



Effectiveness Of Oxytocin Massage On Breast Milk Production In Postpartum Mothers

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ABSTRACT

Suboptimal breast milk production during the postpartum period is one of the causes of failure in exclusive breastfeeding. Psychological factors, fatigue, and lack of oxytocin stimulation can inhibit milk production. Oxytocin massage is a non-pharmacological intervention aimed at stimulating oxytocin to increase milk production and release. This study aimed to determine the effectiveness of oxytocin massage on breast milk production in postpartum mothers.

This study uses a quasi experimental design with a one-way approach. group Pretest - posttest. The sample consisted of 30 postpartum mothers selected using purposive sampling. Breast milk production was measured using indicators of smooth flow and frequency of breastfeeding. Data were analyzed using the Wilcoxon test Signed Rank Test. The results of the study showed an increase in breast milk production after oxytocin massage with a *p value* = 0.000 (<0.05).

The conclusion of this study is that oxytocin massage is effective in increasing breast milk production in postpartum mothers.

Keywords: Oxytocin Massage, Breast Milk Production, Postpartum Mothers

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1. Introduction

Breast milk is the best nutrition for babies because it contains complete nutrients, antibodies, and growth factors essential to support their health and development. Exclusive breastfeeding for the first six months of life is recommended by the World Health Organization (WHO). Organization (WHO) and UNICEF as an effort to reduce infant morbidity and mortality rates.

During the postpartum period, many mothers experience problems with breast milk production and release. Low milk production is often caused by physiological and psychological factors, as well as a lack of stimulation from the hormones prolactin and oxytocin. Stress, fatigue, and anxiety after childbirth can inhibit the milk letdown reflex, making mothers less confident in breastfeeding.

The hormone oxytocin plays a crucial role in the release of breast milk through the let-down reflex. One method that can stimulate oxytocin release is oxytocin massage, which involves massaging the back along the spine and down to the shoulder blades. This massage provides relaxation and increases maternal comfort, thereby stimulating oxytocin production.

Oxytocin massage is a simple, safe, and easily performed intervention by healthcare professionals and families. However, the implementation of oxytocin massage in obstetric care is still suboptimal and not routinely performed. Therefore, this study was conducted to determine the effectiveness of oxytocin massage on breast milk production in postpartum mothers as a basis for implementing non-pharmacological interventions to support successful breastfeeding.

2. Research Methods

a) Research Design

This study uses a quasi -experimental design with a one-way approach. group pretest – posttest This design aims to determine changes in breast milk production in postpartum mothers before and after oxytocin massage intervention without using a control group.

b) Location and Time of Research

The study was conducted at Community Health Center X in June–July 2025. The location was selected based on the high number of postpartum maternal visits and the lack of routine implementation of oxytocin massage in postpartum services.

c) Population and Sample

The population in this study was all postpartum mothers who received health services at Community Health Center X during the study period.

The sample size was 30 postpartum mothers, which was determined using a purposive sampling technique.

1) Inclusion Criteria





- a. Postpartum mother day 1 to 7
 - b. Mothers give birth normally or by cesarean section uncomplicated caesarean section
 - c. Mother and baby are in good health
 - d. Willing to be a respondent by signing the informed consent consent
- 2) Exclusion Criteria
- a. Mothers with severe breast disorders (mastitis, breast abscess)
 - b. Mothers with postpartum hemorrhage
 - c. Babies with congenital abnormalities or certain medical conditions
- 3) Research Variables
- Independent variable: Oxytocin massage
 - Dependent variable: Breast milk production
- 4) Operational Definition of Variables

Variables	Operational Definition	Measuring instrument	Scale
Oxytocin massage	Massage the back area along the spine to the scapula for ± 15 minutes	Oxytocin massage SOP	Nominal
Breast milk production	Smoothness of breast milk based on signs of adequate breast milk supply	Observation sheet	Ordinal

5) Research Instruments

The instrument used is a breast milk production observation sheet which includes:

- Frequency of breastfeeding baby ≥ 8 times/day
- Breasts feel full before breastfeeding
- Breast milk flows smoothly when massaged
- The baby looks satisfied after breastfeeding.

The instrument has been tested for content validity by obstetric experts.

6) Research Procedures

- a. Respondents were given an explanation and signed an informed consent form Consent.
- b. Assessment of breast milk production before intervention (pretest).
- c. Oxytocin massage for ± 15 minutes, 2 times a day for 3 consecutive days.
- d. Assessment of breast milk production after intervention (posttest).
- e. Recording observation results on the research sheet.

7) Data collection technique

Data is collected through:

- Direct observation.
- A short interview with a postpartum mother.
- Recording the results of observations of breast milk production.





8) Data Analysis Techniques

Data analysis is carried out through:

- Univariate analysis to see the frequency distribution of respondent characteristics and breast milk production.
- Bivariate analysis using the Wilcoxon test Signed Rank Test because the data is ordinal and paired.

The level of statistical significance was set at $\alpha = 0.05$.

9) Research Ethics

This research has received approval from Community Health Center X. All respondents were given an explanation of the purpose, benefits, and procedures of the research. The confidentiality of respondents' identities was maintained, and respondents had the right to withdraw at any time without consequence.

3. Research Results And Discussion

a. Results

1) Respondent Characteristics

This study involved 30 postpartum mothers who met the inclusion criteria. Respondent characteristics included age, education, occupation, and parity.

Table 1.

Respondent Characteristics

Characteristics	Category	f	%
Age	<20 years	4	13.3
	20–35 years	20	66.7
	>35 years	6	20.0
Education	Base	7	23.3
	Intermediate	15	50.0
	Tall	8	26.7
Work	housewife	18	60.0
	Work	12	40.0
Parity	Primipara	13	43.3
	Multipara	17	56.7

Interpretation:





Most respondents are of healthy reproductive age (20–35 years), have secondary education, and are multiparous, so that physiologically and psychologically they support the breastfeeding process.

2) Breast Milk Production Before Oxytocin Massage

Before undergoing oxytocin massage, most postpartum mothers experience less than smooth breast milk production.

Table 2.
Breast Milk Production Before Oxytocin Massage

Breast milk production	f	%
Fluent	12	40.0
Not smooth	18	60.0
Total	30	100

Interpretation:

These results indicate that in the early postpartum period, many mothers experience obstacles in breast milk production due to hormonal and psychological factors.

3) Breast Milk Production After Oxytocin Massage

Oxytocin massage for 3 days, there was an increase in breast milk production in most respondents.

Table 3.
Breast Milk Production After Oxytocin Massage

Breast milk production	f	%
Fluent	22	73.3
Not smooth	8	26.7
Total	30	100

Interpretation: The majority of

Postpartum mothers experienced an increase in the smoothness of breast milk production after oxytocin massage intervention.

4) Analysis of Differences in Breast Milk Production Before and After Oxytocin Massage

Bivariate analysis was performed using the Wilcoxon test. Signed Rank Test.

Table 4.
Results of the Wilcoxon Test for Breast Milk Production





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Variables	Z	p- value	Information
Breast milk production pretest – posttest	-4,732	0,000	Significant

Interpretation: The p

Value = $0.000 (< 0.05)$ indicates that there is a significant difference in breast milk production before and after oxytocin massage.

Summary of Research Results

The results of the study prove that oxytocin massage is effective in increasing breast milk production in postpartum mothers, both statistically and clinically.

b. Discussion**1) Oxytocin Massage on Breast Milk Production**

The results of the study showed that oxytocin massage significantly increased breast milk production in postpartum mothers. This increase occurred because oxytocin massage stimulated the release of the hormone oxytocin, which plays a role in the milk *let-down reflex*. When the hormone oxytocin increases, the myoepithelial cells around the breast alveoli contract so that breast milk can flow more smoothly.

This finding aligns with the theory of lactation physiology, which states that successful breastfeeding is greatly influenced by the balance of the hormones prolactin and oxytocin. Oxytocin massage helps accelerate the milk response. these hormones, especially in early postpartum mothers.

2) The Effect of Relaxation on Breast Milk Production

In addition to hormonal stimulation, oxytocin massage provides a relaxing effect that can reduce postpartum maternal stress and anxiety. A mother's psychological state significantly influences milk production. A comfortable and relaxed mother will produce milk more easily than a tense or anxious mother.

In this study, postpartum mothers reported feeling more comfortable and calm after receiving oxytocin massage. This supports the theory that stress can inhibit the oxytocin reflex, making relaxation interventions essential during the postpartum period.

3) The Role of Health Workers and Families

Oxytocin massage is also influenced by the role of healthcare workers and family support. Education provided to mothers and families about the benefits of oxytocin massage helps increase family involvement in postpartum maternal care. Emotional support from the family can strengthen the effect of oxytocin massage on breast milk production.





This is in line with the concept of comprehensive midwifery care which emphasizes the importance of social support in improving maternal and infant health.

4) **Research Limitations**

This study has limitations, including the lack of a control group, which prevents direct comparison with mothers who did not receive oxytocin massage. Furthermore, breast milk production was measured observationally, not objectively, using breast milk volume measurements.

Nevertheless, the research results still show a significant influence and can be used as a basis for the application of oxytocin massage in postpartum obstetric services.

Practical Implications

Oxytocin massage can be a routine intervention in postpartum midwifery care because it is easy to perform, requires no special equipment, and is safe for the mother. This intervention can also improve the success of exclusive breastfeeding programs.

4. **Conclusion And Suggestions**

a. **Conclusion**

Oxytocin massage is effective in increasing breast milk production in postpartum mothers and can be used as a non-pharmacological intervention to support successful breastfeeding.

b. **Suggestion**

- Health workers are advised to apply oxytocin massage in postpartum midwifery care.
- Mothers and families can be involved in carrying out oxytocin massage independently at home.
- Further research is recommended using a control group and a larger sample.

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