Research Article

IMPLEMENTATION OF NURSING INTERVENTIONS IN MRS. M USING ENDORPHINS AND OXYTOCIN MASSAGE TO INCREASE EXCLUSIVE BREAST MILK

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ABSTRACT

Background: Exclusive breast milk is the best food needed by newborns up to 6 months of age. One of the factors that influences the failure of exclusive breastfeeding is the lack of smooth breast milk production. Endorphin and oxytocin massage is one method that can be used to increase breast milk production. **Objective:** To find out how the endorphin and oxytocin massage method was applied to Mrs. M to increase exclusive breastfeeding in breastfeeding mothers in Awang village, West Bangkal**. Methods:** This research method uses a case study research design on Mrs. M, who has poor milk flow in the left breast, using the endorphin and oxytocin massage method to increase breast milk. Nursing care for Mrs. M was carried out from 20–26 November 2023, twice a day in the morning and afternoon for 6-12 hours, using endorphin and oxytocin massage SOPs and observation sheets. **Results:** The results obtained after the endorphin and oxytocin massage intervention for 7 days showed an increase in breast milk production, namely, the left breast became more extensive and tense, the feeling that the milk was increasing when pressed, the milk came out but did not leak and was thicker. There is an increase in breastfeeding frequency to 8-10x a day for 10 minutes on the right breast and ±5 minutes on the left breast. Sleep duration increased to 3-4 hours, and the baby's weight increased by 0.075 grams**. Conclusion:** The method of applying endorphin and oxytocin massage can increase exclusive breast milk production in breastfeeding mothers

Keywords: Endorphine, Oxytocin, Massage, Breast Milk

INTRODUCTION

The growth and development needs of newborns up to 6 months of age are the only food that contains nutrients, which is breast milk (mother's milk) (Hidayati and Hanifah, 2019). The World Health Organization (WHO) recommends exclusive breastfeeding in the first six months of a baby's life. Breast milk is the perfect food for babies and contains all the substances necessary for their growth and development. These nutrients include protein, carbohydrates, fat, vitamins, minerals, and water (Indrayani and Ph, 2019).

Indonesia's exclusive breastfeeding coverage in 2022 is 67.96%, down from 2021, namely 69.7%(WHO, 2023). The early breastfeeding initiation (IMD) rate in Indonesia also fell from 58.2% in 2019 to 48.6% in 2021 (Unicef, 2022). Based on research by the Indonesian Pediatrician Association, the number of mothers who have breastfed their children in Indonesia is already high, namely 90%, but mothers who exclusively breastfeed for 6 months are still low, namely 20%. Breastfeeding is recommended for up to 2 years or more. According to the 2018 Basic Health Research (Riskesdas) report, 74.5% of babies aged 0 to 5 months in Indonesia received breast milk in the last 24 hours, but the percentage has decreased. Based on the performance report of the South Kalimantan Provincial Health Service, exclusive breastfeeding in South Kalimantan in 2021 was 50.16%. Exclusive breastfeeding for babies aged 0-6 months in Banjar Regency decreased in 2020 by 82.1 and fell in 2021 to 56.5% (Dinkes Kalsel, 2021; Kementerian Kesehatan Republik Indonesia, 2022). Based on data from an assessment conducted in Awang Village, West Bangkal, 88 toddlers (53.66%) out of 164 babies were exclusively breastfed.

Several factors that can influence exclusive breastfeeding are the mother's lack of knowledge about the importance of breastfeeding, sore nipples, swollen breasts,

blocked milk ducts, mastitis, breast abscess, the mother's feeling that little milk comes out, the baby has difficulty breastfeeding, and continued formula feeding. Another factor that can influence the low level of exclusive breastfeeding is the lack of stimulation that can release the hormones prolactin and oxytocin in the smooth production of breast milk (Marantika, Choirunissa, and Kundaryanti, 2023). Breast milk production can also be influenced by the mother's psychology and physiology, such as feelings of fear and anxiety and feeling unable to produce breast milk according to the baby's needs. This can make the mother stop breastfeeding and become the basis for failure to breastfeed (Indanah, Karyati, and Widyawati, 2023) exclusively.

Increasing the breastfeeding process and milk production can be done in various pharmacological and non-pharmacological ways. Several non-pharmacological ways to improve the breastfeeding process and breast milk production can be done, such as breast care, breastfeeding techniques, food consumption, lactation massage, market massage, oxytocin massage, endorphin massage, Woolwich massage, back rolling massage, octane massage, hypnobreastfeeding, and warm compresses. One solution to overcome irregular breast milk production is endorphin and oxytocin massage (Indanah, Karyati, and Widyawati, 2023).

The Endorphin Massage method is a light massage on the neck, arms, and hands to stimulate the release of endorphins in the body, indirectly stimulating the oxytocin reflex. Endorphin Massage is a light touch/massage therapy that can stimulate the body to release endorphin compounds. This endorphin compound relieves pain and provides comfort (Magfirah and Idwar, 2021). Based on research by Magfirah and Idwar (2021), the results showed that the Endorphin Massage method influenced breast milk production in postpartum mothers.

Oxytocin Massage is a non-pharmacological way to stimulate breast milk production by providing massage through pressure on the spine so that the mother feels calmer, relaxed, and less stressed. Oxytocin massage also increases the letdown reflex, so breast milk decreases more quickly (Indanah, Karyati, and Widyawati, 2023). The research results by Rahmita and Mardiya (2022) showed that oxytocin massage effectively increases breast milk production in breastfeeding mothers.

Endorphin and oxytocin massage can increase breast milk production in breastfeeding mothers. Based on research by Indanah, Karyati, and Widyawati (2023), combining oxytocin and endorphin massage is more effective in increasing breast milk production than oxytocin massage alone. Research by Hidayati and Hanifah (2019) showed that the application of endorphin and oxytocin massage affected breast milk production in breastfeeding mothers.

The patient, Mrs. M, lives in Awang Village, West Bangkal RT. 02. The researcher made the first visit on 09 November 2023. At the time of the assessment, Mrs. M complained that the milk in her left breast was not flowing smoothly and only a little milk came out, so Mrs. M rarely breastfeeds her child using the left breast and more often uses the right breast. Based on these problems, the author is interested in managing a nursing care case entitled "Nursing Care for Mrs. M with the Application of Endorphine and Oxytocin Massage Methods to Increase Exclusive Breastfeeding in Breastfeeding Mothers in Awang Village, West Bangkal" with the aim of Mrs. M was able to apply the endorphine and oxytocin massage method to increase exclusive breastfeeding in breastfeeding mothers in Awang Village, West Bangkal.

METHODS

This research is a nursing case study, including interviews, assessments, physical examinations, and observations. This research begins with assessing the patient and family members, followed by data analysis and nursing planning. Then, it is implemented according to the nursing plan prepared previously and evaluated after the implementation process is complete. The respondent who was the patient in this study was Mrs. M, 30 years old, who lives in the RT. 2 Awang West Bangkal Village, Karang Intan District. During the assessment, Mrs. M complained that the milk in her left breast was not flowing smoothly, and only a little milk came out. So, Mrs. M rarely breastfeeds her child using the left breast and uses the right breast more often. During breast examination, Mrs. M, there is no visible venous congestion, but there is slight hyperpigmentation on the mammary areola and

nipples. Mrs. M said there was an enlargement of the right breast. On inspection, the left breast did not appear to be enlarged. Mrs. M said the milk on the left breast did not leak, and no milk came out when pressed. Mrs. M also said the left breast did not feel tense or get bigger. Based on this, the researchers will apply the endorphin and oxytocin massage method to Mrs. M for 7 consecutive days, 2 times a day, and within 6-12 hours.

Previously, respondents were given health education about breast milk, endorphin massage, and oxytocin. The tools and materials used for this intervention are chairs, pillows, towels, washcloths, and a basin filled with warm water and olive oil.

The endorphin massage method is as follows (Herlinda, 2021): encouraging the mother to take the most comfortable position possible (sitting or lying on her side) and breathing deeply. Start by stroking the outer surface of the mother's arm, from the hand to the forearm, using your fingertips for 5 minutes. Then, move to the other arm. Next, on the back, massage lightly from the neck to form a V outward towards the side of the ribs. This massage continues downwards, backward.

Then, continue with oxytocin massage (Aisyah and Lestari, 2021). Advise to remove the top of your clothes, then position the mother on her side to the right or left while hugging a pillow and putting on a towel. First, coat both palms with olive oil, then massage along both sides of the mother's spine using two fists, with the thumbs pointing forward. Massage the area of the cervical spine on the most prominent bone (processus spinosus/cervical vertebrae) with intense second pressure, forming small circular movements with both thumbs. Then, massage the area on both sides of the spine downwards, from the neck towards the shoulder blades. Massage for 2 -3 minutes with repetition up to 3 times, and finally, clean the mother's back with a warm water washcloth.

RESULTS AND DISCUSSION

Based on the data obtained during the assessment, the researcher raised two nursing diagnoses: knowledge deficiency (00126) and lack of knowledge. The intervention provided health education using booklets containing material about breast milk, endorphin massage, and oxytocin. The following diagnosis was insufficient breast milk production (00216) related to inadequate breast milk fluid volume. The intervention was applied the endorphin and oxytocin massage method to Mrs. M for 7 consecutive days, 2 times a day, and within 6-12 hours.

Table 1. Observation Results for 7 Days

No	Criteria	Day						
		1	2	3	4	5	6	7
1.	Breasts feel tense	R(+) / L(-)	R(+) / L(-)	R(+) / L(-)	R(+)/ L(+)	R(+)/ L(+)	R(+)/ L(+)	R(+)/ L(+)
2.	Breasts get bigger, heavier, and warmer.	R(+) / L(-)	R(+) / L(-)	R(+)/ L(+)	R(+)/ L(+)	R(+)/ L(+)	R(+)/ L(+)	R(+)/ L(+)
3.	Breast milk seeping/dripping.	R(+) / L(-)	R(+) / L(-)	R(+) / L(-)	R(+) / L(-)	R(+) / L(-)	R(+) / L(-)	R(+) / L(-)
4.	Breast milk comes out after pressing on the nipple	R(+) / L(-)	R(+) /L(-)	R(+)/ L(+)	R(+)/ L(+)	R(+)/ L(+)	R(+)/ L(+)	R(+)/ L(+)
5.	Frequency of breastfeeding	8x	8x	8x	8x	8x	8x	8-10x
6.	Length of breastfeeding	R(<10 minute)/ L(-)	R(<10 minute)/ L (<1 minute)	R(<10 minute)/ L (1-2 minute)	R (<10 minute)/ L (± 3 minute)	R (<10 minute)/ L (<5 minute)	R (<10 minute)/ L (± 5 minute)	R (10 minute)/ L (± 5 minute)
7.	Urination	3-4x change diapers/ day	3-4x change diapers/ day	3-4x change diapers/ day	3-4x change diapers/ day	3-4x change diapers/ day	3-4x change diapers/ day	3-4x change diapers/ day
8.	Urine color	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow	Yellow

9.	Defecate	-	-	-	-	-	+	-
10.	Long sleep	2-3 hours	2-3 hours	2-3 hours	2-3 hours	± 3 hours	3-4 hours	3-4 hours
11.	Weight Gain	BB: 4.325 grams						BB: 4.400 grams

Information:
R: Right
L: Left

Analysis Before Endorphin and Oxytocin Massage to Increase Exclusive Breast Milk in Breastfeeding Mothers

Based on the results of research conducted on Mrs. Before carrying out the method of applying endorphin and oxytocin massage to increase breast milk, the result was that Mrs. M less, namely Mrs. M only breastfed her child using the right breast because the milk on the left breast was not flowing smoothly. Mrs. M said the left breast did not feel tense, it did not get bigger, heavier, or warmer, and no milk leaked out after pressing the nipple. Mrs. M also said that breastfeeding usually takes <10 minutes.

These results align with research conducted by Hidayati and Hanifah (2019), who found that out of 40 people, 27 (67.5%) had less breast milk production before being given an endorphin and oxytocin massage. Several factors influence milk production: breastfeeding behavior and mothers' psychology and physiology. In addition, a lack of the hormones prolactin and oxytocin can cause a decrease in breast milk production and excretion in the first days after giving birth. This will affect breast milk's smoothness and subsequent production (Hidayati and Hanifah, 2019; Indanah, Karyati, and Widyawati, 2023).

This research is also supported by research conducted by Indanah, Karyati, and Widyawati (2023) from 6 respondents in the OKE massage intervention group. Before being given the OKE massage, it was found that 5 respondents (83.3%) experienced poor breast milk production. The research conducted by Rahmawati & Rositawati (2022) found that from 20 respondents before the OKE (Oxytocin Endorphin) massage, there were 20 respondents whose breast milk production was not smooth.

Mothers providing breast milk can experience problems, including producing little milk in the first days. The hormone oxytocin and the hormone prolactin influence breast milk production. This hormone can be released by applying the endorphin and oxytocin massage method, done with a gentle touch, and then continued with massage on the back area. (Hidayati and Hanifah, 2019).

Analysis after Endorphin and Oxytocin Massage on Increasing Exclusive Breast Milk in Breastfeeding Mothers

Based on the research results conducted on Mrs. After carrying out the method of applying endorphin and oxytocin massage to increase breast milk for 7 days, namely from 20 November - 26 November 2023, the results showed that breast milk production was. M less, namely Mrs. M breastfed her child using both breasts. Mrs. M said that the left breast felt tense, it was getting bigger, no milk was leaking out, and milk was coming out after pressing the nipple. Mrs. M also said that breastfeeding on the right breast was 10 minutes, and on the left, ± 5 minutes.

The results of this research are in line with the study conducted by Hidayati and Hanifah (2019) of 40 respondents after endorphin and oxytocin massage, 26 respondents (65%) had sufficient breast milk production, and 8 respondents had good breast milk production (20%). Another study conducted by Indanah, Karyati, and Widyawati (2023) showed that out of 6 respondents after the OKE massage, 6 had good breast milk production. The research conducted by Rahmawati & Rositawati (2022) found that from 20 respondents after the OKE (Oxytocin Endorphin) massage, 19 respondents had smooth breast milk production and only 1 respondent whose breast milk production was not slick.

Endorphin and oxytocin massage is massage or stimulation carried out in the spinal area; neurotransmitters stimulate the medulla oblongata and directly send messages to the hypothalamus in the posterior pituitary, then oxytocin comes out so that the breasts release milk. Apart from that, this massage can also relax tension and relieve stress so that the hormone oxytocin is released, which results in

the release of milk and increased milk production. (Rahmawati & Rositawati, 2022).

Analysis of the Effectiveness of Endorphin and Oxytocin Massage in Increasing Exclusive Breast Milk in Breastfeeding Mothers

Based on the results of the intervention carried out on Mrs. M through endorphin and oxytocin massage to increase breast milk for 7 days, namely from 20 November - 26 November 2023, the results obtained were an increase in breast milk as measured by the criteria for breast milk adequacy. Namely, Mrs. M said she breastfed her child on both breasts. The left breast started to get bigger and felt tense, and Mrs. M said it felt like the milk was increasing. When pressed, the milk came out but didn't leak. The milk came out thicker than the right breast. Mrs. M said that her child breastfeeds 8-10 times daily for 10 minutes on the right breast and ± 5 minutes on the left breast. Mrs. M said that his child had no bowel movements today, and his BAK was in diapers, which were changed 3-4 times a day and were yellowish. Mrs. M also said that her child breastfed more than before the massage and slept 3-4 hours longer than usual. Based on the results of research by (Magdalena et al., 2020) showed that after oxytocin massage, 9 respondents (56.2%) had a frequency of breastfeeding their babies ≥ 8-12 times a day and an average frequency of urinating ≥ 6-8 times a day.

Based on research results, the baby's weight increased from 4,325 grams to 4,400 grams. That is, there was an increase of 0.075 grams. This is in line with the research results by Anggraeni and Lubis (2020), who found that oxytocin massage significantly affects the weight gain of babies aged 0-6 months who are given exclusive breast milk. Therefore, increasing body weight indicates the success of the breastfeeding process. Breastfeeding mothers who are given oxytocin massage will have higher levels of the hormone oxytocin. High levels of the hormone oxytocin will cause fat metabolism in the mother's body to increase and the process of releasing fat from fat tissue (lipolysis), which results in gluconeogenesis so that glucose levels in the blood increase. Likewise, in breast milk. This gluconeogenesis process can result in a significant increase in the baby's weight. In this study, weight gain was only minor. If the intervention time were more extended, weight gain would increase. The following research was conducted by Anggraeni and Lubis (2020) on 33 babies after the intervention. It was found that the babies' weight increased by 284.85 grams over 2 weeks.

Based on the research results, it can be concluded that there was an increase in breast milk production after endorphin and oxytocin massage. This aligns with research conducted by Hidayati and Hanifah (2019). The results showed that 27 of the 40 people had insufficient breast milk production before being given endorphin and oxytocin massages, and then, after being given the endorphin and oxytocin massage, 26 of the 40 people had sufficient breast milk production. The results of this study show that the endorphin and oxytocin massage method influences breast milk production in mothers breastfeeding babies aged 0-6 months in Gading Village, Probolinggo Regency. Oxytocin and endorphin massage is a non-pharmacological intervention that significantly affects breast milk.

Massage or stimulation is carried out in the spinal area; neurotransmitters stimulate the medulla oblongata and directly send a message to the hypothalamus in the posterior pituitary. Then oxytocin comes out so that the breasts release milk. This massage can relax the tension and relieve stress, so the hormone oxytocin comes out and helps with the excretion of breast milk. The decrease in breast milk production and release is caused by a lack of stimulation of the hormones prolactin and oxytocin, affecting breast milk's smoothness and output. One non-pharmacological way to overcome irregularities in breast milk production is by applying the endorphin and oxytocin massage method. Breast milk production will increase with repeated massages for 6-12 hours (Hidayati and Hanifah, 2019).

Based on research conducted by Indanah, Karyati, and Widyawati (2023) showed that OKE (Oxytocin Combination Endorphin) massage was more effective in increasing breast milk production for babies of breastfeeding mothers in Jati Wetan Village, Jati Community Health Center, Kudus Regency, compared to oxytocin massage alone. Physiologically, increasing oxytocin and endorphins sent to the brain can cause these hormones to flow into the blood. Then, this hormone enters the mother's

breasts, causing the muscles around the alveoli to contract, which allows breast milk to flow through the milk ducts. The hormone oxytocin and endorphins also cause dilation of the milk ducts and reduce swelling, allowing milk to flow through the alveoli so that more mother's milk is produced, increasing milk output in a non-pharmacological way (Indanah, Karyati, and Widyawati, 2023).

Endorphin massage is a touch therapy or light massage that stimulates the body to release endorphin compounds, which are pain relievers and can create a feeling of comfort. Endorphin massage is also a non-pharmacological way to increase breast milk production and reduce pain. If the psychological state is calmer, it will trigger the release of endorphins and affect breast milk production (Dyah Ayu Wulandari, Dewi Mayangsari, and Sawitry, 2019). Endorphin massage stimulates the release of endorphin hormones and the prolactin and oxytocin reflexes to increase breast milk volume and production (Hidayati and Hanifah, 2019).

Oxytocin massage is in the cervical spine area, back, or along the spine (vertebrae) up to the fifth to sixth rib bones. (Hidayati and Hanifah, 2019). This massage is carried out on the back area, namely cervical 5-6 to the level of the lower shoulder blades, using the thumbs of the hands with small circular movements on both sides of the spine for 2-3 minutes. This message will comfort and relax the mother, stimulating the release of endorphin hormones and the oxygen reflex to facilitate the release of breast milk and milk production (Fitriani, Pangestu, and Hartikasih, 2021). This massage also speeds up the work of the parasympathetic nerves to stimulate the posterior pituitary to release oxytocin. Oxytocin massage massages the back of a nursing mother to increase the hormone oxytocin, accelerate the healing of placental implantation wounds, prevent bleeding, and increase breast milk production. Oxytocin stimulation massage for breastfeeding mothers stimulates the hormone oxytocin to facilitate breastfeeding and increase maternal comfort. The mother will feel more comfortable and relaxed, thus reducing stress which causes the hormone cortisol to decrease, which results in no obstacles to the hormone oxytocin which plays a role in the smooth release of breast milk produced by the hypothalamus. One of the benefits of oxytocin massage is that it increases the down reflex which makes breast milk flow quickly (Dyah Ayu Wulandari, Dewi Mayangsari and Sawitry, 2019).

Research conducted by Rahmawati & Rositawati (2022) The results obtained before the OKE (Oxytocin Endorphin) massage were 20 respondents with smooth breast milk production. After the OKE massage, there were 19 respondents with slick breast milk production. So, it can be concluded that there is a significant influence between breast milk production before and after the OKE massage. Other research conducted by Fitriani, Pangestu, and Hartikasih (2021) The results showed that there was a difference in the increase in the amount of breast milk produced by postpartum mothers before and after intervention in the form of oxytocin and endorphin massage at the Alianyang Community Health Center, Pontianak City.

The limitation of this research is that the time for administering the endorphin and oxytocin massage intervention was only 1 week. If it were carried out longer, the increase in breast milk production would be more visible. Apart from that, in this study, the researchers could not measure the growth in breast milk directly and only measured several criteria for the smooth flow of breast milk. Respondents are unwilling to pump breast milk and want to breastfeed their children now.

CONCLUSION

From the research above, it was found that there was an increase in breast milk as measured by several criteria, so it can be concluded that the method of applying endorphin and oxytocin massage can increase exclusive breast milk production in breastfeeding mothers. Suggestions for further research regarding the intervention time can be carried out longer to increase entire breast milk production more effectively.

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