

## The Effect of Oxytocin Massage on Breast Milk Production

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### **Abstract**

A decrease in breast milk production in the first days after birth may be caused by the lack of stimulation of the oxytocin and prolactin hormones. Oxytocin massage was one of solution to overcome the lack of breast milk production. The research aimed to analyze the effect of oxytocin massage on baby's weight and breast milk production. Subjects of this quasi-experimental research were 60 postpartum mothers who selected by using quota sampling technique. Intervention groups were 30 respondents and control groups were 30 respondents. Data were analyzed by using linear regression test. Hypothesis test results indicated that there was the effect of oxytocin massage on baby's weight and breast milk production, so it was advisable that the oxytocin massage can be used in postpartum care.

**Keywords:** Oxytocin Massage, Breast Milk

### **I. INTRODUCTION**

Exclusive breastfeeding for infants during the first 6 months could save 1.3 million children worldwide, including 22% of the baby's life floated after birth. UNICEF data indicate that exclusive breastfeeding can reduce Maternal Mortality Rate (MMR) in Indonesia. Some of the regulations established by the government had to improve the coverage of exclusive breastfeeding in Indonesia. Although the regulations and programs have been set by the government, but coverage of exclusive breastfeeding is still far from the national target of 80%. According to data from "The Basic Health Research" in 2013, the rate of exclusive breastfeeding in infants aged 6 months only reached 30.2%. This achievement is higher than the results of "The Demographic and Health Survey of Indonesia" in 2012 (27%) and "The Basic Health Research" in 2010 (15.3%) (Kemenkes RI, 2013).

The low coverage of exclusive breastfeeding is influenced by many factors, both factors of the mother and baby. Research conducted by Siregar (2004) showed that exclusive breastfeeding is influenced by various factors such as breast milk that has not come out, after childbirth, the less breast milk production, and difficulty of baby in sucking the breast milk. Colin and Scott (2002) explains that 29% of postpartum mothers stop breastfeeding because breast milk production is less.

The decline in breast milk production in the first days after birth may be caused by a lack of stimulation of the prolactin and oxytocin hormone (Roesli, 2009). Research conducted by Pace (2001) showed that in 95% of mothers, breastfeeding decreased due to stimulation baby sucking.

One of effort that can be done to stimulate the prolactin and oxytocin hormones is performing oxytocin massage. Suryani & Astuti (2013) reported that oxytocin massage can increase the breast milk production and the baby's weight. Indicator of milk production is: 1) feeding frequency, 2) urinating frequency of, 3) duration of sleep after feeding. Ummah (2014) reported that oxytocin massage can accelerate the release of breast milk.

## II. METHODS

Table 1 shows the methods had been implemented in this research.

**Table 1:** Research methods that implemented

<b>Type of research</b>	Quasi-experimental (non randomized experiment)
<b>Design</b>	<p>Posttest only with the control group design.</p> <ul style="list-style-type: none"> <li>- The intervention group was given oxytocin massage treatment from 1<sup>st</sup> day to 5<sup>th</sup> day postpartum, the control group was given oxytocin massage treatment only at the 1<sup>st</sup> day.</li> <li>- On the 6<sup>th</sup> day the baby was taken their weight and measured the amount of breast milk of their mother.</li> </ul>
<b>Population</b>	All postpartum mothers at Health Centers in South Tangerang District.
<b>Sample</b>	<ul style="list-style-type: none"> <li>- Sample size: 30 for intervention group and 30 for control group, from Kampung Sawah Health Center, Pamulang Health Center, Pondok Benda Health Center, and Serpong Health Centers</li> <li>- Sampling technique: quota sampling</li> </ul>
<b>Data collection</b>	<p>Time of data collection: October 2015</p> <p>Data collection technique:</p> <ul style="list-style-type: none"> <li>- Baby's weight measurement</li> <li>- Amount of breast milk measurement</li> </ul>
<b>Data analysis</b>	<ul style="list-style-type: none"> <li>- T-test</li> <li>- Correlation test</li> <li>- Linear regression test</li> </ul>

## III. RESULTS

**Table 2:** Description of baby's weight

Variable	Intervention group			Control group		
	N	Mean	Min – Max	N	Mean	Min – Max
Baby's weight at 1 <sup>st</sup> after birth (g)	30	3076,67	2500 – 3800	30	3073,33	2100 – 3800
Baby's weight at 6 <sup>th</sup> after birth (g)	30	3428,33	2600 – 4100	30	3079,33	2150 – 3600

**Table 3:** Description of amount of breast milk

Variable	Intervention group			Control group		
	N	Mean	Min – Max	N	Mean	Min – Max
The amount of breast milk pumped at 6 <sup>th</sup> day after child birth	30	190	115 - 500	30	162	80 – 400

**Table 4:** Difference of baby's weight at 6<sup>th</sup> after birth dan amount of breast milk in intervention group and control group

Variable	N	Mean	SD	SE	P-value	95% CI
Baby's weight						
Intervention group	30	3428,33	316,14	57,72	0,0001	189,44-508,56
Control group	30	3079,33	301,12	54,98		
Amount of breast milk						
Intervention group	30	190,17	122,02	22,28	0,053	127,08-194,08
Control group	30	161,67	90,79	16,58		

About baby's weight, p-value of independent samples t-test was 0.0001, so it concluded that the difference was significant; and about amount of breast milk, p-value was 0.053, so concluded that the difference was significant.

**Table 5:** Result of linear regression test for "baby's weight" as dependent variable

Variable	Beta	R-Square	P-value	95% CI
Constant	3079,333	0,248	0,000	2966,507-3192,160
Oxytocin massage	349,000			

P-value = 0.000 (<0,05), so it was concluded that oxytocin massage can increase the baby's weight.

**Table 6:** Result of linear regression test for "amount of breast milk" as dependent variable

Variable	Beta	R-Square	P-value	95% CI
Constant	131,000	0,090	0,039	18,314-60,582
Oxytocin massage	36,234			

P-value = 0.039 (<0,05), so it was concluded that oxytocin massage can increase the amount of breast milk.

#### IV. DISCUSSION

Oxytocin massage is one of right solution to accelerate and facilitate the breast milk production. Massage will give a sense of comfort and relax in women after childbirth. This condition can reduce inhibition of prolactin and oxytocin hormone secretion. The oxytocin is also called the hormone of love, so that when the mother's condition is happy, quiet, and comfortable; the oxytocin production will increased (Roesli, 2009). Instead, oxytocin secretion drops when the mother is in a stated of worry, fear, or anxious. The oxytocin stimulates the myoepithelial breast to contract, so that the milk will be released smoothly. Pace (2001) states that massage significantly can affect the peripheral nervous system, increase stimulation and conduction of nerve impulses, weaken and stop pain, and improve blood flow to tissues and organs. Massage also makes the muscles become more flexible, and provide therapeutic effects that lead to a sense of comfort and relax.

According to Biancuzzo (2003), lactation process involved the production and expenditure of breast milk. Milk production has started since pregnancy and expenditure still inhibited during pregnancy. Immediately after birth, estrogen and progesterone drop dramatically, so that the action of prolactin and oxytocin will be maximized. This condition make the expenditure of brest milk will be smooth.

In the State of China, massage is one of the form of non-medical treatment to increase breast milk production through suppression. Massage in certain areas can provide the energy balance, which is commonly known as tub up acupressure. Acupressure is an low cost non invasive act. Only a few studies that discuss acupressure and milk production (Esfahani, *et al.*, 2015). Lixin, *et al.* (2008) says that acupressure has an influence on the increase in the secretion of the prolactin and can increase breast milk production.

According to Riordan (2004), massage on the back area in postpartum mothers also carried out in Japan. The purpose of this action is to relieve discomfort and provide a sense of relaxation. Morhenn, *et al.* (2012) explains that the massage can increase the oxytocin and reduced adrenocorticotropin hormone. Adrenocorticotropin hormone was associated with stress, whereas the oxytocin was associated with tranquility. Through massage, it is expected an increase in the level of oxytocin and a decrease in the level of adrenocorticotropin.

## V. CONCLUSSION

Results of study indicated that there was the effect of oxytocin massage on baby's weight and breast milk production. Based on the conclusion, it was advisable that the oxytocin massage can be used in postpartum care.

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