

THE IMPACT OF HANDS ON PUMPING ON THE LEVEL OF BREAST MILK PRODUCTION ON POST PARTUM MOTHERS

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ABSTRACT*

The exclusive breastfeeding in Indonesia has not yet reached the national level target. Data from Private Hospital in West Jakarta found that there were only 60% of mothers who gave exclusive breast feeding in 2016, 38% of whom said they were unsuccessful due to low breast milk. The method that can be used to increase milk production is Hands on Pumping (HOP) technique, HOP is a technique of flushing the breast milk by relying on the strength of our thumb and index finger. To observe the effect of HOP on breast milk production in post partum mothers. We employed a quasi experimental design with pre and post test design, with the control group. The sample size was 68 mothers post multiparous partum with criteria 34 as the HOP experimental group and 34 post partum mothers as the control group (without HOP). On the third day of the intervention group there was a significant increase in breast milk production from the first day. The experimental group received HOP intervention (34 mothers) with a rise of 121.08 ml. This means that there is a difference in milk production before and after treatment. On the third day, the results of the p value are 0,000, with p value <0.05, which brought to the conclusion that there was an influence of HOP on breast milk production. HOP can significantly increase milk production. Next researcher is recommended to conduct similar research by paying attention to other factors that also affect breast milk production, such as psychological, nutrition, maternal breast conditions, and hormones.

Keywords: Postpartum mothers, hands on pumping, breast milk.

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INTRODUCTION

Breast milk is the best food for babies created by God because its content is rich in nutrients, vitamins, minerals, antibodies that are suitable for the baby's needs (Roesli, 2009). Breast milk for babies is very important from birth to the age of six months without additional food or other formula. Breastfeeding during the first six months is known as Exclusive Breastmilk and has been recommended by the World Health Organization (WHO).

Based on WHO statistical data in 2012, only 39% of newborn less than six months in the world are exclusively breastfed, while in China, the exclusive breastfeeding rate is only 28%. This global number has increased very slowly over the past few decades, in part because of the low rates of breastfeeding in some developed countries (Smerdon & Wallace, 2013).

The Indonesian government's support for exclusive breastfeeding is established in Government Regulation Number 33 of 2012 concerning the Government that

guarantees the fulfillment of the baby's right to get exclusive breastfeeding from birth to the age of six months by observing their growth and development. The achievement of exclusive breastfeeding fluctuated from 2011-2013 as follows, 65.87% in 2011, 53.78% in 2012, 57.63% in 2013 (Statistical Center and Ministry of Health, 2014).

From observational data obtained from Private Hospital in West Jakarta in the midwifery room, achievement of breastfeeding for babies has not reached 100%, around 38% of mothers can not breastfeed due to lack of milk production (Amarille, 2016). Another factor that inhibits exclusive breastfeeding because 25% of patients complain of pain while breastfeeding, 20% of patients complain of anxiety and fear of lack of milk production, and 12% of patients said they did not know or did not understand how to put their baby in the right position and attachment while breastfeeding.

Factors that can inhibit the failure of exclusive breastfeeding in infants are often due to lack of milk production flowing smoothly and rapidly (Perinasia, 2012). One technique for increasing breast milk production is Hands On Pumping (HOP),

which is one of the nursing interventions in health services. HOP technique is the technique of flushing the breast milk using hands by relying on the strength of our thumb and index finger (Perinasia, 2012).

METHODS

This study is a quasi-experimental research design using pre-post test design with control group that takes measurements at the beginning and at the end of the study (Notoatmodjo, 2010). The sampling technique in this study was conducted with non-probability sampling, namely consecutive sampling of 68 mothers post multiparous partum in Private Hospital in West Jakarta on December 5, 2017 until January 24, 2018. (Dharma, 2011; Dahlan, 2014).

This research was conducted under the review of the Mochtar Riady Institute for Nanotechnology Ethics Committee (MRIN ethical review number (04.1710182.)) With the aim of assessing feasibility. The ethical principles that were used in this research are benefits, respect of human dignity, and justice (Polit & Back, 2012).

The data obtained was analyzed by univariate and bivariate analysis to see the effect of HOP with the dependent variable

(breast milk production) using the independent t-test statistical test. The research instrument used was a questionnaire to determine age, education and employment and form for observing breast milk produced from the first day and the third day. The measuring device uses are syringe 1 ml, 3 ml syringe, measuring spoon, and cup feeder.

All respondents were first educated about the benefits of breastfeeding, how to breastfeed, how to increase breast milk production, and accompanied for Early Breastfeeding Initiation for 30 minutes to one hour (Roesli and Yohmi, 2009). In the control group milking was carried out on the first day after Early Breastfeeding Initiation and on the third day at 08.00 WIB to find out the amount of milk produced and accompanied for 3 days while breastfeeding. In the intervention group respondents were given additional explanations about how to increase milk production and HOP techniques.

After early breastfeeding the mother is assisted in performing HOP then the amount of breast milk is recorded on the observation form. Furthermore, HOP was conducted at 08.00 WIB, 14.00 WIB and 21.00 WIB for 3 days.

RESULTS AND DISCUSSION

The results of the study regarding the effect of HOP on the level of milk production in postpartum mothers in Private Hospital in West Jakarta. This research was conducted on December 5, 2017 until January 24, 2018 at Private Hospital in West Jakarta with a total of 68 respondents consisting of 34 control groups and 34 intervention groups. Respondents in this study were postpartum multiparous mothers from day one to day three who were treated at Private Hospital in West Jakarta in Midwifery room.

Table 1 Respondent Characteristic Distribution (n= 68 people)

Treatment	Category	N	%
Age	17-25	8	11.8%
	26-35	48	70.6%
	36-45	12	17.6%
Education	Junior High	1	1.5%
	Senior High	20	29.4%
	University	47	69.1%
Occupation	Employed	40	58.8%
	Unemployed	28	41.2%

Based on the table above, it can be seen that the average response age is around 26-35 years which is a productive age. The youngest age of the respondent is 21 years old and the oldest is 40 years old. The most education from respondents was tertiary education at 69.1% and the average respondent is a person who works at 58.8%.

Table 2. Distribution of total breastmilk in the intervention group on the first and third days of mothers post multiparous partum (n=34)

Time	Mean	SD	95% CI	P Value
Day: 1	1.67	1.48	142.77	0.0001
Day: 3	122.76	62.50	-99.40	

The table above shows a significant increase in milk production from the first day of the intervention group receiving HOP intervention with an increase of 121.08 ml. This means that there is a difference in milk production between before and after treatment. On the third day of P value 0,000, p value <0,05 concluded that the influence of HOP on milk production. The stimulation that results from the muscles of the breasts generated by HOP techniques stimulates smooth muscle contraction, and the stimulation is useful to activate and increase the production of breast milk (Perinasia, 2012, Roesli, 2010).

Table 3. Distribution of milk production of first and third day control groups in multipara postpartum mothers (n=34)

Time	Mean	SD	95% CI	P Value
Day- 1	0.89	1.42	13.80-7.44	0.0001
Day- 3	11.52	9.62		

The table above shows that there is an increase in milk production from the control group of post partum mothers. The increase of milk production from the first and third days was 10.62 ml. On the third day, the results of P value 0.000 <0.05

means that the control group experienced an increase on the third day.

Table 4. Distribution of Breastfeeding Production in Intervention Group and Control Group on Day 1 and Day 3 in Multipara Post-Partum Mother (n = 68)

Variabel	Mean	SD	95% CI	P Value
Intervention				
Day-1	1.67	1.48	0.07-	0.30
Control	0.89	1.42	1.48	
Day-1				
Intervention				
Day-3	122.76	62.50	89.58-	0.0001
Control	11.52	9.62	132.89	
Day-3				

The table above illustrates that there is a similar increase in breast milk production in the mothers of the intervention group and control group, it can be seen from the increase in breast milk production on the first day of the two groups until the third day. The intervention group had an increase in breast milk production at 122.76 ml, which is far more than the control group.

The third day is a period of lactogenesis II where the breast that has been stimulated from the baby's mouth during breastfeeding can increase milk production more than that in the mothers who do not breastfeed their babies (Biancuzo, 2003; Evariny, 2008). On the second and third days postpartum, estrogen and progesterone levels dropped drastically so that the effect of prolactin was more dominant and at this time breast milk secretion began to occur. With early breastfeeding, there is

stimulation of the nipples, and prolactin is formed by the pituitary, so that breast milk secretion is smoother. This explains why each respondent experienced an increase in breast milk production on the third day (Bahiyatum, 2008; Perinasia, 2012; Dahl, 2015).

The similarity of the increase in breast milk production on the third day of the two respondents based on the results of the study can be seen from the fact that the two groups did the same thing to breastfeed their babies as early and as actively as possible. In the beginning of the study, researchers began the Early Breastfeeding Initiation known as IMD. Baby's skin contact with mother's skin stimulates the production of oxytocin and prolactin in mothers to increase milk production (Roesli, 2008).

The increase of breast milk production on the third day was an average of 11.52 ml. Both respondents have a difference in the amount of breast milk production produced by 111.24 ml. This research is in line with the theory of breastmilk formation in lactogenesis II that on the third day after birth the breasts will experience fullness of breast. The volume of breast milk will increase because of the stimulation caused

when the mother is breastfeeding and when the mother is doing HOP which is one way to increase breast milk production (Susanto, 2009).

The result of statistical test shows that there are influence of HOP with the amount of milk production in post partum mother. On the third day, the HOP group experienced an increase in the amount of milk production with an average of 122.76 ml while the group that didn't do HOP on the third day, experienced an increase with the average of 11.52 ml. This shows that HOP can increase breast milk production.

The results of this study are reinforced by the theory stated by Medela (2016), Perinasia (2012) and Roesli & Yohmi E (2009) which claimed that breasts do not become completely empty after breastfeed the babies because the baby's stomach capacity is still small, so it is not optimal in emptying breast. Breastfeeding techniques can be done either by breastfeeding or milking. At the time of milking the prolactin hormone will come out if there is emptying process of the breast milk. The more breastmilk is removed or emptied from the breast, it will increase milk production.

Jiang et al (2015) in China in their article entitled "The Evaluation of the Impact of Breast Milk Expression in Early Postpartum Period on Breastfeeding Duration" explains that the postpartum mothers who succeeded in breastfeeding for six months were the mother who combined direct breastfeeding and breast milk which prolonge the period of mother's breastfeeding. According to the research of Mardiyarningsih, E., Setyowati & Sabri, L. (2011) in the effectiveness of combination of marble and oxytocin massage techniques to the production of post-sectio breastmilk mothers, there were as many as 23 people (85.2%) who were given the intervention of her milk production smoothly, while in the control group there were only nine people (33,3%).

The results of the analysis, also obtained post-sectio mothers who were given combined intervention of marmet techniques and oxytocin massage that had probability of 11.5 times higher and had the experience of smooth breast-feeding than the control group. J Marton, Jy Hallm RJ Wong, L Thairu, We Benitz and WD Rhine (2009) in the title "Combinating Hand Techniques with Electric Pumping Increases Milk Production in Mothers of Preterm Infants" conducted a study on the

combination of hand techniques with machine pumps boosting milk production in mothers with premature babies. The study revealed that mothers who gave birth prematurely and mothers with babies whose conditions are unable to be breastfeed are directly can avoid the lack of milk production by using breast milk pumping. In the first three days post partum of the mothers who used hands to flush five times a day, there was a Mean Daily Volume (MDV) of 820 ml per day in eight weeks.

CONCLUSIONS

HOP effectively increased breastmilk production, as evidenced by an increase in the number of breast milk on third day compared to the first day of 121.08 ml. On the third day of the intervention group, the results of p value 0,000, so it can be concluded that there was an effect of HOP on breastmilk production because the p value was <0.05.

HOP is a technique or method to help increase milk production. This can help maximize prolactin respiration and minimize side effects from delayed breastfeeding (Evariny, 2008). In this study, the researchers only looked at the effects of HOP, without controlling

psychological variables, nutrition, breast conditions, and hormones that support breast milk production. Thus, for further research, it is recommended to consider

these factors to support the exclusive breast milk program which is one of the government's main programs.

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