

# Effectiveness of The Combination of Marmet Technique and Oxytocin Massage Against The Breast Milk Production of Mother Postpartum

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## Abstrak

Menurut UNICEF (*United Nations Children's Fund*) Perilaku yang tidak tepat dan kurangnya pengetahuan berkontribusi terhadap kematian anak salah satunya yaitu para ibu tidak menyadari pentingnya pemberian ASI. Menurut Riset Kesehatan Dasar (RISKESDAS) presentase pola menyusui < 1 jam tahun 2010 yaitu 29,3% dan meningkat menjadi 34,5% tahun 2013. Pola menyusui 1-6 jam pertama tahun 2010 sebanyak 40,7% dan menurun menjadi 35,2% tahun 2013. Beberapa metode untuk membantu memperlancar produksi ASI diantaranya adalah metode pijat oksitosin, teknik marmet, kompres hangat, massase rolling (punggung), *breast care*, dan metode SPEOS (Stimulasi Pijat Endorphin, Oksitosin dan Sugestif). Penelitian ini bertujuan untuk mengetahui efektivitas kombinasi teknik marmet dan pijat oksitosin terhadap produksi ASI ibu postpartum. Penelitian ini menggunakan metode *quasi eksperiment* dengan *post test only with control group design* dan teknik pengambilan sampel *Purposive sampling* yaitu 30 responden. Hasil bivariat menggunakan *independent T-test* didapatkan *p value* (0,007) <  $\alpha$  (0,05) yang artinya ada pengaruh yang bermakna antara produksi ASI ibu postpartum kelompok intervensi dengan produksi ASI ibu postpartum kelompok kontrol dengan rata-rata produksi ASI dari 15 responden kelompok intervensi sebesar 1,113cc sedangkan 15 responden kelompok kontrol sebesar 0,547cc. Kombinasi teknik marmet dan pijat oksitosin efektif untuk menstimulasi pengeluaran hormon prolaktin yang selanjutnya merangsang sel-sel alveoli dan sel mioepitel sehingga menghasilkan produksi ASI pada ibu postpartum..

**Kata kunci:** 3-5 kata kunci ditulis dalam bahasa Indonesia

## Abstract

According to UNICEF improper Behaviour and less of knowledge contributed to the death of a child, one of them, namely the mothers do not realize the importance of breast feeding. According to Basic Medical Research percentage of breastfeeding pattern <1 hour in 2010 i.e. 29,3% and increased to 34,5% in 2013. The breastfeeding patterns 1-6 the first hour of the in 2010 as many as 40,7% and decreased to 35,2% in 2013. A few methods to help improve the ASI production such as oxytocin massage methods, marmet technique, warm compresses, massase rolling (back), breast care, and methods of SEMOS (Stimulation of Endorphin Massage, Oxytocin and Suggestive). This research aimed to know the effectiveness combination of the marmet technique and oxytocin message against the breast milk production of mothers postpartum. This research used quasi alphabets experiment with post test methods only with control group design. The results of using independent T-bivariat test obtained *p value* 0,007 <  $\alpha$  (0,05) which means there was a significant influence between breast milk production of mother postpartum group intervene the breastmilk production of mother postpartum with control group with an average of breast milk production of 30 respondents were divided into two groups that was 15 respondents of the intervention group obtained 1,113cc whereas 15 respondents of control group obtained 0,547cc. The combination of the marmet technique and oxytocin massage and was effective to stimulate hormone prolactin spending that would stimulate the cells of the alveoli and contain myoepithelial for breast milk Production of mothers postpartum process on the first days after birth..

**Keywords:** Oxytocin Massage, Marmet Technique, Breast milk Production

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## 1. Introduction

Breastfeeding is a simple and natural effort of a mother to her baby, but breastfeeding activities require knowledge in carrying out breastfeeding appropriately and correctly[1]. In developing countries such as Indonesia, postpartum is a critical period for both mother and baby, at this time the mother also experiences fatigue after giving birth to reduce breast milk production[2]. The United Nations Children's Fund (UNICEF) stated that inappropriate behavior and lack of knowledge contribute to child mortality, one of which is that mothers do not realize the importance of breastfeeding. Children who are exclusively breastfed are 14 times more likely to survive in the first six months of life than children who are not breastfed. Starting breastfeeding on the first day after birth can reduce the risk of newborn death by 45%[3]. However, according to the results of the campaign conducted by UNICEF and the National Center for Women's and Children's Health, the rate of exclusive breastfeeding in Indonesia decreased[4]. According to Basic Health Research (RISKESDAS) the percentage of breastfeeding patterns in less than one hour (early breastfeeding initiation) in 2010 was 29.3% and experienced an increase in 2013 to 34.5%. The pattern of breastfeeding in the first 1-6 hours of 2010 was 40.7% and decreased to 35.2% in 2013[5]. UNICEF and the World Health Organization (WHO) recommend exclusive breastfeeding until the baby is six months old. Exclusive breastfeeding is recommended in the first few months of life because breast milk is not contaminated and contains many of the nutrients that children need[6]. However, there are some obstacles experienced by mothers in giving breast milk immediately after giving birth, one of which is breast milk production is not optimal[7].

Hormones that play a role in the production process of breast milk are the hormones estrogen and progesterone which help the maturation of alveoli and the hormone prolactin functions for the production of breast milk[1]. An alternative method that can be used in handling the problem of breast milk production, one of which is by milking breast milk by means of Cloe Marmet, which is

called the marmet technique, is a combination of red and massaging techniques. Blushing using the hands and fingers has the advantage that negative pressure can be regulated, more practical and economical because it is enough to wash your hands and fingers thoroughly before milking[8]. Meanwhile, oxytocin massage is one solution to overcome insufficient breastfeeding. Oxytocin massage is a massage along the spine (vertebrae) to the fifth-sixth *costae* bone and is an attempt to stimulate the hormone prolactin and oxytocin after giving birth[9]. This massage serves to increase the hormone oxytocin which can calm the mother that causes breast milk release[10]. According to the results of Hanum[5] study of the effectiveness of oxytocin massage on breast milk production in postpartum mothers, there were differences in postpartum maternal breast milk production which carried out oxytocin massage 66.6% and no oxytocin massage 33.4% was assessed from the production of baby urine for 24 hours and the frequency of quiet sleep of the baby. While the results of Mardyaningsih[11] research on the effectivity of the combination of marmet and oxytocin massage on post *sectiosecarea* mothers found that mothers were given a combination of marmet and oxytocin massage techniques as much as 85.2%, greater than the mothers who were not treated as much as 33.3% assessed from the frequency of urination, characteristics of urination, infant sleep hours, and baby's weight. The purpose of this study was to determine effectiveness of the combination of marmet techniques and oxytocin massage on breast milk production in postpartum mothers.

## 2. Methods

### 2.1. Research design

This study uses a quasi-experimental research design that is two group post-test, namely intervention and control groups to identify the effect of marmet technique stimulation and oxytocin massage on breast milk production.

### 2.2. Population and sample

The population in this study were mothers who had normal childbirth in maternity homes Mitra Ananda and Husniatiprivate practice

midwives. The sampling technique used in this study is the purposive sampling technique, which uses the inclusion criteria to determine the sample to be studied. Inclusion criteria are as follows:

1. Willing to be a respondent
2. Postpartum first and third day
3. The psychological condition of the mother is good
4. Do not have systemic disease.

The number of samples used in this study was 30 respondents who were divided into two groups, the treatment group, and the control group.

### 2.3. Research procedure

The first step the researcher divided the sample into two groups randomly according to the inclusion criteria. After getting the sample in the treatment group, the researchers gave a combination of marmet techniques and oxytocin massage to postpartum mothers starting from the first day to the third day. In the control group, postpartum mothers were only given proper breastfeeding counseling. Every day each group measured breast milk production by accommodating breast milk with a milk bottle and then measuring it using a syringe. The results of the measurements are recorded on the observation sheet that has been provided then the results of the breast milk production measurements are analyzed to determine the comparison of the number of breast milk production between groups.

## 3. Result

In this study, the respondent's production was measured through increasing breast milk production which was accommodated using milk bottles and then measured using syringes.

### 3.1 Univariate Analysis

In the results of the study, variable postpartum mothers were given a combination of marmet and oxytocin massage techniques and those who were not given a combination of marmet technique and oxytocin massage. The results of the study can be seen in the following tables:

**Tabel 1. Amount of postpartum mother's breastmilk production given massage of marmettechnique and oxytocin massage in the private practice midwife Husniyati:**

Group	Breast milk first day (cc)	Breast milk second day (cc)	Breast milk third day (cc)	Amount (cc)
Treatment	0,1	0,5	1	1,6
Treatment	0	0,6	0,8	1,4
Treatment	0	0,5	0,6	1,1
Treatment	0,5	0,6	1	2,1
Treatment	0	0,2	0,5	0,7
Treatment	0	0,1	0,5	0,6
Treatment	0,1	0,3	0,8	1,2
Treatment	0,2	0,5	1	1,7
Treatment	0,1	0,1	0,2	0,4
Treatment	0	0,1	0,4	0,5
Treatment	0,2	0,8	1	2
Treatment	0,1	0,1	0,5	0,7
Treatment	0,2	0,2	0,2	0,6
Treatment	0	0,3	0,6	0,9
Treatment	0	0,4	0,8	1,2
Average	0,1	0,3	0,7	1,113

Based on Table 1 it was found that 15 postpartum mothers were given a combination of marmet and oxytocin massage techniques on average breast milk production on day 1 was 0.100cc, day 2 was 0.353cc and day 3 was 0.660cc. The breast milk production has increased from day 1 to day 3, with a total breast milk of 0.4cc - 2.1cc.

**Tabel 2. Amount of postpartum mother's breastmilk production which is not given marmet technique massage and oxytocin massage in maternity homes mitra ananda.**

Group	Breast milk first day (cc)	Breast milk second day (cc)	Breast milk third day (cc)	Amount (cc)
Control	0,0	0,0	0,0	0
Control	0,1	0,4	0,4	0,90
Control	0	0	0,1	0,1
Control	0,2	0,2	0,3	0,7
Control	0,1	0,1	0,5	0,7
Control	0,5	0,5	0,5	1,5
Control	0,1	0,1	0,2	0,4
Control	0	0	0	0
Control	0	0,2	0,2	0,4
Control	0	0	0	0
Control	0,2	0,2	0,2	0,6

Control	0,2	0,2	1	1,4
Control	0	0	0	0
Control	0	0,2	1	1,2
Control	0	0,1	0,2	0,3
Average	0,093	0,147	0,307	0,547

Based on Table 2 it is known that 15 postpartum maternal respondents who were not given a combination of marmet and oxytocin massage techniques on average breast milk production on day 1 were 0.093cc, day 2 was 0.147cc and day 3 was 0.307cc. The breast milk production is only a few that have increased from day 1 to day 3 with a total breast milk of 0 - 1.5cc.

### 3.2 Bivariate analysis

In this analysis to determine the effect and average breast milk production from each group tested by the T-test. The requirement to fulfill the t-test is data in the form of ratios, homogeneous data, and data must be normally distributed. This data has been tested for normality using the Kolmogorov Smirnov test with the results of p-value  $(0.448) > \alpha (0.05)$ , which means that the data is normally distributed, and the Kolmogorov Smirnov test with Levene's test results p-value  $(0.763) > \alpha (0.05)$ . Which means homogeneous data. After the requirements are met, then continued the data analysis using the parametric T-test with a presentation like the following table:

**Tabel 3. Comparison of treatment and control groups**

Group	n	Average	p
Treatment	15	1,113	0,007
Control	15	0,547	

Based on table 3, it can be seen that the T-Test parametric test results obtained  $p (0.007) < \alpha 0.05$ , this shows that  $H_0$  is rejected, which means there is a significant effect on the combination of marmettechniques and oxytocin massage on postpartum maternal breast milk production. The average production of breast milk in the treatment

group was 1.113cc more than the control group of 0.547cc.

## 4. Discussion

The combination of marmet technique and oxytocin massage is an attempt to stimulate the hormone prolactin and oxytocin after giving birth so that it can help the production process of breast milk. Based on the results of research on the amount of breast milk production in postpartum mothers who were given a combination of marmet and oxytocin massage techniques, the average breast milk production on day 1 was 0.1 cc, day 2 was 0.3 cc and day 3 was 0.7 cc and increased from day 1 to day 3 is the total breast milk of 0.4 cc – 2.1cc. This is because the marmet technique aims to empty the milk from the lactiferous sinuses located below the areola so that it will deliver impulses to the hypothalamus in the anterior pituitary to stimulate the release of the hormone prolactin. The release of the prolactin hormone will then stimulate the alveoli cells (mammary alveoli) to produce breast milk and oxytocin massage aims to stimulate the hypothalamus in the posterior pituitary and anterior pituitary, thus releasing the hormone prolactin to produce breast milk and the hormone oxytocin to stimulate alveoli cells and myoepithelial cells to excrete breast milk.

While the group that was not given a combination of marmet and oxytocin massage techniques on average breast milk production on day 1 was 0.093 cc, day 2 was 0.147 cc and day 3 was 0.307 cc and only a few respondents experienced an increase in breast milk production which was 0 - 1.5 cc. Some respondents who experience increased milk production can be caused by other factors such as Early Breastfeeding Initiation (IMD) and frequent breastfeeding of babies in the first days after delivery, because baby suction can trigger the release of breast milk from the mammary alveoli through the lactiferous duct. Suction stimulates the production of oxytocin by the posterior hypophysis gland. Oxytocin enters the blood and causes contraction of special cells (myoepithelial cells) that surround the mammary alveolus and lactiferous duct. Contraction of these

specialized cells pushes the milk out of the alveoli through the lactiferous duct.

Breast milk production results in this study are in accordance with the theory according to Marliandiani[1] that on the first day of normal conditions breast milk production is around 10-100cc / 24 hours and continues to increase every day up to 150-300 cc / 24 hours, breast milk production in this study is 2,1cc on evaluation 30 minutes after combination of marmet technique and oxytocin massage so that milk production per day is 96 cc / 24 hours. The results of this study are reinforced by the results of previous studies according to Mardiyarningsih[11] on effectiveness of the combination of marmet and oxytocin massage techniques on maternal breast milk production post section that there is a difference in the proportion of smooth breast milk production between the treatment and control groups with p-value (0,000) while the OR value (11,500) which means that the treatment group has an 11.5 times greater chance of smooth as compared to the control group. The results of Kiftia's research[10] on the effectiveness of oxytocin massage on postpartum maternal breast milk production with p-value  $0.001 < \alpha$  (0.05) showed a significant difference in mean values before and after oxytocin massage.

## 5. Conclusion

The average amount of breastmilk production of postpartum mothers was given a combination of marmet technique and oxytocin massage as much as 1.113cc while the average breast milk production of postpartum women who were not given treatment was 0.547cc. Statistical test results show that the combination of marmet techniques and oxytocin massage can increase breast milk production in postpartum mothers.

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