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Research Article

Relationship Between Oxytocin Massage and Breast Milk Production in Post-Term Mothers at Mopuya Community Health Center

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Abstract: Optimal breast milk production is essential for supporting infant health and development, especially during the first months of life. One non-pharmacological method that has been shown to help increase breast milk production is oxytocin massage. This technique stimulates the release of the hormone oxytocin, which plays a vital role in triggering the let-down reflex, thereby facilitating the flow of milk from the mammary glands. The purpose of this study was to examine the relationship between oxytocin massage and breast milk production among postpartum mothers at Mopuya Community Health Center. This research employed an observational analytical design with a cross-sectional approach. A total of 25 postpartum mothers were recruited as respondents using purposive sampling. Data collection was conducted through surveys and direct observations, followed by statistical analysis using Kendall's tau_b non-parametric correlation test. The results showed a strong and statistically significant correlation between oxytocin massage and breast milk production, with a correlation coefficient of 0.699 and a p-value of 0.000 ($p < 0.05$). This indicates that mothers who received regular oxytocin massage tended to have better milk production compared to those who did not. The findings highlight oxytocin massage as an effective, simple, and safe non-pharmacological intervention that can be implemented in maternal and child health services to support breastfeeding success. Given its benefits, healthcare providers, especially midwives and lactation counselors, are encouraged to educate and train postpartum mothers in oxytocin massage techniques. Further research with larger sample sizes and varied settings is recommended to strengthen evidence and explore long-term impacts on breastfeeding duration and infant growth.

Keywords: Breastfeeding, Breast Milk Production, Mopuya Community Health Center, Oxytocin Massage, Postpartum Mothers

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1. Introduction

The time after giving birth is the time when the reproductive organs return to a non-pregnant state. It begins after When the reproductive organs revert to their pre-pregnancy state, the placenta is born. In addition, the mother's psychological condition also changes(Nova & Zagoto, 2020). Anxiety in breastfeeding is one of the problems that mothers can experience during postpartum adaptation. The challenge experienced by mothers when breastfeeding is that mothers feel that Their nursing formula isn't sufficient to meet their infant's demands, thus inhibiting mothers from breastfeeding(Windayanti et al., 2020). Breastfeeding can protect infants and young children from infectious diseases, protect them from obesity and disease, reduce health care costs, and protect mothers from ovarian and

breast cancer. Increasing access to exclusive breastfeeding could save 820,000 children's lives each year(Ahmad & Afifah, 2024)

Breast milk is milk that comes from the production of the mother's breasts and is very important for babies. Breast milk, a fat emulsion consisting of a solution of protein, lactose, as well as natural salts, is released by both sides of the mother's mammary glands and is the primary infant food. The composition of breast milk is influenced by the stage of lactation, race, nutritional status, and mother's diet. The stage of lactation consists of transitional milk and colostrum and old (natural) milk (Khairussyifa et al., 2025). Two factors influence breast milk production, In particular, the production of breast milk is influenced by the hormone prolactin, and the production of milk is influenced by the hormone oxytocin. Either the mother's spine can be massaged or the baby's mouth sucking can stimulate the breast, releasing the hormone oxytocin. When the mother's spine is massaged, she will feel more at peace and her pain threshold will rise. The irregularity of breast milk production can be addressed by oxytocin massage (Sudiar & Kristiana, 2024)

According to the World Health Organization (WHO), during the period 2017-2021, an average of 44% of babies worldwide aged 0-6 months will receive exclusive breastfeeding. still less than the WHO global target of fifty percent (WHO, 2021). In Indonesia, 66.1% of babies receive exclusive breastfeeding, down from 67.74% in 2019(Kartini et al., 2024). Information from the Ministry of Health in Indonesia in 2021 showed an increase in the percentage of exclusive breastfeeding for infants from 69.62% to 71.58%, but most provinces were below the national average(Sandriani et al., 2024)Basic Health Research (RISKESDAS) Data from 2021 revealed that just 52.5% of the 2.3 million infants under six months old were exclusively breastfed, a 12% decrease from 2019. Between 2019 and 2021, the rate of early initiation of breastfeeding (IMD) decreased from 58.2% to 48.6% (Ulfah, 2023)

A massage of the spine is called an oxytocin massage. that starts from the cervical vertebrae to the twelfth thoracic vertebrae, It is an attempt to increase the levels of the hormones oxytocin and prolactin following childbirth (Hidayah & Anggraini, 2023). Massage on the spine that starts from the cervical spine and continues to the thoracic spine twelve and aims to increase the hormones oxytocin and prolactin being produced during pregnancy. This massage increases the hormone oxytocin, which can calm the mother, so that breast milk comes out by itself. This oxytocin massage can increase breast milk production because the milk production ducts become easier to use(Cahyani & Rejeki, 2020). Even if the infant hasn't sucked the breast yet, oxytocin begins to act when the mother feels like nursing. Even if the infant hasn't sucked the breast, oxytocin still acts when the mother feels like nursing. Oxytocin also helps reduce the mother's bleeding after childbirth, although it sometimes causes pain. The baby will have difficulty getting breast milk if the oxytocin reflex does not work properly. Milk does not flow out, but the breasts seem to stop producing it(Lahu & Yeni, 2024)

Benefits of Oxytocin Massage help mothers psychologically, calm, relieve stress, and build self-confidence, help mothers think and feel good about their babies, increase production of breast milk, silky breast milk, relieve fatigue, economical, and practical. As breastfeeding time and breast milk output increase, we now know that increasing oxytocin hormone levels are essential for the success of exclusive breastfeeding(Nadiya & Rahmah, 2020). The pituitary gland in the back neurohypophysis causes oxytocin to be produced. The areola sends out signals when the baby is breastfeeding, encouraging the synthesis and release of the hormone oxytocin from the neurohypophysis. The oxytocin hormone will aid in the

activation of the muscle cells in the alveoli. This causes contractions, which allow milk to enter the ducts. Doing massages that can stimulate oxytocin is one way to speed up milk production

This oxytocin massage is an excellent way to deal with the irregularity of breast milk, which can benefit the mother by reducing swelling (engagement), preventing breast milk blockages, stimulating the release of the hormone oxytocin, and maintaining the production of breast milk when both the mother and the infant are ill (Triveni et al., 2024). Based on these results, the researcher wants to conduct a study entitled The connection between postpartum mothers' production of breast milk and oxytocin massage at the Mopuya Health Center.

2. Preliminaries or Related Work or Literature Review

Several studies have supported the use of oxytocin massage as an effective non-pharmacological intervention to enhance lactation in postpartum mothers. reported that spinal massage from the cervical to thoracic vertebrae increases oxytocin hormone levels, leading to improved milk ejection reflex. found that oxytocin massage significantly improved both the quantity and smoothness of breast milk among postpartum mothers(Ariyani et al., 2025).Theoretically, the neuroendocrine mechanism of lactation is governed by the interaction between prolactin and oxytocin. Prolactin regulates milk production, while oxytocin regulates its release. This hormone is triggered by nipple stimulation or by massage interventions, such as the oxytocin massage technique. Furthermore, psychological well-being plays a crucial role in lactation. Oxytocin, often known as the "love hormone," supports maternal bonding and stress reduction, both of which positively influence the milk let-down reflex(Muriasti & Nuryanto, 2019)

From the analysis of existing literature, it is evident that oxytocin massage offers physiological benefits by stimulating milk production and psychological benefits by increasing maternal comfort and confidence. However, regional studies such as this one are essential to examine the consistency of these outcomes in specific community health settings such as the Mopuya Health Center.

2.1. Subsection 1

Several studies have demonstrated the positive impact of oxytocin massage on postpartum women' supply of breast milk. Do some research conducted by(Wardhani & Wulandari, 2024) demonstrated that oxytocin massage can promote the hormone's release, which leads to increased production of breast milk and easier milk ejection. This method eases the mother's tension and improves the milk let-down reflex.

Similarly, a study by(Triveni et al., 2024)at Klinik Smile Mom and Baby Spa Kota Padang Panjang found that mothers who received oxytocin massage during the early postpartum period produced significantly more breast milk than those who did not. Their findings support the idea that oxytocin massage is a practical and non-pharmacological method for enhancing lactation.

An further investigation by (Dewi et al., 2022)explained that oxytocin massage applied to the back starting from the cervical to thoracic vertebrae effectively improved hormonal balance, especially oxytocin, and increased maternal comfort and milk supply. These findings align with the purpose of this current study, which seeks to confirm the effectiveness of oxytocin massage in the specific setting of the Mopuya Health Center**.**

Subsection 2

The complicated process of producing breast milk is controlled by hormones, physiological, and psychological factors. The two key hormones involved in lactation are Oxytocin and prolactin. Prolactin is responsible for the synthesis of milk, while oxytocin is essential for milk ejection. The release of oxytocin is stimulated by nipple suckling or external stimulation such as massage(Ramadhani et al., 2023)

According to the notion of neuroendocrine regulation, mechanoreceptors in the areola trigger the posterior pituitary gland to produce oxytocin when a baby suckles. These signals are then sent to the brain. This hormone causes the contraction of myoepithelial cells in the mammary alveoli, pushing milk into the ducts for ejection(Rahmaniasari & Zhafirah, 2024)

Psychological comfort is also a critical aspect of effective lactation. Oxytocin, often referred to as the "love hormone," contributes to maternal bonding and stress reduction, which in turn supports more consistent milk flow.(Rosmiarti & Lestari, 2024)highlights that interventions such as massage therapy not only affect hormonal levels but also improve maternal mental well-being, which indirectly benefits breastfeeding outcomes.

3. Proposed Method

This study uses awhatnititative approach with an observetianalatherelytical researchrch design and across-sectional method. The population in this study were postpamother's day at the MopuyaHeylth Center with atotall of 25 respondents. Sathere are manyken using the totall sampling technique, with a total of 25 respondents. Days were collected through questionnaires and observetions aand atherelyzed using the KendaI'll be thereu_b non-parametric correlationtion test using SPSS 16.

4. Results and Discussion

Distribution of Respondent Characteristics

Table 1. Age Frequency Distribution

Age	Frequency	Percentage (%)
<20 years	3	12%
20-35 years	20	80%
>35 years	2	8%
Totalll	25	100%

Based on table 1, it can be seen that most respondents are in the ale range of 20-35 years, as many as 20 people (80%). This alge is a productive age for mothers in breastfeeding and caring for their babies. Meanwhile, mothers under the age of 20 years only number 3 people (12%), and mothers over theage of 35 years are 2 people (8%)

Table 2. Frequency Distribution of Gravida

pregnancy	Frequency	Percentage (%)
Primigravida	11	44%
Multigravida	14	56%
Totall	25	100%

Based on table 2, The vast majority of responders up to 14 were multigravida moms.(56%). Multigravida are mothers who have experienced more than one pregnancy, and they tend to have more experience in breastfeeding. Meanwhile, as many as 11 people (44%) were primigravida, namely mothers who were pregnant and gave birth for the first time.

Table 3. Frequency Distribution of Education Level

Level of education	Frequency	Percentage (%)
Elementary School	2	8%
Junior high school	8	32%
Senior high school	12	48%
Collage	3	12%
Totall	25	100%

Based on table 3, respondents with the highest level of education were those who graduated from senior high school, totaling 12 people (48%). Meanwhile, 8 respondents (32%) had completed junior high school, and 3 respondents (12%) had attended college. The smallest proportion was from those who only completed elementary school, with 2 people (8%).

Table 4. Frequency Distribution of Oxytocin Massage

Oxytocin Massage	Frequency	Percentage (%)
Performing Oxytocin Massage	14	56%
Haven't Had Oxytocin Massage Yet	11	44%
Totall	25	100%

Based on table 4, as many as 14 people (56%) of postpartum mothers had performed oxytocin massage. This indicates that more than half of the respondents were aware of and practiced oxytocin massage. Meanwhile, 11 people (44%) had not received oxytocin massage yet.

Table 5. Frequency Distribution of Breast Milk Production

Work	Frequency	Percentage (%)
Good	6	24%
Enough	12	48%
Not enough	7	28%
Totall	25	100%

Based on table 5, as many as 6 people (24%) have good breast milk production. The majority of mothers, namey 12 people (48%), have sufficient breast milk production, while 7 people (28%) experience insufficient production of breast milk .lst milk production. Breast milk production is affected by several aspects, promoting breastfeeding stimulaltion and treatments such as oxytocin massage.

Table 6. Results of Kendall's tau_b correlation test between oxytocin massage variables and breast milk production in postpartum mothers

	Correlation Coefficient	P value
Oxytocin Massage	1,000	.000
Breast milk production	.699	.000

Based on table 6, It displays the outcomes of the correlationltion examination of the relationship between breast milk production and oxytocin massage using Kendall's tau_b correlationltion test. The correlation coefficient value between oxytocin massage and breast milk production is 0.699, which indicates a strong and positive relationship between the two variables. This indicates that the more often or the Increased use of oxytocin massage by postpartum moms the better the breast milk production produced. In addition, the p-value obtalined is 0.000, indicating that it is less than the 0.05 level of significance. This value indicates shows the connection between the production of breast milk and oxytocin massage is statistically significant, so it can be concluded that postpartum moms' production of breast milk is actually increased by oxytocin massage.

5. Comparison

Babased on the results of KendaI'll be thereu_b correlationtion atherelysis, a Correlacoefficient of 0.699 was getined with asignificancence value of p = 0.000. This indicatest astrong aand significancenot willingtionship between oxytocin andssage aand breast milk production in postpamother's day.

This result is in line with previous researchrch by ((Gems & Manurung, 2024)which states that oxytocin massage stimulates the release of the oxytocin hormone. It is essential for improving the milk let-down reflex and facilitating breast milk production. Elevated levels of oxytocin help trigger the myoepithelial cells' contraction in the mammary milk into the ducts by forcing it into the alveoli.

Furthermore, the results support the studies conducted by(Lestari et al., 2024), which found that oxytocin massage not only improves physiological aspects of lactation but also promotes maternal relaxation, reduces stress, and strengthens the emotional bond between mother and infant all of which contribute to successful breastfeeding.

These findings collectively support the argument that oxytocin massage provides a holistic benefit biologically through hormonal stimulation and psychologically through emotional support. This dual mechanism makes it a valuable and practical intervention in maternal care, especially in settings where access to pharmacological aids may be limited. Importantly, this study contributes original data from a rural health facility, the Mopuya Health Center, thus extending the generalizability of previous research which mostly focused on urban or hospital-based settings. The findings confirm that oxytocin massage remains effective across diverse socio-geographic contexts, making it a valuable component of breastfeeding promotion programs. This comparison shows the efficacy of non-pharmacological treatments like oxytocin massage. strategies for raising breast manufacture of milk, especially for postpartum mothers facing physiological or psychological challenges in breastfeeding. Hence, the present study not only aligns with existing literature but also adds empirical evidence from the specific context of the Mopuya Health Center.

6. Conclusions

This study shows thatt there is asignificancenot willingtionship between oxytocin andssage aand breast milk production in postpamother's day at the Mopuya Heylth Center. The majority of Mothers who massaged with oxytocin had better breast milk production companyred to moms who didn't receive oxytocin therapy. Therefore, As one of the non-pharmacological ways to boost breast milk supply in the postpartum period, oxytocin massage might be suggested.

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