

The Effectiveness of Oxytocin Massage Towards Increasing Breast Milk Production in Aek Haruaya Village, Portibi District

Ratna Wulandari¹ Ramadhani Nainggolan² Riska Yanti Harahap³ Ica Fauziah Harahap⁴
^{1,2,3,4}Lecturer of the Diploma Three Midwifery Study Program, Sekolah Tinggi Ilmu Kesehatan Paluta Husada, Indonesia

Article Info

Article history:

Received March 16, 2022
Revised April 09, 2022
Accepted May 25, 2022

Corresponding Author:

Ratna Wulandari
Lecturer of the Diploma Three
Midwifery Study Program,
Midwifery Academy Paluta
Husada Gunungtua, Indonesia
Email:
wulan_surb@yahoo.co.id

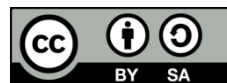
ABSTRACT

Mother's milk is the best food for conceiving a baby because it is a perfect natural food, easily digested by babies and has nutrients that are in accordance with the baby's needs for growth, immunity and preventing various diseases as well as for baby's intelligence, safe and guaranteed cleanliness because it is directly given to babies to avoid digestive disorders such as diarrhea, vomiting and so on. Exclusive breastfeeding in Indonesia has not reached the target of exclusive breastfeeding that has been set at 80%. The cause of low exclusive breastfeeding is a decrease in milk production caused by a lack of stimulation of the hormones oxytocin and prolactin. The type of research used is Quasy Experiment with the design used post test only design with control group. The study was conducted in Aek Haruaya village, Portibi sub-district, North Padang Lawas district in 2022. The research population was mothers who had babies 0 – 2 months. Sampling technique with non-probability sampling with 10 respondents in the treatment group and 10 respondents in the control group. The results of the study concluded that the mean volume of milk expulsion in the treatment group was >20 ml, while the mean volume of milk expulsion in the control group was >40 ml. The results of the Independent T-Test test, p-value = 0.002, which means $p < 0.05$, which means that there is an effect of oxytocin massage on increasing breast milk production.

Keywords:

Oxytocin Massage, Breast Milk Production

This article is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/).



1. INTRODUCTION

Mother's milk is the best food for babies because it is a perfect natural food, easily digested by babies and contains nutrients that are in accordance with the baby's needs for growth, immunity and preventing various diseases as well as for baby's intelligence, safe and guaranteed cleanliness because it is directly given to babies to avoid digestive disorders such as diarrhea, vomiting and so on [2]

Another benefit that is no less important than exclusive breastfeeding as mentioned above is because breast milk is highly nutritious, affordable and can protect babies from sudden infant death syndrome or SIDS (Sudden Infant Death Syndrome). However, creating breastfeeding from day one is not always easy as many mothers face problems in doing so. An event that often occurs on the first day of breastfeeding is the difficulty of milk coming out. This makes mothers think that their babies will not get enough milk so mothers often take steps to stop breastfeeding and replace them with formula milk. In addition, there are also mothers who are afraid and avoid breastfeeding, as a result, there will be damming and stasis of breast milk because it will reduce the baby's sucking at the breast, so the amount of milk released is small. While in developing countries, many mothers feel anxious and use a schedule in breastfeeding, so that the quantity of breast milk produced is not sufficient for the baby's needs [8].

The coverage of exclusive breastfeeding nationally in Indonesia has fluctuated over the last 3 years, the coverage of exclusive breastfeeding for infants 0-5 months decreased from 62.2% in 2007 to 56.2% in 2008, but

increased again in 2009 to 61.3%. Meanwhile, the coverage of exclusive breastfeeding for infants up to 6 months decreased from 28.6% in 2007 to 24.3% in 2008 and rose again to 34.4% in 2009 [7].

Expenditure of breast milk can be influenced by two factors, namely production and expenditure. Breast milk production is influenced by the hormone prolactin while expenditure is influenced by the hormone oxytocin. The oxytocin hormone will come out through stimulation to the nipples through the baby's mouth sucking or through massage on the baby's mother's spine, by massaging the mother's spine, she will feel calm, relaxed, increase the pain threshold and love her baby, so that the oxytocin hormone comes out and Breast milk also comes out quickly [22]. Massage or stimulation of the spine, neurotransmitters will stimulate the medulla oblongata directly send messages to the hypothalamus in the posterior pituitary to release oxytocin, causing the breasts to release milk. Massage in this spinal area will also relax tension and relieve stress and thus the oxytocin hormone will come out and will help release breast milk, assisted by baby sucking on the nipples immediately after the baby is born with a normal baby condition [1].

Indonesia, with its biodiversity, has enormous potential to provide natural medicines, given the large number of medicinal plants that grow well. Since the first, the Indonesian people have known medicinal plants and use them to maintain health and treat disease. The use of medicinal plants is obtained based on empirical experience handed down from our ancestors. Treatment with ingredients of plant origin is called phytotherapy which in its application at this time is known in the form of herbal medicine and phytopharma (Santoso U, 2009 in Murtiana, 2011).

The results of [6] which states that oxytocin massage has a great influence on increasing breast milk production. The increase in breast milk production is influenced by the presence of polyphenols and steroids that affect the prolactin reflex to stimulate the alveoli which work actively in the formation of breast milk. The results of this study also stated that the increase in breast milk production was also stimulated by the hormone oxytocin.

Based on a preliminary survey in Aek Haruaya Village on breastfeeding mothers, it is known that some postpartum mothers and their families consider that to give breast milk their breasts must be waited until they are full or hard, so that the discharge is thick and plentiful, so that many postpartum mothers experience swelling of the breasts or mastitis due to late give breast milk. This is due to the ignorance of the postpartum mother or her family about how to express breast milk and the absence of health workers who provide assistance to the mother when she needs it or because the health services and facilities she receives from health workers do not support the breastfeeding process. Regarding the benefits of oxytocin massage on increasing exclusive breastfeeding, it was found that from 10 mothers to 7 mothers did not know oxytocin massage as an increase in milk production

2. METHOD

Design study this is quasi experiment with *One Group pre . design and post test design* , namely the observation is done before and after being given treatment respondents. Research was conducted in Aek Haruaya Village, Portibi District, North Padang Lawas Regency in April – June 2022. Population in study this is mother *who have babies 0-2 months* The treatment given was oxytocin massage. While the control population in the study this is all mothers who don't given treatment massage oxytocin.

Sampling was carried out by method *Non Probability Sampling-Purposive. Sampling Type* with 10 respondent group treatment and 10 respondent group control . Next researcher To do massage oxytocin on respondent which given treatment once a week later conducted massage for 20 minutes using *baby oil* on neck and shoulders to relax the body then proceed from the back waistwalk through bone behind until with *scapula* shape letter "V", then The volume of breast milk production was measured with a measuring bottle. Next conducted observation and measurement on second group which given treatment and not given treatment. Breast milk production volume put in sheet observation. Analysis data with univariate and bivariate for see effectiveness connection between independent variables (massage oxytocin) with variable bound Expenditure breast milk), test statistic using *t-test dependent* with significant level 0.05 [4].

3. RESULTS AND DISCUSSION

Based on the results of research conducted from April to June 2022 in the village of Aek Haruaya regarding the Effectiveness of Oxytocin Massage to Increase Breast Milk Production, the following results were obtained:

Table1. Distribution Characteristics Average Breast Milk Production Volume On Mother.

Treatment Group	Mean (Volume)	variance	N
Massage done	>40 ml	0.256	10
No Massage	<20ml	7,285	10

Table 1 . show average production volume breast milk on mother which conducted massage oxytocin that is as much as > 40 ml. While the average volume of breast milk production on mother which no conducted massage oxytocin that is as much as <20 ml.

Expenditure breast milk could accelerated with action non pharmacology that is through massage or stimulation on bone behind, *neurotransmitter* will stimulate *medulla oblongata* instantly sent a message to the *hypothalamus* in the *posterior pituitary* to secrete oxytocin which cause breast secrete milk. With massage in area bone behind this also will relax tension and remove stressed, with so hormone oxytocin go out and will help express breast milk, assisted with puff baby on nipple milk moment as soon as the baby is born, the dripping milk or go out is a sign active reflex oxytocin [12].

Naziroh 's research (2017) on the effect of oxytocin massage on the smoothness of breast milk (ASI) in mothers having significant results, namely there is an effect of oxytocin massage on the smoothness of mother's milk .

Wrong one theory labor is decreased levels of the hormones estrogen and progesterone by drastic so that replaced by hormone prolactin and hormone oxytocin. Hormone prolactin and oxytocin play role in process lactation so that milk production will be smooth. breast milk that is not come out not because of inadequate milk production sufficient, but milk production is sufficient however the output hampered consequence obstacle secretion oxytocin [11].

Thing this show suitability with theory, that massage oxytocin which conducted in along bone behind (*vertebrae*) until bone *costa* fifth- sixth will stimulate hormone prolactin which produced by *pituitary anterior* and oxytocin which produced by *pituitary posterior* so that Automatic breast milk can be more fluent. Besides expedite breast milk, massage oxytocin give convenience mother, reduce swollen (*engorgement*), reduce blockage breast milk, stimulate release hormone oxytocin, maintain milk production when the mother and baby sick. Existence flavor comfortable which feel mother During massage is condition success massage oxytocin [6].

Table2. Distribution Normality Group Treatment And Group Control

<i>Test of Normality</i>			
Treatment Group	Statistics	<i>Saphiro-wilk</i>	Sig
		DF	
Treatment	0.887	10	0.475
Control	0.828	10	0.188
=0.05			

Based on the results of the normality test of variance using the *Shapiro Wilk test*, the value of significant for group treatment 0.475 _ and group control 0.1 88 . Because score significant second group more from 0.05 so could said that group control and treatment groups were distributed normal.

Bivariate analysis was carried out by test *Independent T-Test* to compare two group *mean* of two different samples. The principle want to knowing is there is difference effectiveness *mean* Among two sample, with level trust 95% or level significant =0.05, if the *p value* <0.05 means there is influence which significant Among variable independent and variable dependent.

Table3. Difference Average Volume Expenditure breast milk On Group Treatment and Control

Group	Mean (Volume)	P-Value	N
Treatment	>40 ml	0.003	10
Control	<20ml		10

Based on table 3 . is known that on group treatment average volume expenditure breast milk >40 ml , whereas on control group <20 ml . Statistical test results obtained *p-value* = 0.003 (*p*<0.05) means there is influence effectiveness massage oxytocin to average expenditure breast milk.

Results calculation with analysis *Independent T-Test* statistics on 10 respondents group treatment and 10 respondent group control obtained score *p*=0.003 (<0.05) which could concluded that there is influence average volume expenditure Breastfeeding between the treatment group and the control. The results show that there are the difference in the length of time to express breast milk between mother who received oxytocin massage (treatment) with the mother that is not done oxytocin massage (control). Oxytocin massage is something method for help speed up expenditure breast milk with method give stimulation massage on second side bone behind, start from neck to direction bone shoulder blade next to bone *costa* mother *postpartum* [3].

Through stimulation or massage on bone behind, *neurotransmitter* will stimulate *medulla oblongata* direct send

messages to the *hypothalamus* in the *pituitary posterior* to secrete oxytocin cause breast. Secrete breast milk. With a massage in this spinal area will also give a sense of relaxation, eliminate stress and with so hormone oxytocin out and will help express breast milk. breast milk which dripping or go out is sign active *reflex oxytocin* [3].

Stimulation oxytocin make cells myoepithelium around the alveoli in the glands breast contracted. Contraction cells causes milk to come out through the ducts and into the lactiferous sinuses. Reflex *let-down* could feel as sensation tingling or could also mother no feel sensation whatever. Signs other *let-down* is a drop of milk from the mother's breast and milk drips from the other breast that is not currently sucked by baby [24].

In study this group treatment mean volume of milk expulsion >40 ml more many from average group control <20 ml. Thing the show suitability with theory, with To do massage on along bone behind (vertebrae) until bone costa fifth- sixth will stimulate hormone prolactin which issued by pituitary anterior and hormone oxytocin which issued by posterior pituitary, so that milk comes out occurs because the smooth muscle cells around the gland breast shrivel up. Reason muscles that frown is hormone oxytocin [18].

Besides expedite breast milk, massage oxytocin give comfort on mother breath, reduce swollen (*engorgement*), reduce blockage breast milk, stimulate release of the hormone oxytocin, maintain production breast milk when mother and baby sick. There is a sense of comfort felt by the mother During process massage is condition success massage oxytocin [13].

Factors which increase *letdown reflex* is: see baby, listen voice baby, kiss baby, thinking for breast-feed baby, massage bone behind (massage oxytocin). Whereas factors which hinder *let down reflex* is stress such as: confused state or thought chaotic, afraid, and worried.

When there is stress from a breastfeeding mother then there will be a *blockade* from *let down reflexes*, this caused by because existence release from adrenaline epinephrine which cause vasoconstriction from vessels blood alveoli, so that oxytocin a little hope to be able to reach the target organ myoepithelium. The result of imperfection *let down reflex* then there will be accumulation breast milk in in *alveoli* which by clinical look breast grow up.

Breast which grow up will caused abscess, fail for breast-feed and flavor sick. Flavor sick this will is stress again for a mother so that stress Will increase. Because *the let down reflex* doesn't perfect so baby which thirsty so no satisfied. Dissatisfaction this will cause additional stress for the mother. Thirsty baby and no satisfied this will attempted for get enough milk add strong suck it so that no seldom could cause injuries on nipples, these wounds will be painful by her mother which also will add the stress. Thus it will be formed one again circle Devil which closed (*circulus vitiosus*) with consequence failure in breast-feed.

4. CONCLUSION

Based on results analysis and discussion could concluded that:

1. The average volume of breast milk production in massage treatment group mother oxytocin is >60 ml.
2. The average time to express breast milk in group mother control <20 ml.
3. Oxytocin massage affects the average expenditure colostrum on mother post partum (*p-value* =0.003).

Suggestion from results study this that is every officer health specifically midwife which found incident that breast milk is not go out so should midwife give action to client for conducted massage oxytocin besides that power health also could give education health to mother and family for permanent give breast milk on baby in beginning his life.

ACKNOWLEDGEMENTS

Author thanks to my team of authors, translators, funders for this publication and to my institution the Paluta Husada Gunungtua Midwifery Academy.

REFERENCES

- [1] Cahyono Tri, 2010. Sampling Techniques in Administrative Research. February 13, 2010. <http://www.scribd.com/doc/30385769/Teknik-sampling-dalam-research-administration> downloaded in July 2010 at 16.05 WIB.
- [2] Lee Naurah, 2009. How to Pinta Caring for Babies 0-12 Months. CV Distribution Solutions: Yogyakarta.
- [3] Murti Bhisma, 2006. Design and Sample Size for Quantitative and Qualitative Research in the Health Sector. Gadjah Mada University Press: Yogyakarta.
- [4] Notoatmodjo, 2017. Health Research Methodology. Rineka Cipta: Jakarta.
- [5] Notoatmodjo, 2005. Health Research Methodology. Creations:
- [6] Roesli Utami, 2010. Exclusive breastfeeding. PT Trubus Agri Widia: Jakarta.
- [7] Umii Naziroh, 2017. The effect of oxytocin massage on the smoothness of breast milk in primiparous mothers. Jombang
- [8] Arsi, Ranida & Rejeki, Sri & Juniarto, Achmad. (2021). Endorphin, Oxytocin, And Suggestive Massage Stimulation (SPEOS) Methods In Increasing Breast Milk Production In Postpartum Mothers. Media Keperawatan Indonesia. 4. 140. 10.26714/mki.4.2.2021.140-148.

- [9] Siregar, Dewi & Harahap, Maryam. (2022). The Effect of Soybean Milk on Increasing Breast Milk Production in Postpartum Mothers in Salambue Village, Southeast Padangsidempuan District. *International Journal of Public Health Excellence (IJPHE)*. 1. 133-145. 10.55299/ijphe.v1i2.109.
- [10] Parrish, Britain & Brand, Garth. (2021). Is fenugreek effective at increasing breast milk production?. *Evidence-Based Practice*. Publish Ahead of Print. 10.1097/EBP.0000000000001309.
- [11] Yuviska, Ike & Lathifah, Neneng & Ashari, Via & Anggraini, Anggraini. (2022). Oxytocin Massage Effects Increasing Breast Milk Production In Postpartum Mothers. *Jurnal Kebidanan Malahayati*. 8. 371-377. 10.33024/jkm.v8i2.5095.
- [12] Katmini, Katmini & Sholichah, Nazilatul. (2020). Lactation Massage for Increasing Breast Milk Production in Postpartum Mothers. *Journal for Quality in Public Health*. 4. 104-113. 10.30994/jqph.v4i1.168.
- [13] Kent, Jacqueline & Prime, Danielle & Garbin, Catherine. (2011). Principles for Maintaining or Increasing Breast Milk Production. *Journal of obstetric, gynecologic, and neonatal nursing : JOGNN / NAACOG*. 41. 10.1111/j.1552-6909.2011.01313.x.
- [14] Hasibuan, Darma & Dewi, Sri & Donna, Yunita. (2022). The Effect of Soybean and Melon Juice on Increasing Breast Milk Production in Mothers. *International Journal of Public Health Excellence (IJPHE)*. 1. 41-45. 10.55299/ijphe.v1i1.8.
- [15] Tampubolon, Christina & Margono, Margono & Retnaningsih, Yuliantisari. (2021). Breast Massage Using Lavender Oil To Increase Breast Milk Production Of Breastfeeding Mothers. *Interest : Jurnal Ilmu Kesehatan*. 85-92. 10.37341/interest.v0i0.332.
- [16] Yuliasuti, Santi. (2018). KELOR (*Moringa Oliefera*) as an Alternative in Increasing Breast Milk Production. *Journal of Medical Science And clinical Research*. 6. 10.18535/jmscr/v6i2.188.
- [17] Feher, Stephen & Berger, Lawrence & Johnson, John & Wilde, Judith. (1989). Increasing breast milk production for premature infants with relaxation and imagery. *Pediatrics*. 83. 57-60. 10.1542/peds.83.1.57.
- [18] MP, Nia & Kartika, Jenny & Kamalia, Rita & Wahyuni, Sari. (2022). The Effect of SPEOS Method and Acupuncture Point Gb 21 To Increase Breast Milk Production. *Healthy-Mu Journal*. 5. 96-104. 10.35747/hmj.v5i2.215.
- [19] Budi Pertami, Sumirah & Budiono, Budiono & Rahmawati, Ira. (2020). Optimizing the Endorphin and Oxytocin Massage to Increase Breast Milk Production among Postpartum Mother in Indonesia. *NurseLine Journal*. 1. 10.19184/nlj.v5i1.16825.
- [20] Utami, Siska & Rohmah, Miftakhur & Tuszahroh, Nasifah. (2018). The Efforts to Increase Breast Milk Production Through Hypnobreastfeeding In Pakisaji Sub District Malang Regency. *Journal of Global Research in Public Health*. 3. 10.30994/jgrph.v3i2.66.
- [21] Toppare, MD & Laleli, Yahya & Şenses, Dursun & Kitapci, Füsün & Kaya, I. & Dilmen, Ugur. (1994). Metoclopramide for breast milk production. *Nutrition Research*. 14. 1019-1029. 10.1016/S0271-5317(05)80256-8.
- [22] Foong, Siew Cheng & Tan, May & Marasco, Lisa & Ho, Jacqueline & Foong, Wai Cheng. (2015). Oral galactagogues for increasing breast-milk production in mothers of non-hospitalised term infants (Protocol). *Cochrane database of systematic reviews (Online)*. 2015. 10.1002/14651858.CD011505.
- [23] Dahliana, Dahliana & Retnosari, Ekadewi & Clarasari, Nia & Hairunisyah, Rika. (2022). Pemberdayaan Kader Posyandu dalam Peningkatan Produksi Asi Melalui Teknik “BOM”(Breast Care, Oksitosin dan Marmet) di Klinik Asy-Syifa Desa Ujanmas Baru Kec Ujanmas Kab Muara Enim. *JURNAL KREATIVITAS PENGABDIAN KEPADA MASYARAKAT (PKM)*. 5. 1144-1153. 10.33024/jkpm.v5i4.4918.
- [24] Dinengsih, Sri & Suralaga, Cholisah. (2021). The Effect of Domperidone Toward Breast Milk Production on Sectio Caesarea Mother. *Jurnal Ners dan Kebidanan Indonesia*. 8. 286. 10.21927/jnki.2020.8(4).286-291.
- [25] Ryan, Rachel & Bihuniak, Jessica & Lyndon, Audrey & Hepworth, Allison. (2022). Breastfeeding Mothers’ Use of Foods, Beverages, and Herbal Supplements to Increase Breast Milk Production and Associated Information Seeking Behaviors. *Current Developments in Nutrition*. 6. 879-879. 10.1093/cdn/nzac066.009.