensure the robustness of the statistical analysis, and the Mann–Whitney U test was applied [10].

Table 4. Mann–Whitney U Test Results on Breast Milk Ejection

Group		N	Mean Rank	Sum of Rank	Test Statistic
Breast Milk Ejection	Oxytocin Massage and Breast Care	30	44.50	1335.00	Asymp Sig. (2-tailed) 0.000
	No Intervention	30	16.50	495.00	
	Total	60			

Based on the Mann–Whitney test, the results showed a statistically significant difference between the intervention and control groups ($p = 0.000 < 0.05$). This finding indicates that oxytocin massage combined with breast care has a significant effect on improving breast milk output among postpartum mothers at Pertamina Central Hospital Jakarta. These results suggest that non-pharmacological interventions can play an important role in supporting lactation during the early postpartum period..

Oxytocin massage and breast care, as applied to the 30 postpartum mothers in the intervention group, represent non-pharmacological approaches to supporting lactation. Massage along the spinal area helps relieve muscle tension and maternal stress, which facilitates the release of oxytocin. The activation of this hormone plays a critical role in triggering the milk ejection reflex, allowing breast milk to

flow more smoothly. Clinically, an active oxytocin reflex is often indicated by spontaneous milk dripping or release, enabling the infant to suckle effectively shortly after birth.

In addition to stimulating milk ejection, appropriate breast care provides multiple benefits for lactating mothers. Regular breast care helps maintain breast health, prevents engorgement and inflammation, and supports optimal milk production. Moreover, breast care contributes to maternal comfort and enhances emotional bonding between mother and infant through a more positive breastfeeding experience. These physical and emotional benefits further reinforce the role of breast care as an essential component of postpartum lactation support.

The findings of this study demonstrate that the Mann–Whitney U test yielded a p-value of 0.000 ($p < 0.05$), indicating a statistically significant

effect of oxytocin massage and breast care on the smoothness of breast milk ejection among postpartum mothers at Pertamina Central Hospital, Jakarta. Moreover, the intervention group exhibited substantially higher outcome scores than the control group, suggesting not only statistical significance but also a strong effect size. Taken together, these results confirm that oxytocin massage combined with breast care positively influences both breast milk production and ejection.

These findings align closely with previous research, which reported a significant effect of breast care and oxytocin massage on breast milk ejection in postpartum mothers ($p < 0.05$). The consistency between the present study and earlier evidence strengthens the validity of these interventions as effective strategies for facilitating lactation [11].

Further supporting this conclusion, another study found that breast milk ejection improved from inadequate to adequate levels in 87.5% of mothers following breast care interventions. In addition, pre-test and post-test analyses among mothers receiving oxytocin massage and breast care revealed significant improvements in lactation outcomes. This suggests that the combined intervention is more effective than a single approach, as it simultaneously stimulates oxytocin release and enhances maternal relaxation—both of which are essential for optimal breast milk ejection [12].

Consistent with earlier findings, research examining the effects of breast care on breast milk production has reported significant differences before and after the intervention. Breast care not only facilitates smoother milk flow but also enhances maternal comfort and relaxation. As physical fatigue following childbirth decreases, oxytocin levels tend to increase, thereby supporting the milk ejection reflex. Consequently, breast care emerges as a simple yet effective strategy to support the success of exclusive breastfeeding. [13].

These findings are further supported by evidence showing that appropriate breast care, particularly during the breastfeeding period, can increase the release of oxytocin. Oxytocin plays an important role in breastfeeding because it activates the let-down reflex, a process in which the alveolar cells in the mammary glands contract and allow breast milk to flow through the milk ducts toward the nipple. This process helps infants breastfeed more easily. For this reason, oxytocin massage is considered an essential part of breast care. By stimulating oxytocin release naturally, this massage helps improve milk flow, reduces maternal stress, and supports a more comfortable breastfeeding experience. In addition, oxytocin massage may help prevent blocked milk ducts and contribute to the success of exclusive breastfeeding in postpartum mothers [14].

Based on the results of this study, the combination of breast care and oxytocin massage was effective in improving breast milk production among postpartum mothers. These interventions work by stimulating prolactin and oxytocin through gentle touch and massage, which helps facilitate milk ejection, maintain breast health, and promote maternal relaxation. Importantly, the benefits of this approach are not only physiological but also psychological. Mothers who feel more relaxed and confident tend to breastfeed more effectively. Therefore, combining breast care with oxytocin massage can be considered a simple and effective strategy to reduce breastfeeding difficulties and support successful exclusive breastfeeding.

From clinical perspective, breast care refers to a set of practices aimed at maintaining breast hygiene and overall breast health during the postpartum period. Its objectives include preserving nipple elasticity, stimulating the release of lactogenic and prolactin hormones, improving blood circulation, preventing milk duct blockage, and increasing

breast milk production. Oxytocin massage, meanwhile, involves gentle massage along the spine extending to the fifth or sixth rib. This technique is designed to stimulate prolactin and oxytocin secretion after childbirth and to support a more comfortable and natural breastfeeding process [4].

In practice, oxytocin massage is recommended to be performed twice a day during the postpartum period, with each session lasting approximately two to three minutes. This massage does not need to be performed only by healthcare providers; it can also be done by husbands or other family members because the technique is simple and does not require special equipment. In addition to oxytocin massage, adequate and balanced nutrition especially the consumption of green vegetables also supports breast milk production. Emotional support from husbands and family members is equally important, as it helps mothers feel calm, confident, and comfortable, which in turn facilitates smoother breast milk ejection [15].

4. Conclusion

This study demonstrates that oxytocin massage and breast care have a positive effect on increasing breast milk production among postpartum mothers in the maternity ward of Pertamina Central Hospital. To achieve optimal outcomes, it is important for postpartum mothers to understand the benefits of exclusive breastfeeding for infants, mothers, and families. Health care providers are also encouraged to continuously enhance their knowledge and practical skills related to oxytocin massage and breast care as effective methods to support breast milk production. Oxytocin massage helps stimulate the release of oxytocin, which plays a key role in milk ejection, while breast care contributes to maintaining breast hygiene and ensuring smooth milk flow through the ducts. With adequate knowledge and proper application of these interventions, breastfeeding mothers are more likely to produce

sufficient breast milk to meet their infants' needs.

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6. References

- [1] Karana, Kinanti P. Ibu Membutuhkan Lebih Banyak Dukungan Menyusui Selama Masa Kritis Bayi Baru Lahir 2024.
- [2] Kemenkes RI. Profil Kesehatan Indonesia Tahun 2017. Kementerian Kesehatan RI 2018.
- [3] Rahayu S, Ruspita M, Rosiana H, Nasrawati. Teknik Massage Effleurage dan Pijat Oksitosin. Yogyakarta: CV. Budi Utama Deepublish Digital; 2022.
- [4] Tandipajung T, Rumende R, Mait M. Pengaruh Perawatan Payudara Dan Pijat Oksitosin Terhadap Kelancaran Produksi Asi Pada Ibu Nifas Di Rumah Sakit Kota Tomohon. *Dharma Med* 2024;3:36–44. <https://doi.org/10.70524/vh7da758>.
- [5] RI D. Profil Kesehatan Indonesia. Dep Kesehat RI 2016.
- [6] Nelina T, Maria ADB. Ibu Post Partum Hari Ke 4-7 Di Desa Karang Sari Dan Desa Cintaasih Puskesmas Cipongkor Tahun 2024 2024:106–15.
- [7] Kamonji P, Hadati R. Efektivitas Pijat Oksitosin dan Breast Care Pada Ibu Bersalin Terhadap Pengeluaran ASI. *Public Heal Fac Receiv Revis Form* 12 2019;2:218–30.
- [8] Notoatmodjo S. Metodologi Penelitian Kesehatan. Revisi Cet. Jakarta: PT Rineka Cipta; 2012.
- [9] Nurgiyantoro B, Gunawan,

- Marzuki. Statistik Terapan. Revisi Cet. Yogyakarta: Gadjah Mada University Press; 2015.
- [10] Sugiyono. Metode Penelitian Bisnis: Pendekatan Kuantitatif, Kualitatif, Kombinasi dan R&D. Bandung: Alfabeta; 2017.
- [11] Atik A, Hamidah S. Pengaruh Pijat Oksitosin Dan Perawatan Payudara Terhadap Pengeluaran ASI Pada Ibu Nifas Di Ruang Bersalin. *IJMT Indones J Midwifery Today* 2024;3:70. <https://doi.org/10.30587/ijmt.v3i2.7823>.
- [12] Saribu HJD, Pujiati W. Pengaruh pijat oksitosin dan perawatan payudara terhadap pengeluaran ASI pada Primigravida Trimester III. *J Keperawatan* 2020;10:19–28.
- [13] Kairupan, Sandra F, Yahya, M I, Desiyanti, W I. Perawatan Payudara Terhadap Kelancaran Produksi ASI pada Ibu Post Partum. *J Ber Kesehat* 2024;17:61–9.
- [14] Siahaya A, Talahatu O, Paunno M. Pengaruh Pijat Oksitosin Pada Ibu Nifas Terhadap Kecukupan Asi Bayi Baru Lahir Di Praktik Mandiri Bidan Kota Ambon. *J Keperawatan* 2023;15:1131–8.
- [15] Wulandari S, Handayani S. Asuhan Kebidanan Ibu Masa Nifas. Yogyakarta: Gosyen Publishing; 2011.