

# Oxytocin Massage Increase Milk Production During Breastfeeding

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**Abstract**— Breast milk is the main food for babies at the age of 6 months of life. Breast milk, which is produced naturally by the body, contains nutrients that are essential for the baby's growth and development. However, in practice there are still many problems in breastfeeding. Mothers do not give breast milk to their babies, especially in the first days of life because milk production is not smooth. Therefore, to prevent the failure of early breastfeeding, efforts are needed to speed up breastfeeding, one of which is oxytocin massage. Oxytocin massage is a massage performed on breastfeeding mothers on the back, to help increase the production of the hormone oxytocin and also prolactin which helps the body in the process of expressing breast milk. Oxytocin massage can be used in postpartum mothers. This type of research is quantitative research, quasi-experimental. Quasi experimental research design with pre and post test without control. The effectiveness of the treatment was assessed by comparing the post-test scores with the pre-test scores. Based on the results of the Wilcoxon Test, the Sig (2-tailed) results showed a value of 0,005 (p value <  $\alpha$  0.05) so that the results obtained that H<sub>0</sub> was rejected and H<sub>a</sub> was accepted, which means that there was a significant difference before and after massage oxytocin in increasing breast milk production. Oxytocin massage can effectively increase milk production with a mean result of -2,840.

**Keywords**—Massage Oxytocin, Breast Milk Production

## I. INTRODUCTION

Breast milk (ASI) is the best natural nutrition for babies because it contains the energy and substance needs needed for the first six months of a baby's life. All nutritional needs, namely protein, carbohydrates, fats, vitamins and minerals, are fulfilled by breast milk. Breast milk can meet the nutritional needs of babies and protect the body from various diseases [1].

In the first days of a baby's life, not a few mothers experience problems in breastfeeding their babies because of problems with milk production. This is because there are still pregnancy hormones such as estrogen that suppress breast milk production, therefore to prevent failure of early breastfeeding, efforts are needed to accelerate breastfeeding [2].

At the time after giving birth, there are two hormones that work to maintain the lactation process, namely the hormone prolactin to increase breast milk secretion and the hormone oxytocin which causes breast milk ejection [3]. The oxytocin hormone functions to tighten the smooth muscles around the alveoli to squeeze milk into the milk ducts and play a role in the process of letting down milk / milk ejection reflex. One of the non-pharmacological therapies that can stimulate the release of the hormone oxytocin is back massage or oxytocin massage for nursing mothers [4].

Oxytocin massage can stimulate the oxytocin reflex or the let down reflex. This massage will make the mother feel relaxed, the fatigue after giving birth will disappear and the milk will come out quickly [5]. Oxytocin makes myoepithelial cells around the alveoli contract, so that the milk that has collected in the alveoli can flow and fill all the milk ducts smoothly [6].

Oxytocin massage can be done 1-2 days after delivery, before the mother breastfeeds and can be repeated several times after the mother breastfeeds. Oxytocin massage can be done several times a day with a 3-5 minute massage. The effect of oxytocin massage can be seen in the reaction within 6-12 hours of massage [7]. According to the Health Profile of Klaten Regency [8], the coverage of exclusive breastfeeding in Klaten Regency in 2019 was 82.2%. Based on the results of a preliminary survey in Keprabon Village, Polanharjo, Klaten, one of the factors causing the failure of breastfeeding mothers to provide exclusive breastfeeding to their babies is due to the problem of milk production that has not been released on the first and second days of the baby's birth. Because of this, giving formula milk is an option for breastfeeding mothers to meet the nutritional needs of their babies. The purpose of this study was to determine the effectiveness of oxytocin massage in increasing breast milk production.

## II. METHOD

This research design is pre-experimental (Pre-experimental Designs) with One Group Pre and Post Test Design. The sampling technique used is total sampling. The samples obtained were 10 post partum mothers on the 1st and 2nd day. Statistical analysis used the non-parametric Wilcoxon Signed Rank Test.

## III. RESULT

Based on the research results, the following results were obtained:

Table 1. Average Milk Production Before Oxytocin Massage

| Breastmilk production (pre-test) | Mean | n  | Standar Deviasi (SD) |
|----------------------------------|------|----|----------------------|
|                                  | 32   | 10 | 13,581               |

Based on the table above, it can be seen that the average milk production before the oxytocin massage is 32

Production of breast milk produced on the first and second day since the baby is born around 50-100 ml / day. The amount increases to 500 ml by the second week. Breast milk production is more effective and increases 10-14 days after delivery [3].

Table 2. Average Milk Production after Oxytocin Massage

| Breastmilk production (pre-test) | Mean | n  | Standar Deviasi (SD) |
|----------------------------------|------|----|----------------------|
|                                  | 56   | 10 | 8,097                |

Based on the table above, the results show that the average milk production after oxytocin massage in post partum mothers is 56. Oxytocin massage can be done 1-2 days after delivery, before the mother breastfeeds and can be repeated several times after the mother breastfeeds. Oxytocin massage can be done several times a day with a 3-5 minute massage. The effect of oxytocin massage can be seen in the reaction within 6-12 hours of massage [7].

Table 3. Differences in average milk production before and after oxytocin massage

| Breastmilk production (post test-pre test) | N               | Mean | Sum of Rank | Z                   | P-Value |
|--|-----------------|------|-------------|---------------------|---------|
| Negative Rank                              | 0 <sup>a</sup>  | ,00  | ,00         | -2,840 <sup>a</sup> | ,005    |
| Positive Rank                              | 10 <sup>b</sup> | 5,50 | 55,00       |                     |         |
| Ties                                       | 0 <sup>c</sup>  |      |             |                     |         |
| Total                                      | 10              |      |             |                     |         |

Based on the table above, the result shows that the Negative Rank between the results before and after the oxytocin massage is 0, which indicates that there is no decrease in the amount of breast milk production from before and after the oxytocin massage. Positive Rank of 10 post partum mothers experienced an increase in the amount of milk production before and after the oxytocin massage. The average increase is 5,50, while the number of positive ratings is 55. The Ties value shows the number 0 which means there is no similarity in the amount of milk production before and after the oxytocin massage. Based on these results it can be seen that the p-value  $0,005 \leq 0,05$ , then  $H_a$  is accepted, so it can be concluded that there is an effect of oxytocin massage on milk production in post partum mothers.

Oxytocin massage has many benefits in the breastfeeding process, including reducing stress on postpartum mothers, reducing pain in the spine, stimulating the work of the oxytocin hormone, increasing comfort, increasing the movement of breastmilk to the breasts, increasing the filling of breastmilk to the breasts, increasing breastfeeding [9]. The results of this study are in accordance with a similar study conducted by Ika Nur Saputri, et al [10] said that there was a significant effect on breast milk production before and after oxytocin massage in postpartum mothers. Oxytocin massage is an act of massaging the spine from the 5-6th nerve to the scapula which can accelerate the work of the parasympathetic nerve to convey commands to the back of the brain so that the hormone oxytocin is released [7].

According to Eko Mardiyarningsih, et al. [5] in their research on post-cesarean section mothers, the combination method of marmet technique and oxytocin massage can effectively increase milk production. The results of this study are also in line with the results of research by Fairus Prihatin Idris, et al [10] which states that there is an effect of oxytocin massage by husband on the response of mother in breastfeeding on days two and three. Oxytocin massage is done to stimulate the oxytocin reflex or let down reflex. With

massage, the mother will feel relaxed, so that the oxytocin hormone comes out and the breast milk will run smoothly [11].

Johan and Azizah’s research [12], proves that oxytocin massage can increase milk production. Oxytocin massage, spinal massage therapy on the ribs 5-6 to the scapula will accelerate the work of the parasympathetic nervous system which stimulates the posterior pituitary to release oxytocin.

Studies related to the effectiveness of oxy-tocin massage on breast milk production have been carried out by many researchers, as has been done by Lutfiana Puspita Sari, et al [11] that combination of oxytocin massage and hypnobreastfeeding can effectively decreasing anxiety and increasing breast milk production for post-partum mothers. Massage around vertebrae or back-bone might decrease noradrenaline hor-mone so that mothers will achieve a calm and relaxed condition. Noradrenaline hor-mone is a hormon that medulla produces and that affect sympathetic neuron system. During the massage process, serotonin and dopamine hormone are increased while norepineprhine and cortisol (stress hor-mone) are decreased. As a result, the secretion of oxytocin hormone becomes fluent [13].

Oxytocin massage effective to increasing breast milk release and increase breastmilk production from post partum mothers. Post partum care practices suggested in efforts to make early breastfeeding initiation, and ensure the production of adequate breast milk by doing oxytocin massage to stimulate breast milk release so that the breast milk production increases [14].

According to Morhenn et al [15], massage was associated with an increase in Oxytocin (OT) and reductions in adrenocorticotropin hormone (ACTH), nitric oxide (NO), and beta-endorphin (BE). Comparing the effects of massage for the massage group with those for the rest group, the research team found significant differences between groups for changes in Oxytocin (OT), adrenocorticotropin hormone (ACTH), nitric oxide (NO), and beta-endorphin (BE).

Oxytocin massage is carried out along the spine, where in lactation the mother often feels tense. Along the spine there are acupressure points to facilitate the lactation process and facilitate the flow of milk and the nerves around the breast which are connected to the nerves that are spread along the spine. Oxytocin massage is carried out on postpartum mothers as a stimulus that will cause an increase in prolactin and oxytocin levels, especially on the first day of breastfeeding, which in turn will affect the production and release of breast milk [6].

A study conducted by Husna, et al [16] stated that back massage can increase in breast milk production in post partum mothers. In their research, breast milk production was measured by looking at several indicators of the smooth effectiveness of breastfeeding, including differences in the frequency of breastfeeding in infants, differences in frequency. urination in infants and the difference in the length of sleep the baby sleeps after feeding.

#### IV. CONCLUSION

Based on the results of the research above, it can be concluded that there is an effect of oxytocin massage on increasing breast milk productivity.

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