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# THE EFFECT OF THE COMBINATION OF OKETANI MASSAGE AND OXYTOCIN MASSAGE ON BREAST MILK PRODUCTION IN POSTPARTUM MOTHERS AT TPMB L TANGERANG

## Abstrak

**Pendahuluan :** Cakupan pemberian Air susu ibu (ASI) Eksklusif di Indonesia tahun 2017 masih rendah hanya sekitar 35%, angka tersebut masih jauh dibawah rekomendasi WHO sekitar 50%. Ada dua hal yang mempengaruhi ASI yaitu produksi dan pengeluaran. Produksi ASI dipengaruhi oleh hormon prolaktin sedangkan pengeluaran dipengaruhi oleh hormon oksitosin. Untuk merangsang pengeluaran hormon prolaktin dan oksitosin di Indonesia ada banyak jenis metode yang dapat dijadikan pilihan bagi ibu yang mengalami masalah selama menyusui, seperti pijat oksitosin, pijat prolaktin, pijat marmet, pijat oketani dan pijat oksit-perawatan payudara. **Tujuan penelitian :** adalah untuk mengetahui Pengaruh Kombinasi Pijat Oketani dan Pijat Oksitosin terhadap Produksi ASI pada ibu post partum. **Metodologi** Penelitian ini menggunakan pendekatan kuantitatif dengan desain *quasi experiment* menggunakan rancangan *pre and post test with control* Sampelnya sebanyak 100 responden dibagi 2 kelompok 50 kelompok intervensi dan 50 responden kelompok kontrol. Teknik pengambilan sampel menggunakan *Purposive sampling*. Instrumen yang digunakan Lembar Observasi dan SOP. Analisa data yang digunakan uji *man whitney*. **Hasil penelitian** kecukupan ASI setelah dilakukan pijat kombinasi dan pijat oksitosin yaitu rata-rata 10,34, sedangkan pada kategori produksi ASI kurang lancar rata-rata nilainya sebanyak 3,96. **Kesimpulan** ada pengaruh yang signifikan kecukupan ASI antara kelompok Kombinasi Pijat Oketani dan Oksitosin sesudah diberikan pijatan pada kelompok eksperimen dan kontrol pada ibu post partum

**Kata Kunci :** ASI, Pijat Oksitosin, Pijat Oketani.

## Abstract

**Introduction:** The scope of exclusive breastfeeding in Indonesia in 2017 was still low with only around 35%, still far below the WHO recommendation of around 50%. Breastfeeding revolves around two mechanisms, namely production and release. Breast milk production is influenced by the hormone prolactin while the release is influenced by oxytocin. To stimulate the production of prolactin and oxytocin, there are many methods that might provide an option for mothers who are having problems during breastfeeding, such as oxytocin massage, prolactin massage, marmet massage, oketani massage and oxy massage-breast care. **Research objectives:** To determine the effect of the combination of oketani massage and oxytocin massage on breast milk production in postpartum mothers. **Methodology:** This study used a quantitative approach with quasi-experiment using pretest and posttest with control design. 100 respondents were involved as samples, divided into 2 groups; 50 respondents in the intervention group and 50 respondents in the control group. The samples were taken with a purposive sampling technique. The Instruments used were observation sheets and SOP. Data were analyzed using the Mann-Whitney test. **Research results:** Adequacy of breast milk after combined massage and oxytocin massage averaged 10.34, while for the inadequate milk production category, the average value was 3.96. **Conclusions:** The combination of oketani massage and oxytocin massage has a significant effect on breast milk adequacy for postpartum mothers in the experiment group and control group.

**Keywords:** Breast milk, Oxytocin massage, Oketani massage

## INTRODUCTION

Breast milk is an important source of nutrition whose production and adequacy require greater concern from prospective mothers. Mothers' own milk is the

best source of nutrition for nearly all infants (Martin et al., 2016). To ensure the provision of breast milk, The Indonesian government officially enacted a regulation, namely Government Regulation Number 33 of 2012 which contains a statement that newborns have the right to breastfeeding without the addition of other foodstuff (excluding drugs, minerals and vitamins) until the baby reaches the age of six months or is referred to as exclusive breastfeeding (Farida & Ismiakriatin, 2022). In Asian countries such as India, the Philippines, (Cho et al., 2012) Vietnam, and Myanmar, the rate exclusive breastfeeding has reached 46%, 34%, 27%, and 24%, respectively, while Indonesia it self it has reached 54.3% (Salamah & Prasetya, 2019). According to the World Health Organization (WHO), in 2017 the average rate of exclusive breastfeeding in the world was only around 48% (Bhattacharjee et al., 2019). There are many methods of removing breast milk internationally such as massage (Loretta et al., 2019), Accupresure (Esfahani et al., 2015), galactogogues (Zuppa et al., 2010) such as young papaya (Cai et al., 2015), ginger (Paritakul et al., 2016), fenugreek herbal tea (Sakka et al., 2014), Breastfeeding revolves around two mechanisms, namely production and release. Breast milk production is influenced by the hormone prolactin while the release is influenced by oxytocin (Chatterton et al., 2000).

Oketani massage movement and breast care are beneficial in facilitating the milk discharge reflex, effective for increasing the volume of breast milk and preventing accumulation in the breasts (Mahdizadeh-Shahri et al., 2021). Oketani massage is a painless breast care method that can stimulate pectoralis muscle strength to increase milk production, make the breasts softer and more elastic, can provide comfort and relieve pain in postpartum mothers, make areola and nipples more elastic, making it easier for baby to suckle (Cho et al., 2012). Milk flow becomes smoother because there is pressure on the alveoli (Nickerson, 1995).

In reality, inadequate milk production in the first few days after giving birth is an obstacle in breastfeeding as early as possible. Breast milk plays a role in cognitive, sensory and motor development and provide protection against infection and chronic disease (Barría, 2022). Breast milk production is influenced by hormonal factor, food intake, maternal psychological condition (stres) (Lau, 2001), breast care, frequency of breastfeeding (Kent et al., 2012), and consumption of hormonal drugs/contraception

Research has shown that 8 out of 10 samples studied reported that oketani massage is 80% effective in overcoming breast problems such as breast milk supply, preventing breast milk retention and inverted nipples (Kabir & Tasnim, 2009).

The novelty of this research is to combine two methods to facilitate the production of breast milk

## **METHODS**

This study used a quantitative approach with quasi-experiment using pretest and posttest with control design. 100 respondents were involved as samples, divided into two groups namely experiment group and control group. The

experiment group consisted of postpartum mothers 1-7 given a treatment namely a combination of oketani massage and oxytocin massage 1 to 2 times a day for 3 days for 3-5 minutes. While the control group was only given oxytocin treatment. The study was conducted from July to November 2022 at the TPMB L Tangerang. The instruments used were observation sheet procedure to determine milk production in postpartum mothers on day 1 which was measured again on day 7 according to the research SOP. This research passed the ethical test with number 069/EC/KEPK\_STIKES\_KENDAL/XII/2022. The analysis used was the Mann-Whitney test.

## RESULTS AND DISCUSSION

### Results

**Table 1. Frequency Distribution Of Characteristics Of Postpartum Mothers Day 1-7**

Age	Total	Percentage (%)
20-35	38	76%
36-40	12	76%
Parity		
Primipara	21	42%
Multipara	29	58%
Total	100	100%

**Table 2. Frequency Distribution Of Breast Milk Adequacy Before And After Being Treated With Oketani Massage And Oxytocin Massage In The Experiment Group In Postpartum Mothers Day 1-7**

Experiment Group	Mean	Std. Dev	P-value	N
Pretest	10.34	1.697	0.000	50
Posttest	3.96	0.879		50

**Table 3. The Effect Of The Combination Of Oketani Massage And Oxytocin Massage On Breast Milk Adequacy Before The Massage In The Control Group In Postpartum Mothers Day 1-7**

Control Group	Mean	Std. Dev	P-value	N
Pretest	10.76	1.27	0.000	50
Posttest	5.18	0.719		50

**Table 4. The Effect Of The Combination Of Oketani Massage And Oxytocin Massage on Breast Milk Adequacy After The Massage In The Control Group In Postpartum Mothers**

Breast Milk	Mean	z	P-value	N
Control	67.97	6.312	0.000	50
Experiment	33.03			50

### Discussion

#### Univariate Analysis

### **Frequency distribution of breast milk adequacy before and after being treated with oketani massage and oxytocin massage in the experiment group in postpartum mothers day 1-7**

The descriptive statistic results are means and standard deviation of breast milk adequacy between measurements before (pre) and after the intervention of combined oketani and oxytocin massage. The mean of adequacy of breast milk before massage was 10.340 with a standard deviation of 1.697, while after (post) massage, an average of 3.960 with a standard deviation of 0.879 was obtained. Based on the statistical test results, a  $p$  value = 0.000 < 0.05 was obtained, and it can be concluded that there is a mean difference in the pretest and posttest intervention groups.

The age between 20-35 is the age of healthy reproduction, the optimal time for women to conceive because their reproductive organs are ready and mature (Nwandison & Bewley, 2006). Similarly, this is also the time when women are psychologically ready to support the readiness of the growth and development of the fetus in the womb. 35 is considered in the category of high risk for congenital abnormalities and complications during pregnancy and childbirth (Lampinen et al., 2009).

Many primipara mothers experience problems with milk production on days one to 7, this is caused by several things such as stress, fatigue (Çankaya & Ratwisch, 2020), lack of sleep and inhibition of the function of the thyroid gland in producing important hormones in the body such as estrogen and progesterone, this hormone imbalance causes the production of breast milk may decrease or even be absent altogether (Marasco, 2014).

The researcher assumed that the productive age for giving birth is widely known. If the mother is psychologically comfortable and happy, then the production of hormone oxytocin and the hormone prolactin increases, leading to adequate and smooth breast milk production.

### **Frequency distribution of breast milk adequacy before and after being treated with oketani massage in the control group in postpartum mothers day 1-7**

The results showed that postpartum mothers day 1-7 who received oxytocin massage showed a mean of breast milk adequacy of 10.76 with a standard deviation of 1.270. Meanwhile, on the 7th day of observation, after the massage, the mean was 5.180 with a standard deviation of 0.7197. Based on the statistical test results, a  $p$  value = 0.000 < 0.05 was obtained, and it can be concluded that there is a mean difference in the pretest and posttest control groups.

Oxytocin massage is spinal massage starting from the 5-6th rib to the scapula which will accelerate the work of the parasympathetic nerves to convey commands to the hindbrain so that oxytocin is released (Biancuzzo, 2003). Oxytocin massage is intended to increase the hormone oxytocin that has the ability to calm the mother so that the breast milk will automatically come out (Dağlı & Çelik, 2022).

## Bivariate Analysis

### **The effect of the combined oketani and oxytocin massage on breast milk adequacy before and after the massage in the experiment group and control group in postpartum mothers**

Table 4 shows that the means of breast milk adequacy before and after the combined oketani massage in postpartum mothers were 67.97 and 33.03, respectively. The statistical test showed a difference in adequacy before and after the combined oketani massage in postpartum mothers ( $p=0.000$ ).

Massage is one of the solutions to overcome low breast milk supply. One type of massages, oketani massage, is a management skill to address lactation problems such as low breast milk production and breast swelling (Anderson et al., 2019). Oketani massage causes breasts to be soft, supple and the areola becomes more elastic, the lactiferous ducts and nipples also become more elastic, and quality breast milk is produced since the total solids content, the concentration of fat and gross energy increase (Dehghani et al., 2018).

The outlines that increased protein levels are caused by increased activity of protease enzymes which are stimulated by massaging the mammary tissues and glands. Increased protease enzyme activity can increase protein synthesis. Oketani massage can also make the mammary glands mature and wider, so that more milk glands are formed and more breast milk is produced, decreasing lipoxigenase activity (Lawrence, 2022).

Oketani breast massage a special technique is practiced by Japanese midwives for increasing breast milk secretion and for better quality of milk. In our study Oketani breast massage given to 30.7% mothers. Another study at LMC of RMCH on an average 33.0% of mother required Oketani breast massage for improving lactation that is close to our studies (Akter et al., 2015). Oketani-Massage on the Severity of Breast engorgement stated that breast oketani-massage compared to routine care quickly and more efficiently reduces the severity of breast engorgement after delivery (Dehghani et al., 2017). Oketani breast massage significantly increased total solids, lipids, and casein content, as well as the gross energy of breast milk and thus improved its overall quality (Rahnemaie et al., 2019).

The combination of oketani massage and oxytocin massage is an option that can be used as a recommendation for postpartum mothers who experience problems in milk production (Nuampa & Payakkaraung, 2021). Oxytocin massage helps create a relaxing effect and increases the hormone oxytocin which acts as a hormone that secretes milk (Katili et al., 2021b),

There is a difference in the flow of breast milk before and after the combination oketani massage, compared to oxytocin massage alone. The results showed that efforts to stimulate the hormones prolactin and oxytocin in postpartum mothers include expressing milk, nursing or massaging the breasts, cleaning the nipples, frequently breastfeeding the baby even though the milk has not come out, and early breastfeeding.

Prolactin and oxytocin reflexes are also generated from the combination oketani massage which aims to stimulate the nerves in the posterior pituitary gland, so that the hormone oxytocin is released. This causes myoepithelial cells

around the alveoli to contract and push milk into the ampulla. Apart from being influenced by the baby's sucking, the release of oxytocin is also influenced by receptors located in the ducts. When the ductus dilates, reflexively oxytocin is secreted by the pituitary. This combination oxytocin massage affects breast milk adequacy because the results of this study showed that before the mothers received the combination oxytocin massage, their milk production was stuttered compared to after the massage. Low breast milk production may be attributable to fatigue and anxiety as well as unpreparedness to breastfeeding because no milk is coming out. For postpartum mothers, combination oxytocin massage is given so that they feel calm and comfortable, and the hormone oxytocin increases and milk production is maintained.

## **Conclusions**

The combination of oketani massage and oxytocin massage has a significant effect on breast milk adequacy for postpartum mothers day 1-7 in the experiment group and control group. Postpartum mothers and families are expected to seek for other information sources on how to increase breast milk production, both complementary or herbal, in order to provide exclusive breastfeeding to the baby.

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