

ICASH-A07

## **COMPARING EFFECTIVENESS OF PALM DATES AND OXYTOCIN MASSAGE IN STIMULATING BREASTMILK PRODUCTION OF POST PARTUM MOTHER**

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### **ABSTRACT**

**Backgrounds:** The coverage of exclusive breastfeeding in the world is still low. It is influenced by the limited number of breastfeeding counselors, the lack of education, advocacy and coaching breastfeeding support groups, maternal health and physiological factors (prolactin and oxytocin hormones). Dates contains oxytocin and many chemical elements which are good for breastfeeding mothers. Regular oxytocin massage therapy is also shown to increase the production of the oxytocin hormone.

**Aims:** To compare the effectiveness of palm dates and oxytocin massage in stimulating breastmilk production of postpartum mothers.

**Methods:** it is a literature review study, using keywords breastfeeding, palm dates and oxytocin massage from national and international journals.

**Results:** The results shown that palm date and oxytocin massage have been proven to increase the oxytocin hormone that is influential on the smoothness of breastfeeding in postpartum mothers. Some studies noted that the palm dates contain potuchin hormone that serves spur blood vessel contractions around the breast spurring mammary gland to produce milk. In addition, there is the hormone oxytocin can help stimulating the contractions of the muscles of the uterus to facilitate childbirth. While oxytocin massage can increase milk production and the baby's weight and also to drive a contraction in the veins surround the breast and spurring the milk glands to produce milk.

**Conclusion:** The results of several studies suggest that the oxytocin massage is more effective applied to increase oxytocin than the consumption of palm dates.

**Keywords:** Breastfeeding, palm date, oxytocin massage

### **INTRODUCTION**

Mother's milk is the best, naturally available babies' meal. A high nutritional content and the presence of immune substances make breast milk superior to the more expensive, man-made formula milk. Baby's nutritional needs can be met by providing breast milk alone or known as the "exclusive breastfeeding". (1) A study in Ghana shows that immediate breastfeeding from the moment of child's birth can prevent infant mortality by 16% and if breastfeeding begins within the first hour after the birth, the figure rises to 22%. (2)

The Indonesian government has enacted the regulation no. 33 of 2012 on Exclusive Breastfeeding, stating that babies should be exclusively breastfed without substituting and/or supplementing with other food or beverages for the first six months. (3) However, according to the World Health Organization (WHO) in 2014 as much as 85% of infants are not given breast milk, meanwhile achievement of

breastfeeding in Indonesia in 2011 by 54%, in 2012 by 52%, in 2013 amounted to 51.07%, and declined in 2014 by 49.7%.

The low performance of breast feeding is influenced by several factors, one of which is the mother's health condition that causes a decrease in milk production.<sup>(4)</sup> The prolactin and oxytocin hormones play an important role in the production of breast milk. Production of prolactin hormone determine and maintain the secretion of milk, while oxytocin causes the muscle cells around the alveoli drives milk into storage.<sup>(5)</sup> Breastfeeding early in the first hour of birth overcomes the problem of low breast milk production because the babies sucking the nipple stimulates the secretion of the oxytocin hormone. Other methods to generate the hormone production are through consuming fruits that contain oxytocin and also through regular oxytocin massage therapy.

Dates are one of the fruits with the complete nutrition that provide the nutritional needs of nursing mothers. One of the advantages of dates is the chemical elements contained in the palms' oxytocin. The content of oxytocin in palms can stimulate nervous impulses in the posterior pituitary granular, causing myoepithelial cells around the alveoli to contract and push the milk into the ampulla vessels. The hormone oxytocin induces a lot of milk to many and the baby's needs.<sup>(6)</sup>

Oxytocin massage is a massage performed along the spine (vertebrae) until the fifth and sixth costae bone as well as an attempt to stimulate the prolactin and oxytocin hormones after delivery.<sup>(7-9)</sup> In addition to stimulate the "let down" reflex, oxytocin massage also provides comfort to the mother, reduce swelling (engorgement), reduce blockages breast milk, stimulates the release of the hormone oxytocin, and maintain the milk production when the mother and the baby are sick.<sup>(10)</sup>

## **METHODS**

The method used in this paper was Literature Review that was conducted from 2012 to 2016. The literature was taken from various from National and International Journals obtained from Google Scholar, Nurse Media Journal of Nursing & Dama International Journal of Researchers (DIJR) using keywords Breastfeeding, Exclusive Breastfeeding, Date Palm and Oxytocin Massage. Research criteria used in the form of experimental research, pre-test and post-test design to know the extent of effectiveness of Dates and Massage of Oxytocin in influencing the smoothness of breast milk.

## RESULTS

The search through Google Scholar, Nurse Media Journal of Nursing & Dama International Journal of Researchers (DIJR) found several journals related to date palm and oxytocin massage and then re-examined with criteria of literature collection such as experimental research, pre-test, post-test, date palm for mothers and breastfeeding mothers, oxytocin massage for breastfeeding mothers and found nine journals that correspond to the researchers' theme, three journals on date palms and six journals on oxytocin massage.

### *Palm date*

The results showed that date palm are able to increase the expenditure of the hormone oxytocin that is very influential on the smoothness of breast milk in postpartum mothers. Dates are one of the fruits with complete nutrition that can be given to meet the nutritional needs of breastfeeding mothers. The research conducted by Suroso and Paryono mentioned that the date palm contain potuchin hormone that serves to spur blood vessel contractions around the breast which in turn spur the milk glands to produce milk (11) In addition, three sources also mentioned that date palm contain oxytocin hormone that can help stimulating contractions in the muscles of the uterus and spur contractions in the veins around the mother's breast, thus increasing milk production.(11-18)

From three research on the benefits of dates for labour and fluency, it was found that the number of samples studied varies considerably from 56-75. The research used in the form of experimental research with pre-test and post-test design. In terms of literature utilization, most studies use national and international health journals, medical books, health bulletins, health centres and previously established researches.

In the research there are several forms of intervention used; dates can be consumed directly (63%), used as palm juice (25%) and mixed in yogurt (12%). The combination of dates and yogurt can potentially be developed into a probiotic product that enhances the functional effectiveness of the dates and does not reduce the ingredients therein. Intervention time varies between four weeks and two weeks, with six seeds every day, 45-50 grams of dates every day and 500 grams of dates in yogurt.

### *Oxytocin Massage*

Oxytocin massage proved significantly through several studies to stimulate the release of the oxytocin hormone.(19-24) In addition to stimulating the release of oxytocin hormone, oxytocin massage also provides comfort to the mother, reduces engorgement, reduces breast milk blockage and maintains milk production when the mother and baby are sick.(10)

Samples from the research ranged from 20 to 95 postpartum mothers. The research used in the form of experiment with pre-test – post-test design. In terms of literature utilization, most studies use health journals (national and international), medical books, health bulletins, health centres and previously established researches. In the six researches, the time taken to perform the massage is 3-10 minutes (40%), 15-20 minutes (40%) and 45-50 minutes (20%) for 3 (67%) - 5 days (33%). Final value are observed in milk production, infant weight, cortisol levels and oxytocin levels by blood tests.

Table 1: Analysis of the Journal

No	Title	Place and year	Researcher	Description
1.	The Effect of Fenugreek Herbal Tea and Palm Dates on Breast Milk Production and Infant Weight	Cairo Egypt, 2014.	Abeer, Salama, and Salama.	Sample 75 postpartum mothers. Results p = 0.001 concludes that dates and fenugreek herbal teas appear to be useful for increasing milk production during the early postpartum period.(18)

Table 1: Analysis of the Journal

No	Title	Place and year	Researcher	Description
2.	<i>Pemberian Sari Kurma pada Ibu Menyusui Efektif Meningkatkan Berat bayi Usia 0-5 Bulan.</i> (Provision of Date Palm Extract to Breastfeeding Mothers is Effective in Baby Ages Zero to Five's Weight Gain)	Semarang, July and August 2015	Putriningtyas and Hidana.	Sample 56 breastfeeding mothers. Results $p = 0.001$ concludes that there was a significant difference for infant weight gain for four weeks in both groups.(15)
3.	<i>Literature study on Pengaruh Yogurt Kurma sebagai Pelancar ASI.</i> (The Impact of Date Palm Yogurt in Expediting Breast Milk Production)	Lumajang, 2015.	Wardani.	The research used is literature study sourced from textbook, journal, scientific article and literature review. Dosage for pregnant and lactating women 500 mg/day, divided into two giving each 250 mg. The combination of dates and yogurt can potentially be developed into a probiotic product that enhances the functional effectiveness of the dates itself in increasing breast milk production. (12)
4.	The Effect of Oxytocin Massage on Breast Milk Production.	Jakarta Selatan, 2016.	Azriani and Handayani.	The subjects of this study were 60 postpartum mothers. With $P = <0.005$ , the results of the hypothesis test show that there is an effect of oxytocin massage on the weight and breast milk of infant production, so it is recommended that oxytocin massage be used in postpartum care. (21)
5.	Effects of acupoint stimulation with Digital Massager of Oxytocin on the Breast Milk Production of Working Mothers.	Semarang, 2016.	Anggorowati, et al.	The sample was 93 breastfeeding mothers. Result $p = 0.000$ concludes that DMO stimulates and increases the production of working mother's milk. It can also be an alternative to complementary therapies, especially for nursing care of nursing mothers.(22)
6.	Massage Increases Oxytocin and Reduces Hormoneadrenocorticotropin in Humans.	University of California Los Angeles (UCLA), Los Angeles, CA. 2012.	Morhenn, Beavin, and Zak.	95 people from UCLA participated in this study. $P = <0.005$ the result is a significant difference between the groups. In conclusion, massage increases OT and decreases ACTH, NO and BE.(20)
7.	The Effect Of Oxytocin Massage On The Postpartum Mother On Breast Milk Production.	Surakarta, 2016.	Sulaeman, et al.	The subjects were 60 postpartum mothers. Result $P$ value for Infant Weight = 0.000 whereas $P$ value for ASI amount = 0,039. Conclusion There is an effect of oxytocin massage on weight and breast milk production and it is suggested that oxytocin massage may be used in postpartum care.(23)

Table 1: Analysis of the Journal

No	Title	Place and year	Researcher	Description
8.	Oxytocin Massage as an Alternative in Increasing Prolactin Hormone Level and Lactation Process on Post Sectio Caesarea Women.	Semarang, 2016.	Nurdiana, Onny, Sumarni S, Supriyana, Maharani Y, Yunyaty W, et at	Samples were 20 postpartum mothers. The results show $p = 0,000$ . Its implications oxytocin massage can be applied to increase levels of prolactin hormone and milk production for post Sectio Caesarea women (infant weight).(24)
9.	Effect of Massage and Aromatherapy on Stress and Prolactin Level among Primiparous Puerpural Mothers.	Semarang, 2016.	Widyawati, M.N., et al.	Subject 52 postpartum. The results were three treatments with $p = 0.001$ and at control $p = 0.343$ . In conclusion Loving Massage & Aromatherapy are proven to reduce stress levels and can increase prolactin levels in primipara postpartum.(19)

## DISCUSSION

Breastfeeding is influenced by the feeding frequency, birth weight, gestational age at birth, age and parity, stress and acute diseases, tobacco consumption, alcohol intake, hormonal contraceptive pills and injections and physiological factors namely prolactin and oxytocin.(25). The date palm contains potuchin hormone that serves to bind the uterus and uterine muscles that can help reducing postpartum haemorrhage, spur blood vessel contractions around the breast and spur the milk glands to produce milk.(11) In addition, there is the hormone oxytocin that helps stimulate contractions of the muscles of the uterus to facilitate childbirth.(11-18) This hormone will also help spur a contraction in the veins that surround the breast, thus spurring the milk glands to produce milk.(5)

A research conducted in Cairo, Egypt compared the consumption of fenugreek herbal tea one cup three times a day with the consumption of ten date palm seeds for fourteen days. The result proved that the consumption of the date palms increases breast milk volume at the beginning of postpartum and baby's weight weighed on day to 0, 3, 7, & 14 using infant scale ( $p = 0.001$ ). This result is also supported by a research conducted in Semarang, Indonesia which stated that consumption of date juice can effectively increase the weight of 0-5 Months old baby ( $p = 0.001$ ). )

Massage may increase milk production by 11.5 times and decrease cortisol levels by 28%.(27) Oxytocin Massage provides stimulation to the spinal muscles. The neurotransmitters stimulate the medulla oblongata to send a message to the hypothalamus and to the posterior pituitary to secrete the oxytocin hormone. Massaging the spinal muscles also reduces tension and relieves stress.(28) A study conducted at the University of California Los Angeles (UCLA) showed that oxytocin massage can increase OT (oxytocin) and decrease ACTH, NO and BE. As supported by previous study conducted in Southern Jakarta, there is an effect of oxytocin massage on infant weight and breast milk production. Therefore, it is suggested that oxytocin massage be used in postpartum care.(20) Supported by research in Surakarta and Semarang also hold the theory that oxytocin massage proves to increase breast milk production and baby's weight.(22-24)

From this literature study, it appeared that oxytocin massage is the more effective method to increase oxytocin hormone compared to the consumption of date palms.

## CONCLUSION

Date Palm and Oxytocin Massage are proven to increase the oxytocin hormone that is very influential on the smoothness of breastfeeding on post-partum mothers. Date palms contain complete nutrition that can be given to meet the nutritional needs of pregnant women and maternity. It can be consumed directly, made into date juice, or mixed with yogurt. The date palm contains potable hormone and oxytocin hormone that can help stimulate contractions in the muscles of the uterus to ease the mothers' pain while labouring. This hormone also helps spurring contractions in the veins of blood vessels around the mother's breast, thus spurring the milk glands to produce milk. Oxytocin Massage spinal muscles will stimulate the medulla oblongata to send a message to the hypothalamus and to the posterior pituitary to secrete the oxytocin hormone that provide comfort, relieve stress, reduce swelling (engorgement), reduce breast milk blockages, and maintain milk production when the mother and the baby are sick.

This study used *Literature Review* which is helpful to see some research simultaneously to obtain a new finding on a particular topic that has been studied. No research has been found that distinguishes the two methods. From this literature study, it is proved that oxytocin massage is the more effectively method to increase oxytocin than the consumption of date palms.

## CONFLICT OF INTEREST

There is no conflict of interest.

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