

# THE DIFFERENCE BETWEEN THE EFFECT OF OXYTOCIN MASSAGE AND BREAST CARE ON THE BREAST MILK PRODUCTION IN POSTPARTUM MOTHERS

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## ABSTRACT

*UNICEF and WHO recommendations to reduce infant morbidity and mortality by providing breast milk alone for the first six months of life. WHO statistics in 2017 showed exclusive breastfeeding coverage in several countries was below 50%. Exclusive breastfeeding in Indonesia in 2019 was 67.74%, while in Sleman Regency in 2019, it was 82.25%. Knowing the effect of oxytocin massage and breast care on the smooth production of breast milk in postpartum women at Kedaton Clinic. This type of research uses pure experimentation with a post-test-only control design. The research sample was postpartum women, with 15 treatment and 15 control group samples. The results of the analysis of most respondents in the treatment group (86.6%) in the category of smooth milk production, with a mean of 17.27, and in the control group, most respondents (73.4%) in the category of smooth milk production, with a mean of 13.73. The difference test results showed sig. (2-tailed) of 0.243 < 0.05. There is no difference in effectiveness between the treatment group, mothers who performed oxytocin massage, and the control group who performed breast care. It is expected that health workers, especially midwives, can provide education on oxytocin massage and breast care for postpartum women so that breast milk production runs fluently.*

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

## INTRODUCTION

UNICEF and WHO recommendations to reduce infant morbidity and mortality include exclusive breastfeeding for the first six months of life and continuing until two years of age (World Health Organization, 2017). The Sustainable Development Goals (SDGs) target that by 2030, the neonatal mortality rate will fall to 12/1,000 live births and the mortality rate of children under five years old down to 25/1,000 KH. One of the efforts that can be made is to increase the coverage of exclusive breastfeeding (UNICEF, 2017). WHO statistics 2017 showed that exclusive breastfeeding coverage in some countries was below 50%. Meanwhile, UNICEF said that the average exclusive breastfeeding coverage data worldwide was only 38%. The Indonesian Health Profile 2019 data showed that exclusive breastfeeding coverage was 67.74%. Furthermore, the Sleman Regency health profile data in 2019 amounted to 82.25%, but this figure has not reached the Sleman Regency strategic plan target of 84% (Dinkes Sleman, 2020).

Exclusive breastfeeding is the best nutrition for infants because it contains complete nutritional values with a composition that suits the baby's needs. Therefore, the key to successful exclusive breastfeeding is the implementation of early breastfeeding initiation within the

first hour after the baby is born (World Health Organization, 2017). Early breastfeeding initiation will stimulate the smooth production of breast milk. Currently, the implementation of exclusive breastfeeding in the community is still relatively low. This is caused by non-optimal breast milk production. Thus, in addition to early breastfeeding initiation, it is necessary to increase breast stimulation, which can increase milk production. This stimulation can be in oxytocin massage or breast care (Hastuti, 2017).

The early days after delivery are an essential time for the mother's success in exclusive breastfeeding for six months. Breastfeeding obstacles begin with poor milk production early on, causing mothers to feel worried and not confident that they cannot breastfeed optimally. This is the beginning of a mother's failure to breastfeed exclusively. Breast milk production is strongly influenced by the mother's mindset and breastfeeding frequency. Maternal anxiety and fear of a lack of breast milk production and a low level of maternal understanding of the breastfeeding process, so the mother decides to give formula milk (Azizah, 2016).

Breast stimulation is necessary to facilitate milk production, one of which is oxytocin massage. This action can stimulate the production of the hormone oxytocin, which plays a role in breast milk

production. Oxytocin massage is a technique that can overcome breast milk production that is not smooth, namely by stimulating the oxytocin reflex or let-down reflex. The benefits that can be obtained by doing an oxytocin massage make the mother relax and calm so that the milk comes out (Haryono, 2014) This technique involves massaging the back area right along the spine at costa 5-6 to the scapula, increasing the work of parasympathetic nerves, and stimulating the posterior pituitary to release the hormone oxytocin (Adriani, 2017).

Other benefits of oxytocin massage are that it can reduce swelling, breast milk blockage, and maternal fatigue after childbirth (Astutik, 2016). Research conducted by Natalia in 2019 mentioned that oxytocin massage can significantly increase breast milk production before and after the procedure. Research conducted by Siregar (2014) states that several factors influence the implementation of exclusive breastfeeding for six months, including breast milk that does not come out immediately after childbirth, babies have difficulty sucking nipples, flat or short nipples, working mothers, and ease of obtaining formula milk.

Complementary therapy in increasing breast milk production has also been studied by Erfina *et al.* (2020) and Geddes *et al.* (2013), that applying pressure to

specific points on the body can increase breast milk production compared to postpartum exercise activities. Yahya *et al.* (2020) and Anita *et al.* (2020) also conveyed that the combination of back massage therapy and acupuncture can be used as a complementary therapy for postpartum primiparous women in helping to increase oxytocin hormones. Similarly, Fang *et al.*, (2024) in China through massage in postpartum women can increase the desire to breastfeed and the lactation process runs smoothly.

In addition to these complementary therapies, breast massage also plays a role in increasing breast milk production. Research conducted by Kilci Erciyas & Kavlak (2024) The amount of breast milk expressed with back and breast massage was higher than that of mothers who did not get back and breast massage. Back massage and acupuncture therapy can increase prolactin hormone levels so that this therapy can be given to postpartum mothers and breastfeeding mothers to facilitate breast milk and can be considered to be practiced in obstetric care (Anita *et al.*, 2020). The results of another study also concluded that breast massage is effective in increasing the amount of breast milk released (Viswanath *et al.*, 2016).

Oxytocin massage is an easy and effective technique to stimulate reflex milk letdown by increasing the oxytocin

hormone. (Purwanti & Hanum, 2017). In addition, this massage relaxes mothers and reduces swelling, congestion, and engorgement of their breasts (Wulandari *et al.*, 2018). Breast massage is done by explicitly massaging the soft tissue of the breast to increase the flow of lymph and blood so that the reflex milk release is better (Bowles, 2011). Oxytocin massage can even increase milk production in mothers who have premature babies (Karbandi *et al.*, 2017).

Oxytocin massage and breast care are two ways to increase breast milk production. Oxytocin massage and breast care aim to relax the muscles. This is to the results of research that muscle relaxation significantly increases the success of breastfeeding because it can increase the level of endorphins, analgesic hormones, and natural happiness of a person's body, so they experience a reduction in stress, pain, and anxiety. (Kiliçli & Gül, 2024).

Based on a preliminary survey conducted by researchers by taking data on postpartum women who control postpartum at Kedaton Clinic, out of 13 people met, nine people said that their breast milk did not come out immediately on the first day. Four people came out immediately but a little. A total of 4 people have been given formula and breast milk. A total of 10 people work and are currently on maternity leave but have concerns about not being

able to store breast milk. Based on these conditions, the researcher is interested in conducting a study entitled "Differences in the Effect of Oxytocin Massage and Breast Care on Breast Milk Production in Postpartum Women at Kedaton Clinic in 2022".

### **Method**

This study uses a post-test-only control design, which is to determine the difference in the effect of oxytocin massage and breast care on the smooth production of breast milk in postpartum mothers. This type of research is used to prove the existence of a causal relationship (Sugiyono, 2015). The inclusion criteria in this study were postpartum women in physiological conditions, postpartum women from the first to the seventh day, postpartum women who breastfed with a frequency of at least six times per day, and mothers who did not consume breast milk enhancers and were willing to be respondents. Exclusion criteria in this study are having disease complications, such as diabetes, high blood pressure, breast tumors, and breast cancer. The participants in this study were postpartum mothers at Kedaton Clinic, with 15 women in the treatment group and 15 women in the control group. The sampling technique in this study used simple random sampling. This sampling technique provides an equal opportunity for each member of the population to become a

member of the sample (Sugiyono, 2015). The independent variables in this study were oxytocin massage and breast care treatment. The dependent variable was breast milk production. Univariate and bivariate data analysis techniques were used in this study. The data normality test

used the Shapiro-Wilk Test because the number of samples was  $< 50$ . The normality test results were that the data were not normally distributed, and then the data were analyzed using the Mann-Whitney Test (Notoatmodjo, 2012).

## RESULT AND DISCUSSION

### 1. Results

Table 1. Distribution of Respondent Characteristics in Postpartum Women at Kedaton Clinic in 2022

Variable	Group				Total	
	Oxytocin Massage		Breast Care		f	%
	f	%	f	%		
Age						
< 20 and > 35 years	0	0	1	6.7	1	3.3
20 – 35 years	15	100	14	93.3	29	96.6
Employment status						
Employed	7	46,7	9	60	16	53.33
Not employed	8	53.33	6	40	14	46.67
Parity						
Primipara	9	60	9	60	18	60
Multiparous	6	40	6	40	12	40

The analysis results in Table 1 above show that in this study, most respondents were aged 20-35 years (93.3%), and most were

working (60%). Most of the respondents (60%) were primiparous or had a history of childbirth that had been experienced once.

Table 2. Distribution of Mean Breast Milk Production of Postpartum Women at Kedaton Clinic in 2022

Variable	n	%	Mean	Mean difference
Oxytocin massage				
Smooth	13	86.6	17.27	3.54
Fairly smooth	1	6.7		
Not smooth	1	6.7		
Breast care				
Smooth	11	73.4	13.73	
Fairly smooth	2	13.3		
Less smooth	2	13.3		

The results of the analysis in Table 2 above show that most of the respondents in the intervention group (86.6%) were in the category of adequate breast milk

production, with an average of 17.27 and in the control group, most of the respondents (73.4%) were in the category of proper

breast milk production, with an average of 13.73.

Table 3. Difference between Oxytocin Massage and Breast Care for Postpartum Breast Milk Production at Kedaton Clinic in 2022

Variable	N	Mean	Mean difference	p-value
Oksitosin massage	15	17.27	3.54	0.243
Breast care	15	13.73		

Based on the table above, it is known that the sig. (2-tailed) is  $0.243 < 0.05$ ; then  $H_0$  is accepted, and  $H_a$  is rejected. So, it can be concluded that there is no difference in effectiveness between the treatment group, mothers who do oxytocin massage, and the control group, mothers who are breastfeeding.

## 2. Discussion

The results showed that most respondents were aged 20-35 (93.3%). This age range is the ideal age for reproduction because, at that age, a woman is more prepared physically, emotionally, and mentally. This condition is very supportive for women who undergo pregnancy, childbirth, and breastfeeding. At a healthy reproductive age, egg quality, cervical capacity, and hormonal conditions are still excellent (Hidayati, 2012). In Happy's research (2018), the age variable was divided into two categories, namely  $\leq 35$  years of reproductive age category and  $> 35$  years of non-reproductive age category. In the  $\leq 35$  year category, 53 (76.8%)

respondents practiced exclusive breastfeeding, while in the  $> 35$  year category, 5 (50%) respondents practiced exclusive breastfeeding. The statistical test results obtained a p-value of 0.120 ( $p < 0.05$ ), it can be concluded that there is a relationship between age and exclusive breastfeeding (Happy, 2018).

Based on the respondents' employment status, most are working, namely 60%. Work today is a necessity for every individual. Through work, families can fulfill needs such as food, clothing, shelter, and social needs. Therefore, respondents with working status can use their income to meet their needs, including needs related to the lactation process, such as buying books about breastfeeding and breastfeeding and buying food that supports the quality of breast milk. In addition, working will provide opportunities for mothers to actualize and reduce stress that can affect breast milk production. Working is not a reason to stop exclusive breastfeeding for at least four months and, if possible, up to 6 months, even if

maternity leave is only three months. With a great deal of knowledge about breastfeeding and how to express breast milk correctly, breast milk pumping equipment, and support from the work environment, a working mother can exclusively breastfeed (Bahriyah, 2017).

Based on the respondents' parity status, most were primiparous, 60%. The number of children is quite influential with the mother's activities. The first child is usually expected, and the mother focuses more on caring for the baby. So that it will support the mother in the lactation process; these results are in line with the research of Khofiyah (2019), where this study was obtained (p-value 0.001), which means that there is a relationship between parity and exclusive breastfeeding (Khofiyah, 2019). Similarly, the results of research by Fakhidah (2018), where the results of the study obtained the results (p-value of 0.031), mean that there is a relationship between parity and exclusive breastfeeding (Fakhidah and Palupi, 2018). Mothers who have previously given birth have more experience in exclusive breastfeeding for their babies (Khanal, Sauer, and Zhao, 2013). With more parity, the mother's confidence in breastfeeding her baby exclusively will increase. Still, mothers who have high parity but low exclusive breastfeeding can be caused because the mother has previously failed to provide

exclusive breastfeeding, which ultimately traumatizes the mother (Sudargo & Kusmayanti, 2019).

The results also showed that the majority of respondents' smoothness of breast milk production was in the smooth category, namely for the oxytocin massage group by 86.6% and the breast care group by 73.4%. This shows that both actions are effective in smoothing postpartum women's milk production because both can stimulate the production of the hormone oxytocin, which plays a significant role in the milk production process. Physiologically, breast care by encouraging the breast will affect the pituitary to secrete more progesterone, estrogen, and oxytocin hormones by stimulating the mammary glands through massage so that breast milk can come out smoothly. Statistical test results with a p-value = 0.243, more significant than the value of  $\alpha = 0.05$ , mean no difference in oxytocin massage and breast care with the adequacy of breast milk production in postpartum women.

The mean difference in milk production between oxytocin massage and breast care was 3.54. Oxytocin massage and breast care have no difference in milk production as both measures aim for adequate breast milk. Oxytocin massage and breast care stimulate the letdown reflex, while oxytocin massage affects the letdown reflex by massaging the cervical

spine. In contrast, breast care affects the letdown reflex due to stimulation of the nipple and around the breast. This milk letdown reflex will cause the contraction of myoepithelial cells. The contraction of these cells will squeeze the milk out of the alveoli and into the duct system to further flow through the ducts to the baby's mouth so that breast milk is available (IDAI, 2013).

Oxytocin massage is effective if done twice daily for 3-5 minutes or approximately 2-3 minutes with 2-3 massages. The implementation of oxytocin massage therapy can affect the release of colostrum in postpartum women, and oxytocin massage has a significant effect on primiparous postpartum women (Wahyuningsih, 2022). Oxytocin massage is one of the solutions to overcome breast milk deficiency. Breast milk is produced due to the combined work of hormones and reflexes. The prolactin reflex is for the milk formation reflex, while the oxytocin reflex is the milk flow or release reflex (let down reflex). After being produced by the milk-making source, the milk is released from the milk-making source and flowed into the milk ducts. Oxytocin massage stimulates the oxytocin reflex (let down reflex). This is for research Tuti (2016) conducted on the relationship of oxytocin massage with the smooth production of breast milk in postpartum mothers. The results of the

study stated that most respondents who were given oxytocin massage produced smooth breast milk production, and there was a very close relationship between oxytocin massage and smooth breast milk production with a p-value of 0.001, which means that oxytocin massage can affect smooth breast milk production (Tuti, 2016).

Breast care is caring for the breasts so that milk comes out smoothly. Physiologically, breast care by stimulating the breasts will affect the pituitary glands, which produce progesterone, estrogen, and oxytocin hormones, primarily by stimulating the mammary glands through massage. Movement in breast care helps stimulate the milk production reflex. Some of the goals of breast care are to keep the breasts clean, flex, and strengthen the nipples, and the treated breasts will produce enough milk for the baby's needs. Good breast care will make a mother not have to worry about the shape of her breasts changing rapidly, making them less attractive. In addition, good breast care will cause the nipple not to blister when sucked by the baby, facilitate the flow of breast milk, and overcome flat or submerged nipples so that they can be more prominent so that they can be sucked by the baby (Kemenkes RI, 2018).

Based on the above analysis results, both can accelerate breast milk production, so both can be applied to postpartum



mothers. Oxytocin massage and breast care also have many other benefits, such as increasing the firmness of the breast and surrounding skin, relaxing the breast and breast area, preventing breast cancer, preventing breast milk blockage, and maintaining breast hygiene, especially in the nipple and many more (Nur et al., 2020). Furthermore, the mean difference in milk smoothness between oxytocin massage and breast care was 3.52. This means that oxytocin massage is slightly better in facilitating breast milk production. It can only be adjusted to the mother's condition, as in postpartum mothers with a history of spontaneous labor; the oxytocin massage method can be applied, while in postpartum mothers with a history of SC delivery, the breast care method can be used.

## CONCLUSION

The majority of respondents were 20-35 years old (93.3%), working (60%), and primipara (60%). Breast milk production in the intervention group was as much as 86.6%, while in the control group, it was adequate in 73.4% of respondents. Oxytocin massage and breast care effectively promoted breast milk production, as indicated by the exact p-value of 0.000. There was no difference in the effect of oxytocin massage and breast care on breast milk production, as shown

by the same p-value of 0.245. Thus, it can be concluded that oxytocin massage and breast care can promote breast milk production.

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