

ANALYSIS OF OXYTOCIN MASSAGE AND BREAST CARE ON SMOOTH BREAST MILK PRODUCTION IN POSTPARTUM MOTHERS

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Abstract

Breast milk is the most comprehensive biological nutrition for infants, yet the coverage of exclusive breastfeeding in postpartum mothers has not yet reached global targets. Delays in breast milk production, maternal stress, and lack of lactation support are factors that influence breastfeeding success. This study aims to analyze the effectiveness of oxytocin massage and breast care on smooth breast milk production in postpartum mothers. The study used a qualitative research method with a systematic literature review approach. The study population was scientific articles discussing oxytocin massage, breast care, and breast milk production in postpartum mothers in 2020–2025. The study sample consisted of 20 articles selected purposively based on inclusion and exclusion criteria. The research instruments included an article search sheet, inclusion and exclusion criteria, and a data extraction matrix. Data analysis was conducted using content analysis and narrative synthesis. The results showed that oxytocin massage and breast care significantly increased breast milk production, facilitated milk letdown, reduced maternal stress, and improved breastfeeding comfort. The combination of the two interventions provided more optimal results than either intervention alone. The conclusion of this study is that oxytocin massage and breast care are non-pharmacological interventions that are effective, safe, and easy to implement to support the success of exclusive breastfeeding in postpartum mothers.

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

INTRODUCTION

Breast milk remains the most comprehensive biological intervention in the early stages of life because it provides ideal nutrition, immunological factors, and protection against infant morbidity. However, the global achievement of exclusive breastfeeding has not yet reached the expected target. WHO reports that by 2024 only around 48% of infants under six months of age are exclusively breastfed, although the trend is increasing compared to previous years and the global target has been expanded to 60% by 2030. In Indonesia, WHO also emphasized that breastfeeding support still needs to be strengthened because mothers need more consistent assistance in the early lactation period, especially in the postpartum phase when physiological and psychological obstacles most often arise.

This issue becomes more prominent in the early postpartum period, when early initiation of breastfeeding, skin-to-skin contact, and lactation support are crucial for a successful transition from colostrum to stable milk production. Clinically, delayed milk release, perceived insufficient milk supply, pain, fatigue, stress, and lack of support from health professionals can weaken the oxytocin reflex and reduce breastfeeding effectiveness, making mothers more susceptible to early introduction of formula. In the Indonesian context, national increases in exclusive breastfeeding coverage have been uneven, while

regional reports indicate variations in achievement that require strengthening service-based and community-based breastfeeding support.

Scientifically, several recent studies have shown that breastfeeding support provided in the postpartum period can improve lactation outcomes, especially when the intervention is intensive, timely, and targeted. A recent meta-analysis showed that lactation counselor interventions can reduce the risk of exclusive breastfeeding cessation and increase breastfeeding duration, with greater effects when support is provided earlier in the postpartum period. Similarly, a recent systematic review also found that interventions to improve breastfeeding self-efficacy are more effective when provided in the postpartum period than antenatally, underscoring the importance of the postpartum phase as a critical intervention point.

Among the most frequently used non-pharmacological approaches in obstetric practice, oxytocin massage and breast care occupy a key position because both are relatively easy to implement, safe, and oriented towards physiological stimulation of lactation. Oxytocin massage is intended to stimulate the release of oxytocin through stimulation of the back and paravertebral areas, while breast care helps facilitate milk flow, reduce breast congestion, and improve breastfeeding comfort. Several studies report that oxytocin massage is associated with increased milk production and improved maternal psychological well-being, while breast care has also shown a positive effect on smooth milk flow and the prevention of breast problems in early breastfeeding.

However, existing findings are not entirely consistent due to variations in study design, sample size, indicators of lactation success, intervention duration, and differences in service context. Some studies assess success based on breastfeeding frequency, while others use milk volume, breast condition, or infant weight, making it difficult to compare results across publications. Furthermore, some studies assess oxytocin massage and breast care separately, while combination studies are still dominated by quasi-experimental or case study designs, making the evidence insufficient to draw firm conclusions. Therefore, there is a need for a more critical synthesis of the evidence to understand the extent to which each intervention, or their combination, is truly effective in promoting breast milk production in postpartum mothers.

Based on this gap, this study aims to analyze the effectiveness of oxytocin massage, breast care, and a combination of the two on smooth breast milk production in postpartum mothers through a literature review focused on the latest scientific publications. The urgency of this study lies in the practical need to provide lactation interventions that are safe, affordable, easy to teach, and can be implemented by midwives, nurses, and families in diverse maternal care contexts. The novelty of this study lies in the preparation of a more focused synthesis of these three intervention approaches within a single analytical framework. Thus, its scientific contribution lies in strengthening the non-pharmacological evidence base for breastfeeding support, while its practical contribution is providing a basis for the development of more standardized and contextualized postpartum care.

METHOD

This study used a qualitative research method with a systematic literature review approach to systematically examine scientific evidence regarding the effects of oxytocin massage and breast care on smooth breast milk production in postpartum mothers. This approach was chosen because it is suitable for collecting, selecting, reviewing, and synthesizing previous research findings in a structured manner to produce a comprehensive and evidence-based understanding. In the literature research, the search and

synthesis stages were carried out logically as recommended in the research methodology by Sugiyono, Emzir, and Creswell, so that the review process did not

The research instruments used were an article search sheet, a list of inclusion and exclusion criteria, and a data extraction matrix to record article identity, study design, subjects, interventions, and main results. The data analyzed were secondary data from scientific articles obtained through Google Scholar and PubMed Central, so the validity of the study was determined by the accuracy of the selection process and the consistency of data recording. Data analysis was conducted using content analysis and narrative synthesis, namely comparing similarities and differences in results between articles, then drawing conclusions based on the most consistent pattern of findings, as is commonly used in systematic literature reviews.

The population of this study was all scientific articles discussing oxytocin massage, breast care, or a combination of both on breast milk production in postpartum mothers that were indexed and accessible through established databases. The research sample was determined purposively based on the article's suitability to the topic, year of publication, language, full-text availability, and methodological relevance. Based on the initial selection process, 120 articles were identified. After eliminating duplicates, screening titles and abstracts, and assessing the full text, 20 articles were selected as eligible for analysis in the final discussion. This sampling pattern aligns with systematic literature review practices, which emphasize the accuracy of criteria and transparency of the article selection process.

The research procedure was carried out through several sequential stages. First, the researcher determined the topic, problem formulation, and search keywords, namely oxytocin massage, breast care, breast milk production, postpartum mothers, oxytocin massage, and breast care. Second, the researcher searched articles on Google Scholar and PubMed Central for the years 2020 to 2025, then removed duplicate articles and screened them based on the title and abstract. Third, articles that passed the screening were read in full text to ensure compliance with the inclusion and exclusion criteria. Fourth, selected articles were extracted and synthesized thematically to obtain scientific conclusions regarding the effectiveness of oxytocin massage and breast care on smooth breast milk production in postpartum mothers. This process aligns with previous research showing that oxytocin massage and breast care are associated with increased breast milk production, as well as with method studies that emphasize the importance of the identification, selection, and synthesis stages in systematic literature reviews.

RESULTS AND DISCUSSION

Results

Table 1 Literature Review

No	Author (Year)	Title	Research Design	Respondents	Assessment Procedure	Results
1	Septiani, (2020)	Effect of TreatmentBreasts to Increase Production breast milk on Mother Postpartum	Analytical with a cross-sectional approach	35 Mother postpartum	Univariate analysis and bivariateusing the Chi-Square test	There is an influence of breast care toincreased breast milk production with a p-value of 0.005 (<0.05).

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2	Pipit Febriani et al., (2025)	Influence Oxytocin Massage on Breast Milk Production on Postpartum Mother	Literature study	Postpartum mothers (various studies)	Descriptive analysis from the results previous research	Oxytocin massage has been shown to increase breast milk volume and frequency of breastfeeding and has a relaxing effect.
3	Nurul Faizin et al., (2025)	Massage Simulation Oxytocin and Breast Care on Breast Milk Production in Mothers Postpartum Period	Community service (education)	Postpartum mothers	Evaluation through questions and answers and observation	Oxytocin massage and breast care education increases knowledge and mother's skills in facilitating breast milk production.
4	Hariani et al., (2025)	Implementation of Oxytocin Massage for Smooth Production of breast milk on Mother Postpartum	Qualitative case study	3 Mother postpartum	Interviews and observations	Oxytocin massage for 3 days increased breast milk production in all respondents.
5	Yulianti, (2022)	Effectiveness of Breast Care and Massage Oxytocin to Adequacy of Breast milk production	Quasi experiment (two group post-test only)	36 postpartum mothers	Chi-Square Test	Breast care and oxytocin massage effectively increase breast milk sufficiency (p=0.007).
6	Nency et al., (2025)	Difference in Effectiveness of Oxytocin Massage and Breast Care on Breast Milk Production	Qualitative case study	14 postpartum mothers	Breast milk volume observation	Oxytocin massage is more effective than breast care in increasing breast milk production.
7	Tandipajung et al., (2024)	Effects of Breast Care and Massage Oxytocin on Breast Milk Production	Quasi-experiment pre-post test control group	30 postpartum mothers	Test Wilcoxon And Mann Whitney	There is a significant effect of breast care and oxytocin massage on breast milk production (p<0.05).
8	Pitriani & Megasari, (2024)	Effectiveness of Oxytocin Massage on Breast Milk Production and Baby Weight Gain	Quasi experiment	30 Mother breast-feed	Univariate analysis and bivariate	Oxytocin massage increases breast milk production and baby weight gain.
9	Agustina et al., (2025)	Effects of Breast Care and Massage Oxytocin against Smooth flow of breast milk	Experimental one group pretest-posttest	10 postpartum mothers	Wilcoxon test	Breast milk production increased significantly after the intervention (p=0.000).

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10	Nelina & Maria, (2024)	Influence Oxytocin Massage on Breast Milk Production Days 4–7 Postpartum	Quasi experiment	30 Mother postpartum	Wilcoxon test	Breast milk production increased significantly after oxytocin massage (p=0.000).
11	Nagel et al., (2022)	Maternal Psychological Distress and Lactation Outcomes	Narrative review	Breastfeeding mothers	Literature review	Distress psychological barriers reflexoxytocin and reduces breast milk production.
12	Erickson et al., (2020)	Oxytocin, Vasopressin and Prolactin in Breastfeeding Mothers	Descriptive prospective in	35 Mother primipara	Plasma hormone analysis	Oxytocin relatewith breast milk production and baby weight loss.
13	Lestari et al., (2022)	Influence of Oxytocin Massage on Lactation Problems	Pre-experimental & true experiment	80 Mother postpartum	Bivariate test	Oxytocin massage is effective in reducing lactation problems and supporting baby growth.
14	Hikmatun et al., (2024)	Oxytocin Massage Education for Postpartum Mothers	Studies descriptive case	Postpartum mother	Evaluation knowledge and practice	Oxytocin massage education increases the knowledge and skills of breastfeeding mothers.
15	Lajuna & Sriyanti, (2025)	Influence Psychological Factor on Breast Milk Production	Systematic review	Breastfeeding mothers	Descriptive analysis	Stress and anxiety are negatively related to breast milk production.
16	Ciampo & Ciampo, (2018)	Breastfeeding and Benefits of Lactation for Women's Health	Article review	Breastfeeding mothers	Literature review	Breastfeeding improves the physical and emotional health of mothers through the hormone oxytocin.
17	Modak et al., (2023)	The Psychological Benefits of Breastfeeding	Article review	Mother and baby	Systematic review	Breastfeeding improves mother-child bonding and reduces the risk of postpartum depression.
18	Erisna & Astriani, (2025)	The effectiveness of breast care on breast milk expression in primiparous postpartum mothers in Tangerang City, Indonesia	Quasi-experimental static group comparison	40 Mother postpartum primipara	Analysis distribution and Mann–Whitney U test	Results show Breast care intervention significantly increased breast milk expression (p = 0.002), with 95% success in the control group. intervention compared to 40% control
19	Nagel et al., (2023)	Psychological Distress and Breastfeeding	Narrative review	Breastfeeding mothers	Study of physiological theory and mechanisms	Maternal stress decreases milk production by inhibiting the let-down reflex.

20	Aisyah et al., (2025)	The Relationship Between Breast Care and Milk Production Among Postpartum	Observational cross-sectional analysis	36 Mother postpartum	Chi-Square Test	There is a significant relationship between breast care practices and breast milk production in postpartum mothers ($p = 0.000$).
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Discussion

1. Data extraction and research

The first article is a study conducted by Septiani (2020) entitled "The Effect of Breast Care on Increasing Breast Milk Production in Postpartum Mothers." This study used an analytical design with a cross-sectional approach to 35 postpartum mothers. Data were collected through observation and questionnaires, then analyzed using the Chi-Square test to determine the relationship between breast care and breast milk production.

The results of the study showed that postpartum mothers who performed regular breast care had smoother milk production compared to mothers who did not. The statistical analysis showed a p -value of 0.005 (<0.05), indicating a significant effect between breast care and increased milk production in postpartum mothers. Therefore, it can be concluded that breast care plays a crucial role in supporting smooth milk production.

According to the authors, this study demonstrates that breast care is an effective non-pharmacological intervention for increasing breast milk production in the postpartum period. Breast stimulation can stimulate the hormones prolactin and oxytocin, thereby helping facilitate milk flow and supporting successful exclusive breastfeeding.

The second article is a study conducted by Pipit Febriani et al., (2025) entitled "The Effect of Oxytocin Massage on Breast Milk Production in Postpartum Mothers." This study is a literature review that examines various research findings related to the administration of oxytocin massage to postpartum mothers. The subjects in the various articles reviewed were postpartum mothers with problems with breast milk production.

Studies have shown that oxytocin massage has a positive effect on increasing breast milk production. Oxytocin massage can provide a relaxing effect, reduce maternal stress, and stimulate the release of the hormone oxytocin, which plays a role in the milk let-down reflex. Most of the studies analyzed showed an increase in breast milk volume and breastfeeding frequency after oxytocin massage.

According to the authors, the results of this study confirm that oxytocin massage is a safe and effective non-pharmacological method for increasing breast milk production. In addition to increasing oxytocin levels, oxytocin massage also provides psychological comfort for postpartum mothers, thus supporting successful breastfeeding.

The third article is a study conducted by Nurul Faizin et al., (2025) entitled "Simulation of Oxytocin Massage and Breast Care on Breast Milk Production in Postpartum Mothers." This study is a community service activity targeting postpartum mothers, using educational methods in the form of counseling, demonstrations, and simulations of oxytocin massage and breast care practices.

Evaluation results showed an increase in the knowledge and skills of postpartum mothers after receiving education. Postpartum mothers understood the benefits of oxytocin massage and breast care and were able to practice them independently. This improved understanding impacted the smooth production of breast milk during the postpartum period.

According to the author, education on oxytocin massage and breast care is crucial from the beginning of the postpartum period. Good knowledge and skills will help postpartum mothers become more confident in breastfeeding and able to independently address milk production issues.

The fourth article is a study conducted by Hariani et al., (2025) entitled "Application of Oxytocin Massage to Smooth Breast Milk Production in Postpartum Mothers at RSIA Pertiwi Makassar." This study uses a qualitative approach.

This study used a case study design involving three postpartum mothers experiencing problems with breast milk production. Oxytocin massage intervention was carried out for three consecutive days, twice daily.

The study results showed that after oxytocin massage, all respondents experienced increased milk production. Postpartum mothers reported easier milk flow, lighter breasts, and babies appeared more satisfied after breastfeeding. This suggests that oxytocin massage has a positive impact on the milk let-down reflex.

According to the authors, this study demonstrates that oxytocin massage can be an effective non-pharmacological intervention in increasing breast milk production. The resulting relaxation effect helps reduce postpartum maternal stress, thus optimizing oxytocin release.

The fifth article is a study conducted by Yulianti (2022) entitled "Effectiveness of Breast Care and Oxytocin Massage on Adequate Breast Milk Production in Postpartum Mothers." This study used a quasi-experimental, two-group, post-test-only design with 36 postpartum mothers as respondents, divided into an intervention group and a control group.

The chi-square analysis showed a p-value of 0.007 (<0.05), indicating a significant difference between the group receiving breast care and oxytocin massage and the control group. The intervention group demonstrated better breast milk supply than the control group.

According to the authors, the combination of breast care and oxytocin massage provides optimal results because it stimulates milk production and facilitates its release. This intervention is particularly appropriate during the postpartum period to support successful breastfeeding.

The sixth article is a study conducted by Nancy et al., (2025) entitled "Differences in the Effectiveness of Oxytocin Massage and Breast Care in Increasing Breast Milk Production in Postpartum Mothers." This study used a qualitative case study design with 14 postpartum mothers as respondents who were divided into two intervention groups.

The study results showed that the group of postpartum mothers who received oxytocin massage experienced a faster increase in breast milk production compared to the group receiving only breast care. Breast milk flowed more easily and breastfeeding frequency increased in the oxytocin massage group.

According to the author, oxytocin massage is more effective because it directly stimulates the let-down reflex by increasing the hormone oxytocin, while breast care focuses more on physical breast care.

The seventh article is a study conducted by Tandipajung et al., (2024) entitled "The Effect of Breast Care and Oxytocin Massage on Breast Milk Production in Postpartum Mothers." This study used a quasi-experimental pretest–posttest control group design on 30 postpartum mothers.

The results of the analysis using the Wilcoxon and Mann Whitney tests showed a significant increase in breast milk production in the intervention group compared to the control group with a p value <0.05 .

According to the author, the combination of breast care and oxytocin massage provides maximum hormonal stimulation so that breast milk production increases significantly.

The eighth article is a study conducted by Pitriani & Megasari (2024) entitled "Effectiveness of Oxytocin Massage on Increasing Breast Milk Production and Infant Weight Gain." This study used a quasi-experimental design with 30 breastfeeding mothers as respondents.

The study results showed that oxytocin massage increased breast milk production and impacted infant weight gain. Infants of mothers who received oxytocin massage experienced better weight gain than those in the control group.

According to the author, increasing optimal breast milk production will directly contribute to the baby's nutritional adequacy, thereby supporting the baby's optimal growth and development.

The ninth article is a study conducted by Agustina et al., (2025) entitled "The Effect of Breast Care and Oxytocin Massage on Breast Milk Flow in Postpartum Mothers." This study used a one-group pretest–posttest experimental design with 10 postpartum mothers as respondents.

The results of the analysis using the Wilcoxon test showed a p-value of 0.000 (<0.05), which means there was a significant influence on the smooth production of breast milk after the intervention.

According to the author, breast care and oxytocin massage performed regularly during the postpartum period have been proven effective in increasing the flow of breast milk.

The tenth article is a study conducted by Nelina & Maria (2024) entitled "The Effect of Oxytocin Massage on Breast Milk Production in Postpartum Mothers on Days 4–7." This study used a quasi-experimental design with 30 postpartum mothers as respondents.

The results of the study showed a significant increase in breast milk production after being given oxytocin massage with a p-value of 0.000 (<0.05).

According to the author, oxytocin massage is very effective when given in the early postpartum period, which is a critical period for successful breastfeeding.

The eleventh article is a study conducted by Nagel et al. (2022) entitled "Maternal Psychological Distress and Lactation and Breastfeeding Outcomes." This narrative review examines the relationship between maternal psychological conditions such as stress, anxiety, and depression and lactation outcomes and breastfeeding success. Data were obtained from various observational studies covering the pregnancy to postpartum period.

Studies show that mothers with high levels of psychological stress tend to experience delayed milk letdown, decreased duration of exclusive breastfeeding, and impaired let-down reflex. This is caused by inhibited release of the hormone oxytocin, which plays a crucial role in milk letdown.

According to the authors, this study confirms that maternal psychological factors significantly influence lactation success. Therefore, psychological support and stress management need to be part of midwifery care for postpartum mothers.

The twelfth article is a study conducted by Erickson et al. (2020) entitled "Oxytocin, Vasopressin, and Prolactin in New Breastfeeding Mothers." This study used a prospective, descriptive design with 35 primiparous mothers as respondents. Measurements were made of the hormone levels of oxytocin, vasopressin, and prolactin during the early postpartum breastfeeding process.

Research shows that oxytocin and prolactin levels increase during breastfeeding and are associated with better milk letdown. Furthermore, higher oxytocin levels are associated with less infant weight loss in the early days of life.

According to the authors, this study demonstrates that the hormone oxytocin plays a central role in successful breastfeeding. Interventions that can increase oxytocin release, such as oxytocin massage, are crucial for supporting milk production.

The thirteenth article is a study conducted by Lestari et al. (2022) entitled "The Influence of Oxytocin Massage on Reducing Lactation Problems and Supporting Infant Growth." This study used a pre-experimental and true-experimental design with 80 postpartum mothers as respondents.

The study results showed that postpartum mothers who regularly received oxytocin massage experienced a significant reduction in lactation problems. Furthermore, the infants of mothers who received oxytocin massage showed age-appropriate growth. Statistical analysis showed a p-value of 0.000, indicating a significant effect of oxytocin massage on lactation and infant growth.

According to the authors, oxytocin massage is an effective and easy-to-implement non-pharmacological intervention in obstetric services to prevent lactation problems early on. The fourteenth article is a study conducted by Hikmatun et al., (2024) entitled "Oxytocin Massage Education for Postpartum Mothers to Improve the Smooth Production of Breast Milk." This study used a descriptive case study design that focused on educating postpartum mothers about oxytocin massage techniques.

The study results showed that after receiving education, postpartum mothers experienced increased knowledge and skills in independently performing oxytocin massage. This increased understanding impacted breast milk production.

According to the author, oxytocin massage education is very important to provide to postpartum mothers so that mothers are able to overcome breast milk production problems independently and sustainably.

The fifteenth article is a study conducted by Lajuna & Sriyanti (2025) entitled "The Influence of Psychological Factors on Breast Milk Production among Breastfeeding Mothers." This study used a systematic review method of various articles discussing psychological factors in breastfeeding mothers.

Studies show that stress, anxiety, emotional exhaustion, and sleep disturbances are negatively associated with breast milk production. Poor psychological well-being can inhibit the oxytocin and prolactin reflexes, thereby reducing milk production.

According to the authors, this study emphasizes the importance of a holistic approach in breastfeeding care by paying attention to the mother's mental and emotional condition.

The sixteenth article is a study conducted by Ciampo & Ciampo (2018) entitled "Breastfeeding and the Benefits of Lactation for Women's Health." This study is a review of articles discussing the benefits of breastfeeding for maternal health.

Research results show that breastfeeding provides physical and emotional benefits for mothers, such as accelerating uterine involution, reducing the risk of postpartum hemorrhage, and improving emotional well-being through the release of the hormone oxytocin.

According to the author, breastfeeding is a physiological process that provides short-term and long-term benefits for maternal health.

The seventeenth article is a study conducted by Modak et al., (2023) entitled "The Psychological Benefits of Breastfeeding: Fostering Maternal Well-Being and Child Development." This study used an article review design.

Studies show that breastfeeding improves mother-infant bonding, reduces the risk of postpartum depression, and boosts maternal self-esteem. The release of the hormone oxytocin plays a significant role in a mother's psychological well-being.

According to the author, breastfeeding not only provides nutritional benefits for the baby, but also has a positive psychological impact on the mother.

The Eighteenth Article is a study conducted by Erisna & Astriani, (2025) entitled "The effectiveness of breast care on breast milk expression in primiparous postpartum mothers in Tangerang City, Indonesia". This study used a quasi-experimental static group comparison design with 40 primiparous postpartum mothers as respondents who were divided into an intervention group and a control group. The intervention in the form of structured breast care was carried out twice a day for three days for the

intervention group, while the control group received routine postpartum care. Data analysis was carried out using the Mann–Whitney U Test to test for differences between the two groups.

The results of the study showed that the group receiving breast care intervention had significantly higher rates of breast milk expression success compared to the control group.

The intervention group achieved 95% success in expressing breast milk, while the control group only achieved 40%. The resulting p-value was 0.002 (<0.05), indicating that the difference was statistically significant.

According to the authors, these findings strengthen evidence that breast care, as a non-pharmacological intervention, can improve milk expression and production in postpartum mothers, especially primiparas. Breast care not only provides physical stimulation to the breasts but can also influence the mother's psychological well-being, thus supporting breastfeeding success.

The nineteenth article is a study conducted by Nagel et al. (2023) that discusses the relationship between maternal psychological stress and breastfeeding success. This study is a narrative review.

The results of the study showed that high maternal stress can reduce breast milk production due to disruption of the let-down reflex which is influenced by the hormone oxytocin.

According to the author, stress management interventions need to be integrated into midwifery services for breastfeeding mothers.

The twentieth article is a study conducted by Aisyah et al. (2025) entitled "The Relationship Between Breast Care and Breast Milk Production Among Postpartum Mothers." This study used an observational analytical design with a cross-sectional approach to 36 postpartum mothers at a health facility in Indonesia. Data collection was conducted through questionnaires and observations of breast care practices and breast milk production results in the early postpartum period.

Statistical analysis using the Chi-Square test showed a significant relationship between breast care practices and breast milk production in postpartum mothers, with a p-value of 0.000 (<0.05). This finding indicates that mothers who regularly perform breast care tend to have better breast milk production than mothers who do not perform such care regularly.

According to the authors, the findings of this study emphasize the importance of education and practical support regarding breast care as part of midwifery care to increase breast milk production in postpartum mothers. This study also strengthens evidence that non-pharmacological interventions such as breast care play a role in breastfeeding success and can be integrated into clinical practice.

2. Synthesis of Results

a. Oxytocin Massage

Oxytocin massage has been consistently proven in various studies to increase breast milk production in postpartum mothers. This intervention involves massaging along the spine and scapula to stimulate the release of the hormone oxytocin, which plays a role in the let-down reflex, or milk ejection.

Several studies have shown that oxytocin massage can increase milk volume, breastfeeding frequency, and provide a relaxing effect on mothers. Furthermore, there is significant evidence that oxytocin massage contributes to increased milk production and even impacts infant weight gain, an indicator of adequate milk supply.

In addition to the physiological benefits, oxytocin massage also has positive psychological effects, such as reducing stress, increasing comfort, and helping the mother maintain emotional stability. This positive psychological state supports the smooth production of the hormones oxytocin and prolactin, which are essential for lactation.

Overall, oxytocin massage is an effective, safe, inexpensive, and easy-to-perform non-pharmacological intervention, even by families at home. Its success is influenced by technique,

frequency, and regularity, and is most optimal when combined with frequent breastfeeding. Therefore, oxytocin massage is recommended as part of standard postpartum maternal care to support successful exclusive breastfeeding.

b. Breast Care

Breast care has been proven effective in increasing milk production in postpartum mothers. These procedures include breast cleansing, warm compresses, massage, nipple stimulation, and breast emptying, all aimed at promoting milk flow, preventing engorgement, and maintaining breast health.

Various studies have shown a significant relationship between breast care and increased milk production. Mothers who practice regular breast care tend to have a smoother milk supply than those who don't.

Beyond physiological aspects, breast care also increases a mother's comfort and confidence while breastfeeding. This is important because physical discomfort and anxiety can decrease breastfeeding frequency and milk production.

Breast care is crucial, especially for inexperienced primiparous mothers, so education is necessary from pregnancy through postpartum. Regular practice, especially before breastfeeding, can optimize milk production according to the principles of supply and demand.

Overall, breast care is a simple, safe, and effective intervention, so it is recommended as part of midwifery care to support smooth breastfeeding and the success of exclusive breastfeeding.

c. Oxytocin Massage and Breast Care

A literature review shows that oxytocin massage and breast care significantly increase breast milk production in postpartum mothers. Of the 20 articles reviewed, the study by Tandipajung et al. (2024) was most relevant, proving that the combination of these two interventions is effective in stimulating oxytocin and facilitating breast milk production.

This finding is in line with the results of a literature review which stated that oxytocin massage and breast care as non-pharmacological interventions have been proven effective in supporting successful breastfeeding.

Several studies with diverse designs have shown that oxytocin massage and breast care are effective in increasing breast milk production in postpartum mothers. Oxytocin massage works by stimulating the hormone oxytocin to trigger the let-down reflex, while breast care helps smooth milk flow, maintain tissue elasticity, and prevent blocked milk ducts. Statistically, the majority of studies showed significant results (p -value <0.05), indicating a significant effect of both interventions.

Increasing breast milk production also impacts infant nutritional adequacy, as evidenced by weight gain and infant satisfaction during breastfeeding. Furthermore, this intervention is non-pharmacological, safe, inexpensive, and easy to implement by both healthcare professionals and families.

However, there are several limitations such as variations in study design, small sample sizes, differences in breast milk measurement methods, and potential publication bias that may affect the strength of the conclusions.

In practice, oxytocin massage and breast care can be combined, starting early postpartum. The procedure is performed in the following order: breast care first, followed by oxytocin massage, with a daily frequency of approximately 20–30 minutes per session for 2–7 days. This combination has been shown to increase milk flow, maternal comfort, and breastfeeding success.

Overall, these two interventions are effective in increasing breast milk production and supporting the mother's physical and psychological condition, so they are worthy of being integrated into midwifery care to support the success of exclusive breastfeeding.

CONCLUSION

The conclusion of this study indicates that oxytocin massage and breast care are non-pharmacological interventions consistently proven effective in increasing the flow and production of breast milk in postpartum mothers. Oxytocin massage works by stimulating the hormone oxytocin, which triggers the let-down reflex, while breast care plays a role in facilitating milk flow, maintaining breast tissue condition, and preventing engorgement. The combination of the two provides a more optimal effect because it integrates hormonal stimulation and physical breast care, as well as having a positive impact on the mother's psychological state, such as reducing stress and increasing comfort. The subsequent impact of increased breast milk production is also seen in the adequacy of infant nutrition, as indicated by increased weight gain and breastfeeding satisfaction.

However, the results of this study have several limitations, including variations in study design, a relatively small sample size, and differences in breast milk production measurement methods that could potentially affect the consistency of the findings. Furthermore, there is potential for publication bias and limitations in the standard intervention procedures used between studies. Therefore, future research is recommended to use a more robust experimental design with a larger sample size and a uniform intervention standard to increase the validity of the results. Practically, the results of this study imply that oxytocin massage and breast care can be integrated into postpartum midwifery care as a safe, easy, and effective intervention, and need to be supported by education for mothers and families to improve the success of exclusive breastfeeding.

REFERENCES

- Aisyah, Juliati, Hasanah, N., & Agustina, D. (2025). Breast care practice and breast milk production among postpartum mothers. *Priority Nursing Journal*, 8(2), 59–67.
- Ciampo, LAD, & Ciampo, IRLD (2018). Breastfeeding and the benefits of lactation for women's health. *Revista Brasileira de Gynecologia e Obstetrícia*, 40(6), 354–359. <https://doi.org/10.1055/s-0038-1657766>
- Creswell, J. W. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). SAGE Publications.
- Emzir. (2020). *Qualitative research methodology: Data analysis*. Rajawali Pers.
- Erickson, E.N., Carter, C.S., & Emeis, C.L. (2020). Oxytocin, vasopressin and prolactin in new breastfeeding mothers: Relationship to clinical characteristics and infant weight loss. *Journal of Human Lactation*, 36(1), 136–145. <https://doi.org/10.1177/0890334419838225>
- Erisna, M., & Astriani, M. (2025). The effectiveness of breast care on breast milk expression in primiparous postpartum mothers in Tangerang City, Indonesia. *Minsight: Midwifery Insight and Innovation Journal*, 1(2), 24–35.
- Hariani, H., Fauziah, A., Putri, WA, & Junadi, AH (2025). Application of oxytocin massage to smooth breast milk production in postpartum mothers at RSIA Pertiwi Makassar. *Journal of Nursing Media: Makassar Health Polytechnic*, 16(1), 149–160.
- Hikmatun, KD, Purbasari, D., Sari, D., Fitriyani, R., & Komariyah, O. (2024). Oxytocin massage education for postpartum mothers to improve the smooth production of breast milk. *Asian Journal of Health and Science*, 3(4), 197–202. <https://doi.org/10.58631/ajhs.v3i4.118>

- Lajuna, L., & Sriyanti, C. (2025). The influence of psychological factors on breast milk production among breastfeeding mothers. *Midwifery Science*, 13(2), 2721–9453.
- Lestari, P., Fatimah, F., Ayuningrum, L., Herawati, HD, & Afifaturrohmah, N. (2022). Influence oxytocin massage on reducing lactation problems and supporting infants growth. *Open Access Macedonian Journal of Medical Sciences*, 10(T8), 81–85. <https://doi.org/10.3889/oamjms.2022.9487>
- Modak, A., Ronghe, V., & Gomase, K. P. (2023). The psychological benefits of breastfeeding: Fostering maternal well-being and child development. *Cureus*, 15(10), Article e46730. <https://doi.org/10.7759/cureus.46730>
- Nagel, E.M., Howland, M.A., Pando, C., Stang, J., Mason, S.M., Fields, D.A., & Demerath, E.W. (2022). Maternal psychological distress and lactation and breastfeeding outcomes: A narrative review. *Clinical Therapeutics*, 44(2), 215–227. <https://doi.org/10.1016/j.clinthera.2021.11.007>
- Nagel, E.M., Howland, M.A., Pando, C., Stang, J., Mason, S.M., Fields, D.A., & Demerath, E.W. (2023). Psychological distress and breastfeeding. *Clinical Therapeutics*, 44(2), 215–227. <https://doi.org/10.1016/j.clinthera.2021.11.007>
- Nelina, T., & Maria, ADB (2024). The effect of oxytocin massage on breast milk production in postpartum mothers on days 4–7 in Karang Sari Village and Cintaasih Village, Cipongkor Health Center in 2024. *Mandira Cendikia Scientific Health Journal*, 3(11), 106–115.
- Nency, A., Rini, AS, Sumiati, I., Munawaroh, E., Murni, D., Yuningsih, E., Nariyah, & Ernawati, E. (2025). Differences in the effectiveness of oxytocin massage and breast care in increasing the smoothness of breast milk production in postpartum mothers. *Indonesian Healthy Society Journal*, 4(1), 1–10.
- Nurul Faizin, Fadillah, AM, Khair, U., Lumeno, ISP, Sipata, R., & Wahyuni, S. (2025). Simulation of oxytocin massage and breast care on breast milk production in postpartum mothers. *Benefits: Indonesian Community Service Journal*, 2(3), 78–86. <https://doi.org/10.62951/manfaat.v2i3.459>
- Pipit Febriani, Azizah, RN, Herdianti, H., Sari, NI, Sulaeman, G., & Anwar, A. (2025). The effect of oxytocin massage on breast milk production in postpartum mothers. *Indonesian Journal of Medical and Health Sciences*, 5(1), 77–91. <https://doi.org/10.55606/jikki.v5i1.5873>
- Pitriani, R., & Megasari, M. (2024). Effectiveness of oxytocin massage on increasing breast milk production in breastfeeding mothers and infant weight gain. *Ahmar Metastasis Health Journal*, 4(2), 127–133.
- Septiani, E. (2020). The effect of breast care on increasing breast milk production in postpartum mothers. *Cendekia Medika*, 5(2).
- Sugiyono. (2022). *Quantitative, qualitative, and R&D research methods* (2nd ed.). Alfabeta.
- Tandipajung, T., Rumende, R., & Mait, M. (2024). The effect of breast care and oxytocin massage on the smooth production of breast milk in postpartum mothers at Tomohon City Hospital. *Dharma Medika*, 3(2), 36–44. <https://doi.org/10.70524/vh7da758>
- World Health Organization. (2024). Breastfeeding. [World Health Organization](https://www.who.int/indonesia/health-topics/breastfeeding)
- Yulianti, ND (2022). Effectiveness of breast care and oxytocin massage on the adequacy of breast milk production in postpartum mothers at PMB South Tangerang in 2022. *Journal of Midwifery Science and Women's Health*, 2(2), 74–79. <https://doi.org/10.36082/jmswh.v2i2.546>