

Lacta Massage Using Fennel Essential Oil to Increase Prolactin Hormone Levels in Postpartum Mothers

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Abstract: ***Introduction:** Breastmilk is the first food, the main and the best food for babies. About 30% of mothers experience breastfeeding problems in the first 2 weeks postpartum and lack of milk production is often used as a reason to cease breastfeeding. Lacta massage using fennel essential oil is one of the non-pharmacological therapies that can be used as an alternative effort in stimulating the hormone prolactin to increase milk production. **Research Method:** True experiment with the pretest-posttest design with control group design. A total of 34 respondents. Data analysis using Paired T-Test, Wilcoxon and Mann-Whitney. **Results:** There were significant differences between the intervention group and the control group with a value of 0.041. In the intervention group, there was an average increase in prolactin hormone levels of 93.12 ng/ml and in the control group of 7.6 ng/ml. **Conclusion:** Lacta massage using fennel essential oil is effective for increasing prolactin hormone levels in postpartum mothers so that it can be used as an alternative effort to increase breastmilk production.*

Keywords: lacta massage, prolactin, postpartum mother

1. Introduction

The relevance of this research relates to the production of breast milk and the smoothness of the breastfeeding process. Breastmilk is the first and foremost nutrient to fulfill the nutritional needs that are important for babies. Breast milk production is affected by the performance of the hormone prolactin. Lack of milk production is often used as an excuse for mothers to stop their breastfeeding period.

2. Literature Survey

Breastmilk is the main nutrient that plays an important role for health and survival and can reduce infant morbidity and mortality because it contains all the nutrients, vitamins and minerals as well as antibodies in building the baby's immune system and increase intelligence[1].

Breastfeeding is influenced by maternal and infant factors. A study by Foong in Malaysia that about 30% of mothers experience breastfeeding problems in the first two weeks of postpartum and lack of milk production is often used as an excuse to stop their breastfeeding [2].

Lack of baby stimulation in the breast during the early period of breastfeeding affects the formation of the hormone prolactin and oxytocin causes the production and expenditure of breast milk are inhibited [3].

Efforts to overcome the problem of breast milk production can be given pharmacological or non-pharmacological

therapy. One non-pharmacological effort is lacta massage using fennel essential oil.

Lacta massage is an innovative massage technique performed on breastfeeding mothers by combining breast care techniques, massage oxytocin and breast pressure using fennel essential oil. Research by Winnie said that breast care proved to be able to increase the hormone prolactin and facilitate milk flow[4]. Oxytocin massage is a massage along both sides of the costae to the fifth and sixth rib boundaries in an effort to stimulate the mother's body to release prolactin and oxytocin hormones. Research by Agustie on oxytocin massage has been shown to increase prolactin hormone by 66%[5]. Breast pressure suppresses certain points on the breast that leads to energy balance in the body and helps increase milk production. Research by Desak and Umesh Patel that the application of pressure using the thumb and fingertips of both the breast and back is significantly able to increase milk production and help maximize prolactin and oxytocin receptors[6, 7].

Fennel essential oil is proven to contain fatty acids, flavonoids, vitamins, minerals such as calcium(49mg / 100g) which are associated with increased milk supply. Research conducted by Nawang were using fennel essential oil for breast massage can increase prolactin hormone levels by 180.94%[8].

3. Methods/Approach

This type of research uses a true experimental research design with a pretest-posttest design with control group

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design. This research was conducted at the Genuk Health Center and Ngesrep Health Center in Semarang City. The number of samples of 34 respondents who were divided into intervention groups with lacta massage using fennel essential oil was carried out 2 times a day and a control group with breastcare with a duration of 30 minutes given for 3 days. Breastpressure points in this study are SP17, SP18, SP19, ST16, ST18, Ki22, Ki23, Ki24, and CV17.

4. Results and discussion

4.1 Characteristics of respondents

Table 1: Description the characteristics of age, education, employment, parity, and psychology

Variable	Group		p-value
	Intervention	Control	
Age Mean±SD Min±max	26.76±3.437 21±35	28.24±4.562 20±35	0.140
Level of education Basic Middle High	0% 82.4% 17.6%	0% 94.1% 5.9%	0.287
Employment Work Does not work	58.8% 41.2%	76.5% 23.5%	0.271
Parity Primipara Multipara	35.3% 64.7%	41.2% 58.8%	0.508
Psychology Normal Mild Moderate Severe	70.6% 5.9% 11.8% 11.8%	64.7% 17.6% 5.9% 11.8%	0.773

In Table 1, this study shows that the age range of respondents to healthy reproductive age is 20-35 years. In the intervention group, the average age of respondents was 27 years, while in the control group the average age of respondents was 28 years. Healthy reproductive age is the safest age for pregnancy, childbirth, and breastfeeding because the body is more optimal for carrying out its functions related to breastfeeding, besides that it is also supported by psychological and mental maturity. After the homogeneity test for the two groups was obtained, the p-value was 0.140, meaning that there were no significant differences in the age of respondents in the intervention and control groups.

The level of education in the intervention group was intermediate at 82.4% and high at 17.6%. While in the control group, 94.1% in secondary education and 5.9% high. Education is one of the important factors to get and receive information so that it will increase the knowledge and desire of the mother to give exclusive breastfeeding to her baby. After testing the homogeneity of the two groups, it was obtained the p-value of 0.287, meaning that there were no significant differences in the level of education of respondents in the intervention and control groups.

Employment of respondents in the intervention group as much as 58.8% of respondents worked and the control group showed that 76.5% of respondents worked. Working mothers can continue to provide breast milk by milking and storing it

to give their babies when the mother works. After testing the homogeneity of the two groups, it was obtained the p-value of 0.271, meaning that there were no significant differences in the work of respondents in the intervention and control groups.

The respondent's parity in the intervention group was primipara 35.3% and multiparous 64.7%. Whereas in the control group, primipara 41.2% and multiparous 58.8%. Mothers who have previous breastfeeding experience have better knowledge and skills and confidence to breastfeed their babies compared to mothers who have never breastfed before. After testing the homogeneity of the two groups, it was found that the p-value was 0.508, meaning that there were no significant differences in the respondent parity in the intervention and control groups.

Psychological respondents in the two groups at most were normal at 70.6% and in the control group at 64.7%. The performance of hormones in a person's body including the performance of the hormone prolactin is influenced by his psychological condition. A mother who does not experience anxiety and feels more confident in breastfeeding her baby, her body will be more optimal in producing the hormone prolactin. After testing the homogeneity of the two groups, it was obtained the p-value of 0.773, meaning that there were no significant psychological differences in the respondents in the intervention and control groups.

4.2 Hormone levels of prolactin

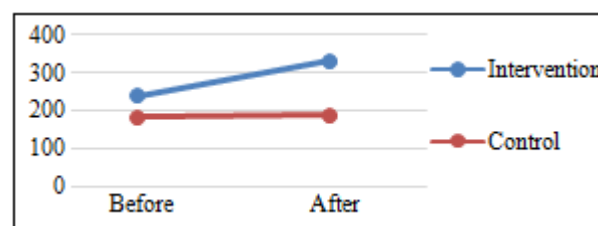


Figure 1 Effect of Combination of Balck cumin (*Nigella Sativa*) and Lactation Massage on Oxytocin Levels

It can be concluded that there is a significant difference in the mean difference between the increase in prolactin hormone between the intervention group and the control group (p-value=0.041). And there were significant differences in prolactin hormone levels between before and after treatment in the intervention group and the control group.

During the lactation process, there are two hormones that play an important role in maintaining the lactation process, namely the hormone prolactin to increase the production of breast milk and the hormone oxytocin which cause the secretion of breastmilk. To help increase the production of breastmilk, among others, maternal skin care with baby's skin, pumping breastmilk regularly 12 times per day, lactation counseling, and relaxation techniques to help with breastfeeding and food intake[9].

Lacta massage is an innovative massage technique performed on breastfeeding mothers by combining breast care techniques, oxytocin massage and breast pressure using fennel essential oil. Lacta massage will stimulate the body to

release the hormone prolactin and the hormone oxytocin so that milk production will be optimal. The emphasis on the points of SP17, SP18, SP19, ST16, ST18, Ki22, Ki23, Ki24 and CV17 in the breast is proven to increase breast milk production[10]. Point CV17 is a key point used to increase breast milk production. The Ki22, Ki22 and Ki24 points are used to control Chi flow (energy) and help in blood production so that it can overcome the lack of energy flow and blood supply to the body which causes breast milk production to increase[11]. This is in line with the research urging that breast acupressure combined with oxytocin massage significantly increase breast milk production[6].

The use of aromatherapy typically for massage can improve the effectiveness of the absorption of the content in essential oils[5]. Maximum absorption will help improve relaxation and comfort and relieve pain, thus stimulating the body to release prolactin and oxytocin hormones and milk production will increase[12]. Research conducted by Nawang stated that acupressure in the breast combined with aromatherapy can increase prolactin hormone by 302.88%[8].

Fennel can improve milk supply and digestion of the mother and baby for the better. Fennel contains *fatty acids*, *flavonoids*, vitamins, minerals such as *calcium* (49mg / 100g) and essential oils. Fennel is a common galactagogue herb and is used in increasing breast milk production. Fennel seeds that contain *calcium* are associated with an increase in milk supply[13]. Fennel oil applied to the skin will be absorbed through the integumentary system into the circulatory system and simultaneously the odor receptors in the nose through neurotransmitters stimulate the part of the brain in the limbic system which is part of the hypothalamus responsible for the production of hormones to produce the hormone prolactin[8, 14].

Lacta massage using fennel essential oil has a positive effect because it passes through two lines of the body system simultaneously, namely a combination of breast milk physical mechanical receptors through massage on the breast and back area and on the skin and through absorption of essential oils of fennel. Lacta massage causes mechanical stimulation directly on the skin, thus stimulating afferent nerve impulses in the limbic system along the vertebrae and acupressure points in the breast area. These stimuli give back sensation to the anterior pituitary gland so that prolactin is secreted into the circulatory system. Prolactin that enters the blood causes the acini cells in the alveoli mammary to production of breast milk. At the same time, the relaxing effect of the essential oil from fennel essential oil applied to the skin will be absorbed through the integumentary system into the circulatory system and simultaneously the odor receptors in the nose through neurotransmitters stimulate the part of the brain in the limbic system in the hypothalamus responsible for producing hormones to produce prolactin hormone and amygdala and hippocampus which are responsible for controlling emotions and memories that affect physical, mental and emotional health[8, 14]. When the condition relaxes the circulatory and hormonal systems are relatively smoother so the mother feels more comfortable in the process of breastfeeding.

5. Conclusion

Lacta Massage uses fennel essential oil to increase prolactin hormone levels by 39% in postpartum mothers so that it can be used as an alternative effort to increase breast milk production.

6. Future Scope

Researchers cannot control breastfeeding duration and baby suction strength.

7. Other Recommendations

For further research, researchers can continue the research by increasing the number of longer interventions.

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