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Combination Of Breast Care And Oxytocin Massage Of Breastfeeding Mothers In Infant Weight Gain

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Abstract

The perception that the supply of milk production is less than 30-80% of breastfeeding mothers is the main reason mothers stop breastfeeding their babies. Breast milk is a source of fat and protein that is important for the growth and nutrition of infants. Increased breast milk secretion has a very positive impact on the baby's weight gain. One technique to increase milk production, among others, by doing breast care and oxytocin massage. Breast Care aims to expedite blood circulation and prevent blockage of milk production channels from facilitating the expenditure of milk. At the same time, oxytocin massage can stimulate the secretion of the hormone oxytocin (letdown reflex) so that milk comes out. This research analyzes the effect of a combination of breast care and oxytocin massage on breastfeeding mothers on infant weight gain. This research is a quasi-experimental study with a pre-post test control design. Sampling took as consecutive sampling. The results showed that there were significant mean differences in infant weight gain between the treatment and control groups ($p < 0.05$). The results of this study expected to contribute to midwifery as a non-pharmacological effort to increase milk production which will have a positive impact on infant weight so that it can support the government's efforts to increase exclusive breastfeeding coverage and reduce infant mortality and morbidity.

Keywords: Breast Care; Oxytocin Massage; Infant; Weight Gain

INTRODUCTION

One of the goals of health development is to reduce the infant mortality rate (IMR), which is an essential aspect of describing the level of human development in a country in terms of public health. Based on data from the World Health Organization (WHO), 53% of infant mortality in Indonesia is related to nutritional factors. Disease arising from malnutrition is diarrhea by 15% (SDKI, 2012). One strategy in reducing morbidity and infant mortality is exclusive breastfeeding (Vennemann et al., 2009).

Achievement of exclusive breastfeeding in Indonesia is still far from the national target of 80%. The percentage of exclusive breastfeeding in infants 0-6 months in Indonesia in 2013 was 54.3%. The percentage of breastfeeding in South Sumatra was 74.49% (Indonesia Health Profile, 2014), and the coverage of Palembang City exclusive breastfeeding in 2014 was 74.18% (Palembang City Health Profile, 2014). Infants who are not breastfeeding have a higher risk of death from diarrhea than babies who are exclusively breastfeeding. Deaths from diarrhea and pneumonia can reduce by one-third of the baby gave exclusive breastfeeding (Lamberti et al., 2011). Besides, exclusive breastfeeding can meet the energy and nutritional needs so that the baby can grow and develop optimally (Butte et al., 2002).

Worldwide, the prevalence of maternal perceptions that lack of milk production reported between 30% and 80%, which causes mothers to stop breastfeeding, and this is the main reason for stopping giving breast milk, which occurs 1-4 weeks postpartum (Ahluwalia et al., 2005).

The production of breast milk in the first days of giving birth is an obstacle for mothers in breastfeeding. Oxytocin massage is one technique for overcoming the smooth production of breast

milk. Oxytocin massage is massage along the spine (vertebrae) to the fifth-sixth costae bone and is an attempt to stimulate the hormone oxytocin (Mardiyaningsih et al., 2011).

One other technique to increase milk production in breast care. Breast care aims to expedite blood circulation and prevent blockage of milk production channels from facilitating the expenditure of breast milk. Tactile stimulation during breast care can stimulate the hormones prolactin and oxytocin, which help babies get breast milk (Meihartati et al., 2017).

This research supported by previous research in which oxytocin massage affects the expenditure of breast milk in postpartum primiparous mothers with a P-value of 0,000 where the average milk expenditure is 5.37 times greater than the average before intervention with an average of 0.97 (Sulaeman R et al., 2019).

Breastfeeding perceptions are less common in 30% -80% of breastfeeding mothers and are the main reason for stopping breastfeeding that occurs 1-4 weeks postpartum (Ahluwalia et al., 2005). There have been previous studies on oxytocin massage and breast care on milk production, but no one has examined the impact on infant weight, so the basis of this study carried out.

METHOD

This research is a quasi-experimental with pre-post test control design. This research was conducted at the Midwife Practice of Palembang City from 17 April 2019 to 28 August 2019. A sample of 60 nursing mothers and their babies consisted of 30 nursing mothers who did breast care and oxytocin massage and 30 breastfeeding mothers who did not give breast care and oxytocin massage. The sample in

this study was part of the first day postpartum mothers, normal labor, and willing to be respondents. Sample taken by consecutive sampling, the sample criteria are, namely those who normal labor, aterm, single, and healthy babies, birth weight babies ≥ 2500 grams. The mother does not use other drugs to increase milk production and is willing to be a respondent.

The treatment group in this study were breastfeeding mothers who did breast care and oxytocin massage. Previously, researchers would do breast care and oxytocin massage in the treatment group, mothers and families were also taught how to do it independently at home, respondents also provided with a booklet as a guide in doing breast care and oxytocin massage. Breast care and oxytocin massage were carried out twice in the morning and

evening for 14 days, and researchers by telephone and whatsapp monitored the mother's compliance in breast care and oxytocin massage.

Weighing the baby's weight in this study used a digital baby scale LAICA BF 2051 with a precision of 10 grams. When weighing, the scales are placed in a flat place and covered with a clean thin mat, and then the baby is placed on the scales in a naked state. Every baby weighed with the same type of scale and the same weighing procedure. Monitoring of the baby's body weight at birth, on the 6.9 days, and after treatment that is on the 15th day. The data on this research variable processed with the Mann Whitney Test analysis of SPSS program version 20. This study obtained ethical approval from the Health Ethics Commission research on Health Polytechnic Mataram Number: LB. 01. 03/ 1.1/ 6318/2019.

RESULT AND DISCUSSION

Table 1 Characteristics of Subjects in Both Study Groups

Characteristics	Research group		p-value *
	Treatment (n=30)	Control (n=30)	
Age (years)			0,727*
x (SD)	27,3 (4,1)	26,9 (3,9)	
Range	21-37	22-36	
Frequency of breastfeeding			0,107**
<8 x/days	0	0	
8-12 x/days	27	21	
>12 x/days	3	9	
Infant Gender			0,438**
Male	18	14	
Female	12	16	
Infant Weight (gr)			0,899*
Average (SD)	3073 (288,8)	3081 (214,0)	
Range	2610-3810	2710-3470	

Table 1 shows that there were no significant differences in the characteristics of mothers and infants between the treatment and control groups on the characteristics of maternal age, frequency of

breastfeeding, baby's sex, and birth weight of the baby ($p > 0.05$).

The trend of changes in infant weight presented to find out the pattern of the decrease, return to birth

weight and increase in weight of the infant birth weight between the treatment group and the control

group assessed on day 6.9 and after the study on the 15th day.

Table 2 Differences in Trend of Changes in Infant Weight in the Two Study Groups

The trend of Weight Change	Research Group				p-Value
	Treatment (n=30)		Control (n=30)		
	n	%	n	%	
6 days					0,004*
weight loss	4	13,3	16	53,3	
regain	4	13,3	2	6,7	
weight gain	22	73,3	12	40	
9 days					0,000**
weight loss	30	100	17	56,7	
regain	0	0	2	6,7	
weight gain	0	0	11	36,7	
15 days					0.492**
weight loss	30	100	28	93,3	
regain	0	0	0	0	
weight gain	0	0	2	6,7	

Table 2 shows that on the 6th day, the majority of respondents in the treatment group experienced an increase in body weight by 22 respondents (73.3%). In the control group, most of the respondents still experienced a weight loss of 16 respondents (53.3%). Statistical test results showed that there were significant differences in the trend of changes in infant weight between the treatment group and the control group on the 6th day ($p < 0.05$).

On the 9th day and the 15th day, all respondents in the treatment group had experienced an increase in

infant weight (100%). However, in the control group, some respondents were still experiencing weight loss, namely on the 9th day as many as 11 respondents (36, 7%) and the 15th day were two respondents (6.7%). Statistical test results showed that there were significant differences in the trend of changes in infant weight between the treatment group and the control group on the 9th day ($p < 0.05$). However, there were no significant differences between the treatment group and the control group on the 15th day ($p > 0.05$).

Table 3: Increase in Infant Weight on Monitoring Day 6 and 9 of Both Groups

Variable	Group		p-Value*
	Treatment	Control	
	(n=30)	(n=30)	
Six days			
Enhancement (%)			0,03
Average (SD)	1,0 (1,1)	-1,2 (3,7)	
Range	(-1,86) – (2,74)	(-8,85)-(3,16)	
Enhancement (gr)			0,023
Average (SD)	30,67 (34,9)	-41,67 (115,7)	
Range	(-60) – (80)	(-270) – (90)	
Nine days			
Enhancement (%)			0,006
Average (SD)	4,4 (1,3)	1,3 (4,2)	
Range	0,93-6,67	(-5,86) – (6,67)	
Enhancement (gr)			0,002
Average (SD)	136,67 (41,2)	86,46 (128)	
Range	30-200	(-190)-(200)	

Table 3 shows that there are significant differences in weight gain for infants in percent (%) and grams on day six and day nine between the treatment and control groups ($p < 0.05$).

Table 4. Increased Infant Weight Pre and Post Treatment Between the Two Study Groups

Variable	Research Group		p-Value*
	Treatment	Control	
	(n=30)	(n=30)	
Enhancement (%)			<0,01
Average (SD)	10,65 (2,3)	7,5	
Range	4,04-13,36	(-1,43) – (12)	
Enhancement (gr)			<0,01
Average (SD)	327 (76,5)	228 (117,8)	
Range	130-470	(-40) – (390)	

Table 4 shows that there were significant differences in infant weight gain in percent (%) and grams on day 15 between the treatment group and the control group ($p < 0.05$). Table 2 on the trend of changes in baby's weight on the 6th day shows that the majority of infants in the treatment group gained weight as many as 16 babies (72.7%) and in the

control group the majority of babies still experienced weight loss that was as much as 13 infants (56.5%).

This research, in line with the theory that the first day to start gaining weight is around the 4th day (Noel et al., 2008). Transitional milk is a period that encourages milk production to support nutritional

needs and rapid growth in infants (Ballard et al., 2013). Lack of milk production in the first days after giving birth can cause by a lack of stimulation of prolactin and the hormone oxytocin, which plays a role in the smooth production of breast milk (Gustirini, 2018). Table 2 also shows that the trend of changes in infant weight on day 15 is not significant between the treatment group and the control group. This is because most of the baby's weight on day 15 has increased (rising trend).

Table 3 and Table 4 show that there is a significant difference in the increase in infant weight in percent (%) and grams on day six, day nine, and after treatment, which is on day 15 between the treatment group and the control group ($p < 0.05$). The results of this study are in line with previous research studies conducted that breast care can increase the smoothness of breast milk excretion 1-2 times greater than mothers who gave breast care (Nilamsari, 2014). This research is also in line with previous research that oxytocin massage affects the expenditure of breast milk in postpartum primiparous mothers with a P-value of 0,000 where the average milk expenditure is 5.37 times greater than the average before intervention with an average of 0.97 (Sulaeman R et al., 2019).

Significant increase in infant weight between the two study groups because physiologically breast care influences the pituitary to release the hormone oxytocin by stimulating the milk glands through massage (Nilamsari, 2014). Breast treatment, combined with oxytocin massage in this study, will maximize the stimulation of the hormone oxytocin release.

One of the hormones needed for lactogenesis is oxytocin. Oxytocin releases after nipple sensory stimulation in the nipple. Impulses that activate

release transmitters along the same pathway as the release of prolactin to the mesencephalon level. At that time, the pathways of dividing and impulses that control the release of oxytocin travel to the supraoptic and paraventricular nuclei, where they stimulate both the synthesis and release of oxytocin (Beesley et al., 2008).

Oxytocin massage is one solution to overcome the shortage of milk production. Oxytocin massage is done by massaging along the sides of the spine for the fifth-sixth bone costae and is an attempt to stimulate the hormone prolactin and oxytocin after childbirth. Massage on the side of the spine, will stimulate the medulla oblongata directly send messages to the hypothalamus in the posterior hypofise to release oxytocin, causing the release of breast milk (Suwondo et al., 2015), this is very important for the survival of the baby because breast milk is a staple food for newborns (Wulan et al., 2017).

CONCLUSION

Breast care and oxytocin massage are critical during lactation to expedite breastfeeding. The results of this study expected to contribute to midwifery as a non-pharmacological effort to increase milk production. We hope it will have a positive impact on infant weight so that it can support the government's efforts to increase exclusive breastfeeding coverage and reduce infant mortality and morbidity.

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