

THE EFFECT OF EFFLEURAGE TECHNIQUE BACK MASSAGE USING LAVENDER AROMATHERAPY OIL ON POST-PARTUM BREAST MILK PRODUCTION

Yuni Herdiyani^{1*}, Nurul Isnaini², Vida Wira Utami³, Suharman⁴

¹⁻⁴Health Sciences Faculty, Midwifery Study Program, Malahayati University

Email Correspondence: yuniherdiyani663@gmail.com

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ABSTRACT

Lack of stimulation of the hormones prolactin and oxytocin can result in not achieving exclusive breastfeeding, psychological stress, decreased milk production in the first days after delivery. This hormone plays a role in the smooth production of breast milk. Attempts to stimulate the hormones prolactin and oxytocin can be done by back massage with the effleurage technique using lavender aromatherapy oil on post-partum breast milk production. This study aims to determine the effect of back massage using the effleurage technique using lavender aromatherapy oil on post-partum breast milk production at the Way Nipah Community Health Center in 2023. The research method used is quantitative with a pre-experimental design, one-group pretest-posttest. The sampling technique used proportional random sampling. The research was conducted in February-July 2023 at the Way Nipah Community Health Center in 30 people. Data analysis used the Wilcoxon test. The average breast milk production before the intervention was 5.37 ml with a standard deviation of 2.48, the minimum value was 0.0 and the maximum value was 10.0. The average breast milk production before effleurage technique back massage with lavender aromatherapy oil is between 4.44 to 6.29. The average breast milk production after the intervention was 77.0 ml, with a standard deviation of 9.79. The smallest value was 50.0, and the maximum value was 90.0. From the interval estimation results, it can be concluded that 95% believed that the average breast milk production after the effleurage technique back massage with lavender aromatherapy oil was between 73.34 and 80.65. There is an effect of back massage using the effleurage technique back massage with lavender aromatherapy oil on the post-partum breast milk production at the Way Nipah Community Health Center in 2023. Community Health Center can be used to support breastfeeding their babies and assist in applying effleurage technique back massage to help breast milk production.

Keywords: *Effleurage Back Massage, Lavender Aromatherapy Oil, Breast Milk Production, Post-partum*

INTRODUCTION

Lactation is the whole process of breastfeeding, starting from the production of breast milk until the baby sucks, the breast secretes milk, and the baby swallows milk (Jouanne

et al., 2021). Early breastfeeding will stimulate an increase in prolactin in the blood, thereby increasing milk production (Susanti et al., 2022). Exclusive

breastfeeding helps children survive and build the antibodies they need to protect against many common childhood illnesses, such as diarrhea and pneumonia (Amoo et al., 2022). Children who are breastfed perform better on intelligence tests, are less likely to be obese or overweight, and are less likely to develop diabetes as adults (Hossain & Miharshahi, 2022). Increasing the number of breastfeeding mothers globally has the potential to save the lives of more than 820,000 children under five and can prevent an additional 20,000 cases of breast cancer in women each year (WHO, 2020).

The coverage of exclusive breastfeeding in Lampung Province is 76.76%, which is still below the national target of 80% (Kemenkes RI, 2021). Bad effects for the baby will occur if the baby does not get exclusive breastfeeding. Babies who are breastfed will be healthier than babies who are fed formula (Salamah et al., 2019). Exclusive breastfeeding based on Government Regulation Number 33 of 2012 concerning exclusive breastfeeding, is breast milk given to babies from birth for six months without adding or replacing it with other foods or drinks (except medicines, vitamins, and minerals). Breast milk contains colostrum, which is rich in antibodies (Matsumoto et al., 2020). It contains protein for immunity and is useful for killing germs in high numbers, it can reduce the risk of death in infants (Shitie et al., 2022). Breast milk also contains certain enzymes that function as absorbent substances that will not interfere with other enzymes in the intestine (Lyellu et al., 2020). Formula milk does not contain these enzymes, so the absorption of food completely depends on the enzymes found in the baby's intestines (Kemenkes RI, 2021).

The problem of breastfeeding is one of the biggest health issues in the world (Mäkelä et al., 2023). The reasons why mothers do not exclusively breastfeed their babies are due to working mothers or other social activities, physical factors, reflex and hormonal factors (prolactin and oxytocin), psychological factors, socio-cultural factors, factors of lack of support and attention from families and partners to mothers, factors of lack of mother's knowledge about colostrum, and the mother's thinking that her milk is lacking or does not have enough milk (Akter, 2018). These factors cause mothers not to give exclusive breastfeeding to their babies (Nurhidayati & Zulfa, 2021).

There are many factors that can affect breastfeeding production, including food factors, use of contraception, breast care, rest patterns, and others (Riksani, 2012). One of the efforts to influence breastfeeding that will be carried out by researchers is back massage (Zulfiana et al., 2021). Back massage is massage along the spine (vertebrae) to the fifth-sixth ribs and is an attempt to stimulate the hormones prolactin and oxytocin after childbirth (Purwanti et al., 2018). This back massage serves to increase the hormone oxytocin (Dewi et al., 2017). Back massage has several techniques, one of which is effleurage, which is done with light and soothing rubbing movements (soft, slow, long, or intermittent) when starting and ending the massage. This movement aims to warm up the muscles so they are more relaxed (Marilyn, 2016).

There are several types of oils that can be used in effleurage massage practices, one of which is lavender essential oil, that is well-known for its refreshing, strengthening, animating, and calming effects on the skin (Fitri,

2018). Research conducted by Susanti et al. (2022) stated that there was a difference in the smoothness of expressing breast milk after an effleurage technique back massage with lavender aromatherapy oil, and there was an increase in the average milk production of 58.82 mL. Meanwhile, research conducted by Ohorella et al. (2021) showed differences in the smoothness of milk production between the oxytocin massage group and the lavender aromatherapy group.

According to the results of a preliminary study in February 2023 in the Way Nipah Community Health Center, the coverage of exclusive breastfeeding for the 2022 period was 58.1%, which is still very low compared to the Kotaagung Community Health Center, which was 91.17% of the national breastfeeding target. According to the results of the preliminary study with interviews from 5 mothers who had babies aged 1-6 months, 3 of the mothers said that they had given their babies formula milk because only a little milk comes out.

The question of this research is whether there is an effect of effleurage technique back massage using lavender aromatherapy oil on post-partum breast milk production

at the Way Nipah Community Health Center in 2023? This study aims to determine the effect of effleurage technique back massage using lavender aromatherapy oil on post-partum breast milk production at the Way Nipah Community Health Center in 2023.

RESEARCH METHODOLOGY

This research uses a quantitative type and pre-experimental design. The research was carried out in April 2023 at the Way Nipah Community Health Center. The population used in this study were all postpartum mothers on day 1 of 30 respondents, using a purposive sampling technique. This research was conducted in the Way Nipah Community Health Center Work Area in February-July 2023. The dependent variable is breast milk production and the independent variable is effleurage techniques back massages using lavender aromatherapy oil. The instruments used in this research are standard measuring tools, namely measuring cup, observation sheet, aromatherapy oil, clean towels, and a breast pump. The data collection tool uses an observation sheet. Data analysis used the Wilcoxon test.

RESEARCH RESULT

Univariate analysis

Table 1

| Breast Milk Production (ml) | Mean | Standard Deviation |
|-----------------------------|------|--------------------|
| Before | 5,37 | 2,48 |
| After | 77,0 | 9,79 |

The average breast milk production before the intervention was 5.37 ml, with a standard deviation of 2.48. The smallest value was 0.0, and the maximum value was

10.0. From the interval estimation results, it can be concluded that 95% believed that the average milk production before effleurage technique back massage with

lavender aromatherapy oil was between 4.44 and 6.29. The average breast milk production after the intervention was 77.0 ml, with a standard deviation of 9.79. The smallest value was 50.0, and the maximum value was 90.0. From the

interval estimation results, it can be concluded that 95% believed that the average breast milk production after the effleurage technique back massage with lavender aromatherapy oil was between 73.34 and 80.65.

Bivariate analysis

Table 2

| Breast Milk Production (ml) | Mean | Standard Deviation | p-value |
|-----------------------------|------|--------------------|---------|
| Before | 5,37 | 2,48 | 0,000 |
| After | 77,0 | 9,79 | |

The results of the Wilcoxon Test found p-value 0.000. It can be concluded that there is an effect of the effleurage technique back massage using lavender

aromatherapy oil on post-partum breast milk production in the Way Nipah Community Health Center in 2023.

DISCUSSION

Breast Milk Production Before Intervention (Pre-Test)

The average breast milk production before the intervention was 5.37 ml, with a standard deviation of 2.48. The smallest value was 0.0, and the maximum value was 10.0. From the interval estimation results, it can be concluded that 95% believed that the average milk production before effleurage technique back massage with lavender aromatherapy oil was between 4.44 and 6.29. During pregnancy, the hormones estrogen and progesterone induce the development of the alveoli and lactiferous ducts in the breasts. After the baby is born, there is a decrease in the level of the hormone estrogen. This decrease in estrogen levels will also encourage an increase in prolactin levels, a hormone that plays in the breastfeeding process (Haryono & Setianingsih, 2014).

The results of this study were in line with research conducted by Susanti et al. (2022), that the average breast milk production before the efflurage massage was 39.18 ± 14.105 , the maximum value is 70 mL, and the minimum value is 30 mL.

According to the researchers' assumptions, the causes of failure to breastfeed include delays in early breastfeeding, mothers feeling that their milk is not sufficient, and not being secreted. Insufficient milk is caused by various factors, small nipples and other breast abnormalities. In addition, psychological factors also affect breastfeeding in primiparous mothers who have no experience. The possibility of stress during the adaptation period after childbirth is very high can inhibit breast milk production. Giving a massage using aromatherapy is way to stimulate breast milk production.

Breast Milk Production after Intervention (Post-Test)

The average breast milk production after the intervention was 77.0 ml, with a standard deviation of 9.79. The smallest value was 50.0, and the maximum value was 90.0. From the interval estimation results, it can be concluded that 95% believed that the average breast milk production after the effleurage technique back massage with lavender aromatherapy oil was between 73.34 and 80.65.

Back massage is massage along the spine (vertebrae) to the fifth-sixth costal bone, which aims to stimulate the hormones prolactin and oxytocin after childbirth (Purwanti et al., 2018). Massaging the mother's back is one way to stimulate the oxytocin reflex and make the mother relax when she has difficulty expressing breast milk (Anggraini et al., 2022). The upper back is the point used to accelerate the lactation process. The nerves that innervate the breasts originate from the upper spine, between the shoulder blades. This is an area where women often experience muscle tension (Usman, 2020). Back massage can relax the shoulders and stimulate the let-down reflex. La Leche League International (LLL) has recommended back massage as an effort to increase breast milk flow (Sinaga & Mufdlilah, 2023). Back massage can be done using aromatherapy oil (Nurhanifah, 2013). Aromatherapy is medicine using fragrances, it refers to the use of essential oils in holistic healing to improve emotional health and well-being and restore balance to the body (Fitri, 2018). The results of this study were in line with Yuliana et al. (2016), that found the back massage treatment using lavender increasing breast milk production 3.33 times.

According to the researcher's assumption, back massage is way to stimulate the oxytocin reflex, which is useful in increasing and facilitating breast milk production. A significant increase in breast milk production for each respondent occurred on the 3rd day post-partum, this is in accordance with the theory that colostrum on the 3rd day turns into mature milk, where the volume is more according to the needs of the baby. The physiological process of lactation starts at the time of pregnancy, when the hormones estrogen and progesterone induce the development of the alveoli and lactiferous ducts in the breast after the baby is born, followed by a decrease in the level of the hormone estrogen. It will encourage an increase in prolactin levels, a hormone that plays in the breastfeeding process (Haryono & Setianingsih, 2014).

Breastfeeding is a complex process. Knowing how the breasts produce milk will help mothers understand the breastfeeding process so they can breastfeed exclusively. Hormones and reflexes work together to produce breast milk. When the baby starts sucking milk, there will be two reflexes that will cause the milk to come out. This is called the formation reflex or prolactin reflex, which is stimulated by the hormone prolactin, also known as the let down reflex (Haryono & Setianingsih, 2014).

Effect of Effleurage Technique Back Massage on Breast Milk Production

The results of the Wilcoxon Test found p-value 0.000. It can be concluded that there is an effect of the effleurage technique back massage using lavender aromatherapy oil on post-partum breast milk production in the Way

Nipah Community Health Center in 2023.

Back massage provides a stimulus to the subcutaneous dermis and fascia areas. In this skin area, there are cutaneous nerves that activate the vagus nerve. It is located in an afferent pathway that stimulates the posterior pituitary by activating beta-alpha fibers and slowing the conduction of the fiber subpopulation (Rinjani & Magdalena, 2021). This situation causes the posterior pituitary to produce the hormone oxytocin. In addition to providing stimulation to the nerves in the skin, massage also puts pressure on the spinal points in the spine. Massage can have a relaxing effect on this organ (Yuliana et al., 2016).

Effleurage massage performed on the back is a mechanical receptor directly on the skin, thereby simultaneously stimulating afferent nerve impulses in the limbic system along the vertebrae and ribs 5-6 to the scapula, which will accelerate the work of the parasympathetic nerves, which stimulate the posterior pituitary to release oxytocin. This stimulation provides feedback to the posterior pituitary gland (neurohipophyse) so that oxytocin is secreted into the circulatory system. Oxytocin entering the blood causes the contraction of myoepithelial cells that surround the mammary alveoli and lactiferous ducts. Smooth muscle contractions around the mammary glands shrink, and myoepithelial cells push milk out of the alveoli through the lactiferous ducts to the lactiferous (Susanti et al., 2022).

The results of this study are in line with Nurul's research (2019), showed that there was a difference between before and after given the effleurage technique back massage using rose aromatherapy oil. It

showed that there was an effect of effleurage technique back massage using rose aromatherapy oil on breast milk production in postpartum. According to the researchers assumptions, giving effleurage technique back massage with using aromatherapy oil can stimulate breast milk production. Based on the theory of the limbic system, the amygdale and hippocampus increase the effect of gamma aminobutyric, which is a neurotransmitter and brain hormone that inhibits unfavorable neurological reactions and responses to make the mother relax. Aromatherapy cause relax and stimulate produce the hormone serotonin (Yuliani et al., 2016). These hormones are most effective in increasing and facilitating breast milk production. Prolactin reflex to facilitate breast milk production. When the baby suckles the mother's nipple, there is neo-hormonal stimulation of the mother's nipples and areola. This stimulation is transmitted to the pituitary via the vagus nerve, then to the anterior lobe. The hormone prolactin will be secreted, enter the blood circulation, and stimulated to produce milk.

CONCLUSION

The average production of breast milk before intervention was 5.37 ml and after intervention was 77.0 ml. There is an effect of effleurage technique back massage using lavender aromatherapy oil on the production of breast milk for postpartum in the Way Nipah Community Health Center in 2023.

Suggestion

Based on research results, it is necessary for community to increase knowledge through participation in health counseling and classes for

pregnant women. For the Community Health Center, these results can be used as a reference to provide support and assist to mothers in breastfeeding with effleurage technique back massage.

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