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Indian Journal of Forensic Medicine & Toxicology, NOctmobberr--:D1e0ce.m59b5er82/0091793,V-9o1l.3103.,2N01o.94.0055106.487 [Effectiveness of Oxytocin Massage and Breast Care Treatment on Breast Milk Production](#) Feften Hendriyani, [Suryaningsih1](#), Agung Suharto1 Lecturer, Health Polytechnic of Surabaya Abstract Breast care treatment is an important part that must be considered as a preparation for breastfeeding. The smoothness factor of breast milk apart from giving breast care treatment that develops one of them in triggering the release of oxytocin hormone is through oxytocin massage which is done on the postpartum and breastfeeding mothers. This study aims to determine the [effectiveness of oxytocin massage and breast care treatment](#) for more [breast milk production](#), using static group comparison design. Dependent variables for [postpartum maternal breast milk production](#), the independent variables were [oxytocin massage and breast care](#) treatment. The subjects were 28 postpartum mothers at BPS Rtn, Mlajah, Bangkalan Indonesia, selected using simple random sampling. Data were collected using observation sheets, then analyzed by Kruskal Wallis test. [Based on the results, it was proved that the average rank in the oxytocin massage and breast care treatment combination group was higher than the average rank in the breast care treatment group. The average rating in the breast care treatment group was higher than the average oxytocin massage group and the average oxytocin massage group was higher than the control group. However, there was no difference in breast milk expenditure in each group \(p-value >0.05\).](#) Keywords: [breast milk production, oxytocin massage, breast care treatment](#) Introduction In the first day postpartum mothers often experience psychological disorders. The occurrence of psychological disturbances can reduce milk production. Another study conducted by Roesli(1) identified that with breast milk, babies are eight times savor likely to develop blood cancer, spleen cancer, nerve cancer, and diarrhea, because the ability of the baby's intestine to absorb food has been adjusted by respective compositions each mother. Children without breastfeeding by breast milk are more likely to develop chronic diseases such as cancer, heart disease, hypertension, and diabetes after adulthood, the likelihood of children suffering from malnutrition and obesity is also higher(2). To reducing mortality and preventing disease and increase intelligence, breast milk also affects the family economy, where the amount of money parents spend in Indonesia for the need for formula milk for their babies in a year can spend around Rp. 3.96 trillion and calculations in a year there are 4.5 million newborns and each baby needs 44 cans of milk at a price of Rp. 20,000/ cans. [Based on the results of the Basic Health Research 2014](#), breastfeeding in infants born for 6 months has not been satisfactory. Breastfeeding at 0-1 month is 45.4%, 2-3 months 38.3%, and 4-5 months 31%. Overall, [the coverage of exclusive breastfeeding in Indonesia is only 20%](#) far from the target set of 80%. Ministry of Health has set a target coverage of exclusive breastfeeding per 2014 by 80%. In fact, only 27.5 percent of mothers in Indonesia have succeeded in giving exclusive breastfeeding. Responding to these findings, World Vision Indonesia (WVI) and the Indonesian Breastfeeding Mothers Association (AIMI) collaborated to conduct research to find solutions for breastfeeding(3). There are several factors that affect the mother in giving breast milk to her baby. Huang et al.(4) reported that the behavior of breastfeeding mothers was influenced by maternal education, the status of parity and the closeness of the mother's relationship with her baby. Based on Nuraini(5), there was significant relationship between maternal knowledge and behavior on breastfeeding, but there was no relationship with family support with breastfeeding. This shows that better the mother's [1688 Indian Journal of Forensic Medicine & Toxicology, October-December 2019, Vol. 13, No. 4](#) knowledge, more breastfeeding behavior will increase. The Ministry of Health has issued decree concerning exclusive breastfeeding. But [not all postpartum mothers immediately excrete breast milk because breast milk was complicated interaction between mechanical stimuli, nerves and various hormones that affect oxytocin](#) release(6). Based on preliminary study on February 1, 2018 at the BPS Rtn Mlajah, Bangkalan, Indonesia, 4 of 10 breastfeeding mothers that did not give breast milk through the first, second, and third days, this was because breast milk had not come out and breast milk production was low(7). The 4 respondent had never done oxytocin massage and breast care treatment. Many factors influence breastfeeding and breast milk production, including maternal physical factors, such as breast anatomical abnormalities, health problems, hormonal contraceptives

(estrogen), lack of nutritious food, working mothers, smokers, and alcohol consumption. Breastfeeding factors such as not giving IMD (Early Breastfeeding Initiation), breastfeeding technique errors, not breastfeeding on demand, and prelactal supplementation of breast milk complementary foods. Infant factors such as health, low birth weight, and congenital abnormalities. Psychological factors such as stress, lack of confidence, anxiety, and sadness(8),(9). In addition to the above factors, other factors that also affect [breast milk production](#) were [breast care](#) treatment and oxytocin [massage](#). Physical treatment of the breast nearing the lactation period and during lactation needs to be done because it can flex the nipples and avoid blockage of the lactation lactus so that when the baby becomes more susceptible to suckling and breast milk will come out smoothly. Other factors that also affect breast milk production and [breast milk production](#) are [breast care](#) treatment and oxytocin [massage](#). [Oxytocin massage is](#) expected and breast treatment provides benefits. Increases comfort, increases breast milk movement to the breast, adds breast milk to the breast, and expedites breastmilk production. This study aims to determine the [effectiveness of oxytocin massage and breast care treatment](#) for more [breast milk production](#) Method The design of this study was static-group comparison, with experiment group that receive oxytocin massage and breast care treatment, and control that no receive treatment. A score determined to measure differences among two groups. Dependent variable was breast milk production and the independent variables were oxytocin massage and breast care treatment. Subjects were 28 postpartum mothers at BPS Rtn, Mlajah, Bangkalan Indonesia, selected using simple random sampling. Data were collected using observation sheets, then analyzed by Kruskal-Wallis test. Findings and Discussion The results [showed that postpartum mothers who were given oxytocin massage](#) released enough milk as much as 75% more than those who lacked it. [The p-value was >0.05](#), it [means there was no](#) effect of breastfeeding production on postpartum mothers given oxytocin massage. There are many factors that must be controlled so that breast milk production was high. Oxytocin massage is one of the factors that can affect the smooth release of breast milk so that breast milk production increases. The accuracy in applying oxytocin massage techniques determines the effect given in facilitating the production of breast milk, but does not rule out the possibility when oxytocin massage techniques are applied correctly but other factors not controlled by breast milk production will decrease. It is also possible that the mother did not apply oxytocin massage techniques but can control the factors that affect adequate breastfeeding. Some factors that influence the production [of breast milk](#) include [breast care](#) treatment [during pregnancy](#), [breastfeeding](#) techniques, frequency of breastfeeding, formula milk, food consumed by mothers, and maternal psychology. According to IDAI(8) increased milk production is influenced by maternal physical factors, such as breast anatomic abnormalities, health problems, hormonal contraceptives (estrogen), nutrition, working mothers, smokers, and alcohol consumption. Breastfeeding [factors such as](#) doing [Early Breastfeeding Initiation \(IMD\)](#), breastfeeding technique errors, [breastfeeding](#) are not on demand, and prelactal administration of breast milk supplementary food. Infant factors such as health, prematurity, low birth weight and congenital abnormalities. Psychological factors such as stress, lack of confidence, anxiety, and sadness. Other factors are breast care treatment and oxytocin massage. Breastfeeding mothers that can control these factors, [Indian Journal of Forensic Medicine & Toxicology, October-December 2019, Vol. 13, No. 4](#) 1689 more breast milk production and early breastfeeding and exclusive breastfeeding can be applied. Besides the above factors that affect the increase in breast milk production is the time period and sample size. While the time observed by the researchers is only 3 days, the possibility of an increase in breast milk production can be assessed. There was potential to increase, although the sample size is too little. The results showed that post partum mothers who were given breast care treatment issued enough milk as much as 71.4%. The phenomenon found in the field showed that breast milk expenditure and breast milk ejection were small on the first day after giving birth to become an obstacle in early breastfeeding. This obstacle is [caused by](#), the [lack of stimulation of prolactin and oxytocin hormones which](#) are very instrumental [in](#) smoothing out Breast milk production. According to IDAI(8), breast care treatment is beneficial to stimulate the breast to affect the pituitary to release prolactin and oxytocin. Prolactin affects the amount of milk production, while oxytocin influences the process of breast milk. [Breast care](#) treatment [is very important during pregnancy](#) until [breastfeeding](#). [This is because the breast is the only producer of breast milk which is the staple food of](#) a newborn baby [so](#) it must be [done as early as possible](#). Breast and nipple treatment will help flex and strengthen the nipples, making it ebreast milker for the baby to suckle, as well as stimulating [the milk glands so that milk production](#) is transmitted [and](#) increased. [Breast](#) care treatment is a way of treating the breast that is done during pregnancy or the puerperium for breast milk production, in addition to the cleanliness of the breast and the shape of the nipple that goes in or flat. Such nipples are actually not an obstacle for the mother to breastfeed properly by knowing from the start, the mother has time to make the nipples ebreast milker when breastfeeding. Besides that it is also very important to pay attention to personal hygiene(10). Theoretically giving this treatment has a positive impact on the mother. But in reality the provision of breast care treatment is also not optimal in the smoothness of breast milk production, this is due to several factors, which include: 1. Educational factors This factor also determines, even though it has been practiced how to do breast care treatment, but the absorption and perception of individuals varies according to the level of education. 2. Psychological factors Breast milk from the breast is affected by oxytocin and prolactin in the blood, these hormones can improve by making the mother feel comfortable and happy. This oxytocin reflex can be increased by: increase feelings of happiness for example by seeing the baby, improve your sense of relaxation and comfort, increase confidence that breast milk was the best for baby. [Based on the results of the study](#) showed that there [was](#) an effect of breastmilk expenditure in the combination group [of oxytocin massage and breast care treatment on](#) breastmilk expenditure, 100% of breastmilk expenditure was sufficient. [The results of this study are reinforced by](#) research conducted by [Mardiyarningsih\(11\) on the effectiveness of the combination of marmet and oxytocin massage techniques on](#) post section mother's milk production in the Central Java Regional Hospital. [There is a difference in the proportion of smooth breast milk production](#). According to IDAI(8), breast care treatment is beneficial to stimulate the breast to affect the pituitary to release the hormone prolactin and oxytocin. It has been mentioned above that the production and release of breast milk are affected by two hormones, namely prolactin and oxytocin. Prolactin affects the amount of milk production, while oxytocin influences the process of breast milk. [Breast care](#) treatment [is very important during pregnancy](#) until [breastfeeding](#). [Because the breast](#) was [the only producer of breast milk which is the staple food of](#) a newborn baby [so](#) it must be [done as early as possible](#). Breast and nipple treatment will help flex and strengthen the nipples, making it ebreast milker for the baby to suckle, as well as stimulating [the milk glands so that milk production](#) was transmitted [and](#) increased. [Breast](#) care treatment was a way of treating the breast that is done during pregnancy or the puerperium for breast milk production, in addition to the cleanliness of the breast and the shape of the nipple that goes in or flat. Such nipples are actually not an obstacle for the mother to breastfeed properly by knowing from the start, the mother has time to make the nipples ebreast milker when breastfeeding. Besides that it is also very important 1690 [Indian Journal of Forensic Medicine & Toxicology, October-December 2019, Vol. 13, No. 4](#) to pay attention [to](#) personal hygiene(10). [Oxytocin massage is an act of spinal massage ranging from](#) nerves to [5-6 to scapula which will accelerate the work of the parasympathetic nerve to convey commands to the back brain so that oxytocin exits](#)(12),(13). [Oxytocin massage is done to stimulate](#) let down [reflex or reflex](#) flow [of](#) breast milk. Effects of massage massage [can be seen after 6-12 hours of massage](#)(14). [Oxytocin massage is an](#) action taken by the husband on nursing mothers in the form of oxytocin massage on the mother's back to increase the release of the hormone oxytocin. Oxytocin massage carried out by the husband will provide comfort to the mother so that it will provide comfort for breastfed babies(15). The provision of oxytocin massage [will accelerate the work of the parasympathetic nerve to](#) stimulate [the](#) peripheral sensory nerve endings in the back brain to secrete the hormone endorphin, which can inhibit the release of adrenal hormones. Adrenaline hormone is one of the hormones that can inhibit [the release of the](#) oxytocin(16). [The release of the](#) endorphin [hormone](#) can provide comfort, help with relaxation, improve blood circulation, and improve the work of the organ system. This can stimulate the release of the hormone oxytocin and prolactin so that it can increase milk production and release milk. According to Marmi(16), the purpose of oxytocin massage was maintain and facilitate breastfeeding and prevent infection. Benefits of oxytocin massage were increase comfort, increase breast milk movement to the breast, Add breast milk to the breast, increase [breast milk](#) production. [Based on the results of](#) the study, of [the](#) 7 postpartum mothers who had less breastmilk production, 4 postpartum mothers aged 20-35 years,

postpartum mothers educated from junior high school, 3 postpartum mothers as housewives, 2 postpartum primiparous mothers, and 2 multiparous postpartum mothers. Based on the data above, the age of postpartum mothers affects the increase in Breast milk production. This is in accordance with the opinion of Hurlock(17), aged 20- 35 years referred to as "adulthood" and also called the reproductive period, where at this time people have been able to solve problems faced calmly, especially in the face of pregnancy, childbirth and postpartum and caring for the baby later. The level of education is one of the social aspects that can affect human behavior. The low level of maternal education here tends to use exclusive breastfeeding than mothers with high education, generally they are open to accepting changes or new things to maintain their health. Mothers who are more educated tend to prefer formula feeding because they are busy with their career work, and they do not want to repeat and are also less painstaking. The more often babies are given formula milk, the milk production decreases. According to Khasanah(7), the touch and lick of a baby on the mother's nipples during breastfeeding will help stimulate the release of oxytocin hormones in the brain which are important to stimulate breast milk which has an impact on increasing breast milk. There are many factors that can affect breast milk production, such as the frequency of breastfeeding, breastfeeding techniques, maternal nutrition during breastfeeding and also formula feeding for control of all factors is needed so that breast milk can still be produced optimally, regardless of age, parity and breastfeeding mother education. Conclusion [Based on the results of the study it can be concluded that](#), Oxytocin massage is not effective in expediting breast milk. Breast care treatment is not effective in expediting breast milk. [The combination of oxytocin massage and breast care](#) treatment has proven to be effective against breastfeeding. There is no difference between [postpartum mothers who are given oxytocin massage](#) and [breast](#) care treatment for breastfeeding, but there is the potential to expedite breast milk production. [Conflict of Interest](#)- No [Source of Funding](#)- Authors [Ethical Clearance](#)- Yes References 1. 2. 3. Roesli U. Understanding the Exclusive Breastfeeding. Jakarta: Trubus Agriwidaya; 2007. Purwati S, Hubertin. The Concept of Exclusive Breastfeeding Application. Jakarta: EGC; 2004. Asiah N. Mothers's Knowledge about Exclusive Breastfeeding Implementation at Bojong Village, Karang Tengah, Cianjur. ARKESMAS, 2016. 4. Huang HC, Wang SY, Chen CH. Body Image, Indian Journal of Forensic Medicine & Toxicology, October-December 2019, Vol. 13, No. 4 1691 Maternal-fetal Attachment, and Choice of Infant 11. Mardiyarningsih E. Effectiveness of Combination Feeding Method: A Study in Taiwan. Birth. of Marmet Technique and Oxytocin Massage on 2004;31(3):183-188. Breast Milk Production of Post Sectio. Purwokerto: 5. Nuraini A. Relationship between Maternal UNSOED; 2010. Characteristics, Family Support and Health 12. Hamranani S. The Effect of Oxytocin Massage Education with the Behavior of Breastfeeding and on Uterine Involvement in Post Partum Mothers Complementary Food for Breast Milk (MP-ASI) Experiencing Long Labor in Hospitals in Klaten 0-12 Months in the Context of Community Nursing District. Thesis. Jakarta: UI: 2010. in Waru Java Village, Parung District, Bogor 13. Suherni, et al. Postpartum Care. Yogyakarta: Regency. Thesis. Jakarta: FIK-UI; 2002. Fitramaya; 2015. 6. Masdinarsah E. Effect of Oxytocin Massage on 14. Lund I, Moberg U, Wang J, Yu C, Kurosawa Expenditures of Colostrum in Postpartum Mothers M. Massage Affect Nociception of Oxytocin. J. in Midwifery Room of Muhammadiyah Hospital European Neuroscience. 2002;16:330-338. Bandung in 2011. Jur Kes Kartika. 2011 15. Cutrika. Oxytocin Massage [Internet]. 2013 [cited 7. Khasanah Nur. Breast Milk or Formula Milk? 2018 Aug 25]. Available from: <http://webcache>. Yogyakarta: Flash Book; 2011. [googleusercontent.com/search/ppijatoksi.html](https://www.googleusercontent.com/search/ppijatoksi.html) 8. IDAI. Constraints for Exclusive Breastfeeding. 16. Marmi. ASI Saja Mama. Give me Breast Milk 2010. because I'm not a Calf. Yogyakarta: Pustaka 9. Khamzah SN. A Myriad of Wonders of Breast Pelajar; 2012. Milk. Yogyakarta: FlashBook; 2012. 17. Hurlock EB. Developmental Psychology. Jakarta: 10. Mochtar R. Synopsis of Obstetrics. Jakarta: EGC; Erlangga; 2002. 2012.