

Effect of Oketani Breast Massage on Level of Pain and Breast Engorgement Among Postnatal Mothers- A Pre- Experimental Study.

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ABSTRACT

Background: Breastfeeding is the optimal source of infant nutrition; however, breast engorgement is a common postpartum complication that can cause pain, interfere with effective breastfeeding, and contribute to early discontinuation of breastfeeding. Oketani breast massage is a specialized, non-pharmacological technique designed to relieve breast congestion, improve milk flow, and enhance breastfeeding outcomes. **Aim:** To evaluate the effectiveness of Oketani breast massage in reducing breast pain and breast engorgement among postnatal mothers during the early postpartum period. **Methods:** A quantitative pre-experimental one-group pretest–posttest design was adopted. Sixty postnatal mothers aged 18–40 years with breast engorgement during the first 1–7 days postpartum were selected using purposive sampling. Baseline demographic and obstetric data were collected using a structured questionnaire. Breast pain was assessed using the Numeric Pain Rating Scale (NPRS), breast engorgement using the Six-Point Breast Engorgement Scale (SPBES), and breastfeeding confidence before and after the intervention. Oketani breast massage was administered for 15–20 minutes once daily for three consecutive days. Data were analyzed using descriptive statistics and paired *t*-test, with statistical significance set at $p < 0.05$. **Results:** The prevalence of breast engorgement among screened postnatal mothers was 67.5% (50/74). Among the study participants ($n = 60$), the majority were aged below 35 years (78%), primigravida (62%), had completed higher secondary education (48%), and had normal vaginal delivery (53%). Following Oketani breast massage, there was a statistically significant reduction in breast pain and breast engorgement scores, with improvement in breastfeeding confidence ($p < 0.05$). Although breast engorgement was more frequently observed among mothers who underwent caesarean section than those with normal vaginal delivery, the association between mode of delivery and breast engorgement was not statistically significant ($\chi^2 = 0.67$, $p > 0.05$). **Conclusion:** Oketani breast massage is an effective, safe, and non-pharmacological nursing intervention for reducing breast pain and engorgement and improving breastfeeding confidence among postnatal mothers. Integrating this technique into routine postnatal care may enhance maternal comfort, support successful breastfeeding, and contribute to improved maternal and newborn health outcomes. Further multicentre randomized controlled studies with larger sample sizes are recommended to strengthen the evidence

Keywords: Oketani breast massage, breast engorgement, breast pain, breastfeeding, postnatal mothers, nursing intervention, breastfeeding confidence.

INTRODUCTION:

Breastfeeding is recognized as the optimal source of nutrition for infants and is considered the gold standard for promoting child survival, growth, and maternal health. The World Health Organization (WHO) recommends initiating breastfeeding within the first hour after birth, exclusive breastfeeding for the first six months of life, and continued breastfeeding with complementary feeding up to two years or beyond. Despite these recommendations, fewer than half of infants worldwide are exclusively breastfed for the first six months, highlighting the persistent challenges in establishing and maintaining successful breastfeeding. The early postpartum period is particularly critical, as mothers frequently experience breastfeeding-related complications such as breast engorgement, which affects approximately **20–85%** of lactating women during the first week after delivery, depending on the assessment criteria and study population. Breast engorgement is characterized by vascular congestion, interstitial edema, and milk stasis, resulting in painful breast swelling, ineffective infant latch, reduced milk transfer, and an increased risk of nipple trauma, mastitis, and premature discontinuation of breastfeeding. These complications negatively affect maternal confidence and breastfeeding success, emphasizing the need for timely, effective, and evidence-based interventions.

NEED OF THE STUDY:

Oketani breast massage is a specialized, non-pharmacological breast care technique developed in Japan that aims to improve breast elasticity, facilitate milk ejection, relieve congestion, and enhance infant suckling without causing pain or tissue injury. As a nurse-led intervention, it offers a safe, inexpensive, and practical approach that can be incorporated into routine postpartum care. Recent evidence suggests that Oketani massage significantly reduces breast pain and engorgement while improving milk flow, breastfeeding success, and maternal satisfaction, particularly among mothers following cesarean delivery. Given the high prevalence of breastfeeding difficulties in the early postpartum period and the global need to improve exclusive breastfeeding rates, integrating Oketani massage into postnatal care may help prevent breastfeeding complications, promote maternal comfort, and support sustained breastfeeding. However, despite its promising clinical benefits, evidence regarding its effectiveness remains limited in many healthcare settings, warranting further research to strengthen its evidence base and facilitate its wider implementation in maternal and newborn care.

AIM OF THE STUDY:

The aim of this study was to evaluate the effectiveness of Oketani breast massage in reducing breast pain and breast engorgement among postnatal mothers during the early postpartum period.

OBJECTIVES:

Primary Objectives

- To determine the prevalence of breast engorgement among postnatal mothers following delivery.
- To assess the level of pain among postnatal mothers before and after the application of Oketani breast massage.
- To assess the level of breast engorgement among postnatal mothers before and after the application of Oketani breast massage.
- To assess the breastfeeding confidence among postnatal mothers before and after the application of Oketani breast massage.

Secondary Objective

- To determine the association between mode of delivery and breast engorgement

MATERIALS AND METHODS:

A quantitative research approach with a **pre-experimental one-group pretest–posttest design** was adopted to evaluate the effectiveness of Oketani breast massage on the level of pain and breast engorgement among postnatal mothers. The study was conducted among **60 postnatal mothers** experiencing breast engorgement during the early postpartum period. A total of **60 postnatal mothers** were selected using a **non-probability purposive sampling technique**. Mothers aged **18–40 years**, within **1–7 days postpartum**, who were breastfeeding and had breast engorgement were included in the study. Mothers with breast abscess, mastitis requiring medical treatment, severe postpartum complications, breast surgery, or contraindications to breast massage were excluded from the study.

Baseline data were collected using a structured demographic and obstetric questionnaire. The level of breast pain was assessed using the **Numeric Pain Rating Scale (NPRS; 0–10 points)**, and breast engorgement was assessed using the **Six-Point Breast Engorgement Scale (SPBES; scores ranging from 1 to 6)**. Following the pretest assessment, Oketani breast massage was administered by the researcher using the standardized Oketani breast massage technique for **15–20 minutes**. The intervention was provided **once daily for three consecutive days**. The posttest assessment of pain and breast engorgement was conducted after completion of the intervention using the same assessment tools. Ethical approval was obtained from the Institutional Ethics Committee prior to data collection. Written informed consent was obtained from all participants before their enrollment. Confidentiality and anonymity of the participants were maintained throughout the study, and participation was entirely voluntary. The collected data were coded and analyzed using appropriate statistical software. Descriptive statistics, including **frequency, percentage, mean, and standard deviation**, were used to describe the demographic characteristics and study variables. The effectiveness of Oketani breast massage was determined by comparing the pretest and posttest pain and breast engorgement scores using the **paired t-test**. A **p-value of <0.05** was considered statistically significant.

RESULTS:

For tabulation and statistical analysis, the data was obtained from hospital records after gaining permission from hospital director and following ethical guidelines

1. Analysis of Distribution of study participants according to demographic characteristics (n = 60).

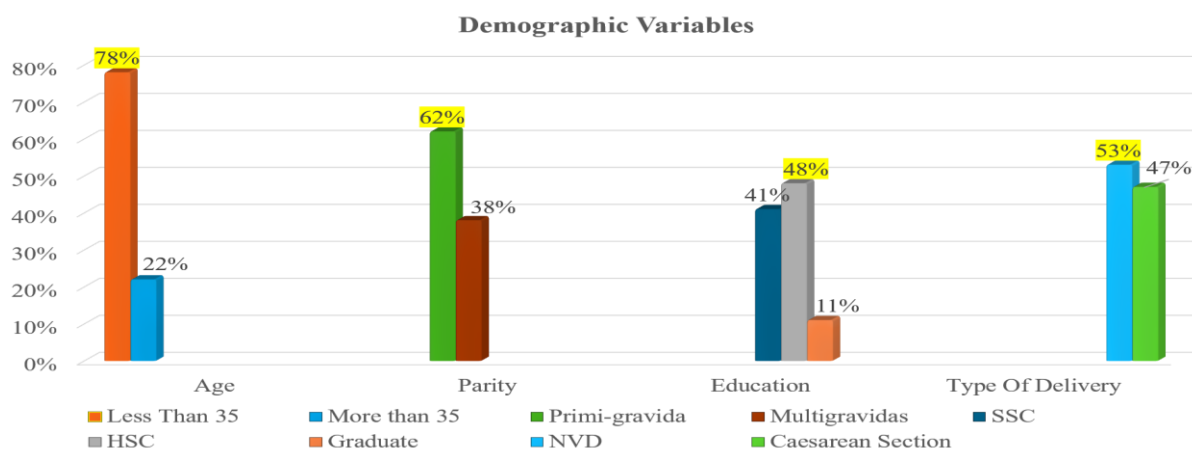
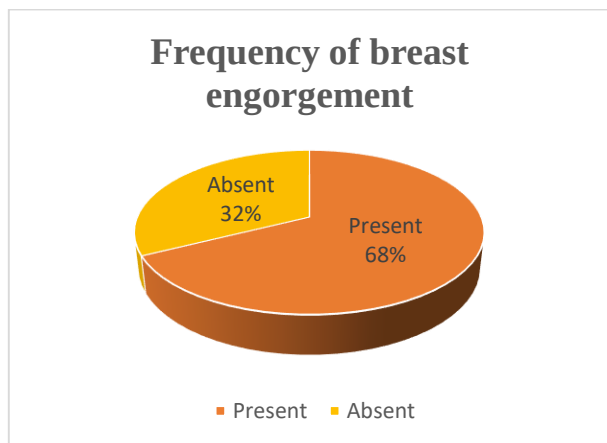


Figure 1. Distribution of study participants according to demographic characteristics (n = 60).

The demographic characteristics of the postnatal mothers are presented in **Figure 1**. The majority of the participants (**78%**) were aged **less than 35 years**, while **22%** were aged **more than 35 years**. With regard to parity, **62%** were **primigravida** and **38%** were **multigravida**. In terms of educational status, **48%** had completed **Higher Secondary Certificate (HSC)** education, **41%** had completed **Secondary School Certificate (SSC)** education, and **11%** were **graduates**. Regarding the mode of delivery, **53%** of the mothers had a **normal vaginal delivery (NVD)**, whereas **47%** had undergone a **caesarean section**.

2. Analysis of Prevalence of Breast Engorgement among Postnatal Mothers

n = 74



S. No.	Breast Engorgement	Frequency (n)	Percentage (%)
1	Present	50	67.5
2	Absent	24	32.4
Total		74	100.0

Figure 2. Prevalence of breast engorgement among postnatal mothers

Figure 2 illustrates the prevalence of breast engorgement among the postnatal mothers included in the study. Of the total participants (n = 74), the majority, **68% (n = 50)**, experienced **breast engorgement**, whereas **32% (n = 24)** did not experience breast engorgement during the early postpartum period. The findings indicate that more than two-thirds of the postnatal mothers were affected by breast engorgement, highlighting that it is a common breastfeeding-related problem in the immediate postnatal period.

DISCUSSION:

The present study found that the prevalence of breast engorgement among postnatal mothers was **67.5%**, indicating that breast engorgement remains a common breastfeeding problem during the early postpartum period. This finding is consistent with the study by **Indrani and Soumya (2019)**, who reported a prevalence ranging from **60% to 75%**, confirming that breast engorgement is one of the most frequent breastfeeding complications after childbirth. The study further demonstrated that **Oketani breast massage significantly reduced breast engorgement and associated pain** among postnatal mothers following the intervention. This result supports the findings of **Cho, Ahn, and Ahn (2012)**, who reported that Oketani breast massage improved breast condition, reduced engorgement, and enhanced breastfeeding comfort. The effectiveness of this intervention may be attributed to its ability to improve milk drainage, reduce tissue congestion, and promote better blood and lymphatic circulation, thereby facilitating comfortable breastfeeding. Furthermore, the present study found that breast engorgement was more common among mothers who delivered by **caesarean section (80.2%)** than among those who had a normal vaginal delivery (19.8%); however, this association was **not statistically significant** ($\chi^2 = 0.67, p > 0.05$). Although statistical significance was not established, this trend is comparable to the findings of **Hill and Humenick (2024)**, who reported that delayed breastfeeding initiation following caesarean delivery contributes to breast fullness and engorgement during the early postpartum period. The lack of statistical significance in the present study may be due to the limited sample size or the influence of other maternal and breastfeeding-related factors. Overall, these findings suggest that breast engorgement continues to be a prevalent postpartum challenge and that **Oketani breast massage is an effective, non-pharmacological intervention** for reducing breast engorgement and pain, thereby supporting successful breastfeeding and improving maternal comfort.

CONCLUSION:

The present study concludes that **breast engorgement is a common postpartum problem**, with a prevalence of **67.5%** among postnatal mothers, underscoring the need for early identification and timely management to promote successful breastfeeding. The findings demonstrate that **Oketani breast massage is an effective non-pharmacological intervention** that significantly reduces the severity of breast engorgement and associated pain, thereby enhancing maternal comfort and supporting optimal breastfeeding practices. Although breast engorgement was more frequently observed among mothers who underwent caesarean section, the association between the type of delivery and breast engorgement was **not statistically significant**, suggesting that other maternal and breastfeeding-related factors may also influence its occurrence. Overall, the study highlights the value of incorporating **Oketani breast massage into routine postnatal nursing care** as an evidence-based strategy to improve breastfeeding outcomes and maternal well-being. Further studies with larger sample sizes and diverse populations are recommended to strengthen the evidence and explore additional factors associated with breast engorgement.

LIMITATIONS:

- The study is conducted in a single hospital, limiting generalizability.
- It was limited to small sample size may have affected statistical power.
- Non-randomized (quasi-experimental) design may introduce selection bias.
- Short follow-up period; long-term effects were not assessed.
- Some confounding factors (e.g., breastfeeding technique, infant latch) were not controlled.

IMPLICATIONS:

The findings have implications for nursing practice, education, administration, and research.

Nursing Research:

Further research is needed with larger, diverse samples to confirm these findings. Longitudinal studies could also examine the long-term effects of Oketani massage on breastfeeding success and maternal confidence.

Nursing Education:

It is essential that nursing students and practicing nurses receive training on Oketani breast massage as part of their maternal and child health education. Workshops and practical demonstrations should be incorporated to build confidence in this skill.

Nursing Practice:

The study highlights that Oketani breast massage is an effective intervention for reducing breast engorgement and pain. Nurses should integrate this technique into routine postnatal care, ensuring early support, proper latch guidance, and frequent breastfeeding encouragement.

Nursing Management:

Hospital administrators should develop protocols that incorporate Oketani breast massage as a standard part of postnatal care. Regular in-service training sessions and continuing education programs should be conducted to equip staff with these skills.

RECOMMENDATIONS:

1. Incorporate Oketani breast massage into routine postnatal nursing care for the prevention and management of breast engorgement.
2. Educate postnatal mothers on early breastfeeding initiation, proper latch, and regular breast emptying to reduce the risk of breast engorgement.
3. Train nurses and midwives in the Oketani breast massage technique to ensure safe and effective implementation.
4. Provide additional breastfeeding support
5. Conduct larger multicenter randomized controlled studies

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