JURNAL PENELITIAN SEKOLAH TINGGI ILMU KESEHATAN NAHDLATUL ULAMA TUBAN
https://ejournal.iiknutuban.ac.id/index.php/jp
E-ISSN: 2686-4959
P-ISSN: 2338-5898
Vol. 7 No. 2 December. Page 97-103

COMPARISON OF BREAST CARE AND OXYTOCIN MASSAGE INTERVENTIONS ON BREAST MILK PRODUCTION IN POSTPARTUM MOTHERS AT THE TANASITOLO HEALTH CENTER, WAJO REGENCY, SOUTH SULAWESI

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Article Info:
Submitted: November 13, 2025
Accepted: November 20, 2025
Published: December 12, 2025

Handling Editor:

Keywords:
Breastfeeding; Breast Milk Production; Breast Care; Oxytocin Massage; Postpartum.

ABSTRACT

Background: Optimal breast milk production is very important in supporting the success of exclusive breastfeeding in postpartum mothers. Two interventions that are often used to increase breast milk production are breast care and oxytocin massage. This study aims to compare the effectiveness of breast care compared to breast care and oxytocin massage on increasing breast milk production in postpartum mothers at the Tanasitolo Health Center, Wajo Regency, South Sulawesi. Method: This study uses a True experiment design with a posttest equivalent group design approach. The population is all postpartum mothers at the Tanasitolo Health Center. A total sampling technique was used, involving 40 postpartum mothers who were equally divided into a breast care group and a breast care plus oxytocin massage group. The participants were divided into two groups, consisting of 20 individuals in the intervention group and 20 individuals in the control group, assigned randomly. Breast milk production was assessed using the LATCH score, and data were analyzed with the Mann–Whitney test. Results: The study showed that both interventions increased breast milk production, but the average increase in breast milk production in the breast care and oxytocin massage group was higher than the breast care only group, with a p-value of 0.000 (p <0.05). Conclusion: Breast care and Oxytocin massage are more effective than breast care alone in increasing breast milk production in postpartum mothers. It is expected that health workers can provide education and services related to breast care and oxytocin massage as one of the effective interventions in supporting successful lactation in postpartum mothers.

1. INTRODUCTION

Maternal and toddler health is one of the main indicators of a nation's health, as reflected in its high Maternal Mortality Rate (MMR) and Infant Mortality Rate (IMR). Indonesia has the highest infant mortality rate in Southeast Asia. The main causes of infant mortality include diarrhea,

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malnutrition and infection. Infant morbidity and mortality can be prevented and overcome by providing exclusive breastfeeding, which is a natural process that can have a positive impact on infants and mothers, because without exclusive breastfeeding, infants are more susceptible to various diseases that increase morbidity and mortality. (Dongoran & Siregar, 2023).

Data from Riskesdas (Basic Health Research) 2018 shows that the coverage of exclusive breastfeeding in Indonesia has only reached 37.3%, far from the WHO target of ≥50%. One of the causes of low exclusive breastfeeding is insufficient breast milk production. A study conducted by Puspitasari (2021) stated that around 40% of postpartum mothers experience delays in breast milk production due to a lack of oxytocin hormone stimulation and suboptimal breastfeeding techniques.

The United Nations Children's Fund (UNICEF) and the World Health Organization (WHO) recommend exclusive breastfeeding until the baby is 6 months old. Breastfeeding can be continued until the baby is 2 years old. According to WHO data in 2020, the average exclusive breastfeeding in the world is around 44% or only increased by 6% from 2016 (38%). Their low level of exclusive breastfeeding will have an impact on the quality and vitality of their next generation. The World Health Organization WHO in 2020 stated that the number of cases of breast infections that occur in women, such as breast cancer, reached more than 1.2 million, including breast infections in the form of mastitis in postpartum mothers. Their period of labor is up to three months of breastfeeding. Around 51.5% of postpartum mothers suffer from breast inflammation (mastitis), which causes abrasions on their nipples and abscesses, causing their milk to stop breastfeeding their baby.

Exclusive breastfeeding is influenced by various factors, including breast milk that does not come out immediately after giving birth/insufficient breast milk production, difficulty for babies in sucking, the condition of the mother's nipples that are not supportive, working mothers, and the influence of breast milk substitute promotions. The reality in their field shows that their relatively low production and expenditure of breast milk in their first few days after giving birth is an obstacle for mothers in providing breast milk. (Maryam et al., 2020)

This is supported by the 2018 Riskesdas data, which states that the main cause of children aged 0-23 months not having or never breastfeeding is that breast milk does not come out (65.7%). So that babies aged 0-5 months (33.3%) have been given prelacteal food, with their most common food variations (84.5%) being formula milk. The irregularity of breast milk production on the first day after giving birth can be caused by a lack of stimulation of the hormone oxytocin, which plays a very important role in the smooth production of breast milk. (Septikasari, 2018)

Breast milk production is influenced by the hormone prolactin, while breast milk secretion is influenced by the hormone oxytocin. Efforts that can be made by Postpartum Mothers to facilitate the increase in breast milk production include breastfeeding the baby more often (7-8 times every 24 hours), breastfeeding the baby with both breasts every time, using a breast pump between breastfeeding times, doing the right diet (choosing food and vitamin intake), drinking lots of water (3 liters of water/day), massaging the spine (oxytocin massage) to facilitate the production of breast milk, consuming herbal supplements, and consulting with health workers to facilitate

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their increase in breast milk production (Sudargo, 2018)

Regular breast care can help smooth the flow of breast milk by cleansing the area around the nipples, massaging gently, and reducing the risk of blocked milk ducts. On the other hand, oxytocin massage is a back massage technique that aims to stimulate the release of the hormone oxytocin, which plays an important role in the let-down reflex process (breast milk release reflex). Severe studies have shown that oxytocin massage can increase breast milk production by up to 60% on days 3 to 5 postpartum. (Lubis & Angraeni, 2021)

Meanwhile, Oxytocin Massage is a spinal massage action starting from the 5th-6th nerve to the scapula, which will accelerate the work of the parasympathetic nerves to convey commands to the back of the brain so that oxytocin comes out. This oxytocin massage is done to stimulate the oxytocin reflex or let down release. In addition to stimulating their left down reflex, the benefits of oxytocin massage are to provide comfort to the mother, reduce swelling, and reduce breast milk blockage. (Doko et al., 2019)

Meanwhile, the coverage of exclusive breastfeeding in South Sulawesi Province is ranked 11th out of 34 provinces with a value of 70.82% (Ministry of Health, 2020). This is not in accordance with the target of the South Sulawesi Provincial Health Office, which is 83%. Their coverage of exclusive breastfeeding in Wajo Regency in 2022 is 68% and in 2023 it is 78.8%. Their coverage of exclusive breastfeeding in the Tanasitolo Health Center work area in 2023 is 20%. Breast milk has many benefits not only for babies, but also for mothers and families, so that breastfeeding in Indonesia has been regulated by the Government in Laws (UU) and Government Regulations (PP).

In Indonesia, breastfeeding has also become a culture and teaching for their community, where breastfeeding is recommended for every mother to her baby for at least 2 years. Although the benefits of breast milk are enormous, there are still many mothers who have not given breast milk exclusively. However, some mothers do not give exclusive breastfeeding because breast milk does not come out or only comes out a little. Some factors that are thought to be the cause of babies not getting breast milk include maternal knowledge, maternal unwillingness to breastfeed due to pain during breastfeeding, and fatigue. Other factors that can influence are a lack of family and environmental support in the breastfeeding process, and a lack of health education regarding factors that can increase breast milk production. (WHO, 2024)

Proper and proper breast care is necessary. If breast care is not carried out, it can potentially cause breast milk stagnation, mastitis, and breast infection. To optimize the postpartum period, a postpartum mother's breast care and oxytocin massage to improve her lactation process, and the active role of health workers/midwives is also needed in providing information and counseling on proper breastfeeding care. (Asih, 2017)

Breast milk production can be increased by using pharmacological and non-pharmacological methods. Pharmacology involves using drugs and using special formula milk for breastfeeding mothers. While non-pharmacological interventions are done with a balanced nutritional diet, early mobilization, breast care, and oxytocin massage. Oxytocin massage in postpartum mothers can stimulate their hormones, prolactin, and oxytocin. (Handayani & Rustiana, 2020). Their hormone oxytocin causes the muscle cells of the milk-producing

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Ducts to contract, pushing breast milk out and ready to be sucked by their baby.

Oxytocin massage also has benefits for reducing breast swelling, providing comfort to their mother, and preventing breast milk blockage.(Lia Dwi Prafitri et al., 2021). In addition, physiological breast care can also stimulate the breasts to influence the posterior pituitary to release more oxytocin hormone through massage efforts. Baby sucking also affects their release of oxytocin. Whereas the duct system is stimulated by massage, the duct will become wider or soften by releasing oxytocin by the pituitary, which has a role in secreting breast milk from the alveoli. (Lubis & Angraeni, 2021)

With the problem of low implementation of breastfeeding, which can affect breast milk production and thus affect the success of Exclusive Breastfeeding, efforts are needed to increase breast milk production to support the success of the Exclusive Breastfeeding program through several intervention efforts.

Although several studies have been conducted on breast care and oxytocin massage in previous studies, to the best of the authors' knowledge, there has been no study that analyzes the effectiveness of both interventions, namely breast care and oxytocin massage, as an effort to ensure adequate breast milk production. Both interventions are combined with the justification of their role in midwifery in their field, which have continuously provided education on breast care and oxytocin massage, but their effectiveness has been evaluated evaluation of their effectiveness. Therefore, research is needed to conduct research by providing breast care and oxytocin massage interventions to evaluate their impact on breast milk production in postpartum mothers.

2. METHODE

This study used a Truie experiment design with a posttest equivalent group design approach. Their population was all postpartum mothers at their Tanasitolo Health Center, namely 40 postpartum mothers. Their sample used was a total sampling consisting of 40 postpartum mothers divided into two groups, namely the breast care group and the breast care and oxytocin massage group. Their research time was November 2023-March 2025. Their research instrument used the LATCH Score. Data analysis used the Mann-Whitney test. This study was conducted after obtaining approval from the Health Research Ethics Commission of STIKES Guna Bangsa Yogyakarta with the number: 055/KEPK/II/2025.

3. RESULTS AND DISCUSSION

This study used a True experiment design with a posttest equivalent group design approach. The population is all postpartum mothers at the Tanasitolo Health Center. A total sampling technique was used, involving 40 postpartum mothers who were equally divided into a breast care group and a breast care plus oxytocin massage group. The participants were divided into two groups, consisting of 20 individuals in the intervention group and 20 individuals in the control group, assigned randomly. Breast milk production was assessed using the LATCH score, and data were analyzed with the Mann–Whitney test.

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Table 1 Frequency Distribution Table of Respondent Characteristics

Characteristics		Experiment		Control	
		n	%	n	%
Age	<20 years	5	12.5	1	2.5
	20-35 years old	13	27.5	12	15.0
	>35 years old	2	5.0	7	10.0
Education	Elementary school	3	7.5	5	12.5
	Junior High School	8	20.0	8	20.0
	Senior High School	6	15.0	3	7.5
	bachelor	3	7.5	4	10
Work	Work	4	10	10	25.5
	Doesn't work	16	42.5	13	35.0
Number of children	Child 1	11	27.5	10	25.5
	Child 2	6	15.0	3	7.5
	Child 3	2	5.0	6	15.0
	Child 4	1	2.5	1	2.5
	Amount	20	100	20	100

Based on Table 1 above, based on age characteristics, Most respondents in the age group 20-35 years are in both the experimental group (27.5%) and in the control group (15%). Based on education, most respondents with junior high school education were in both the experimental and control groups, with a percentage of 20.0% each.

Based on employment statistics, most respondents were unemployed in both the experimental and control groups, with percentages of 42.5% and 35.0% respectively. Based on their number of children, most respondents were unemployed in both their experimental and control groups, with percentages of 27.5% and 25.5% respectively.

Table 2 Latch Scores of Experimental and Control Groups

Latch Score	Experiment	Control
0-3	2	11
4-7	3	7
8-10	15	2
Total	20	20

Based on Table 2, the LATCH score shows that the experimental group had a higher score compared to the control group. In the experimental group, the number of respondents with sufficient breast milk in the sufficient category (8-10) was 15 people, while in the control group, there were only 2 respondents with sufficient breast milk in the sufficient category.

Table 3 Normality Test

	Kolmogorov-Smirnova			Shapiro Wilk		
	Statistics	Df	Sig.	Statistics	Df	Sig.
Post_Experiment	.227	20	.008	.898	20	.038
Post_Control	.172	20	.123	.903	20	.048

Based on Table 3 above, most of the data is not normally distributed with a Sig. value <0.05. Their next test is to use the Mann-Whitney test.

Differences in breast milk production between the experimental group and the control group

Table 4 Effectiveness of the difference in breast milk production between the experimental group and the control group

Breast milk production	N	Mean	P-Value
Experiment	20	8.40	0,000*
Control	20	3.35	

Based on Table 4, the results of the analysis obtained the mean rank value or average ranking of breast milk production for each group, namely in the experimental group, the average LATCH score of 8.40 was higher than the LATCH score of the control group, namely 3.35 with a p-value of 0.000 or (p <0.05), meaning that Ha was accepted and Ho was rejected, namely there was a

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Vol. 7 No. 2 December. Page 97-103

differences between after breast care alone compared to breast care and oxytocin massage, where breast care and oxytocin massage provide to be more effective than breast care alone in the adequacy of breast milk production for postpartum mothers with their LATCH score indicator.

Their results showed that there was a significant difference between the LACTH scores of the control and experimental groups (p = 0.000). This indicates that their intervention, given in the form of breast care and oxytocin massage, had a significant effect on breast milk production compared to breast care alone. When compared with the study of Meinnicke et al. (2022), A. Triansyah et al., which showed a p-value = 0.016, this study showed more statistically significant results (p = 0.000). This indicates that their intervention in this study was more effective in increasing LACTH scores.

In addition, the results of this study indicate that breast care and oxytocin massage have different effects on the respondents' breast milk production, where breast care and oxytocin massage can increase the production of breast milk in postpartum mothers. However, based on the results of statistical tests, it is proven that breast care and oxytocin massage can significantly increase breastfeeding milk production when compared to breast care alone because participants in the experimental group received assistance in breast care and oxytocin massage.

Breastfeeding is one way to care for the breasts, which is done starting from pre-pregnancy to the postpartum period, to help increase breast milk production. (Roifa et al., 2023). In addition to breastfeeding and massage, Oxytocin also helps the lactation process. It is known based on previous studies.

Oxytocin massage provides comfort to the mother, reduces breast milk blockage, stimulates the release of the hormone oxytocin, and maintains breast milk production when the mother and baby are sick. (Dian Wahyuningtyas, 2020). Oxytocin massage is one solution to overcome the irregularity of breast milk production. Massage along the bones (vertebral) to the fifth - sixth costal bones is an effort to stimulate the hormones prolactin and oxytocin after giving birth. (Handayani & Rustiana, 2020)

This study has several strengths, including the use of structured interventions in the form of breast care and oxytocin massage, accompanied by intensive monitoring and assistance by midwives with scheduled monitoring and evaluation by midwives, which were carried out three times a week for approximately one month. Each session was used to monitor breastfeeding progress, provide feedback on attachment techniques, and facilitate oxytocin massage. Their use of the LACTH score as a valid and relevant measuring tool also adds to the objectivity of their results.

4. CONCLUSION

Based on their research results, the following conclusions can be drawn. Breast care has been proven effective in increasing breast milk production in postpartum mothers at the Tanasitolo health center. Breast care and oxytocin massage have been proven effective in increasing breast milk production in postpartum mothers at the Tanasitolo Health Center. Breast care and oxytocin massage are more effective in increasing breast milk production compared to breast care alone, with p<0.000.

5. ACKNOWLEDGMENTS

Their research team would like to express sincere gratitude to all respondents, the academic supervisor, examiners, and also to the research site, at the Tanasitolo Health Center, Wajo Regency, South Sulawesi, for their support and cooperation. This research was successfully conducted thanks to their valuable contributions and assistance.

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