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Application of Oketani Massage to Increase Breast Milk Production in Postpartum Mothers After Caesarean Section at dr. Adhyatma, MPH Regional General Hospital, Central Java Province

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ABSTRACT
Postpartum mothers who undergo Caesarean section often experience delayed lactation, leading to insufficient breast milk production. This case study aims to describe the application of Oketani massage as a complementary therapy to enhance breast milk production in postpartum Caesarean section mothers at RSUD Dr. Adhyatma, MPH, Central Java Province. A descriptive case study design was employed involving three clients who met the inclusion criteria. Oketani massage was provided twice daily for 15 minutes over three consecutive days. Data were collected through assessment, interviews, observation, and documentation, and were analyzed based on changes in breastfeeding frequency, expressed breast milk volume, infant urination and defecation frequency, and LATCH scores before and after the intervention. The results showed improvements in breast milk production, breastfeeding frequency, infant elimination patterns, and LATCH scores in all clients. Outcome variations were influenced by maternal age, nutritional intake, and education level. These findings indicate that Oketani massage is a beneficial non-pharmacological intervention to support lactation among postpartum Caesarean section mothers and may be integrated into maternal nursing care to promote breastfeeding success.

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INTRODUCTION

Breast milk, commonly known as ASI, is the optimal source of nutrition for infants, and the World Health Organization (WHO) recommends exclusive breastfeeding from birth (Nurulita et al., 2025). According to WHO, exclusive breastfeeding is defined as providing only breast milk without additional liquids or solid foods for infants aged 0–6 months. Breast milk contains balanced amounts of proteins, carbohydrates, fats, and minerals essential for infant growth and possesses antibacterial properties that strengthen the immune system and reduce infant mortality (Sari, 2021). It is also more easily digested than

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formula milk, making adequate breast milk intake crucial for survival, growth, and development of infants and young children. Despite increased awareness regarding breastfeeding, stunting rates in many developing countries remain high (Masfufa et al., 2023).

Exclusive breastfeeding is one of the key strategies to reduce infant mortality in Indonesia. The 2022 Puskesmas report recorded that 73.2% of infants aged 0–6 months received exclusive breastfeeding, surpassing the Semarang City Strategic Plan target of 65.60%. Additionally, early initiation of breastfeeding (IMD) was performed successfully in 83.5% of newborns. These achievements were supported by healthcare workers' commitment, increased maternal knowledge of breastfeeding techniques, family involvement, and regulatory support such as Semarang Mayor Regulation No. 7 of 2013 on exclusive breastfeeding promotion (Pemerintah Kota Semarang, 2022).

However, breastfeeding challenges remain significant among mothers undergoing Caesarean section. Caesarean delivery often disrupts the lactation process and delays milk production. Mothers are frequently unable to initiate early breastfeeding within the first hour after birth due to postoperative pain, fatigue, medication effects, anxiety, and stress (Agustina & Keperawatan, 2020). These barriers reduce stimulation of prolactin and oxytocin—two key hormones in lactation (Ahmaniyah & Pratiwi, 2019). The increasing trend of Caesarean births intensifies this concern. WHO reports that Caesarean rates continue to rise globally, with an ideal benchmark of only 10–15%. However, the 2021 WHO Global Survey found that 46.1% of births in developing countries were via Caesarean section. Similarly, Indonesia's RISKESDAS (2021) recorded a Caesarean rate of 17.6%, influenced by medical indications such as fetal malpresentation, hemorrhage, eclampsia, premature rupture of membranes, prolonged labor, umbilical cord complications, placenta previa, hypertension, and others (Siagian et al., 2023).

Breast milk production itself is influenced by hormonal mechanisms involving prolactin, oxytocin, and human placental lactogen (HPL), which regulate alveolar development and milk ejection (Ferinawati & Hartati, 2019). Inadequate breastfeeding frequency may lead to duct obstruction, engorgement, mastitis, and insufficient nutrient intake for infants, resulting in fussiness, poor sleep, and inadequate weight gain (Fatmawati et al., 2019).

One intervention known to increase prolactin and oxytocin levels in postpartum Caesarean mothers is Oketani breast massage (Mahdizadeh-Shahri et al., 2021). First introduced by Sotomi Oketani in Japan, this technique is practiced in several countries, including Korea, Japan, and Bangladesh. Oketani massage enhances maternal–infant bonding, reduces breastfeeding difficulties, alleviates pain, improves comfort, and supports physical and emotional well-being (Sc et al., 2020). It increases milk production by softening breast tissue, improving elasticity of the areola and nipples, and facilitating infant latch-on through targeted pressure on the alveoli (Masfufa et al., 2023). Previous studies, including Sari (2021), have shown that Oketani massage improves early breastfeeding initiation, latch quality, swallowing frequency, nipple condition, and maternal comfort.

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While previous research has generally focused on controlled interventions and quantitative outcomes, the present study provides a unique contribution by offering a detailed, practice-based clinical case analysis of Oketani massage in postpartum Caesarean mothers within an actual hospital environment. This approach allows for deeper exploration of individual variations, real-time responses, and contextual factors influencing breastfeeding outcomes.

Therefore, the purpose of this study is to describe the application and effectiveness of Oketani massage in increasing breast milk production among postpartum mothers following Caesarean section in the Bougenville Ward of RSUD Dr. Adhyatma, MPH, Central Java Province.

METHODS

This study employed a descriptive design with a case study approach to de- scribe the implementation of Oketani massage in increasing breast milk production among postpartum mothers following Caesarean section at Dr. Adhyatma, MPH Hospital, Central Java Province. The case study method was chosen because it ena- bles an in-depth exploration of a specific social unit, resulting in more comprehensive and meaningful data. The research subjects were postpartum mothers who met the inclusion criteria: no history of breast surgery or abnormalities, singleton pregnancy, term gestation, and infants capable of breastfeeding. Conversely, mothers or infants requiring intensive care or having contraindications to breastfeeding were excluded. Participants were selected through purposive sampling, with three clients observed over four days.

The focus of this study was the application of Oketani massage as an interven- tion to enhance breast milk production in postpartum Caesarean mothers. The re- search instruments consisted of observations and nursing documentation. Data were collected through in-depth interviews to explore maternal complaints and subjective conditions, direct observations to assess clinical status, and review of medical docu- ments as supporting data. The procedure included providing explanations to clients, obtaining informed consent, and implementing the Oketani massage technique ac- cording to the established SOP.

The study was conducted on July 18, 2025, in the Bougenville Ward of Dr. Adhyatma, MPH Hospital, observing changes in breast milk production before and after the intervention. Data analysis involved several stages: data collection (inter- views, observations, documentation), data reduction to categorize subjective and ob- jective findings, data presentation in narrative or tabular form, and drawing conclu-sions by comparing the results with existing theories and previous studies. This ana- lytical process was used to evaluate the effectiveness of Oketani massage in increas- ing milk production.

Ethical principles were applied throughout the study, including obtaining in- formed consent signed by clients before any nursing action, ensuring anonymity by not disclosing full client identities, maintaining confidentiality regarding client issues during care, and upholding the principle of non-maleficence, meaning no harm, coer- cion, or

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exploitation of respondents. All procedures were carried out with respect for the rights and comfort of the clients throughout the case study.

RESULTS AND DISCUSSION

Case Study Results

The case study examined the implementation of Oketani breast massage as a complementary therapy to increase breast milk production in postpartum mothers following Caesarean section (SC) at RSUD Dr. Adhyatma, MPH, Central Java Prov- ince. Three respondents met the inclusion criteria: Client 1 (Mrs. I), Client 2 (Mrs. D), and Client 3 (Mrs. N). The results of this study include five stages of nursing care: assessment, diagnosis, intervention, implementation, and evaluation.

Table 4.1 Clinical Observations of Client 1 Before and After Oketani Massage

Date & Time	Pre-Intervention	Post-Intervention
18 July 2025, 09:00	Breastfeeding frequency: 6×/dayMorning milk expression: 2 ccEvening milk expression: 4 ccUrination/defecation: BAK 4×, BAB 1×	Breastfeeding frequency: 8×/dayMorning milk expression: 3 ccEvening milk expression: 7 ccUrination/defecation: BAK 5×, BAB 1×
19 July 2025, 09:00	Breastfeeding frequency: 8×/dayMorning: 5 ccEvening: 7 ccBAK 5×, BAB 1×	Breastfeeding frequency: 10×/dayMorning: 10 ccEvening: 12 ccBAK 6×, BAB 2×
20 July 2025, 09:00	Breastfeeding frequency: 10×/dayMorning: 6 ccEvening: 10 ccBAK 5×, BAB 2×	Breastfeeding frequency: 12×/dayMorning: 15 ccEvening: 20 ccBAK 8×, BAB 3×

After undergoing Oketani massage for three consecutive days, Mrs. I demonstrated increased breastfeeding frequency and breast milk production. Morning milk expression increased from 2 cc to 15 cc, and evening expression increased from 4 cc to 20 cc. Breastfeeding frequency also improved from 6 times to 12 times per day, indicating a positive response to the intervention.

Table 4.2 Clinical Observations of Client 2 Before and After Oketani Massage

Date & Time	Pre-Intervention	Post-Intervention
18 July 2025, 09:00	Breastfeeding frequency: 7×/dayMorning: 3 ccEvening: 5 ccBAK 4×, BAB 1×	Breastfeeding frequency: 8×/dayMorning: 5 ccEvening: 10 ccBAK 5×, BAB 1×
19 July 2025, 09:00	Breastfeeding frequency: 8×/dayMorning: 6	Breastfeeding frequency: 10×/dayMorning: 10

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Date & Time	Pre-Intervention	Post-Intervention
	ccEvening: 7 cc	ccEvening: 20 cc
20 July 2025, 09:00	Breastfeeding frequency: 11×/dayMorning: 10 ccEvening: 10 ccBAK 7×, BAB 2×	Breastfeeding frequency: 13×/dayMorning: 20 ccEvening: 30 ccBAK 8×, BAB 3×

Mrs. D experienced a significant increase in milk production and breastfeeding frequency. Morning milk output rose from 3 cc to 20 cc, while evening output increased from 5 cc to 30 cc. Daily breastfeeding frequency improved from 7 to 13 times per day, showing a strong positive response to Oketani massage.

Table 4.3 Clinical Observations of Client 3 Before and After Oketani Massage

Date & Time	Pre-Intervention	Post-Intervention
18 July 2025, 09:00	Breastfeeding frequency: 5×/dayMorning milk: noneEvening milk: 5 ccBAK 3×, BAB 1×	Breastfeeding frequency: 8×/dayMorning: 5 ccEvening: 12 ccBAK 4×, BAB 1×
19 July 2025, 09:00	Breastfeeding frequency: 8×/dayMorning: 5 ccEvening: 10 ccBAK 4×, BAB 1×	Breastfeeding frequency: 9×/dayMorning: 15 ccEvening: 20 ccBAK 5×, BAB 2×
20 July 2025, 09:00	Breastfeeding frequency: 9×/dayMorning: 12 ccEvening: 20 ccBAK 5×, BAB 2×	Breastfeeding frequency: 12×/dayMorning: 30 ccEvening: 40 ccBAK 7×, BAB 2×

After undergoing Oketani massage for three consecutive days, Mrs. N showed an increase in both breast milk production and breastfeeding frequency. On July 18, 2025, her breastfeeding frequency increased from 5 times per day to 8 times per day, with morning milk expression increasing from none to 5 cc, while evening milk expression remained at 5 cc. On July 19, 2025, her breastfeeding frequency rose from 7 times per day to 9 times per day, with morning milk expression increasing from 5 cc to 10 cc and evening expression from 10 cc to 20 cc. On July 20, 2025, breastfeeding frequency increased from 9 to 12 times per day, with morning milk expression rising from 10 cc to 30 cc and evening expression from 20 cc to 40 cc. The client's urination and defecation frequency also showed daily improvement. Overall, these data illustrate a positive response by Mrs. N to the Oketani massage intervention.

Discussion

The application of Oketani massage was carried out on three postpartum Cae- sarean section (SC) clients. Client 1 was 19 years old, P1A0, a housewife; Client 2 was 25 years old, P1A0, employed as a private-sector worker; and Client 3 was 33 years old, a private-sector worker, P2A0. All three clients received Oketani massage therapy for 15 minutes over three consecutive days, twice daily in the morning and afternoon, which resulted in

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increased breastfeeding frequency and increased infant urination/defecation frequency. Client 1 experienced an increase in breastfeeding fre- quency to 12 times, urination frequency to 8 times, defecation frequency to 3 times, and a LATCH score of 9. Client 2 experienced an increase in breastfeeding frequency to 13 times, urination frequency to 8 times, defecation frequency to 3 times, and a LATCH score of 10. Client 3 experienced an increase in breastfeeding frequency to 12 times, urination frequency to 7 times, defecation frequency to 2 times, and a LATCH score of 8.

The results among the three subjects showed differences in the increase of breast milk production, which may be influenced by several factors, including age, dietary patterns, and education. Age can affect the amount of breast milk produced because the age range of 20–35 years is considered adulthood, during which mothers are better able to solve problems, including seeking accurate information regarding exclusive breastfeeding. Mothers younger than 20 years old are considered not yet mature physically and emotionally, and thus tend to rely on others in providing ex- clusive breastfeeding. Mothers older than 35 years may begin to experience hormo- nal changes that reduce milk production, creating barriers to providing exclusive breastfeeding (Polwandari & Wulandari, 2021). Based on the data obtained, Client 1 was 19 years old, an age considered not yet fully mature physically or emotionally, resulting in lower milk production compared to Client 2 and Client 3. Meanwhile, Client 2 (25 years old) and Client 3 (33 years old) were in the range of healthy repro- ductive age, enabling them to produce more abundant breast milk. Additionally, Cli- ent 3 already had prior breastfeeding experience with her first child, enabling her to produce the highest milk volume among the three clients.

Dietary patterns also influence breast milk production because the glands re- sponsible for producing milk cannot function optimally without adequate nutrition. Nutritious food is one of the factors that help mothers provide proper nutrients to their babies, and the more nutritious food a mother consumes, the more her milk pro- duction increases (Niar et al., 2021). Assessment results showed that Client 2 and Client 3 consumed nutritious food and routinely took vitamins, whereas Client 1 con- sumed less nutritious daily meals, resulting in lower milk production compared with Clients 2 and 3.

Maternal education level also affects breast milk production because lower educational levels influence a mother's basic ability to make decisions, particularly regarding exclusive breastfeeding. Exclusive breastfeeding is not only influenced by educational level but also by the mother’s knowledge about breastfeeding (Tamar et al., 2023). This knowledge can be obtained through health counseling, brochures, and information provided by healthcare workers during Posyandu visits (Assriyah et al., 2020). Based on the data obtained, Client 2 and Client 3 had higher levels of education compared with Client 1, which may have influenced their ability to make informed decisions regarding exclusive breastfeeding.

Oketani massage is an appropriate solution for increasing breast milk produc- tion. Oketani massage is a breast massage technique focused on the areola and nip- ple by applying pressure to the pectoralis muscle to stimulate the process of breast milk

production. This massage aims to increase milk production, soften the breasts, and make the areola and nipples more elastic, thereby facilitating infant latch-on. Milk flow becomes smoother due to pressure applied to the alveoli (Masfufa et al., 2023).

CONCLUSION

Based on the implementation of Oketani massage over two days with four visits for Clients 1, 2, and 3 at RSUD Dr. Adhyatma, MPH, Central Java Province, the results indicate that all postpartum mothers who underwent Caesarean section experienced increased breast milk production and improved LATCH scores. The nursing diagnosis established for all clients was ineffective breastfeeding related to inadequate milk supply, as evidenced by infant urination frequency of fewer than eight times in 24 hours. The nursing care plan developed to address this issue included the application of Oketani massage, which was administered twice daily for 15 minutes over three consecutive days. Evaluation findings demonstrated increases in breastfeeding frequency, as well as improvements in infant urination and defecation patterns, suggesting that Oketani massage is an effective non-pharmacological intervention to enhance breast milk production in postpartum Caesarean section mothers. Future studies are recommended to involve a larger sample size to enhance generalizability and to compare Oketani massage with other lactation-support interventions to determine relative effectiveness. Additionally, longitudinal research is needed to examine the long-term impact of Oketani massage on exclusive breastfeeding rates and infant growth outcomes. Investigating psychological factors such as maternal stress, breastfeeding confidence, and support systems may also provide deeper insights into variables influencing lactation success.

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