

# The Effect of Back Massage on Breastfeeding Mothers Using Lavender Essential Oil on Breast Milk Production At Bpm Wahyu Jl. Pertiwi No. 58 Pond Village, Percut Sei Tuan District in 2021

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### ABSTRACT

Breast milk is an emulsion of fat in a solution of protein, lactose and inorganic salts secreted by the mother's mammary glands. Oxytocin is a hormone that affects the lactation process. Oxytocin that reaches the mammary alveoli causes contraction of the myoepithelial cells surrounding the mammary alveoli and lactiferous ducts. Back massage on the cervical 5-6 to the lower shoulder blades stimulates the release of endorphins and oxytocin hormones and increases blood circulation in the breast area. This study uses a pre-experimental type of research, with a One Group pre-test and post-test design. The population in this study were all breastfeeding mothers who were at BPM Wahyu Jl Pertiwi No.58 Pond Village, Percut Sei Tuan District in 2021, the data collected in May-September were 35 people, The sample in this study was purposive sampling technique, with the research technique using the Chi Square test. The results of this study indicate that there is a significant effect on breast milk production in nursing mothers when a back massage is performed using lavender essential oil. The number of breastfeeding mothers after a back massage using Lavender essential oil produced smooth breast milk with a total of 27 mothers (77.14%) whose breast milk was smooth. The results of statistical tests using the Wilcoxon test show that the p value (0.001) < (0.05) means  $H_0$  is rejected, so there is a significant effect on breast milk production if breastfeeding mothers are massaged using lavender essential oil at BPM Wahyu Jl Pertiwi No. 58 Pond Village, Percut Sei Tuan District, 2021.

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## 1. Introduction

Breast milk (ASI) is a special fluid that is complex, unique, and produced by the two breast glands. Breast milk is the best liquid for newborns until the age of 6 months, because the components of breast milk are easily digested, easily absorbed by newborns, and have the best nutritional content compared to formula milk (Riordan, 2017).

Breast milk is the most suitable food for babies because it contains nutrients needed by babies to grow and develop. The importance of exclusive breastfeeding for newborns until the age of 6 months and continuing to breastfeed until the child is 24 months old has strong evidence. Based on Government Regulation No. 33/2016, exclusive breastfeeding is breast milk given to baby A since birth for six months, without adding and/or replacing with other foods or drinks (except drugs, vitamins, and minerals). Breastfeeding for 6 months of life is an ideal start for infants. Breastfeeding improves the health and cognitive development of infants and mothers in both developed and developing countries, and is the single most important preventive approach to saving children's lives (Marshall, 2018). The World Health Organization (WHO) and the United Nation Children's Fund (UNICEF) recommend optimal nutrition for newborns through a global strategy of exclusive breastfeeding for six months (WHO, 2019). The American Academy of Pediatrics (AAP) recommends exclu-

sive breastfeeding for infants for six months and can be continued at least until the baby is 12 months old (Perry et al, 2017).

The coverage of exclusive breastfeeding (ASI) for infants aged 0 to 6 months in Indonesia in 2018 based on the preliminary report of the 2018 Indonesian Demographic and Health Survey (IDHS) is still quite low, referring to the program target in 2018 of 80%. Nationally, the coverage of exclusive breastfeeding at 52.3% has not reached the target. According to the province, there is only one province that has succeeded in achieving the target, namely the province of West Nusa Tenggara by 84.7%. The provinces of West Java, West Papua, and North Sumatra are the three provinces with the lowest achievements (Directorate General of Nutrition and MCH, Ministry of Health RI, 2018).

Research shows that in Ghana 16% of infant deaths can be prevented through breastfeeding the baby from the first day of birth. However, in Indonesia only 8% of mothers give exclusive breastfeeding to their babies until they are 6 months old and only 4% of babies are breastfed by their mothers within one year. first hour after birth. Whereas around 21,000 newborn deaths (age under 28 days) in Indonesia can be prevented through breastfeeding in the first hour after birth (Kusumaningrum, 2018).

The reason why mothers do not exclusively breastfeed their babies is due to working mothers or other social activities, physical factors, reflex factors, and hormones (prolactin and oxytocin), psychological factors, socio-cultural factors, lack of support and attention from family and partners to mothers, factors Lack of knowledge of mothers about colostrum, mothers assume that the mother's breast milk is lacking or does not have enough milk. These factors cause mothers not to give exclusive breastfeeding to their babies (Purwanti and Sri, 2018). There are many factors that can affect breast milk production, including food factors, use of contraceptives, breast care, rest patterns, etc. (Riksani, 2016). In addition to the several factors above, physiological factors (hormones) as well as factors of peace of mind and mind will be the focus of researchers in an effort to influence or increase breast milk production. One of the efforts to influence breast milk production that will be carried out by researchers is back massage. Back massage is a massage along the spine (vertebrae) to the fifth-sixth rib and is an attempt to stimulate the hormones prolactin and oxytocin after childbirth. This back massage serves to increase the oxytocin hormone which can calm the mother, so that milk comes out (Purwanti and Sri, 2018). Back massage is a massage along the spine (vertebrae) to the fifth-sixth rib and is an attempt to stimulate the hormones prolactin and oxytocin after childbirth. This back massage serves to increase the oxytocin hormone which can calm the mother, so that milk comes out (Purwanti and Sri, 2018). Back massage is a massage along the spine (vertebrae) to the fifth-sixth rib and is an attempt to stimulate the hormones prolactin and oxytocin after childbirth. This back massage serves to increase the oxytocin hormone which can calm the mother, so that milk comes out (Purwanti and Sri, 2018).

Massage has several techniques, one of which is effleurage which is done with light and soothing rubbing movements (soft, slow, and long or not intermittent) when starting and ending massage. This movement aims to warm the muscles to make them more relaxed. (Son in Marilyn, 2016). In the practice of effleurage massage, there are several types of oil that can be used, one of which is Lavender Essential Oil. Lavender Essential Oil is an oil that is well-known for its refreshing, strengthening, enlivening and calming effect on the skin (Putra, 2016).

Research conducted by Suryani in 2016 stated that there was a difference in the smoothness of milk production after an effleurage back massage with lavender aromatherapy oil was carried out for 4 consecutive days. Meanwhile, research conducted by Vidiyanti (2018) showed differences in the smoothness of milk production between the intervention and control groups. The use of lavender essential oil is expected to help post-cesarean mothers to increase relaxation and comfort so that it is hoped that the production of breast milk (ASI) can increase. Lavender essential oil is a popular essential oil and is widely used in the field of clinical health, especially to overcome psychosomatic problems in gynecology (Matsumoto et al, 2013).

Aromatherapy massage with essential oils is the most widely known treatment, because it is able to penetrate the skin and be absorbed into the body, thus providing a healing and beneficial effect on various internal tissues and organs (Koensoemardiyah, 2019). Massage using aromatherapy is a type of treatment that is popular and common in the community, a combination of massage and aromatherapy has been shown to have a positive effect according to its intended use (Sundari, 2016). One of the clinical benefits of lavender in neuropsychiatry is as a sedative, anticonvulsant, anxiolytic and analgesic agent. Although its efficacy is not known for certain, lavender has properties

similar to benzodiazepines and increases the effect of gamma aminobutyric acid in the amygdala (Ujiningtyas, 2016).

From various studies it is proven that lavender aromatherapy can provide a sedative effect. The distinctive aroma of lavender helps promote relaxation for those who inhale it. A relaxed state of the body can help increase milk production. Lavender aromatherapy method is applied to post partum mothers to reduce pain due to surgery. One of the causes of post-cesarean clients experiencing pain and prolonged anxiety is the client's ignorance about how to deal with pain which reduces milk production.

Based on the initial survey on June 25, 2021 conducted at one of the BPM Wahyu Jl. Pertiwi No 58 Pond Village, Percut Sei Tuan Subdistrict during June 2021, 5 postpartum mothers were found and 3 breast milk production was not smooth and 2 people did not know that back massage for breastfeeding mothers using Lavender Essential Oil can launch breast milk production. Based on the above background, the researcher is interested in carrying out research with the aim of knowing "The Effect of Back Massage on Breastfeeding Mothers Using Lavender Essential Oil on Breast Milk Production on Jl. Motherland No. 58 Pond Village, Percut Sei Tuan Subdistrict in 2021".

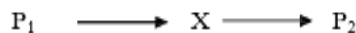
## 2. Method

### 2.1. yes of research

The type of research used in this research is a type of pre-experimental design research, which is a research that carries out activities because this is not yet a real experiment, because there are still external variables that also influence the formation of the dependent variable, not solely influenced by the independent variable. This can happen, because there are no control variables, and the sample is not chosen at random (Sugiyono, 2018).

### 2.2. Research design

The design of this research is all from planning to answer research questions and anticipate some possible difficulties that arise during the research. This study used a One Group pre-test and post-test design without a control group, the subject group was observed before the intervention, then observed again after the intervention. One group before being given a certain treatment was given a pretest, then after being given treatment, another measurement was taken to determine the cause and effect of the treatment. Cause-and-effect testing is done by comparing the results of the pretest with the posttest.



Note:

P1: Pretest

X: Back Massage Using Lavender Essential Oil

P2: Post test

### 2.3. Research sites

This research will be conducted at BPM Wahyu Jl. Pertiwi No 58 Pond Village, Percut Sei Tuan Sub-district in 2021. The reason for choosing the location was because of the problem of the number of post partum mothers as many as 5 people and 3 breast milk production was not smooth and 2 people did not know the Effect of Back Massage Using Lavender Essential Oil can launch breast milk production, an easy-to-reach location, and no research has ever been conducted on the Effect of Back Massage Using Lavender Essential Oil on Breast Milk Production at BPM Wahyu Jl Pertiwi No 58 Pond Village, Percut Sei Tuan District in 2021./

### 2.4. Research time

The research will be carried out starting from April 2021 since the title is accrued by the supervisor and the initial survey will be carried out in May 2021, starting from the initial survey to data collection and research.

TABLE 1

POA RESEARCH

No	Information	April	May	June	July	August
1	Title Submission					
2	ACC title					
3	Thesis Preparation					
4	Consul chapters 1,2 and 3					
5	Proposal Exam					
6	Proposal Revision					
7	Conduct research					
8	Result Preparation					
9	Exam Results					

**2.5. Research Population and Sample**

The population is an area consisting of: objects/subjects that have certain qualities and characteristics determined by researchers to be studied and then drawn conclusions (Sugiyono, 2017). The population in this study were post partum mothers who were registered at BPM Wahyu Jl. Motherland No. 58 pond villages, percut sub-district, sei Tuan Langkat Tahun, in June 2021, as many as 35 people. The sample is part or representative of the population being studied (Arikanto, 2017). The sample in this study was using a total population sampling technique, namely where all breastfeeding mothers in the BPM Wahyu Jl Pertiwi No. 58 Pond Village, Percut Sei Tuan Langkat District in 2021, June 2021, were 35 people.

**2.6. Operational Definition of Research**

Operational definition is operationally defining variables based on observed characteristics, enabling researchers to make observations or measurements carefully on an object. To avoid responses about the concept, the researcher will provide operational limitations as follows:

TABLE 1  
OPERATIONAL DEFINITION

No	Variable	Operational definition	Measuring instrument	Measurement Results	Measuring Scale
1	Back Massage Using Lavender Essential Oil	Massage using oil that can cause a relaxing effect on the back area along both sides of the spine with light rubbing movements using the fingers so that the mother feels more comfortable.	Observation sheet	1. Pre 2. Post	ordinal
2	Breast milk production	The volume of breast milk in 1 feeding on the 6th day measured in the morning, 2 hours after the baby suckles using a measuring cup	Observation sheet	1. Fluent 2. Not smooth	ordinal

**3. Results and Discussion**

**3.1 Research result**

This chapter will describe the results of research related to the effect of back massage using lavender essential oil on breast milk production at BPM Wahyu Jl Pertiwi No 58 Pond Village, Percut Sei Tuan District in 2021. The results of this study describe the demographic characteristics of respondents, pre-test and post-test breast milk production without control group. This research was conducted in May 2021 by conducting an initial survey. During the research process there were some respondents who refused to be studied and some respondents were very open during the research.

**3.2 Characteristics of Respondents**

Characteristics of respondents at BPM Wahyu Jl Pertiwi No. 58 Pond Villages, Percut Sei Tuan Subdistrict in 2021 in this study were grouped based on maternal age, gestational age and occupa-

tion. In general, breastfeeding mothers at BPM Wahyu Jl Pertiwi No 58 Pond Village, Percut Sei Tuan District in 2021 can be described as in table 4.1 below

TABLE 2  
FREQUENCY DISTRIBUTION OF CHARACTERISTICS OF BREASTFEEDING MOTHERS IN BPM WAHYU JL. PERTIWI NO. 58 KOLAM VILLAGE, PERCUT SEI TUAN DISTRICT IN 2021

No	Category	Frequency	Percentage (%)	
1	<b>Age</b>	20-34 years old	25	71.4
		>35 years old	10	28.6
		Amount	35	100
2	<b>Gestational Age (0-6 months)</b>	3 months	10	28.6
		5 months	15	42.8
		6 months	10	28.6
		Amount	35	100
3	<b>Work</b>	Teacher	25	71.4
		civil servant	5	14.3
		Housewife	5	14.3
		Amount	35	100

Based on Table 4.1 it can be concluded that most of the 35 respondents were aged between 20-34 years (71.4%), while the majority of respondents were with a gestational age of 5 months (42.8%). And the majority of respondents based on the work of teachers with the number of respondents as many as 25 people (71.4%).

### 3.3 Univariate Analysis

Univariate analysis was conducted to describe each variable by displaying the frequency distribution to see the distribution of respondents according to the various variables studied, the dependent variable and the independent variable. The results showed that the frequency distribution based on the milk production of the respondents can be seen as follows:

#### a. The Effect of Back Massage on Breastfeeding Mothers Using Lavender Essential Oil on Breast Milk Production

TABLE 2  
FREQUENCY DISTRIBUTION OF EFFECT BEFORE BREAKING MASSAGE IN BREASTFEEDING WOMEN USING LAVENDER ESSENTIAL OIL ON BREAST MILK PRODUCTION IN BPM WAHYU JL. PERTIWI NO. 58 KOLAM VILLAGE, PERCUT SEI TUAN DISTRICT IN 2021

NO	Breast Milk Production in Breastfeeding Mothers (Pre-Test)	Amount	Percentage (%)
1	Fluent	17	48.57
2	Not smooth	18	51.43
<b>Total</b>		<b>35</b>	<b>100</b>

Based on Table 4.2 shows that the total number of respondents amounted to 35 people. Based on the data above, it can be seen that the percentage or number of breastfeeding mothers prior to back massage using Lavender essential oil did not experience an increase in breast milk production with a large percentage (51.43%) or 18 people from the total respondents.

TABLE 3  
FREQUENCY DISTRIBUTION OF EFFECT AFTER BACK MASSAGE IN BREASTFEEDING WOMEN USING LAVENDER ESSENTIAL OIL ON BREAST MILK PRODUCTION IN BPM WAHYU JL. PERTIWI NO. 58 KOLAM VILLAGE, PERCUT SEI TUAN DISTRICT IN 2021

NO	Breast Milk Production in Breast-feeding Mothers (Post Test)	Amount	Percentage (%)
1	Fluent	27	77.14
2	Not Lamcar	8	22.86
	Total	35	100

Based on Table 4.3 shows that the total number of respondents amounted to 35 people. Based on the data above, it can be seen that the percentage or number of breastfeeding mothers after a back massage using Lavender essential oil has smooth milk production, this is evidenced by the table which shows that of the total respondents, 27 mothers (77.14%) had smooth breast milk.

#### b. Bivariate Analysis

The results of statistical tests on the effect of back massage on nursing mothers using lavender essential oil on breast milk production at BPM Wahyu Jl. Pertiwi No.58 Pond Village, Percut Sei Tuan District in 2021. It is shown in table 4.4 as follows:

TABLE 4  
DISTRIBUTION OF THE EFFECT OF BACK MASSAGE ON BREASTFEEDING MOTHERS USING LAVENDER ESSENTIAL OIL ON BREAST MILK PRODUCTION AT BPM WAHYU JL PERTIWI NO. 58 DESA KOLAM KECAMATAN PERCUT SEI TUAN YEAR 2021

No	Back Massage using lavender essential oil	Treatment				P-Value
		Before (Pre Test)		After (Post Test)		
		N	%	N	%	
1	Fluent	17	48.57	27	77.14	
2	Not smooth	18	51.43	8	22.86	0.001

Based on the table above, it can be seen that the effect of prior back massage on breastfeeding mothers using lavender essential oil on breast milk production that did not experience smooth milk production was 18 people (51.43%), and 17 people whose milk production was smooth (48, 57%). While the effect after the back massage was carried out on breastfeeding mothers using lavender essential oil whose breast milk production was smooth as many as 27 people (77.14%), and the production of breast milk was not smooth as many as 8 people (22.86%).

The results of statistical tests using the Wilcoxon test show that the p value (0.001) < (0.05) means  $H_0$  is rejected, so there is a significant effect on breast milk production if breastfeeding mothers are massaged using lavender essential oil at BPM Wahyu Jl Pertiwi No.58 Pond Village, Percut Sei Tuan Sub-district in 2021. These results prove that doing back massage to nursing mothers using lavender essential oil has a good effect on breast milk production at BPM Wahyu Jl Pertiwi No.58 Pond Village, Percut Sei Tuan District in 2021 .

### 3.4 Discussion

This research was conducted from April 2021 to July 2021. The number of samples used was 35 people and the type of research was pre-experimental design. This study used a One Group pre-test and Post-test design without a control group, the subject group was observed before the intervention, then observed again after the intervention. Respondents before being given a certain treatment were given a pre-test and then after being given treatment another measurement was taken to determine the cause and effect of the treatment. Cause and effect testing is done by comparing the results of the pre test with the post test. This research was conducted at BPM Wahyu Jl Pertiwi No. 58 Pond Village, Percut Sei Tuan District.

Based on the characteristics of respondents aged 20-34 years as many as 25 people and >35 years as many as 10 people. Meanwhile, based on the gestational age of 3 months as many as 10 people, the age of 5 months of pregnancy as many as 15 people and 6 months as many as 10 people. And based on the work of respondents who work as teachers as many as 25 people while civil servants 5 people and housewives as many as 5 people. The back massage using the effleurage technique is done using lavender aromatherapy oil mixed with Virgin Coconut Oil (VCO) with a ratio of 3 drops of lavender and 1 tablespoon of VCO. Researchers chose lavender oil as aromatherapy combined with massage because the use of lavender oil is expected to help nursing mothers increase relaxation and comfort so that milk production can increase.

Lavender is one of the popular essential oils and is widely used in the clinical health sector, especially in overcoming psychosomatic problems in gynecology (Sholihah, 2017). In accordance with the theory put forward by Ujingtyas, (2012) that lavender aromatherapy has a psychological therapeutic effect from the aroma that is inhaled through inhalation of its volatile components. The use of lavender aromatherapy through massage causes the lavender to evaporate and be inhaled by the mother. When massage using lavender oil is carried out with a soft touch, the mother can become more relaxed, reduce muscle tension and help launch breast milk production (Vidiyanti, 2015). Lavender oil is one of the aroma therapies that has sedative, hypnotic, and anti-neurodepressive effects on humans.

Research conducted by Diego AM; et al (1998) in IGAPrima, 2013) on humans regarding the effects of lavender aromatherapy for relaxation, anxiety, mood, and alertness on EEG (ElectroEncephalo Gram) activity showed a decrease in anxiety, mood improvement, and an increase in the strength of alpha and beta waves on the EEG. indicating increased relaxation. The results also showed that there was a significant increase in the strength of the alpha waves in the frontal area, which indicated an increase in drowsiness.

According to the researcher's assumptions from the results of research that has been done about the effect of prior back massage on breastfeeding mothers using lavender essential oil on breast milk production, 18 people (51.43%) did not experience smooth breast milk production, and 18 people (51.43%) whose breast milk production was smooth. 17 people (48.57%). While the effect after the back massage was carried out on breastfeeding mothers using lavender essential oil whose breast milk production was smooth as many as 27 people (77.14%), and the production of breast milk was not smooth as many as 8 people (22.86%).

The results of statistical tests using the Wilcoxon test show that the p value  $(0.001) < (0.05)$  means  $H_0$  is rejected, so there is a significant effect on breast milk production if breastfeeding mothers are massaged using lavender essential oil at BPM Wahyu Jl Pertiwi No.58 Pond Village, Percut Sei Tuan Sub-district in 2021. These results prove that doing back massage to nursing mothers using lavender essential oil has a good effect on breast milk production at BPM Wahyu Jl Pertiwi No.58 Pond Village, Percut Sei Tuan District in 2021.

Massaging the mother's back is one way to stimulate the oxytocin reflex to relax the mother when she has difficulty expressing milk. The upper back is the point used to facilitate the lactation process. The nerves that supply the breasts come from the upper spine, between the shoulder blades. This area is an area where women often experience muscle tension. Massaging your back can relax your shoulders and stimulate the letdown reflex. Massage done on the back with the effleurage technique and combined with lavender aromatherapy oil is very good for mothers because it can make the mother become 2x more relaxed and feel comfortable so that the hormone oxytocin increases and milk production becomes more. This can be used as one of the supports for post partum mothers so that more confident and feel comfortable when breastfeeding their baby so that milk production becomes smooth and can meet the baby's needs without having to use formula milk.

Research on back massage using lavender essential oil is an attempt to increase the smooth production of breast milk. because with smooth milk production, post-partum mothers can breastfeed their babies which is a form of worship. Likewise, the role of an active and caring husband to do massage as a simple method can be worship to carry out Allah's commands according to the Qur'an by loving his wife,

#### 4. Conclusion

Based on the description of the results of the research and discussion, it can be concluded as follows: Most of the 35 respondents were aged between 20-34 years (71.4%), while the majority of respondents were with a gestational age of 5 months (42.8%). And the majority of respondents based on the work of teachers with the number of respondents as many as 25 people (71.4%). The total number of respondents was 35 people, and it can be seen that the percentage or number of breastfeeding mothers before a back massage using Lavender essential oil did not experience an increase in breast milk production with a large percentage (51.43%) or 18 people from the total respondents. The total number of respondents is 35 people,

The results of statistical tests using the Wilcoxon test show that the p value (0.001) < (0.05) means  $H_0$  is rejected, so there is a significant effect on breast milk production if breastfeeding mothers are massaged using lavender essential oil at BPM Wahyu Jl Pertiwi No.58 Pond Village, Percut Sei Tuan Sub-district in 2021. These results prove that doing back massage to nursing mothers using lavender essential oil has a good effect on breast milk production at BPM Wahyu Jl Pertiwi No.58 Pond Village, Percut Sei Tuan District in 2021 .

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