

The Effect of Oketani Therapy on Increasing Breast Milk Production in Primiparous Postpartum Mothers

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Abstract

The postpartum period is critical for establishing exclusive breastfeeding during the first six months of an infant's life. However, primiparous postpartum mothers often experience inadequate milk production or impaired milk ejection due to flat or inverted nipples and ineffective milk flow. Oketani therapy is a non-pharmacological breast massage designed to improve breast tissue elasticity, stimulate the mammary glands, promote nipple protrusion, and facilitate milk ejection. This study aimed to determine the effect of Oketani therapy on breast milk production among primiparous postpartum mothers. This quantitative study employed a pre-experimental one-group pretest-posttest design. Data were collected using an observation sheet and the standard operating procedure for Oketani therapy. A total of 35 participants were selected through consecutive sampling. Breast milk production was compared before and after the intervention. The results showed a significant difference in breast milk production before and after Oketani therapy ($p < 0.001$), as indicated by an increased volume of breast milk after the intervention. Oketani therapy was effective in increasing breast milk production among primiparous postpartum mothers and may be recommended as a simple and practical independent nursing intervention.

Keywords: breast milk production, Oketani therapy, postpartum mothers, primiparous mothers

Pengaruh Terapi Oketani terhadap Peningkatan Produksi ASI pada Ibu Primipara Pascapersalinan

Abstrak

Masa pascapersalinan merupakan tahap penting untuk membangun pemberian ASI eksklusif selama enam bulan pertama kehidupan bayi. Namun, ibu primipara pada masa pascapersalinan sering mengalami produksi ASI yang tidak memadai atau gangguan pengeluaran ASI akibat puting datar atau terbenam serta aliran ASI yang tidak efektif. Terapi Oketani merupakan pijat payudara nonfarmakologis yang bertujuan meningkatkan elastisitas jaringan payudara, merangsang kelenjar payudara, membantu penonjolan puting, dan melancarkan pengeluaran ASI. Penelitian ini bertujuan mengetahui pengaruh terapi Oketani terhadap produksi ASI pada ibu primipara pada masa pascapersalinan. Penelitian kuantitatif ini menggunakan desain pre-experimental one-group pretest-posttest. Data dikumpulkan menggunakan lembar observasi dan prosedur operasional standar terapi Oketani. Sebanyak 35 peserta dipilih melalui teknik consecutive sampling. Produksi ASI dibandingkan sebelum dan sesudah intervensi. Hasil penelitian menunjukkan perbedaan produksi ASI yang bermakna sebelum dan sesudah terapi Oketani ($p < 0,001$), yang ditandai dengan peningkatan volume ASI setelah intervensi. Terapi Oketani efektif meningkatkan produksi ASI dan dapat direkomendasikan sebagai intervensi keperawatan mandiri yang sederhana dan praktis.

Kata kunci: ibu pascapersalinan, ibu primipara, produksi ASI, terapi Oketani

INTRODUCTION

The postpartum period is a critical stage during which a mother's body undergoes physiological, psychological, and hormonal adaptations following childbirth. These changes significantly influence a mother's readiness to initiate and maintain exclusive breastfeeding. The Indonesian Ministry of Health recommends exclusive breastfeeding from birth until an infant reaches six months of age. Nationally, the exclusive breastfeeding rate reached 74% in 2024. However, in Tangerang Regency, the proportion of infants who received exclusive

breastfeeding for the first six months of life was 63.4%. This figure is expected to improve with continued support from the local government.

Breast milk is the optimal and exclusive source of nutrition for infants during the first six months of life. At this stage, high-quality breast milk is essential because it plays a crucial role in supporting children's growth and development, particularly during the first two years of life (Ministry of Health of the Republic of Indonesia, 2022).

One of the most common challenges experienced by primiparous postpartum mothers is insufficient or delayed breast milk production. This condition can adversely affect both the mother's physical recovery and psychological adaptation during the postpartum period. Several contributing factors include limited breastfeeding experience, flat or inverted nipples, maternal anxiety, postpartum pain, and hormonal changes that interfere with milk secretion. Breast milk production is highly dependent on hormonal regulation and adequate breast stimulation. In addition, ineffective infant suckling may reduce breast stimulation, thereby resulting in suboptimal breast milk production and milk ejection (Sulaeman et al., 2019).

Insufficient breast milk production may negatively affect the nutritional intake of newborns, potentially compromising their growth and development. Management strategies to address this problem include both pharmacological and non-pharmacological interventions. One of the non-pharmacological approaches is Oketani therapy, a breast massage technique designed to improve breast tissue elasticity, stimulate the mammary glands, promote nipple protrusion, and enhance the milk ejection reflex. In addition to improving lactation, Oketani therapy may contribute to better maternal psychological well-being, enabling mothers to breastfeed more confidently and adequately meet their infants' nutritional needs (Sesi et al., 2022).

Failure to achieve exclusive breastfeeding may result from several factors, including delayed onset of lactation or insufficient breast milk production during the first few days after childbirth, maternal stress, ineffective infant latch and suckling, and the mode of delivery (Raden Isni Zahra Hayatinungrum, 2024).

Oketani therapy is a breast massage technique that focuses on stimulating the pectoralis muscles surrounding the breast. This stimulation is intended to improve the flexibility and elasticity of breast tissue, enhance lymphatic and blood circulation, and effectively stimulate the mammary glands to increase breast milk production. In addition to promoting lactation, Oketani therapy may help correct problematic nipple conditions, such as flat or inverted nipples, thereby enabling primiparous postpartum mothers to breastfeed more effectively and allowing infants to achieve a better latch and suckling pattern (Dhedfanka, 2023).

According to a study conducted by Purnani (2024), a routine Oketani massage intervention among postpartum mothers significantly increased breast milk volume compared with conventional breast care. The relaxation and physical comfort produced by the intervention may help reduce maternal anxiety, thereby promoting more effective oxytocin secretion and facilitating breast milk production. Oketani massage also assists mothers in overcoming breastfeeding difficulties while reducing postpartum breast pain and discomfort.

Similarly, a study by Sari and Syahda (2019) reported that, before receiving Oketani massage, breast milk production among postpartum mothers was less than 100 mL among 20 participants (80%), with a mean volume of 82.40 mL. After the intervention, breast milk production exceeded 100 mL among 20 participants (82%), with a mean volume of 105.20 mL. Statistical analysis demonstrated a significant effect of Oketani massage on breast milk production ($p < 0.001$), indicating that the intervention effectively increased lactation among postpartum mothers.

A preliminary study conducted by the researchers in the service area of the Bojong Nangka Community Health Center found that, among eight primiparous postpartum mothers, three (37.5%) experienced no breastfeeding difficulties, whereas five (62.5%) reported

breastfeeding problems during their first childbirth. Delayed onset of lactation associated with impaired prolactin secretion was identified as one of the major factors contributing to the risk of unsuccessful exclusive breastfeeding. Oketani massage, as a safe and effective non-pharmacological breast care intervention, has the potential to improve breast milk production and facilitate milk ejection by increasing breast tissue elasticity and softness while stimulating prolactin secretion.

This study aimed to examine the effect of Oketani therapy on breast milk production among primiparous postpartum mothers. Delayed stimulation of prolactin secretion is one of the factors contributing to insufficient breast milk production. Oketani therapy has been reported to enhance lactation by stimulating physiological mechanisms involved in milk production, making it an important intervention to investigate within the context of maternal nursing care.

METHOD

This study employed a quantitative research approach using a pre-experimental one-group pretest–posttest design. The study compared breast milk production before and after the administration of Oketani therapy in a single group of participants. The intervention consisted of Oketani therapy to promote breast milk production among primiparous postpartum mothers. A total of 35 respondents participated in the study. The inclusion criteria were primiparous postpartum mothers who experienced inadequate breast milk production and had no breast abnormalities or breast-related diseases.

Data were collected using an observational checklist to assess breast milk production, a standard operating procedure (SOP) for Oketani therapy, and an educational leaflet. Data were analyzed using the Wilcoxon signed-rank test to compare breast milk production before and after the intervention and to determine the statistical significance of the treatment effect. Measurement of the amount of breast milk produced using a measuring cup was carried out after the intervention. Measurements before and after the intervention were carried out using an observation instrument over 2 weeks. The researchers conducted validity and reliability tests on the observation instruments based on the amount of breast milk produced, breastfeeding duration, and breastfeeding frequency. The results of the validity and reliability tests yielded a value of >0.08 .

RESULTS AND DISCUSSION

1. Univariate Analysis

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	n (%)		P value
	Frequency	%	
Age			
20 – 35 years old	26	(74 %)	0.490
> 36 years old	9	(26 %)	
Education			
Senior/Vocational High School	25	(71 %)	0.210
Higher education	10	(29 %)	
Employment status			
Unemployed	20	(57 %)	0.149
Employed	15	(43 %)	

Based on Table 1, most postpartum mothers were between 20 and 35 years of age (26 respondents, 74%). The majority had completed senior high school or vocational high school (25 respondents, 71%). Most respondents were unemployed and identified as housewives (20 respondents, 57%).

Table 2. Distribution of Breast Milk Flow Before and After Oketani Therapy

Smooth Breast Milk Flow	Pre test		Post test		P value
	N	%	N	%	
Not smooth	27	77	35	100.0	0.003
Smooth	8	23			
Total	35	100.0	35	100.0	

As shown in Table 2, before the intervention, 27 primiparous postpartum mothers (71%) did not have smooth breast milk flow, whereas 8 (23%) had smooth breast milk flow. Following Oketani therapy, all participants (35 mothers, 100%) demonstrated good breast milk production. Statistical analysis using the Wilcoxon signed-rank test revealed a statistically significant improvement in breast milk flow after the intervention ($p < 0.003$), indicating that Oketani therapy effectively increased breast milk production among primiparous postpartum mothers.

Table 3. Distribution of Breast Milk Production Before and After Oketani Therapy

Breast Milk Production	Pre test		Post test		P value
	N	%	N	%	
Less	25	71	35	100.0	0.000
More	10	29			
Total	35	100.0	35	100.0	

As shown in Table 3, before the intervention, 25 primiparous postpartum mothers (71%) had less breast milk production, whereas 10 (29%) had more breast milk production. Following Oketani therapy, all participants (35 mothers, 100%) demonstrated good breast milk production. Statistical analysis using the Wilcoxon signed-rank test revealed a statistically significant improvement in breast milk production after the intervention ($p < 0.000$), indicating that Oketani therapy effectively increased breast milk production among primiparous postpartum mothers.

Table 4. Mean Breast Milk Production Before and After Oketani Therapy

Breast Milk Production	N	Mean	SD	p-value
Pre	35	26.88	2.726	0.249
Post	35	44.27	2.914	0.266

As presented in Table 4, the mean breast milk production increased from 26.88 before the intervention to 44.27 after Oketani therapy among primiparous postpartum mothers, indicating an improvement in breast milk production following the intervention.

Bivariate analysis was conducted to determine whether there was a statistically significant difference in breast milk production before and after Oketani therapy. This analysis was performed to test the study hypothesis. The Wilcoxon signed-rank test was used for statistical analysis, with all analyses performed using SPSS software.

Table 5. Wilcoxon Signed-Rank Test Results for Breast Milk Production Before and After Oketani Therapy

Variable	(p-value)
Z Breast milk production (Pre-test vs. Post-test)	-4.461
	0.000

Based on the results presented in Table 5, the Wilcoxon signed-rank test yielded a Z-value of -4.461 and a p -value of <0.001 , which was below the significance level of 0.05. Therefore, the null hypothesis was rejected, and H_a was accepted. It can therefore be

concluded that Oketani massage had an effect on increasing breast milk production among postpartum mothers, as evidenced by the pretest and posttest results. Based on the study of 35 respondents regarding the effect of Oketani therapy on increasing breast milk production among primiparous postpartum mothers, the following discussion is presented:

Respondent characteristics included age, education, and occupation. In this study, the majority of respondents were aged 20–35 years (26 respondents, 74%); most postpartum mothers had completed senior high school or vocational high school (25 respondents, 71%); and most postpartum mothers were homemakers (20 respondents, 57%).

Maternal age is an important factor associated with successful lactation. According to Hidayati (2012), mothers younger than 20 years are still in the developmental stage, including the maturation of their reproductive organs, such as the breasts. In contrast, mothers older than 35 years may experience a gradual decline in reproductive function, which can reduce the physiological capacity to breastfeed effectively. Consequently, women aged 20–35 years are generally considered to be within the optimal reproductive age for breastfeeding.

In the present study, most participants had completed senior high school or vocational high school (25 respondents, 71%). A higher level of education is generally associated with greater knowledge, particularly regarding the importance and benefits of exclusive breastfeeding. Knowledge is a key determinant of health-related behavior, as individuals with higher educational attainment are more likely to understand health information and adopt appropriate breastfeeding practices.

Nurma (2014) reported that individuals with higher educational attainment tend to respond more rationally to health information and are better able to evaluate the benefits of recommended health practices. However, advances in information and communication technology have substantially improved access to health information, reducing the influence of educational level as the primary determinant of exclusive breastfeeding practices (Meiyana, 2010). Therefore, mothers with lower educational attainment should be provided with appropriate breastfeeding education and counseling to enhance their understanding of exclusive breastfeeding and support successful breastfeeding practices.

In this study, the majority of respondents were housewives, accounting for 20 participants (57%). Similar findings were reported by Hafni (2016), who found that, among 99 respondents, 74 mothers (74.7%) were unemployed compared with those who were employed. The tendency for mothers not to provide exclusive breastfeeding is often associated with employment-related challenges, particularly when the workplace does not provide childcare facilities or a designated lactation room. If the workplace is located close to home, mothers may return home during breaks to breastfeed their infants or ask someone to bring the baby to the workplace (Dalimunthe, 2011). In addition, working mothers can improve their knowledge of lactation management as an effort to achieve successful breastfeeding and meet their infants' breast milk requirements (Happy, 2018).

Based on the results of this study regarding breast milk production before massage therapy among primiparous postpartum mothers, it was found that 25 respondents (71%) had poor breast milk production before receiving Oketani massage. These findings indicate that, before the administration of Oketani massage, the majority of primiparous postpartum mothers had inadequate breast milk production. Breast milk production can be influenced by many factors. The main factors affecting breast milk production are hormonal factors, particularly prolactin and oxytocin. When an infant suckles at the mother's breast, neurohormonal stimulation occurs in the nipple and areola. This stimulation is transmitted through the vagus nerve to the pituitary gland and subsequently reaches the anterior pituitary lobe.

Prolactin is released when the stimulation reaches the anterior pituitary, enters the bloodstream, and reaches the mammary glands, where it stimulates milk production.

Oxytocin stimulates the milk ejection reflex. Infants naturally exhibit a rooting reflex, in which they turn their heads toward the mother's breast when brought close to it. This reflex further stimulates the release of oxytocin. Insufficient secretion of these two hormones may result in inadequate breast milk production, thereby affecting successful breastfeeding (Qomar, 2018).

Efforts to increase breast milk production can be undertaken through early and routine breast care, improving breastfeeding techniques, and consuming foods that may enhance breast milk production.

Based on the results of this study regarding breast milk production after Oketani massage among primiparous postpartum mothers, it was found that all respondents (35 mothers, 100%) experienced adequate breast milk production after the intervention. These findings indicate an improvement in breast milk production before and after the administration of Oketani massage.

Breast milk is the first natural source of food and drink for infants, providing all the vitamins, nutrients, and minerals required to support optimal growth during the first six months of life. It also contains maternal antibodies that contribute to the infant's immune defense and help protect against disease. Therefore, breast milk is considered the most complete and ideal source of nutrition for infants because it contains specific nutrients required for optimal growth and development. No additional food or liquid is required during the first six months other than breast milk (Sugito, 2016).

Breastfeeding provides numerous benefits for both infants and mothers. Breast milk contains a high concentration of maternal antibodies that help protect infants against infections and strengthen their immune system. For mothers, breastfeeding is one of the most effective and natural ways to promote postpartum weight loss, as it can burn approximately 200–250 additional calories per day. Breastfeeding also facilitates uterine involution, enabling the uterus to return to its normal size more rapidly while reducing the risk of postpartum hemorrhage. Furthermore, women who breastfeed have a lower incidence of osteoporosis and several types of cancer, including breast cancer and ovarian cancer (Lestari, 2013).

Oketani massage can improve an infant's ability to suckle effectively. Consequently, the more strongly the infant suckles and the more frequently breastfeeding occurs, the greater the stimulation of breast milk production. This mechanism differs from that of conventional breast massage. Oketani massage makes the breast tissue softer and increases the elasticity of the areola and nipple, thereby facilitating infant latch and breastfeeding. In addition, milk flow becomes smoother due to the pressure applied to the alveoli during the massage technique (Kbair & Tasnin, 2009).

Based on the findings of this study involving 35 respondents, Oketani massage significantly improved breast milk production. This was demonstrated by the results of the Wilcoxon signed-rank test, which yielded a test statistic of $Z = -4.461$ and a p -value < 0.001 . Since the p -value was lower than the predetermined significance level of 0.05, a statistically significant difference in breast milk production was observed before and after the administration of Oketani massage. Therefore, the alternative hypothesis (H_a) was accepted.

These findings are consistent with the study conducted by Vania Putri and Syukrianti Syahda (2020), entitled "The Effect of Oketani Massage on Breast Milk Production Among Postpartum Mothers in the Working Area of Bangkinang Kota Community Health Center." Using a dependent t-test, the study reported that the mean breast milk production before Oketani massage was 82.40 mL, whereas the mean breast milk production after the intervention increased to 105.20 mL. Statistical analysis showed a p -value < 0.001 , indicating a significant increase in breast milk production following Oketani massage. These findings

further support the effectiveness of Oketani massage in improving breast milk production among postpartum mothers.

This effect may be attributed to the ability of Oketani massage to improve and facilitate breast milk production by enhancing blood and lymphatic circulation, stimulating milk synthesis, and improving nipple shape. In addition, Oketani massage may reduce breast pain and discomfort experienced during the postpartum period. Furthermore, adequate maternal nutritional intake and support from family members are important factors that contribute to successful breastfeeding, as both may influence the adequacy of breast milk production.

CONCLUSION

Based on the findings from the 35 respondents included in this study, it can be concluded that there was a statistically significant difference in breast milk production before and after Oketani massage ($p < 0.001$). These findings indicate that Oketani massage had a significant positive effect on breast milk production among primiparous postpartum mothers.

The findings of this study suggest that Oketani massage may serve as an alternative nursing intervention to improve breast milk production. This technique may also contribute to increasing the knowledge of healthcare professionals and primiparous postpartum mothers experiencing inadequate breast milk production, thereby facilitating its application in routine postpartum care and daily breastfeeding practice.

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