



## The Effect of Stimulation Methods on Breast Treatment for Breast Milk Smoothness in Postpartum Mother

Authors

Nurlaila<sup>1</sup>, Nelly Indrasa<sup>2</sup>

<sup>1,2</sup>Midwifery Department, Tanjung Karang Ministry of Health Polytechnic

\*Corresponding Author

Nurlaila

Email: [nurlailaherman@yahoo.com](mailto:nurlailaherman@yahoo.com)

### Abstract

**Background:** According to 2013 health research the coverage of infants received breastfeeding exclusively in Lampung province only 59.4%. The total coverage of breastfeeding is still far from the target set by the southern Lampung regency itself and also even far from the national goal of 80%.

**Objective:** This study aims to determine breast stimulation techniques to increase breast milk production in postpartum mothers in Lampung province.

**Methods:** This research method used a quasi-experimental design. This study compared groups that were treated and the control group. Treatment group one was given the massage treatment of Marmot techniques & breast care. Group two was treated with oxytocin & massage techniques of breast care. Group three were treated with Marmot massage, oxytocin & massage technique breast care, and a control group was given a treatment of breast care. The population in this study was postpartum mothers who gave birth in southern Lampung district in 2018. The research sample was 60.

**Result:** Marmot Massage techniques, massage techniques, and oxytocin breast care average the signs of breast milk smoothness was 13.40. The method of massage for oxytocin & breast care on common signs of breast milk smoothness was 12.87. Marmot massage & breast care average signs was 12.47 and Breast care produced average mark = 11.73. The results of the statistical test obtained a value of  $p < 0.005$ , which means that it can be concluded that there are significant differences for the average smoothness between the four interventions carried out.

**Conclusion:** The average smoothness of breast milk if given a Marmot technique massage intervention, the oxytocin & massage technique is the best among the three other interventions when viewed from the average smoothness of existing breastfeeding.

**Keyword:** Breastfeeding, Breast Stimulation, Marmot Technique, Breast Milk.

### Introduction

National coverage of exclusive breast milk (0–6 months) in Indonesia in recent years, according to Ministry of Health data Exclusive breastfeeding coverage is of 34.3% in 2009. 2010 shows that only 33.6% of our babies get breast milk, the year

2011 the figure rose to 42%, and according to the 2012 data the coverage of exclusive breast milk was 27.5%, and in 2014 the coverage of exclusive breastfeeding in Indonesia had reached 54.3% (Ministry of Health, 2014).

The method of massage is Marmot technique, which combines the practice of milking and massaging the breast so that the reflex of the milk from the breast milk can be optimal. The technique of milking the breast from lactiferous located below the areola is expected to result in emptying. The more milk is released or drained from the breast, the better the production of breast milk in the breast. Method of draining milk with technique Marmot has proven to increase milk production (Mardyaningsih,2010) on the effect of Marmot technique on boosting the breastfeeding and increase in infant weight.

Oxytocin massage is also one of the solutions to overcome the inability of breast milk production. Oxytocin massage is massage the whole spine (vertebrae) bone up to 5 to 6 and an attempt to stimulate the hormones prolactin and oxytocin after delivery (Morhen,2012). This oxytocin massage is performed to stimulate oxytocin reflexes or letdown reflexes. In addition to boosting the letdown reflexes, the benefits of oxytocin massage are to provide comfort to the mother, reduce engorgement, reduce milk blockage, stimulate the release of the hormone oxytocin, maintain milk production when the mother and baby are sick (Mathiessen, 2001).

The results of the preliminary study, breast care was carried out at one health center in South Lampung against three mothers with complaints of breast milk on the third day (33%), obtained one mother succeeded while other mothers succeeded on the 4th, second day and seventh day. The implementation of the Marmot technique was carried out on three mothers in other health centers obtained by two mothers (66.7%) who breast milk smoothly on the 4th day and the remaining one mother smoothly on the 5th day. The implementation of the oxytocin massage technique carried out on three mothers in another health center was obtained by two mothers (66.7%) of breast milk smoothly on the 3rd day, and the remaining one mother went smoothly on the 4th day. The results of this observation

provide the reason for the researchers to see the effectiveness of oxytocin massage technique, Marmot technique + oxytocin massage compared to breast care in increase breast milking the smoothness of breast milk in postpartum mothers in South Lampung, Indonesia.

### Method

This research method uses a quasi-experimental design. This study compared groups that were treated and the control group. The treatment group 1 was given a treatment of Marmot & Breast care techniques, group 2 was treated with oxytocin massage and Breast care techniques, and group 3 was given Marmot massage treatments, oxytocin massage techniques, and oxytocin Breast Care, and finally, the control group was treated with Breast Care only.

The sample of this study was postpartum mothers who gave birth at the Community Health Center in the area of South Lampung Regency in 2018. Based on the above calculations there were 15 respondents per group, with a ratio of 1: 1, so that the total respondents were 60 respondents. For the sample characteristics not to deviate from the population, then determining the criteria for each sample group was determined by inclusion and exclusion criteria. The data analysis used in this study is descriptive statistics and data analysis with inferential statistics.

### Results and Discussion

The analysis of each variable from the results of the study will result in the distribution and presentation of each variable in the study conducted on 60 samples based on primary data sources at the health center on South Lampung Regency.

**Table 1** Distribution of intervention stimulation towards the smooth running of breast milk in South Lampung Regency in 2018

No.	Intervention Simulation	N	Breast Milk Smoothness
1	Marmot Technique+ Breastcare	15	12.47
2	Oxytocin Massage+ Breast care	15	12.87
3	Marmot Technique + Oxytocin Massage + Breast care	15	13.40
4	Breast care	15	11.73
	Total	60	12.62

Based on table 1, it can be seen that respondents felt the common signs of breast milk smoothness with different types of treatment in varied results. After intervening with Marmot & Breast care technique massage, average signs of breast milk smoothness was 12.47, intervention with oxytocin & Breast care massage techniques the average sign of smoothness was 12.87, intervention with Marmot technique massage, oxytocin & Breast care massage technique, average signs of smooth

operation of breast milk was 13.40, and control group gave intervention Breast Care average signs of breast milk smoothness was 11.73.

Bivariate analysis was performed to determine the difference between independent variables (intervention stimulation) and the dependent variable (breast milk Smoothness), and the ANOVA test is used to determine the effect of intervention stimulation on the smoothness of breast milk.

**Table 2.** Distribution Of Stimulation of Marmot Technique Massage Interventions to Boost Breastfeeding In Health Center In South Lampung Regency 2018

Stimulation of Interventions	Mean	SD	SE	P Value	N
1. Marmot + Breast care technique	12.47	1.246	0.322	0,025	15
2. Breast care	11.73	1.280	0.330		15

The table 2 shows that the average mark breast milk smoothness of respondents with massage techniques of Marmot & Breast care produced average smoothness breast milk of 12.47 with a standard deviation of 1.246, while for the group control given the intervention of the Breast Care average sign of breastfeeding smoothness was 11.73 with a standard deviation of 1.280.

The results of the statistical test obtained a value of  $p = 0.025$ , meaning that it can be concluded that there was a significant effect on the normal signs of breast milk smoothness between intervention with massage techniques of Marmots & Breast care with interventions Breast Care only. This is in line with the theory from Zinnaman (2012), which states that the Marmot Technique is a combination of how to milk the breastmilk and massage the breast so that it reflexes the optimal release of breast milk. Giving a massage to the breast accompanied by emptying the contents of the breast will activate the hormone prolactin and

the hormone oxytocin which serves to make the breast contract so that the milk can come out smoothly. The breast care massage technique only removes the milk that has been stored in the breast sinus instead of emptying it. It will be beneficial to discard breast milk smoothly the next day if the massage is accompanied by the process of leaving breast milk in the breast to stimulate the two hormones that work in the breastfeeding process.

Based on the similarity between the results of the research with theory and related studies that have been done before, the researchers concluded that the milking technique by means is emptying the lactiferous sinuses located below the areola so that it is expected that draining the breast milk in the lactiferous sinus area will stimulate the release of prolactin hormone. This release of prolactin hormone will then stimulate mammary alveoli to produce breast milk. The more milk is released or emptied from the breast, and the more milk will be provided. Giving a massage to the breast

accompanied by emptying the contents of the breast will activate the hormone prolactin and the hormone oxytocin which serves to make the breast

contract so that the milk can come out Smoothly (Bowless,2011).

**Table 3** Distribution of Stimulation of Oxytocin Massage Interventions to Boost Breastfeeding In South Lampung Regency 2018

Stimulation of Interventions	Mean	SD	SE	P Value	N
1. Massage oxytocin + Breast care	12.87	1,246	0,322	0,005	15
2. Breast care	11,73	1,280	0,330		15

It can be seen that the average sign of breast milk fluency felt by respondents with the type of intervention with the technique of oxytocin & Breast care massage. The average sign of Fluent breastfeeding is 12.87 with a standard deviation of 1.246, whereas for the control group given the intervention the of Breast Care average, sign the smooth breastfeeding was 11.73 with a standard deviation of 1.280.

The results of the statistical test obtained a value of  $p = 0.005$ , meaning that it can be concluded that there is a significant influence on the average sign of smooth breastfeeding between interventions with the oxytocin & Breast care massage technique with an intervention of Breast Care only.

This is in line with the theory which states that oxytocin massage provides many benefits in the breastfeeding process. The benefits reported are in addition to reducing stress on postpartum mothers and reducing pain in the spine can also stimulate the work of the hormone oxytocin, another advantage of oxytocin massage, which increases comfort, increase the movement of breast milk to the breast, increase breast milk filling to the breast, facilitate breastfeeding, and accelerate the process of uterine involution. (Sari,2017)

Based on the similarity between the results of

research by Rahayu (2016), with theory and related research that has been done before, the researchers concluded that oxytocin massage is one of the right solutions to accelerate and facilitate the production and expenditure of breast milk by massage along the spine. This massage gives a sense of comfort and relaxation to the mother after undergoing labor so that it simplifies and increases the secretion of the hormone prolactin and oxytocin.

On the characteristics of respondents dominated by respondents who did not work as many as 55 people (91.7%) and respondents who worked only five people (8.3%). So that the researchers concluded that this was one of the indirect factors that affect the Fluent running of breast milk because the condition of mothers who do not have enough workload can help mothers become more comfortable and relaxed so that the production of the hormone oxytocin and prolactin can be more optimal.

In addition to stimulating the letdown reflexes, the benefits of oxytocin massage have also been proven to provide comfort to postpartum mothers who are prone to postpartum blues, reduce swelling, reduce breast milk blockage, so that breast milk production is maintained to keep it smooth.

**Table 4** Stimulation Distribution of Oxytocin Massage Interventions to Boost Breastfeeding In South Lampung District 2018

Stimulation of Interventions	Mean	SD	SE	P Value	N
1. Marmot technique + Oxytocin +massage Breast care	13.40	0.986	0,254	0,000	15
2. Breast care	11,73	1,280	0,330		15

In table 4 it can be seen that the average signs of breast milk smoothness felt by respondents

variedly. The type of intervention with Marmot technique massage, the oxytocin & breast care

massage technique the average sign of smoothness of breast milk was 13.40 with the standard deviation of 0.986, while for the control group given the intervention of the breast care average sign of breastfeeding smoothness was 11.73 with a standard deviation of 1.280.

The statistical test results obtained  $p$ -value = 0,000, so it can be concluded that there were significant differences in the average smoothness of breast milk performed by Marmot technique massage intervention, oxytocin & massage technique breast care with breast care only.

The inhibiting factor in breastfeeding is the production of breast milk itself. The production of breast milk which is less and slowly out can give the mother not to provide enough milk for her baby. Post-partum massages are performed on the mother's breast to stimulate the release of breast milk.

This study also supports a study conducted by Divya (2016), who compared prolactin and oxytocin levels in postpartum mothers 3-5 days of manual massage on the breast and around the nipple to empty breast milk and mothers who only breastfed. The results obtained for breast and nipple massage stimulated oxytocin (OT) and prolactin (PRL) secretion better (basal level of OT in the group / breastfeeding group only  $1.90 \pm 0.18$  while the breast massage group was  $8.61 \pm 0.84$ , the basal level of PRL in the control group was  $79.30 \pm 11.1$ , while in the breast massage group  $99.64 \pm 11.76$ ). The results of this study concluded that breast massage could serve as excellent preparation for starting breastfeeding (Kraletti,2018).

Based on the exposure of research findings that are interrelated with the theory and suitability of the related research, it can be concluded that the intervention with Marmot technique + oxytocin massage is better than Breast care only. The combination of massage and emptying of the breast and massage of the mother's back will be more increase the smooth production and expenditure of breast milk. Manual massage on the breast and around the nipples aims to empty

the lactiferous sinuses located below the areola so that by draining breast milk in the lactiferous sinus area it will stimulate the release of the hormone prolactin and oxytocin to produce breast milk.

The variety of interventions given (Marmot technique + oxytocin massage) is very influential in stimulating reflexes oxytocin and the production of prolactin hormone simultaneously. The breasts are not only massaged but also emptied, and massage along the spine provides comfort and relaxation to the mother so that breast milk production will be more lots and stimulates the fluent release of breast milk from the breast. By delivering stimulation in the puerperium period, it will become a container of knowledge that makes the mother has excellent and right abilities and vice versa. Medical staff and midwives can provide stimulation in various ways both naturally from the surrounding environment and in technique such as breast care therapy, Marmot massage, and oxytocin massage for smooth breastfeeding in postpartum mothers have proven to have a reasonably good influence.

### Conclusion

There is a significant effect for the massage technique of Marmot & intervention breast care with the average smoothness of breast milk which obtained a value of  $p = 0.025$ . There was a significant influence for the intervention with the technique of oxytocin & massage breast care on the average smoothness of breast milk which obtained a value of  $p = 0.005$ . The average smoothness of breast milk if given a Marmot technique massage intervention, the oxytocin & massage technique is the best among the three other interventions when viewed from the average smoothness of existing breastfeeding. The statistical test results obtained  $p = 0.000$  indicating the very high level of significance of this technique.

**References**

1. Bowles, B.C., 2011. Breast massage: A “handy” multipurpose tool to promote breastfeeding success. *Clinical Lactation*, 2(4), pp.21-24.
2. Divya, A., Viswanath, L., and Philip, A., 2016. Effectiveness of Breast Massage on Expression of Breast Milk among Mothers of Neonates admitted in Neonatal Intensive Care Unit. *J South Asian Feder Obst Gynae*, 8, pp.21-4.
3. Kraleti, S.K., Lingaldinna, S., Kalvala, S., Anjum, S. and Singh, H., 2018. To study the impact of unilateral breast massage on milk volume among postnatal mothers-A quasi-experimental study. *Indian Journal of Child Health*, pp.731-734.
4. Mardiyaningsih, E., Kholid, A. And Setyoningrum, U., 2016. Pengembangan Media Pembelajaran Informatif Tentang Asi Eksklusif Bagi Ibu Menyusui Untuk Menurunkan Angka Kematian Bayi (Akb) Sesuai Target Millenium Development Goals (Mdgs). *Medisains*, 15(3).
5. Morhenn, Vera, Laura E. Beavin, and Paul J. Zak. "Massage increases oxytocin and reduces adrenocorticotropin hormone in humans." *Alternative therapies in health and medicine* 18, no. 6 (2012): 11.
6. Matthiesen, Ann- Sofi, Anna- Berit Ransjö- Arvidson, Eva Nissen, and Kerstin Uvnäs- Moberg. "Postpartum maternal oxytocin release by newborns: effects of infant hand massage and sucking." *Birth* 28, no. 1 (2001): 13-19.
7. Rahayuningsih, T., Mudigdo, A. and Murti, B., 2016. Effect of Breast Care and Oxytocin Massage on Breast Milk Production: A study in Sukoharjo Provincial Hospital. *Journal of Maternal and Child Health*, 1(2), pp.101-109.
8. Sari, L.P., Salimo, H. and Budihastuti, U.R., 2017. Optimizing the Combination of Oxytocin Massage and Hypno-breastfeeding for Breast Milk Production among Post-Partum Mothers. *Journal of Maternal and Child Health*, 2(1), pp.20-29.
9. Zinaman, Michael J., John T. Queenan, Miriam H. Labbok, Barry Albertson, and Vergie Hughes. "Acute prolactin and oxytocin responses and milk yield to infant suckling and artificial methods of expression in lactating women." *Pediatrics* 89, no. 3 (1992): 437-440.