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The Effect Of Combining Oxytocin Massage And Breast Care On Breast Milk Adequacy In Postpartum Mothers In The Working Area Of Poncowati Health Center, Central Lampung Regency, 2024

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ABSTRACT
According to WHO in 2021, only 42% of countries provided exclusive breastfeeding from the target of 75%. In Lampung Province, there was a decrease in coverage of infants less than 6 months receiving exclusive breastfeeding from 76.76% in 2022 to 76.20%. Breastfeeding failure is often caused by several problems, one of which is insufficient milk production. Non-pharmacological methods to increase milk production are oxytocin massage and breast care. Oxytocin massage functions to stimulate the oxytocin reflex, calming the mother, so that breast milk flows naturally, while breast care is an action to care for the breasts, especially to facilitate breastfeeding. The research aim was to determine the effect of combining oxytocin massage and breast care on breast milk adequacy in postpartum mothers. The research method was pre-experimental using a one-group pre-posttest design approach by providing oxytocin massage intervention. It was given to postpartum mothers on days 5-9 twice daily, morning and evening. The population in this study was 42 breastfeeding postpartum mothers. The sampling technique used purposive sampling with a sample size of 20 postpartum mothers. Indicators of breast milk adequacy were seen from urination frequency, feeding frequency, and changes in baby's weight. This research was conducted in the Poncowati Health Center Area, Central Lampung Regency in 2024. Data analysis used the Wilcoxon test (for urination and feeding frequency) and Paired Sample Test (for baby's weight changes). Research results showed the average baby feeding frequency before was 7 times and after was 10 times, baby urination frequency before was 6 times and after was 8 times, baby weight before was 3094 grams and after was 3301.5 grams. The conclusion with p-values for feeding 0.000 (<0.05), baby urination 0.000 (<0.05), and baby weight 0.000 (<0.05) means there is an effect of combining oxytocin massage and breast care on breast milk adequacy in postpartum mothers. The research suggests that postpartum mothers can perform a combination of oxytocin massage and breast care as therapy to increase milk production.

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INTRODUCTION

According to the World Health Organization (WHO), exclusive breastfeeding means that infants receive only breast milk and no other liquids or solids, not even water, except for oral rehydration solutions or drops/syrups of vitamins, minerals, or medicines. Based on WHO data in 2021, countries providing exclusive breastfeeding were only 42% and were targeted to increase to 75% by 2020 (World Health Organization and UNICEF, 2021).

Providing breast milk (ASI) exclusively during the first 6 months of a child's life is part of implementing the gold standard of infant and child feeding (PMBA) recommended by WHO and UNICEF. Breast milk contains complete nutrients needed by a baby and is also easily digested by the baby's small and sensitive stomach. Giving breast milk alone is sufficient to meet the nutritional needs of infants under six months of age.

United Nations Children's Fund (UNICEF) and World Health Organization (WHO) recommend breastfeeding babies as soon as possible within one hour after birth, called early initiation of breastfeeding (IMD). During the IMD process, skin contact between Mother and Baby will occur, and this will increase the mother's confidence so that it can support the success of exclusive breastfeeding for 6 months. After that, it can be continued with providing breast milk along with complementary foods until the child is 2 years old. Breast milk has numerous benefits that are very necessary for babies during their development process (Kemenkes, 2021).

More than half a billion working women are not supported by legal regulations on maternity protection, only 20% of countries including Indonesia require employers to provide paid maternity leave and breastfeeding or pumping facilities. Exclusive breastfeeding coverage in Indonesia based on WHO (World Health Organization) data in 2021 was 69.7% and decreased in 2022 to 67.96%, this figure is still below the target of 80%. This indicates the need for more intensive support so that coverage can increase (WHO, 2023).

Coverage of infants less than 6 months receiving exclusive breastfeeding in Lampung Province in 2021 was 74.93%, in 2022 increased to 76.76% and decreased in 2023 to 76.20%. The Exclusive Breastfeeding target is still below the national target of 80% of babies receiving exclusive breastfeeding (Central Bureau of Statistics, 2024).

Data from the Central Lampung District Health Office shows that infants less than 6 months who received Exclusive Breastfeeding in 2021 was 74.6%, in 2022 decreased to 74.2% but increased again in 2023 to 78.6% (Lampung Provincial Health Office, 2024). Based on presurvey data conducted in May 2024, the achievement of Exclusive Breastfeeding coverage in 2021 was 62.8%, in 2022 increased to 63.1% and decreased in 2023 to 62.5%. This achievement is still below the Exclusive Breastfeeding target of 80% (Poncowati Health Center Data, 2024).

Breastfeeding is physiological, but mothers still need to prepare themselves completely both physically (body), mentally (mind) and soul preparation, physical preparation can be in the form of improving the quality of balanced nutritional intake, so that the body has reserves to produce breast milk, besides that breastfeeding mothers must also learn lactation

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management, which is how to position and attach correctly when breastfeeding (Dini and Legina, 2021).

Breast milk (ASI) is the main nutrition that must be given to babies that is natural and healthy because it contains various substances needed by babies in the process of growth, baby development, baby health and baby immunity. Early breastfeeding has a positive impact on both mother and baby. For babies, breastfeeding has an important role to support growth, health, and survival of babies because breast milk is rich in nutrients and antibodies. For mothers, breastfeeding can reduce mortality because the breastfeeding process will stimulate uterine contractions thereby reducing postpartum bleeding (Rasniah, 2022).

Failure in the breastfeeding process is often caused by several problems, both maternal and infant problems. Maternal problems that arise during breastfeeding can start from before delivery, early delivery period, and advanced postpartum period. Breastfeeding problems can also be caused by special circumstances. In addition, mothers often complain that their babies cry that their milk is not enough or their milk is not good, which often leads to the decision to stop breastfeeding (Sutanto, 2018). The impact that occurs if babies are not given exclusive breastfeeding is that they will lack nutrition or malnutrition which will have an impact on growth or height that is not appropriate for age called stunting (Laura E Berk, 2015).

Low milk production can be increased by pharmacological or non-pharmacological means. Pharmacology is by using drugs and using special formula milk for nursing mothers. As for non-pharmacological can be done with a balanced nutrition diet for nursing mothers, early mobilization, with oxytocin massage and breast care (Ernawati, 2020).

To succeed in the program of giving breast milk to babies, one effort to facilitate milk production is to increase the hormone oxytocin in the body. The hormone oxytocin will not be secreted if the body is in an uncomfortable state. One effort to increase comfort in nursing mothers is oxytocin massage. In theory, oxytocin massage is massage performed along the spine (vertebrae) to the fifth and sixth costal bones. The production of the hormone oxytocin, besides having benefits to increase comfort in nursing mothers, this hormone is also able to increase the contraction of mammary gland myoepithelium, thus facilitating milk production (Dini and Legina, 2021).

Breast care is a way of caring for breasts that is done during pregnancy or the postpartum period to increase milk production, in addition to breast hygiene and the shape of nipples that go in or flat (Zubaidah et al, 2021). Research results conducted by Feti and Noor (2023) state that there is an effect of combining breast care and oxytocin massage on milk production. Breast care and oxytocin massage in post partum mothers are important things that must be done and known by postpartum mothers towards successful lactation.

Research results by Fetti (2023), state that there is an influence between oxytocin massage on milk production. Oxytocin massage is one solution to overcome milk production problems. Oxytocin massage can be done wherever the mother wants with a duration of 3-5 minutes, it is more recommended before breastfeeding or expressing milk. To get optimal and good amounts of breast milk, oxytocin massage should be done every day with a duration of 3-5 minutes (Silviani et al, 2023).

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Research results conducted by Ardiyanti and Rista (2023) show a significant effect between oxytocin massage on milk production in post partum mothers at BPM. Research data was collected by performing oxytocin massage after 3 hours postpartum and for 5 days every morning and evening then observed on day 6.

The smoothness of milk production can be measured using milk smoothness indicators seen from mother and baby indicators. Breast milk produced after giving birth on the first day is in the form of colostrum with a volume of around 150-300 ml / 24 hours. Milk production after 10 days and onwards after giving birth until the baby is three months old or called mature breast milk. Breast milk can produce around 300-800 ml/24 hours and breast milk will continue to increase in the following days or weeks (Sestu and Yuni, 2022).

Based on interviews conducted at Poncowati Health Center with 10 mothers who have babies aged < 6 months, 6 mothers did not breastfeed exclusively. Mothers said that the amount of breast milk was insufficient so that the baby cried and slept briefly, this often made mothers give formula milk to babies, the effect was that babies did not get exclusive breastfeeding until the age of 6 months. Counseling conducted to postpartum mothers about breast care and foods that help increase milk production is one of the solutions carried out in the Working Area of Poncowati Health Center, Central Lampung Regency and oxytocin massage has never been done. Based on this background, researchers are interested in conducting research on "The Effect of combining oxytocin massage and breast care on breast milk adequacy in postpartum mothers in the Working Area of Poncowati Health Center, Central Lampung Regency in 2024"

METHODS

This is a quantitative research using a cross-sectional design. The population in this study consisted of all normal postpartum mothers on day 4, totaling 42 postpartum mothers, obtained from delivery estimates in September in the delivery pocket of Poncowati Health Center, Central Lampung Regency. The number of research samples was 20 breastfeeding postpartum mothers selected using purposive sampling technique. The research instrument used observation sheets. Bivariate analysis in the study used paired T-test.

RESULTS AND DISCUSSION

Table 1 Respondent Characteristics

No	Characteristics		*f*	%
1	Age	20-35 years	16	80
		20^{th}/>35 yrs	4	20
		Total	20	100
2	Parity	Primipara	3	15
		Multipara	16	80
		Grandemultipara	1	5
		Total	20	100
3	Occupation	Working	6	30

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No	Characteristics	f	%
	Not Working	14	70
	Total	20	100

Based on table 1, it can be seen that postpartum mothers aged 20-35 years were 16 (80%) mothers and those aged less than 20 years or more than 35 years were 4 (20%) mothers. Primipara postpartum mothers were 3 (15%) mothers, multipara were 16 (80%) mothers and grandemultipara were 1 (5%) mother. Then working mothers were 6 (30%) mothers and non-working mothers were 14 (70%) mothers.

Table 2 Average frequency of infant feeding in postpartum mothers before and after the combination of oxytocin massage and breast care

Feeding Frequency	N	Mean (times/day)	SD	Min-Max (times/day)
Before Intervention	20	7	1,372	5-10
After Intervention	20	10	1,373	8-12

Based on table 2, it can be seen that from 20 postpartum mothers, the average frequency of infant feeding before intervention was 7 times/day and the average after intervention was 10 times/day, with a standard deviation value before of 1.372 and a standard deviation value after of 1.373 meaning the data distribution before is closer compared to the data distribution after intervention. Then the minimum value is 5 times/day and after intervention is 8 times/day, the maximum value before intervention is 10 times/day and after intervention is 12 times/day. From this data, it can be seen that there is an increase in minimum value, maximum value and average value of infant feeding frequency.

Table 3 Average frequency of infant urination (BAK) in postpartum mothers before and after the combination of oxytocin massage and breast care

BAK Frequency	N	Mean (times/day)	SD	Min – Max (times/day)
Before Intervention	20	6	0,967	5-8
After Intervention	20	8	1,105	6-10

Based on table 3, it can be seen that from 20 postpartum mothers, the average frequency of infant urination before intervention was 6 times/day and the average after intervention was 8 times/day, with a standard deviation value before of 0.967 and a standard deviation value after of 1.105 meaning the data distribution before is closer compared to the data distribution after intervention. Then the minimum value is 5 times/day and after intervention is 6 times/day, the maximum value before intervention is 8 times/day and after intervention is 10 times/day. From this data, it can be seen that there is an increase in minimum value, maximum value and average value of infant urination frequency.

Table 4 Average infant body weight in postpartum mothers before and after the combination of oxytocin massage and breast care

Weight	N	Mean (gram)	SD	Min-Max (gram)
Before Intervention	20	3094	241,4	2800-3600
After Intervention	20	3302.5	286,6	2940-3990

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Based on table 4, it can be seen that from 20 postpartum mothers, the average infant weight before intervention was 3094 grams and the average after intervention was 3302.5 grams, with a standard deviation value before of 241.4 and a standard deviation value after of 286.6 meaning the data distribution before is closer compared to the data distribution after intervention. Then the minimum value is 2800 grams and after intervention is 2940 grams, the maximum value before intervention is 3600 grams and after intervention is 3990 grams. From this data, it can be seen that there is an increase in minimum value, maximum value and average value of infant weight.

Table 5 Effect of combination of oxytocin massage and breast care on breast milk adequacy (feeding frequency) in postpartum mothers

Breast Milk Adequacy	N	Mean (times/day)	Mean Increase	*p-value*
Feeding Frequency Before	20	7	3 times/day	0,000
Feeding Frequency After	20	10		

Based on table 5, it was found that from 20 breastfeeding postpartum mothers, the average feeding frequency before intervention was 7 times/day, after intervention was 10 times/day meaning there was an increase in average value by 3 times/day, then from bivariate analysis results obtained p-value of 0.000 (<0.05) meaning there is an effect of combination of oxytocin massage and breast care on breast milk adequacy assessed from infant feeding frequency.

Table 6 Effect of combination of oxytocin massage and breast care on breast milk adequacy (BAK frequency) in postpartum mothers

Breast Milk Adequacy	N	Mean	Mean Increase	*p-value*
BAK Frequency Before	20	6 times/day	2 times/day	0,000
BAK Frequency After	20	8 times/day		

Based on table 6, it is known that from 20 breastfeeding postpartum mothers, the average BAK frequency before intervention was 6 times/day, after intervention was 8 times/day meaning there was an increase in average value by 2 times/day, then from bivariate analysis results obtained p-value of 0.000 (<0.05) meaning there is an effect of combination of oxytocin massage and breast care on breast milk adequacy assessed from infant BAK frequency.

Table 7 Effect of combination of oxytocin massage and breast care on breast milk adequacy (infant weight) in postpartum mothers

Breast Milk Adequacy	N	Mean	Mean Increase	*p-value*
Weight Before	20	3094 gram	207.5 gram	0,000
Weight After	20	3301.5 gram		

Based on table 6, it is known that from 20 breastfeeding postpartum mothers, the average infant weight before intervention was 3094 grams, after intervention was 3301.5 grams meaning there was an increase in average value by 207.5 grams, then from bivariate analysis results obtained p-value of 0.000 (<0.05) meaning there is an effect of combination of oxytocin massage and breast care on breast milk adequacy assessed from infant weight.

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Discussion

Average frequency of infant breastfeeding in postpartum mothers before and after the combination of oxytocin massage and breast care

Based on research results, it can be seen that from 20 postpartum mothers, the average frequency of infant breastfeeding before intervention was 7 times/day and the average after intervention was 10 times/day, with a standard deviation value before of 1.372 and a standard deviation value after of 1.373 meaning the data distribution before is closer compared to the data distribution after intervention. Then the minimum value is 5 times/day and after intervention is 8 times/day, the maximum value before intervention is 10 times/day and after intervention is 12 times/day. From this data, it can be seen that there is an increase in minimum value, maximum value and average value of infant breastfeeding frequency.

Breast milk is an ideal source of nutrition with a balanced composition adapted to the baby's growth needs. Breast milk is the most perfect baby food both in quality and quantity. Through proper breastfeeding management, breast milk as a single food will be sufficient to meet the growth needs of normal babies until the age of 6 months (Elisabeth et al, 2022).

Breastfeeding babies should not be scheduled. Babies should be breastfed according to baby's demand (on demand). Generally, healthy babies will nurse 8-12 times per day with breastfeeding duration of 15-20 minutes on each breast (Sari, 2018). The more often the baby nurses on the mother's breast, the more milk production and output will be. However, the frequency of breastfeeding in premature and full-term babies differs. Studies say that breast milk production for premature babies will be optimal with breast milk pumping more than 5 times per day during the first month after birth. Pumping is done because premature babies cannot nurse yet. Meanwhile, in full-term babies, breastfeeding frequency of 10 ± 3 times per day during the first 2 weeks after birth is associated with sufficient milk production (Zubaidah et al, 2021).

Therefore, breastfeeding is recommended at least 8 times per day in the early period after birth. This breastfeeding frequency is related to the ability of hormone stimulation in the mammary glands. On the nipple and areola of the breast, there are nerve endings that are very important for breastfeeding reflexes. If the nipple is sucked by the baby, the stimulation will be forwarded to the hypothalamus to release prolactin and oxytocin. This causes breast milk to be produced and channeled (Elisabeth et al, 2022).

Failure in the breastfeeding process is often caused by several problems, both maternal and infant problems. Maternal problems that arise during breastfeeding can start from before delivery, early delivery period, and advanced postpartum period. Breastfeeding problems can also be caused by special circumstances. In addition, mothers often complain that their babies cry that their milk is not enough or their milk is not good, which often leads to the decision to stop breastfeeding (Sutanto, 2018). The impact that occurs if babies are not given exclusive breastfeeding is that they will lack nutrition or malnutrition which will have an impact on growth or height that is not appropriate for age called stunting (Laura E Berk, 2015).

Non-pharmacological methods to increase milk production can be done with breast care and oxytocin massage. Breast care is a way of caring for breasts that is done during

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pregnancy or postpartum period for milk production, in addition to breast hygiene and the shape of nipples that go in or flat. Such nipples are actually not an obstacle for mothers to breastfeed well by knowing early on, mothers have time to work so that nipples are easier when breastfeeding (Zubaidah et al, 2021). While oxytocin massage is massage performed along the spine (vertebrae) to the fifth and sixth costal bones. The production of the hormone oxytocin, besides having benefits to increase comfort in nursing mothers, this hormone is also able to increase mammary gland myoepithelial contraction, thus facilitating milk production (Dini and Legina, 2021).

The research was conducted by performing relaxation massage that stimulates the oxytocin hormone which is done along the vertebrae to the fifth or sixth costal bone performed for 5 minutes morning and evening from day 5 to day 9 and actions to care for the breasts during the postpartum period are done 2 times a day morning and evening starting from day 5 to day 9 (Elisabeth et al, 2022).

This research is in line with research conducted by Tabita et al (2019) research results showed the average frequency of infant breastfeeding before intervention was 7.25 and after intervention increased to 11.45 times/day, then research conducted by Emi & Kh (2020) average frequency of infant breastfeeding before intervention was 8 times/day and after intervention combination of oxytocin massage and breast care increased to 10.25 times/day.

According to the researcher's assumption, infant breastfeeding frequency becomes an indicator of breast milk adequacy, because the more babies nurse then the baby's breast milk adequacy will be fulfilled. Breast care and oxytocin massage can increase breast milk adequacy, this can be seen from the increase in average frequency of infant breastfeeding. The more often the baby nurses on the mother's breast, the more milk production and output will be. In the first months after giving birth to ensure the production and output of breast milk. Breastfeeding frequency is related to the ability to stimulate both hormones in the mammary glands, namely prolactin and oxytocin hormones which can be stimulated by performing breast care and oxytocin massage.

Average frequency of infant urination (BAK) in postpartum mothers before and after the combination of oxytocin massage and breast care

Based on research results, it can be seen that from 20 postpartum mothers, the average frequency of infant urination before intervention was 6 times/day and the average after intervention was 8 times/day, with a standard deviation value before of 0.967 and a standard deviation value after of 1.105 meaning the data distribution before is closer compared to the data distribution after intervention. Then the minimum value is 5 times/day and after intervention is 6 times/day, the maximum value before intervention is 8 times/day and after intervention is 10 times/day. From this data, it can be seen that there is an increase in minimum value, maximum value and average value of infant urination frequency.

Assessment of breast milk adequacy can be seen from the indicator of infant urination in a day. To know how many times a day the baby urinates, the baby is not allowed to use diapers. Increased urination frequency is a sign of fulfilled breast milk. Urine color clear to light yellow, if urine color is dark yellow and smelly is one sign of insufficient breast milk. According

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to American Academy of Pediatrics section on Breastfeeding, babies aged 3-5 days are estimated to have urination frequency 3-5 times/day.

Newborn urination frequency increases by 1 time each day, that is first day once, second day 2 times, and so on, until breast milk production volume starts to increase which occurs at 72-69 hours post-birth. So it can be estimated starting from the fourth day onwards, urination frequency per day at least 6 times a day.

Non-pharmacological methods to increase milk production can be done with breast care and oxytocin massage. Breast care is a way of caring for breasts that is done during pregnancy or postpartum period for milk production, in addition to breast hygiene and the shape of nipples that go in or flat. Such nipples are actually not an obstacle for mothers to breastfeed well by knowing early on, mothers have time to work so that nipples are easier when breastfeeding (Zubaidah et al, 2021). While oxytocin massage is massage performed along the spine (vertebrae) to the fifth and sixth costal bones. The production of the hormone oxytocin, besides having benefits to increase comfort in nursing mothers, this hormone is also able to increase mammary gland myoepithelial contraction, thus facilitating milk production (Dini and Legina, 2021).

Several things that must be known by mothers and families, that the work of the hormone oxytocin is strongly influenced by the mother's feelings and thoughts. Thus for the breastfeeding process to run smoothly, the mother must be in a calm, comfortable, and happy state when breastfeeding. However, if the mother is in a stressed state, then the let-down reflex can be blocked. The hormone oxytocin is also called the "love hormone" because almost 80% of this hormone is influenced by mother's thoughts (positive or negative). Positive thoughts will facilitate the release of this hormone, and vice versa (Zubaidah et al, 2021).

This research is in line with research conducted by Tabita et al (2019) research results showed the average frequency of infant urination before intervention was 5.25 times/day and after intervention increased to 9.55 times/day, then research conducted by Emi & Kh (2020) average frequency of infant urination before intervention was 4.65 times/day and after intervention combination of oxytocin massage and breast care increased to 9.55 times/day.

According to the researcher's assumption, the combination of breast care and oxytocin massage is proven to increase milk production as assessed from the indicator of infant urination in 24 hours, the increased amount of infant urination after intervention becomes a sign that the mother's milk amount has increased so that it can meet the baby's breast milk adequacy. Breast care and oxytocin massage performed simultaneously maximize mother's milk production, with breast care the mother's nipples become cleaner so there is no blockage and with oxytocin massage stimulating the oxytocin hormone that helps milk production in the breast.

Average infant weight in postpartum mothers before and after the combination of oxytocin massage and breast care

Based on research results, it can be seen that from 20 postpartum mothers, the average infant weight before intervention was 3094 grams and the average after intervention was 3302.5 grams, with a standard deviation value before of 241.4 and a standard deviation value

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after of 286.6 meaning the data distribution before is closer compared to the data distribution after intervention. Then the minimum value is 2800 grams and after intervention is 2940 grams, the maximum value before intervention is 3600 grams and after intervention is 3990 grams. From this data, it can be seen that there is an increase in minimum value, maximum value and average value of infant weight.

Low Birth Weight Babies (BBLR) have lower ability to suck breast milk compared to babies with normal birth weight (2,500 g). This lower ability to suck breast milk includes lower frequency and duration of breastfeeding compared to normal birth weight babies which will affect the stimulation of prolactin and oxytocin hormones in producing breast milk (Zubaidah et al, 2021).

At 1 month of age, the expected minimum increase in baby's weight reaches 0.014 to 0.028 kg per day or minimum baby weight gain of 100 g in 8 days. If in the first 10 days the weight loss in babies is more than 7% of birth weight, then it indicates possible problems with breastfeeding and requires more intensive evaluation of breastfeeding and possibly intervention to fix problems and increase milk production and intake. Mother's milk volume at one to three months of age, if the mother is healthy then milk production reaches 600 ml per day. Breast size is not related to milk production (WHO/UNICEF Module, 2017).

If the baby's weight a few days after birth drops to 7% of birth weight, mothers need not worry. If mothers receive excessive intravenous fluids or infusions during labor, babies may lose more weight at early birth. If the breastfeeding process goes well and the baby is generally healthy, baby weight growth will rise from the fourth or fifth day at 10-14 days of age baby weight will be the same as birth weight. If baby weight after the third day postpartum continues to decline sharply, immediately evaluate the cause and address it. Mothers should also diligently record and enter baby weight data into WHO growth chart. Generally baby weight gain per week 0-4 months is about 155-241 grams. At age 4-6 months, baby weight gain per week is about 92-126 grams. At age 6-12 months baby weight gain per week is about 50-80 grams (Zubaidah et al, 2021).

Non-pharmacological methods to increase milk production can be done with breast care and oxytocin massage. Breast care is a way of caring for breasts that is done during pregnancy or postpartum period for milk production, in addition to breast hygiene and the shape of nipples that go in or flat. Such nipples are actually not an obstacle for mothers to breastfeed well by knowing early on, mothers have time to work so that nipples are easier when breastfeeding (Zubaidah et al, 2021). While oxytocin massage is massage performed along the spine (vertebrae) to the fifth and sixth costal bones. The production of the hormone oxytocin, besides having benefits to increase comfort in nursing mothers, this hormone is also able to increase mammary gland myoepithelial contraction, thus facilitating milk production (Dini and Legina, 2021).

Why oxytocin massage can facilitate the production of breast milk that comes out because this massage is done along the spine (vertebrae) to the fifth-sixth costal bones. Massage or stimulation performed on the spine, neurotransmitters stimulate the medulla oblongata and send messages to the hypothalamus in the posterior pituitary to release

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oxytocin which causes the breasts to release milk. This massage will also relax tension and eliminate stress. Based on research results, this massage mechanism will give effect for mothers to relax and calm because with massage will decrease hypothalamic pituitary adrenal (HPA) activity, when HPA decreases then ACTH will also decrease. Oxytocin and prolactin hormones that come out after massage will give a calming effect on mothers so that milk production can come out smoothly (Zubaidah et al, 2021).

This research is in line with research conducted by Tabita et al (2019) research results showed the average infant weight before intervention was 2696.5 grams and after intervention increased to 3048.2 grams, then research conducted by Emi & Kh (2020) average infant weight before intervention was 3070 and after intervention combination of oxytocin massage and breast care increased to 3406.5 grams.

According to the researcher's assumption, the combination of breast care and oxytocin massage performed regularly will maximize milk production to meet breast milk adequacy in infants. Baby weight indicator plays an important role in assessing breast milk adequacy, baby weight gain after intervention becomes an indicator that mother's milk has increased. In this study, baby weighing using swaddling was done on all babies, but after baby weighing, the swaddle used by the baby was also weighed with final weight calculation obtained based on baby weight when weighed using swaddle minus the weight of swaddle used by the baby.

Bivariate Analysis

Effect of Combination of Oxytocin Massage and Breast Care on Breast Milk Adequacy in Postpartum Mothers

Based on research results, it is known that from 20 breastfeeding postpartum mothers, the average breastfeeding frequency before intervention was 7 times/day, after intervention was 10 times/day meaning there was an increase in average value by 3 times/day, then from bivariate analysis results obtained p-value of 0.000 (<0.05) meaning there is an effect of combination of oxytocin massage and breast care on breast milk adequacy assessed from infant breastfeeding frequency. Then from the average value of urination frequency before intervention was 6 times/day, after intervention was 8 times/day meaning there was an increase in average value by 2 times/day, then from bivariate analysis results obtained p-value of 0.000 (<0.05) meaning there is an effect of combination of oxytocin massage and breast care on breast milk adequacy assessed from infant urination frequency. From the average value of infant weight before intervention was 3094 grams, after intervention was 3301.5 grams meaning there was an increase in average value by 207.5 grams, then from bivariate analysis results obtained p-value of 0.000 (<0.05) meaning there is an effect of combination of oxytocin massage and breast care on breast milk adequacy assessed from infant weight.

Breast milk (ASI) is the main nutrition that must be given to babies that is natural and healthy because it contains various substances needed by babies in the process of growth, baby development, baby health and baby immunity. Early breastfeeding has a positive impact on both mother and baby. For babies, breastfeeding has an important role to support growth, health, and survival of babies because breast milk is rich in nutrients and antibodies (Rasniah, 2022).

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Failure in the breastfeeding process is often caused by several problems, both maternal and infant problems. Maternal problems that arise during breastfeeding can start from before delivery, early delivery period, and advanced postpartum period. Breastfeeding problems can also be caused by special circumstances. In addition, mothers often complain that their babies cry that their milk is not enough or their milk is not good, which often leads to the decision to stop breastfeeding (Sutanto, 2018). The impact that occurs if babies are not given exclusive breastfeeding is that they will lack nutrition or malnutrition which will have an impact on growth or height that is not appropriate for age called stunting (Laura E Berk, 2015).

Low milk production can be increased by pharmacological or non-pharmacological means. Pharmacology is by using drugs and using special formula milk for nursing mothers. As for non-pharmacological can be done with a balanced nutrition diet for nursing mothers, early mobilization, with oxytocin massage and breast care (Ernawati, 2020).

Ways to increase milk production can be done by performing breast care and oxytocin massage. Breast care during breastfeeding greatly affects the process of giving breast milk. Clean, healthy, and well-maintained breasts help facilitate milk production, so that breastfeeding becomes easier and babies more comfortable when nursing. Oxytocin massage is massage of the spine on the costa (ribs) 5-6 to the scapula (shoulder blade) which will accelerate the work of the parasympathetic nerves, nerves that originate in the medulla oblongata and in the sacrum area of the spinal cord, stimulate the posterior pituitary to release oxytocin, oxytocin stimulates smooth muscle cell contraction surrounding the mammary gland lactiferous ducts causing breast myoepithelial contractility so that it can increase breast milk ejection from the mammary glands (Rasniah, 2022).

Breast care is beneficial to stimulate the breasts thus affecting the pituitary to release prolactin and oxytocin hormones besides maintaining breast hygiene especially nipple cleanliness to avoid infection, flexing and strengthening nipples so babies can easily nurse and can nurse well, reducing the risk of injury when babies nurse (Khamzah, 2018).

Oxytocin massage is a relaxation massage to stimulate the hormone oxytocin. Massage performed along the vertebrae to the fifth or sixth costal bone. Oxytocin massage is one solution to overcome milk production problems (Zubaidah et al, 2021). Oxytocin massage is done to stimulate the oxytocin reflex or let-down reflex. This oxytocin massage is done by massaging the back area along both sides of the spine, so it is hoped that by doing this spine massage, mothers will feel relaxed and fatigue after giving birth will soon disappear. If mothers are relaxed and not tired it can help release oxytocin hormone. Massage on the spine, neurotransmitters will stimulate the medulla oblongata directly sending messages to the hypothalamus in the posterior pituitary to release oxytocin causing the breasts to release milk (Sestu and Yuni, 2022).

The frequency to perform oxytocin massage will affect the production of maternal prolactin hormone levels and breast milk. Oxytocin massage is more effective done twice a day, in the morning and evening. Where massage done twice a day can affect milk production in postpartum mothers (Sestu and Yuni, 2022).

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Oxytocin massage will be more effective when combined with breast care in postpartum mothers compared to if only oxytocin massage is done alone. Breast care is breast care performed to facilitate breast milk and can be done during pregnancy until breastfeeding (Sestu and Yuni, 2022). Why oxytocin massage can facilitate milk production that comes out because this massage is done along the spine (vertebrae) to the fifth-sixth costal bones. Massage or stimulation performed on the spine, neurotransmitters stimulate the medulla oblongata and send messages to the hypothalamus in the posterior pituitary to release oxytocin which causes the breasts to release milk. This massage will also relax tension and eliminate stress. Based on research results, this massage mechanism will give effect for mothers to relax and calm because with massage will decrease hypothalamic pituitary adrenal (HPA) activity, when HPA decreases then ACTH will also decrease. Oxytocin and prolactin hormones that come out after massage will give a calming effect on mothers so that milk production can come out smoothly (Sestu and Yuni, 2022).

Breastfeeding babies should not be scheduled. Babies should be breastfed according to baby's demand (on demand). Generally, healthy babies will nurse 8-12 times per day with breastfeeding duration of 15-20 minutes on each breast (Sari, 2018). The more often the baby nurses on the mother's breast, the more milk production and output will be. With sufficient amount of breast milk for babies then babies will urinate at least minimum frequency of urination per day at least 6 times a day. Good urination is bright yellow. If urination is dark yellow or brownish (like apple juice) and urination frequency less than 6 times per day, most likely the baby is experiencing dehydration or insufficient breast milk. Sufficient breast milk in babies can be seen with changes in baby weight. At 1 month of age, the expected minimum increase in baby weight reaches 0.014 to 0.028 kg per day or minimum baby weight gain of 100 g in 8 days. If baby weight a few days after birth drops to 7% of birth weight, mothers need not worry. If mothers receive excessive intravenous fluids or infusions during labor, babies may lose more weight at early birth. If the breastfeeding process goes well and the baby is generally healthy, baby weight growth will rise from the fourth or fifth day at 10-14 days of age baby weight will be the same as birth weight.

This research is in line with research conducted by Tabita et al (2019) where research results of oxytocin massage administration affects the increase in breast milk production with indicators of baby weight p-value 0.003 (<0.05), breastfeeding frequency p-value 0.000 (<0.05), baby urination frequency p-value 0.000 (<0.05). Research conducted by Emy & Kh (2020) bivariate analysis results show there are differences in average baby weight with p-value 0.001 (<0.05), there are significant differences in urination frequency with p-value 0.001 (<0.05) and there are significant differences in breastfeeding frequency with p-value 0.001 (<0.05) so it can be concluded that there is an effect of oxytocin massage and breast care on milk production with indications of baby weight, baby breastfeeding frequency, baby urination frequency.

According to the researcher's assumption, the combination of breast care and oxytocin massage performed regularly can maximize milk production which can be seen from indicators of baby breastfeeding frequency in 24 hours, baby urination frequency in 24 hours,

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and baby weight gain. Breast care and oxytocin massage performed simultaneously maximize mother's milk production, with breast care the mother's nipples become cleaner so there is no blockage and with oxytocin massage stimulating the oxytocin hormone that helps milk production in the breast.

CONCLUSION

Based on the research results, the following conclusions can be drawn: The average frequency of infant breastfeeding in postpartum mothers in the Working Area of Poncowati Health Center, Central Lampung Regency in 2024 before the combination of oxytocin massage and breast care was 7 times/day and after the combination of oxytocin massage and breast care was 10 times/day. The average frequency of infant urination in postpartum mothers in the Working Area of Poncowati Health Center, Central Lampung Regency in 2024 before the combination of oxytocin massage and breast care was 6 times/day and after the combination of oxytocin massage and breast care was 8 times/day. The average infant weight in postpartum mothers in the Working Area of Poncowati Health Center, Central Lampung Regency in 2024 before the combination of oxytocin massage and breast care was 3094 grams and after the combination of oxytocin massage and breast care was 3301.50 grams. There is an effect of combination of oxytocin massage and breast care on breast milk adequacy in postpartum mothers in the Working Area of Poncowati Health Center, Central Lampung Regency in 2024 with p-value of infant breastfeeding frequency 0.000 (<0.05), p-value of infant urination frequency 0.000 (<0.05) and p-value of infant weight 0.000 (<0.05).

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