

**Original Research****Breast Massage Using Lavender Oil To Increase Breast Milk Production Of Breastfeeding Mothers****Christina Elisabeth Tampubolon<sup>1\*</sup>, Margono<sup>2</sup>, Yuliantisari Retnaningsih<sup>3</sup>**<sup>1,2,3</sup> Departement of Midwifery Poltekkes Kemenkes Yogyakarta, Indonesia**ABSTRACT**

**Background:** Exclusive breastfeeding is recommended for at least 6 months. One of the leading factors that causes breastfeeding mothers experience problems in offering exclusive breastfeeding is the insufficient production of breast milk. Breast massage by utilizing soothing lavender oil is a method to boost breast milk production and also increase the production of oxytocin Hormones and smoothen the flow reflex. Purpose of this study is to analyze effect of breast massage using lavender oil to breast milk production.

**Methods:** This study uses a quasi experimental type with a before and after design with control group. The population of the research is breastfeeding mothers in the working area of Local Health Center of Pleret, involving 36 samples of breastfeeding mothers. Sampling was collected using purposive sampling technique with worksheets monitor the frequency baby's urination, baby's weight, and sleeping duration of the baby. Data analysis used paired test and independent test with computerized program.

**Results:** The increase in breast milk production using lavender oil and coconut oil shows that the p-value is 0.000. The effect of the amount of breast milk production using lavender oil and coconut oil in breast massage shows that the p-value is 0.000.

**Conclusion:** There is found was a significant (p-value 0.000) an effect of lavender oil in breast massage on milk production for breastfeeding mothers.

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**INTRODUCTION**

The World Health Organization (WHO) on exclusive breastfeeding for at least the first 6 months, than complementary feeding until the age of 2 years. The American Academy of Pediatrics (AAP), the Academy of Breastfeeding Medicine (ABM) and the Indonesian Doctors Association (IDA) with the same recommendation regarding breastfeeding for at least 6 months (Dewi, 2020). The Ministry of Health stated that breastfeeding is the best investment for survival, health improvement, social development, and individual economy. The support for improving baby's health

optimally is by providing exclusive breast milk for 6 months and continue breastfeeding optimally until the 2 year or more (Biro Komunikasi Dan Pelyanan Masyarakat, 2019).

The achievement of exclusive breastfeeding in Indonesia has not yet reached 80%. Based on the 2017 Indonesian Nursing Diagnosis Standards report, the percentage of children under 6months who are exclusively breastfed there has increase in the last 5years, from 42% to 52%. The percentage of children who are not breastfed rose from 8% in the 2012 Indonesian Nursing Diagnosis Standards to 12% in the 2017 Indonesian Nursing Diagnosis Standards (BKKBN et al., 2018). The coverage of babies receiving exclusive breastfeeding in D.I Yogyakarta areas in 2019 has met the target, one of them is Bantul Regency with a percentage of 79% (DIY, 2020).

According to research in 2016 stated that one of the factors that cause mothers who often experience exclusive breastfeeding problems with the main obstacle is the lack of milk production (Safitri, 2016). Breastfeeding that was uneven could reduce the need for intake of babies, one of the factors was the lack of breast milk production. As for how to overcome the problem safely with breastfeeding is by doing breast massage (Direktorat Promosi Kesehatan Dan Pemberdayaan Masyarakat, 2019).

Oil is one of the media to facilitate the methods in the breast milk production. The massage method using oil by using aromatherapy oils. Where the skin will absorb the oil from the massage therapy (Asiyah & Wigati, 2015). Research in 2016 that can be used as an intervention states that lavender oil can increase breast milk production, has a calming effect with a fairly good sedative effect and can reduce motor activity by up to 78%, so it can be used in stress management. Lavender oil can have a psychological effect on mothers. In accordance with the factors that affect the production of breast milk, including peace of mind (Yuliana et al., 2018).

In this case, it is known that lavender oil is one of the media that can facilitate the method in reinforce breast milk production. So this research was conducted to further optimize the method of reinforce breast milk. In this study the aim of this study was to determine the effect of using lavender oil in breast massage to increase milk production in breastfeeding mothers in the working area of the Pleret Public Health Center, Bantul Regency.

## **MATERIALS AND METHOD**

The type of research used in this study is a quasi-experimental with a treatment group. The treatment group with lavender oil for breast massage while the control group was given coconut oil for breast massage. Both groups were given the same treatment, the presence of a pretest before breast massage was carried out after breast massage was carried out posttest, a sample size of 18 nursing mothers for the treatment group and 18 breastfeeding mothers for the control group. Respondents obtained through purposive sampling technique with inclusion criteria, breastfeeding moms (0-2 years) after giving birth who were willing to respond by following the research regulations, breastfeeding mothers who experienced impaired breast milk production / breast milk that was uneven, breastfeeding mothers who were not taking supplements/drugs or milk-stimulating herbs. Then the exclusion criteria are breastfeeding mothers who do not do breast massage and breastfeeding mothers who do not use lavender oil.

This research was conducted in December 2020-January 2021 in the working area of the Pleret Pyblic Health Center, Bantul Regency. The type of data used is primary data obtained directly from respondents using research instruments in the form of

observation sheets regarding baby urination, baby's sleep duration and baby's weight. Data analysis consisted of univariate analysis to explain the characteristics of respondents and bivariate analysis using the Shapiro Wilk normality test with the results of the data distribution being normally distributed so that the paired t test analysis test and the independent samples-test were used. Bivariate analysis to determine whether there were significant difference in the age characteristics of the mean data used the independent-test. This research has obtained an ethical certificate from the Health Research Ethics Commission Poltekkes Kemenkes Yogyakarta valid from 29 December 2020 to 29 December 2021 with no. e-KEPK/POLKESYO/0665/XII/2020.

## RESULTS

The result of descriptive analysis

**Table 1.** Frequency Results Characteristics of Respondents

Characteristics	Treatment Group		Control Group		P
	N	%	N	%	
Age					
<20 years old	7	38.9	4	22.2	0.072
21-30	11	61.1	14	77.8	
>35 years old	0	0.0	0	0.0	
Total	18	100	18	100	
Parity					
Primigravida	15	83.3	12	66.7	0.180
Multigravida	3	16.7	6	33.3	
Total	18	100	18	100	
Education					
Junior Highschool	6	38.9	6	33.3	0.602
Senior Highschool	11	61.1	11	61.1	
Undergraduate school	1	5.6	1	5.6	
Total	18	100	18	100	

In table 1, the results presented In table 1 the results presented indicate that the age of the respondent is more from 21-30 years old with a total of 11 people (61.1%) in the massage group with lavender oil and 14 people (77.8%) in the massage group with coconut oil and p- value of both groups 0.072. Characteristics of respondents based on parity showed that there were more primigravida with 15 people (83.3%) massaged using lavender oil, and 12 people (66.7%) massaged with coconut oil and the p-value of both groups was 0.180. Characteristics of respondents based on education showed that of the 36 respondents mostly Senior Highschool with 11 people (61.1%), Junior Highschool 6 people (38.9%) and Undegraduate 1 person (5.6%) in the massage group using lavender oil, in the massage group with coconut oil Most of the Senior Highschool with 11 people (61.1%), Junior Highschool 6 people (38.9%) and S1 1 person (5.6%).

**Table 2.** Increased Breast Milk Production in Breast Massage Using Lavender Oil Test Results

Breast milk increase	Lavender oil breast massage	N	mean	MD	SD	Sig
Baby Urination	Before	18	4.72			
	After	18	10.89	-6.167	1,855	0.000
Baby Weight	Before	18	3384.44			
	After	18	3508.00	-123.556	73.071	0.000
Sleep Time	Before	18	61.11			
	After	18	62.50	-74.444	21,481	0.000
Total Milk Production	Before	18	3450.28			
	After	18	3654.44	-204.167	75,358	0.000

In table 2 in the breast massage group with lavender oil, the average baby urination before treatment was 4.72 times then increased to 10.89 times after being given statistically with a p-value of 0.000, the average baby weight was 3384.44 grams later. Increased to 3508.00 grams statistically with p-value 0.000, and the average length of sleep before being treated was 61.11 minutes then increased to 62.50 minutes after being treated statistically with p-value 0.000. From the total of the three variables, the average before being given treatment was 3450.28 to 3654.44 after being treated and statistically with a p-value of 0.000.

**Table 3.** Increased Breast Milk Production in Breast Massage Using Coconut Oil Test Results

Breast milk increase	Coconut oil breast massage	N	mean	MD	SD	Sig
Baby Urination	Before	18	4.33			
	After	18	9.94	-5.611	1.195	0.000
Baby Weight	Before	18	3118.50			
	After	18	3254.00	-35,500	61.148	0.025
Sleep Time	Before	18	135.56			
	After	18	128.33	-65,833	21,481	0.000
Total Milk Production	Before	18	3185.33			
	After	18	3292.28	-106,944	62.960	0.000

Table 3 shows that the breast massage group with coconut oil, the average BAK baby was 4.33 times before the treatment then increased to 9.94 times after the treatment, statistically with a p-value of 0.000, the average body weight before treatment was 3118.50 grams later. increased to 3254.00 grams after being treated statistically with p-value 0.025 and the average length of sleep before being treated was 135.56 minutes then after being given treatment an average of 128.33 minutes statistically with p-value 0.000 From the sum of the 3 variables, the average before being treated is 3185.33 to 3292.28 after being treated and statistically there is a significant difference with a p-value of 0.000.

**Table 4.** Differences in Effectiveness of Breast Milk Production in Breastfeeding Mothers after being given breast massage with lavender oil and coconut oil Test Results

Increase in the amount of milk production	N	mean	MD	SD	95% Confidence Interval Of The Difference		Sig
					Lower	Upper	
Lavender Oil Breast Massage Group	18	204.17	97.222	23.145	50.185	144,259	0.000
Coconut Oil Breast Massage Group	18	106.94					

In table 4 the value of the increase in the coconut oil group is 204.17 and is 97,222 higher than the average in the coconut oil group, which is 106.94. Statistically with p-value 0.000 (<0.05) where lavender oil in breast massage was more effective in increasing milk production than coconut oil in breast massage.

## DISCUSSION

The results showed that respondents aged 21-30 years, namely the experimental group and the control group, respectively 11 people (61.1%) and 14 people (77.8%). This research refers to the 2017 study stated the age between 20-35 years is a period of healthy reproduction, physically the reproductive organs are ready, and the psychological condition of the mother has an impact on readiness to accept the presence of a baby. Mothers with an older age are considered to have more experience in breastfeeding compared to mothers of young age, so that their knowledge is better than that of young mothers. While the age of less than 20 years is psychologically not ready to become a mother, so it can become a psychological burden that will cause depression and make it difficult for breast milk to come out (Hanifah et al., 2017).

According to the results of the research in 2017, the mother's age factor in breastfeeding there was no significant relationship to breast milk production with p-0.513 (Rahmawati & Prayogi, 2017). In this study, respondents in the working area of the maternal pleret Public Health Center with the highest parity were primigravida as many as 15 people (83.3%) in the experimental group and 12 people (66.7%) in the control group. This research is in line with the 2019 research, there is a tendency for low-parity maternal health to be better than high-parity ones. However, this is not in line with the results of Silva's research which argues that for mothers with multiparity parity plays an important role for breastfeeding mothers to continue from the previous experience of their children (dr. Febri Endra Budi Setyawan, 2019). From the results of the study showed that the education of respondents in the working area of the Pleret Public Health Center who had first-level education was 6 people (33.3%) intermediate as many as 11 people (61%) with 1 graduate (5.6%) in the experimental and control groups.

According to the results of the 2017 study, the mother's education factor in breastfeeding had no significant relationship with breast milk production (Rahmawati & Prayogi, 2017). According to another study in 2016, nothing significant relationship between formal education in breastfeeding mothers and exclusive breastfeeding, but

there is a relationship between mother's knowledge and exclusive breastfeeding and breast milk production (Imam, 2016).

The results of the increase in the coconut oil group was 204.17 and 97,222 higher than the average in the coconut oil group, which was 106.94. Statistically with p-value 0.000 ( $<0.05$ ) indicating that breast massage using lavender oil can increase milk production than using coconut oil. The results obtained in the lavender oil intervention treatment group that the average amount of breast milk was 55.66ml compared to the control group of 52.84 and significantly p-value 0.004 when breast care used lavender oil which is calming which can produce hormones oxytocin increases so that the flow reflex is even (Wardani, 2015). The research refers with the 2019 research, namely the influence of breast milk production before and after oxytocin massage and lavender aromatherapy is carried out and there is no difference in the average breast milk production before and after breast care in the control group. Oxytocin massage and aromatherapy, the combination of these two therapies will increase the stimulation of the targeted nerve impulses because the skin will absorb the essential aromatherapy stimulates smell and at the same time physical therapy from oxytocin massage (Wulan, 2019).

Research is one opinion with research that has been done in 2015 showing that there is an effect of doing breast care with lavender oil with breast care without lavender oil, the volume of breast milk has the effect of increasing the volume of breast milk. At the time of breast care, oil is needed such coconut oil mixed with lavender aromatherapy which is calming so that the production of the oxytocin hormone increases and the flow reflex is even (Wardani, 2015). Another study in 2016 was that breast massage during the puerperium was a necessity for breastfeeding mothers. With breast care, it will help release the breast milk which will increase breast milk production (Wijayanti & Setiyaningsih, 2016). Whether the baby's weight is considered as an indicator of increased breast milk production, the weight will return to the same as at birth at the age of 2 weeks. In the first week the baby's weight will decrease 5-10% of birth weight, then return to the weight at birth at the end of the 2nd week, then the weight increases according to the growth curve (Widaryani, 2019), (dr.Fransisca Handy.Sp.A, 2015). Adequacy of breast milk in infants can be identified by several indicators, the baby urinates at least 6x in 24 hours with clear color, yellowish "seeded" defecation, the baby looks satisfied when hungry wakes up and sleeps enough, at least the baby suckles 10- 12 times in 24 hours, the mother's breasts feel soft, the mother feels the flow of milk with each feed, the mother can hear a soft swallowing sound when the baby swallows, the baby gains weight (Widaryani, 2019), (Pitriani & Rika Andriyani, 2015).

## **CONCLUSION**

The conclusion of this study there is an increase in the amount of breast milk production after being given lavender oil and coconut oil on breast massage, where in the lavender oil group the amount of breast milk production increases. Breast massage with lavender oil is significantly more effective than breast massage using coconut oil on increasing breast milk productivity of nursing mothers.

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