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Differences in The Effect of Breast Care and Oketani Massage on Breast Milk Production in Postpartum Mothers

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A B S T R A C T

The low breastfeeding coverage is proven by the high rate of infant stunting in Indonesia. Apart from inadequate implementation of breast care, maternal diet, and psychology also play a role in the limited coverage of exclusive breastfeeding. This research aimed to determine the mother's ability to produce breast milk after breast care and *Oketani* massage. Dupak Community Health Center was the research location, and a quasi-experimental nonrandomized control group pretest-posttest design was used. Thirty-two postpartum mothers were selected using purposive sampling. Breast milk production observation sheet as a research instrument. Data analysis with Wilcoxon and Mann Withney U. Results: The Mann Withney U test revealed no difference in the effect of breast care and massage on postpartum mothers' ability to produce breast milk, with a p-value of 0.093, meaning that H0 is accepted and H1 is rejected. The Wilcoxon test revealed that postpartum mothers' ability to produce breast milk was influenced by breast care and massage, with a p-value of 0.001. Conclusion: There is no real difference between the effects of *Oketani* massage and breast care on breast milk supply. It is recommended that more researchers develop new intervention strategies by including characteristics that influence postnatal mothers' ability to produce breast milk.

INTRODUCTION

Indonesia still has a low level of breastfeeding distribution; in 2022, the breastfeeding rate is only 67.96%, decreasing compared to 2021 by 69.7%; this requires intensive support so that the coverage can increase (WHO, 2023). The infant mortality rate is the leading indicator of the country's health. Breastfeeding within 6 months can reduce the infant mortality rate by up to 13 percent (Surabaya City Health Profile, 2022). The percentage of babies who are exclusively breastfed in East Java is 69.72% (BPS, 2022). In Surabaya, mothers who breastfeed exclusively in 2022 get 73.56%, and at the Dupak Health Center, they get 66.7% (Kusuma, 2023).

Low breastfeeding coverage is due to a lack of breast milk production and production. Lack of breast milk production is caused by a lack of nutritious nutritional intake, maternal anxiety, and fear, which results in mental health disruption, trauma after using hormonal contraceptives, and lack of self-care for the breast (Pratiwi, 2022). Several factors, such as diet, mental health, breast care, contraceptive use, birth weight, smoking habits, and alcohol consumption, as well as the frequency of breastfeeding and breastfeeding, can lead to unsmooth breast milk production (Qiftiyah et al., 2021; Sholeha et al., 2019; Yanti et al., 2018).

Poor breast milk production will have an impact on babies, such as malnourished babies, susceptible to diseases and infections, suboptimal growth and development, and prone to obesity in adulthood (Wulandari et al., 2022). Prevention that can be done so that this incident does not occur is that health

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workers can provide positive changes to breastfeeding mothers by providing information about breast care, education, and counseling during pregnancy and postpartum periods. Breast care aims to facilitate blood circulation so as to prevent inhibition of the production and production of breast milk, as well as prevent dirty and drowning nipples so that the baby does not have difficulty in breastfeeding, avoiding swelling or damage of breast milk, mastitis, and Breast abscesses can also result in infection (Qiftiyah et al., 2021; Sitepu et al., 2023). In addition to breast care, octane massage can also be done.

Oketani massage is a gentle massage for breastfeeding mothers. The purpose of Oketani massage is to strengthen the pectoralis muscles, which are helpful in increasing milk production and softening and plumping the breasts so that it is easier for babies to take breast milk (Sudirman & Jama, 2019).

Based on this problem, the researcher will examine the effect of breast care and *Oketani* massage, so this study is titled The Difference in the Influence of Breast Care and *Oketani* Massage on the Milk Production of Postpartum Mothers.

The formulation of the problem is "Is there a difference in the influence of breast care and *Oketani* massage on the production of milk for postpartum mothers?". The purpose of the study was to analyze the difference in the influence of breast care and *Oketani* massage on the production of breast milk in postpartum mothers.

METHOD

The design used in the study is a Nonrandomized Control Group Pretest-Posttest. The purposive sampling technique is carried out by visiting the home of the postpartum mother, providing an explanation to the mother about the purpose and benefits of the research to be carried out, providing an application sheet to become a respondent, providing informed consent, observing breast milk production using observation sheets, provide breast care interventions or massage *Oketani*. This research was conducted for three days, and the mother will be observed again on the third day using an observation sheet of breast milk production. The population is 47 postpartum mothers, the sample is taken based on inclusion criteria, namely postpartum mothers from day 5 to day 10, physiological postpartum mothers, and postpartum mothers with normal breasts. The researcher calculated and determined the sample using the federal formula and obtained as many as 16 postpartum mothers for the breast care experimental group and 16 postpartum mothers for the *Oketani* massage control group. Data collection is primarily done with an observation sheet of breast milk production. The analysis technique used is univariate analysis to process data from observation sheets so that the characteristics of postpartum mothers are obtained. Bivariate analysis to determine the relationship or correlation, influence, and difference between the two variables using the Wilcoxon and Mann Whitney U tests.

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RESULT

Table 1. Characteristics of Postpartum Mothers

Characteristics		Experimental Group Breast Care		Control Group *Oketani* Massage	
		n	%	n	%
Age	< 20 Years	2	12,5	3	18,75
	20-35 Years	14	87,5	13	81,25
	>35 Years	0	0	0	0
Education	No School	0	0	0	0
	Elementary School	1	6,25	1	6,25
	Junior High School	2	12,5	5	31,25
	Senior High School	11	68,75	9	56,25
	Diploma/Bachelor	2	12,5	1	6,25
Work	Not Working	9	56,25	13	81,25
	Private/Entrepreneur	5	31,25	2	12,5
	Civil Servants	0	0	0	0
	Laborer	2	12,5	1	6,25
Parity	Primipara	4	25	8	50
	Multipara	10	62,5	7	43,75
	Grandemulti	2	12,5	1	6,25

Source: Primary Data, 2024

The characteristics of postpartum mothers in the experimental group were obtained from almost all postpartum mothers (87.5%) with the age of 20-35 years, most of the postpartum mothers had their last high school education (68.75%), most of the postpartum mothers were not working (56.25%), and most of the postpartum mothers (62.5%) had a history of multipara parity by having children ≥ 2.

Table 2. Postpartum Mother's Breast Milk Production Before Breast Care and *Oketani* Massage

Group	Category	Breast Milk Production	
		n	%
Experimental Group: Breast Care	Less Smooth	14	87,5
	Quite Smooth	2	12,5
	Fluent	0	0
Control Group: *Oketani* Massage	Less Smooth	13	81,25
	Quite Smooth	3	18,75
	Fluent	0	0
Total		16	100

Source: Primary Data, 2024

Before breast treatment, almost all (87.5%) of breast milk production was not smooth, and before *Oketani* massage was carried out almost entirely (81.25%) was not smooth.

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Table 3. Postpartum Mother's Breast Milk Production After Breast Care and *Oketani* Massage

Group	Category	Breast Milk Production	
		n	%
Experimental Group: Breast Care	Less Smooth	4	25
	Quite Smooth	5	31,25
	Fluent	7	43,75
Control Group: *Oketani* Massage	Less Smooth	2	12,5
	Quite Smooth	9	56,25
	Fluent	5	31,25
Total		16	100

Source: Primary Data, 2024

After breast treatment, almost half of the postpartum mothers (43.75%) produced smooth milk, and after a massage of the mother, most (56.25%) produced relatively smooth milk.

Table 4. Analysis of the Effect of Breast Care on Breast Milk Production in Postpartum Mothers

Breast Milk Production	Experimental Group			
	Before Breast Care		After Breast Care	
	n	%	n	%
Less Smooth	14	87,5	4	25
Quite Smooth	2	12,5	5	31,25
Fluent	0	0	7	43,75
Total	16	100	16	100
Wilcoxon signed-rank test	*p-value* 0,001			

Source: Primary Data, 2024

Before breast treatment, almost all postpartum mothers (87.5%) had less smooth milk production, while after breast treatment, almost half of postpartum mothers (43.75%) had smooth milk production. Data analysis with Wilcoxon resulted in a p-value of 0.001, indicating that breast care affects breast milk production.

Table 5. Analysis of the Effect of *Oketani* Massage on Breast Milk Production in Postpartum Mothers

Breast Milk Production	Control Group			
	Before *Oketani* Massage		After *Oketani* Massage	
	n	%	n	%
Less Smooth	13	81,25	2	12,5
Quite Smooth	3	18,75	9	56,25
Fluent	0	0	5	31,25
Total	16	100	16	100
Wilcoxon signed-rank test	*p-value* 0,001			

Source: Primary Data, 2024

Before the *Oketani* massage, almost all (81.25%) of the breast milk was not smooth; after the *Oketani* massage, most (56.25%) were obtained quite smoothly. Data analysis with Wilcoxon produced a p-value of 0.001, meaning that *Oketani* massage affected breast milk production.

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Table 6. Analysis of Differences in the Effects of Breast Milk Production in Postpartum Mothers After Breast Care and *Oketani* Massage

Breast Milk Production	Post Test 2 Groups			
	Breast Care		*Oketani* Massage	
	n	%	n	%
Less Smooth	4	25	2	12,5
Quite Smooth	5	31,25	9	56,25
Fluent	7	43,75	5	31,25
Total	16	100	16	100
Mann Whitney U Test	*p-value* 0,093			

Source: Primary Data, 2024

Based on the Mann-Whitney U test, it produces a p-value of 0.093, which indicates that H0 is accepted and H1 is rejected. Breast care and *Oketani* massage both stimulate breast milk production. Therefore, it can be said that both are equally effective in promoting breast milk production.

DISCUSSION

Before breast care and massage were given, almost all postpartum mothers had less smooth milk production. In accordance with previous research, the unsmooth production of breast milk is influenced by other factors such as food, psychological, breast care, contraceptive use, baby weight at birth, smoking, alcohol consumption, and frequency of breastfeeding and breastfeeding (Qiftiyah et al., 2021; Sholeha et al., 2019; Yanti et al., 2018). This is in line with other studies, where breast milk production is not smooth before breast care and massage (Sari & Syahda, 2020; Wulandari et al., 2022). Based on research by Rosmalia and Silpi, parity is an important factor in postpartum mothers. An individual's understanding of how to exclusively breastfeed can be improved by the experience that mothers gain during breastfeeding, which is related to parity (Mother and Breastfeeding, 2023). This is in line with the findings of another researcher, who found that the level of breastfeeding experience of a mother correlated with her parity (Asrina et al., 2021). According to researchers, less smooth milk production can be caused by food or nutrients consumed by mothers. The experience of breastfeeding mothers before is also a factor causing breast milk production to be smooth; in this study, mothers with a history of primipara and multipara parity get breast milk less smoothly compared to mothers with a history of grande-multi parity milk production smooth since the third day of puerperium.

After breast treatment, almost half of the postpartum mothers produce smooth milk, and after a massage, most of them produce relatively smooth milk. In this study, the results were obtained that the smooth production of breast milk can be affected by breast care and massage (Sari & Syahda, 2020; Wulandari et al., 2022). Age, parity, and education are also important factors for postpartum mothers (Asrina et al., 2021). The age of the mother can affect the level of maturity in thinking, as well as parity related to a mother's experience. Postpartum mothers' education also affects their way of thinking and receiving

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information. A person's knowledge and ease of absorbing new information are directly proportional to their level of education. On the other hand, a person's attitude in accepting new knowledge will be hampered due to lack of education. According to researchers, breast care and *Oketani* massage, which are applied for 3 days, significantly affect breast milk production. Both are very influential, and they can be used as an alternative to facilitate breast milk production. Besides that, easy breast care and *Oketani* massage movements are also the reasons for postpartum mothers to do it themselves at home. The success carried out by the researcher is inseparable from midwives or other health workers, where officers who are good at conveying information and inviting postpartum mothers to carry out breast care and *Oketani* massage, as well as age, education, and maternal parity are also factors in success in carrying out breast care and *Oketani* massage. The productive age and education level of postpartum mothers also affect the way researchers understand or receive information, so researchers must be able to convey it well and clearly according to the characteristics of postpartum mothers. The history of maternal parity also affects the smooth production of breast milk due to previous breastfeeding experience. Mothers with a history of primipara and multipara parity often experience less smooth breastfeeding compared to mothers with a history of grande-multi parity whose milk production has been smooth since the third day of puerperium.

Before breast treatment, almost all postpartum mothers get less smooth milk production, while after breast treatment, almost half of postpartum mothers get smooth breast milk. Data analysis with the Wilcoxon test revealed that breast milk production is affected by breast care. After three days of breast care therapy with sequencing and massage performed by researchers, mothers, husbands, and families, postpartum women showed substantial improvements in their breast health. There is evidence of this from the Wilcoxon Signed Rank Test. The pituitary gland is affected to produce prolactin and oxytocin when the mammary glands are stimulated using the massage and massage techniques used in breast care. Several hormones, such as prolactin and oxytocin, affect the milk supply to breastfeeding mothers, which ultimately increases the amount of breast milk produced (Purwanto et al., 2018).

This research is in line with what Wulandari conducted, and it has a significant impact on the smooth production of breast milk before and after breast care (Wulandari et al., 2022). According to the theory that supports this study, breast care is one of the necessary life needs after childbirth and is an important component of the mother's routine after childbirth. Taking care of the breasts aims to improve blood flow and reduce the possibility of blockage of the milk ducts, which in turn increases milk production and secretion (Mustika et al., 2018). According to researchers, mothers who take care of their breasts during the postpartum period have a positive influence on breast milk production so that it becomes smooth. In contrast to mothers who do not apply it, breast milk production becomes less smooth. Easy breast care movements can also help mothers do it themselves at home, so this breast care can be used as an alternative to facilitate breast milk production.

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Breast milk production after being massaged by the *Oketani* turned out to be relatively smooth, in contrast to before the massage, where the majority of postpartum mothers were not smooth. Based on these findings from the Wilcoxon test, it was concluded that the milk production of postpartum mothers was influenced by *Oketani* massage. After three days of *Oketani* massage performed by researchers, mothers, husbands, and families, postpartum women showed substantial improvements in breast health. There is evidence of this from the Wilcoxon Signed Rank Test. *Oketani* massage is a breast massage method with the aim of stimulating the mother to produce more milk by focusing on the areola and nipple area. In addition to the benefits mentioned above, octane massage can relieve muscle pain, soften breast tissue, and improve the elasticity of the areola and nipples, all of which facilitate breastfeeding in babies (Halimatussakdiah et al., 2023; Mulyaningsih et al., 2019). According to researchers, mothers who do *Oketani* massage during the postpartum period will have a good impact on breast milk production so that it becomes smooth; compared to mothers before doing *Oketani* massage, breast milk production is less smooth. The easy movement of octane massage is one of the reasons postpartum mothers do their octane massage at home.

Researchers found that mothers who received breast care and *Oketani* massage produced more breast milk. Theoretically, postpartum mothers can increase breast milk production by massaging their breasts twice a day, for three consecutive days, for a total of fifteen minutes per session. (Rahayu et al., 2023; Taqiyah et al., 2019). This theory is in accordance with the research results that show that these two treatments affect breast milk production in postpartum mothers.

According to researchers, breast care and *Oketani* massage are both helpful in facilitating breast milk production for postpartum mothers, so both are alternatives for facilitating breast milk production. Apart from that, easy movements are the main reason why mothers do their own breast care and massage at home. The success of the researchers cannot be separated from that of the midwives or other health workers, where the officers are good at conveying information and inviting postpartum mothers to carry out breast care and *Oketani* massage. The characteristics of the mother's age, education, and parity are also factors in success in carrying out breast care and *Oketani* massage. The productive age and educational level of postpartum mothers influence the way the information conveyed by researchers is understood or received, so researchers must be able to convey it well and clearly according to the characteristics of postpartum mothers. The mother's history of parity also influences the smooth production of breast milk due to previous breastfeeding experience. Mothers with a history of primiparous and multiparous parity often experience less smooth breastfeeding compared to mothers with a history of grande multiparous parity whose breast milk production has been smooth since the third day of postpartum.

CONCLUSION

This research concludes that there is no significant difference in the effect of breast care and Oketani massage on breast milk production in postpartum mothers, as indicated by the Mann-Whitney U test with a p-value of 0.093. Both interventions are equally effective in promoting the smooth production of breast milk. Breast care was observed to improve milk production, with 43.75% of postpartum mothers achieving smooth milk flow after treatment, compared to 12.5% before treatment. Similarly, the Oketani massage resulted in 31.25% of postpartum mothers achieving smooth milk flow after the intervention, compared to those before the massage.

The research findings also highlighted the importance of implementing both breast care and Oketani massage as complementary interventions in postpartum care. They provide practical and evidence-based strategies to support lactation, ensuring that postpartum mothers can achieve optimal milk production to meet the nutritional needs of their infants. Further research may explore long-term effects, maternal satisfaction, and potential benefits when these interventions are combined.

REFERENCES

Badan Pusat Statistik. (2022). *Persentase bayi usia kurang dari 6 bulan yang mendapatkan ASI eksklusif menurut provinsi (persen), 2021-2022*. Diakses pada 11 Maret 2025, dari https://www.bps.go.id/id/statistics-table/2/MTM0MCMy/persentase-bayi-usia-kurang-dari-6-bulan-yang-mendapatkan-asi-eksklusif-menurut-provinsi.html

Halimatussakdiah, Lestari, K. P., & Hamidah. (2023). Penerapan Oketani breast massage (OBM) pada ibu postpartum dengan pendekatan evidence-based nursing practice (EBNP). *Jurnal Sago Gizi dan Kesehatan*.

Kusuma, L. C. R. (2023). Perbedaan jumlah produksi ASI ibu menyusui sebelum dan sesudah diberikan SULAIKA (susu kedelai katuk) dan susu kedelai di wilayah kerja Puskesmas Dupak Surabaya. *Media Gizi Kesmas, 12*(2), 649–655.

Mustika, D. N., Nurjanah, S., & Ulvie, Y. N. S. (2018). *Buku ajar asuhan kebidanan nifas* [Internet]. Akademi Kebidanan Griya Husada Surabaya. Diakses pada 11 Maret 2025, dari http://repository.unimus.ac.id/3795/1/1.BukuAjarASIkomplit.pdf

Mulyaningsih, S., Sondakh, L., & Angge, W. A. (2019). Pengaruh pijat oksitosin dan otot pectoralis major terhadap kelancaran pengeluaran ASI pada ibu nifas hari keempat sampai hari kelima di wilayah kerja Puskesmas Limboto. *Jurnal Kesehatan, 8*(2), 77–89. Diakses pada 11 Maret 2025, dari http://journal.umgo.ac.id/index.php/madu

Pratiwi, R. D., Chinaldy, R., & Romlah, S. N. (2022). Analisis pengetahuan ibu dengan keberhasilan toilet training anak usia toddler (literatur review study). Edu Dharma Journal: Jurnal Penelitian dan Pengabdian Masyarakat, 6(1), 43–52

Profil Kesehatan Kota Surabaya Tahun 2020. (2020). *Dinas Kesehatan Kota Surabaya*.

Purwanto, T. S., Nuryani, & Rahayu, T. P. (2018). *Buku ajar asuhan kebidanan nifas dan menyusui* (A. H. Ngestiningrum, Ed.). Magetan: Prodi Kebidanan Magetan, Poltekkes Kemenkes Surabaya.

Qiftiyah, M., Rahmawati, E. S., Utami, A. P., & Hurin'in, N. M. (2021). Hubungan frekuensi perawatan payudara dengan kelancaran produksi ASI pada ibu nifas hari ke-4. *Jurnal Ilmiah Kesehatan, 14*(1), 39.

Rahayu, F., Setyowati, E. R., & Studi Ilmu Keperawatan, P. D. (2023). Penerapan pijat Oketani pada Ny. S untuk mengatasi menyusui tidak efektif. *Borobudur Nursing Review, 3*(2), 92–104.

Sari, V. P. U., & Syahda, S. (2020). Pengaruh pijat Oketani terhadap produksi ASI pada ibu nifas di wilayah kerja Puskesmas Bangkinang Kota. *Jurnal Doppler, 4*(2), 117–123. Diakses pada 11 Maret 2025, dari https://core.ac.uk/download/pdf/354977898.pdf

Sholeha, S. N., Sucipto, E., & Izah, N. (2019). Pengaruh perawatan payudara terhadap produksi ASI ibu nifas. *Oksitosin: Jurnal Ilmiah Kebidanan, 6*(2), 98–106.

Sitepu, J., Sembiring, A., & Mangkuji, B. (2023). Description of breast care on milk production in postpartum mothers in the independent practice of the midwife Helen Tarigan and the Sahtama Clinic, Medan District Profits of 2021. *Formosa Journal of Science and Technology, 2*(6), 1445–1454.

Sudirman, S., & Jama, F. (2019). Pelatihan terapi pijat Oketani ibu postpartum pada perawat/bidan di RS Bersalin Masyita Makassar. *Jurnal Pengabdian Kesehatan, 2*(2).

Taqiyah, Y., Sunarti, S., & Rais, N. F. (2019). Pengaruh perawatan payudara terhadap bendungan ASI pada ibu postpartum di RSIA Khadijah I Makassar. *Jurnal Islam Keperawatan, 4*(1), 12.

World Health Organization. (2023). *World Breastfeeding Week* [Internet]. Diakses pada 11 Maret 2025, dari https://www.who.int/indonesia/news/events/world-breastfeeding-week/2023#:~:text=CakupanASIeksklusifIndonesiapada,agarcakupaninibisameningkat

Wulandari, E. W., Mutiara, V. S., Oktarina, M., Yosiyanti, M., & Keraman, B. (2022). Perawatan payudara meningkatkan produksi ASI ibu nifas. *Jurnal Ilmu Kedokteran dan Kesehatan, 9*(1), 487–491.

Yanti, H. F., Yohanna, W. S., & Nurida, E. (2018). Kelancaran produksi ASI pada ibu postpartum ditinjau dari inisiasi menyusu dini dan isapan bayi. *Jurnal Aisyah: Jurnal Ilmu Kesehatan, 3*(1), 39–46