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THE EFFECT OF LACTATION MASSAGE WITH VIRGIN COCONUT OIL ON THE QUALITY OF BREAST MILK IN POST PARTUM : Literature Review

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Abstract

Introduction: National coverage of exclusive breastfeeding in 2018 is 74.5%. Failure to breastfeed can be caused by not releasing breastmilk smoothly. 35% of mothers stop breastfeeding on the grounds that breastfeeding is not smooth so that it cannot meet the needs of their babies. The decrease in milk production and fluency on the first day of post partum can be caused by a lack of the hormones prolactin and oxytocin which play a role in the smooth production and excretion of breast milk. The problem formulation used the PICO method and met the inclusion criteria. Efforts that can be made by midwives to overcome this problem by doing lactation massage, so that the production of breast milk is large and the baby gets adequate and quality breast milk. Objective: To analyze the effect of lactation massage with virgin coconut oil (VCO) on the quality of breast milk in postpartum mothers. Methods: This study uses a literature review method with an online database sourced from Google Scholar, Proquest, Elsevier, Pubmed, Willey and Sage online library. Search strategy by entering keywords lactation massage / breast massage / oxytocin massage / guinea pig massage / breast care, virgin coconut oil, milk breast / milk volume, intervention, quality of milk / milk production / smoothness of milk / milk output / sufficiency of breast milk, postpartum. Determination of the articles to be analyzed using the PRISMA protocol. Results: The results of the literature review analysis of 11 articles found that 8 articles of lactation massage (breast care, oxytocin massage, oxytocin massage, breast massage with sun essential oil, lactation massage with lavender aromatherapy) proved to have an effect on the quality of breast milk seen from the increase in breast milk production and volume of milk after 3 days post partum. Conclusion: The results of a review of the literature review articles recommend that midwives can perform lactation massage in postpartum mothers to improve the quality of breast milk with a combination of sun essential oil and lavender aroma therapy. Further research can be carried out by lactation massage using VCO with a quasi-experimental method.

Keywords

Lactation massage, breast milk production, VCO.

INTRODUCTION

Breast milk is the best nutritional choice for babies because it contains antibodies and more than 100 types of nutrients, such as Arachidonic Acid (AA), Decosahexanoic Acid (DHA), taurine and spingomyelin which are not found in cow's milk. The coverage of exclusive breastfeeding in Indonesia according to Riskesdas in 2018 is still 74.5%, still less than the

target of 80%. Based on data from the Pekanbaru City Health Office in 2018, that the coverage of exclusive breastfeeding in Pekanbaru is 50.70%.

Chan, et al in Nurliawati (2010) stated that out of 44 post partum mothers, 77% stopped breastfeeding before the baby was 3 months old because of 44% less milk production, 31% breast problems, and 25% fatigue. Research conducted by Collin and Scot in Australia showed that 556 mothers gave birth, as many as 29% had stopped breastfeeding their babies in the second week due to insufficient breast milk. Breast milk contains the most complete nutrition that children really need, therefore children's nutrition at the golden age must be considered, the most important way is to provide quality breast milk. Problems that often occur in the breastfeeding process are sore nipples, swollen breasts, clogged milk ducts, mastitis, breast abscess and low milk production, if these problems are not resolved, it will interfere with breastfeeding (Bahiyatun, 2009).

The quality of breast milk can be seen from the appearance of milk (yellowish white color, smells like cow's milk, it tastes sweet), the production and smoothness of breast milk by looking at the stable weight gain of the baby, the adequacy of the volume of milk to meet the baby's needs, the baby's digestion is going well, the baby is sleeping. soundly. The quality of breast milk can also be seen from its nutritional content, namely 60% whey protein, 40% casein protein, lactoferrin, lysozime and secretory IgA. Breast milk contains essential fats which function to support the baby's brain development. Carbohydrates in breast milk are lactose which functions to reduce the number of bad bacteria in the baby's intestine. To get quality breast milk, it can be done by meeting the nutritional needs of breastfeeding mothers, maintaining the mother's psychological condition, breast care / lactation massage, breastfeeding frequency, and breast anatomy. Lack of breast care can result in decreased milk production or unqualified milk.

Various efforts can be made to facilitate and increase the production of breast milk that can be used to help postpartum mothers, including the lactation massage method, oxytocin massage, breast care, marmet technique and many other massage and relaxation techniques. Lactation massage is very effective in improving the quality of breast milk, such as increasing the production and flow of breast milk, emptying the full breast, reducing swelling or blockage in the flow of milk, preventing dry and blistered nipples and aeroles, making breastfeeding mothers more relaxed, keeping breast shape firm the reflex of milk release is more easily stimulated by skin to skin contact, economical and the mother can do it on her own. The results of the study were more fat and casein content in mothers who performed routine lactation massage than mothers who did not. Lactation massage is done using olive oil, almond oil, baby oil, coconut oil / virgin coconut oil.

The composition of VCO includes medium chain fatty acid (MCFA) which is useful for increasing body weight, body length and head circumference of the baby if given three times a day one tablespoon to nursing mothers for one month. Lauric and caprylic acids found in VCO are useful to strengthen the immune system of the breastfeeding mother's body and the baby's body. VCO can help stimulate and increase milk production and produce quality breast milk. VCO is also used as an ingredient in lactation massage which functions to treat blistered / cracked nipples due to improper attachment, as skin moisturizer, as a relaxing agent for the skin The description of the problem formulation in this study using PICO (Population, Intervention, comparation, outcome), with the inclusion criteria of articles with intervention studies, aims to improve the quality of breast milk assessed in breastfeeding mothers, mean age 20 35 years, normal post partum mother, history of normal delivery, study implemented in a short time (not observational). The purpose of this study was to analyze the effect of lactation massage with virgin coconut oil (VCO) on the quality of breast milk in postpartum mothers.

METHOD

This study used a Literature Review design. The strategy used in finding articles with intervention studies in International and National Journals that discusses lactation massage with VCO on the quality of breast milk, National Journal indexed by Sinta 3 and 4, DOAJ, Web of Science, Journals published in 2012-2020 and meet the inclusion criteria . Data collection through publications was searched through 6 data based, namely Google Schoolar, Proquest, Elsevier, Pubmed, Willey and Sage online library by entering the same keywords, namely lactation massage / breast massage / oxytocin massage / marmet massage / breast care, virgin coconut oil, milk breast / milk volume, intervention, quality of breast milk / milk production / fluency of breast milk / milk output / adequacy of breast milk, postpartum. The total articles obtained were 286 articles. After the data collected is entered into the journal characteristics table and then analyzed using the PRISMA method. Articles are filtered on the basis of titles and abstracts. The literature study relevant to this study found 11 articles.

RESULT AND DISCUSSION

The first article of research conducted by Lisa Putri Utami Damanik in Bantul entitled "The Effectiveness of Neck Massage in Increasing Puerperal Mothers' Breast Milk Quantity from Day One to Day Three in Bantul" uses Propotionate Systematic Random Sampling. Data were analyzed by using the Man Whitney test, giving intervention to 54 respondents. 27 respondents in the intervention group were given "neck massage" once a day for 15 minutes in 3 days and 27 respondents in the control group performed "pectoralis major muscles massage" once a day for 15 minutes in 3 days. Research results Neck massage is more effective than pectoralis major muscles massage in increasing the quantity of breast milk from days 1-3 (Lisa Putri Utami, 2018).

The second research article by Jose, Sharmila; D'Souza, Sonia R B; Sreedevi, C with the title "Effect of breast massage on breast milk volume and experience on the expression of breast milk among mothers of preterm neonates" in India, using a quasy experiment design. Provided intervention to 40 mothers who gave birth to premature babies (27-34 weeks), experienced breast swelling, 20 respondents in the intervention group received breast massage and 20 respondents in the control group who did not receive breast massage. An assessment was carried out using the breast engorgement screening scale tools on the 2nd and 3rd day postnatally, then the volume of breastmilk was measured on the 3rd and 4th days and the duration of expressing the milk manually. Results There was a difference between the volume of breastmilk ($p = 0.023$) and the total duration of manual expressing ($p = 0.006$) between the experimental group and the control group. The results also showed that parity ($p = 0.036$) and previous history of expressing breast milk were significantly associated with the experience of mothers expressing breast milk (Jose, et al, 2019).

The third article of research conducted by Rina Astuti in Medan with the title "Effect Of Virgin Coconut Oil On The Breast Milk Secretion And Analysis Of Medium Chain Fatty Acids using a quasy experiment. Provided intervention to 20 breastfeeding mothers and their babies. 10 people each as the control and intervention group. Given to drink VCO 3 times a day 1 tablespoon in the intervention group and not given VCO in the control group. The variable measured the volume of breast milk was done by comparing the weight of the baby before and after breastfeeding multiplied by the specific gravity of the milk (1.03), where the results of this calculation were converted into the amount of milk that the baby sucked. Anthropometric measurements of babies are carried out using baby scales and length meters. The chain fatty acid analysis is being carried out by using the gas chromatography method. The results of the comparison of breastmilk volume in the intervention group and the control group. The results of the study were not significant ($P > 0.05$) using the independent t test in week I, while in week II to week V there was a

significant difference (P <0.05). The volume of breast milk in the intervention group at week IV was 10.62% higher than the control group. The results of observations on the anthropometric growth rate of infants showed a significant difference in measurement results (P <0.05), namely the anthropometric growth rate of infants in the intervention group was faster after consuming VCO. The measurement results of the medium chain fatty acid composition showed a significant difference (P <0.05) between the intervention group and the control group, where the intervention group had a higher medium chain fatty acid composition after consuming VCO (Astuti, Rina, 2015).

The fourth article of research by Santhosh Kumar Kraleti, Swapna Lingaldinna, Sravani Kalvala, Sadiqua Anjum, Himabindu Singh in India with the title "To study the impact of unilateral breast massage on milk volume among postnatal mothers - A quasi-experimental study" Provided intervention to 42 people Breastfeeding mothers who express breastmilk and deliver them to the breast milk bank, do a massage on the left breast for 10 minutes and express milk on both breasts separately using an electric hospital pump. The results of the study The median volume of the breast that was massaged from the left breast after breast massage was 22.5 ml (10.30) and the median volume of the right breast without massage was 15 ml (10.25). The volume of milk produced from the side of the massaged breast was significantly higher. compared to the side that was not massaged (Santhosh Kumar Kraleti, et al, 2018).

The fifth article of Mervat I. Foda's research, Takaaki Kawashima, Sadako Nakamura, Michiko Kobayashi, and Tsuneyuki Oku in Japan with the title "Composition of Milk Obtained From Unmassaged Versus Massaged Breasts of Lactating Mothers" with a Quasi experimental study. Providing intervention to 39 breastfeeding mothers divided into 2 groups; 1 group of early breastfeeding period (20 people) received lactation massage on days 1-90 after delivery and 1 group of late breastfeeding period (19 people) on days 91-320 after delivery. Breast milk is taken 30 minutes before the massage and immediately after the massage. The massage is done by the oketani massage which is done by the mother herself and has been trained by a midwife. Breast milk is collected only once before and after massage. The samples were manually expressed until the breast felt empty and put in a small plastic bag and stored at -20 C before the chemical composition was analyzed. Results of the study Breast massage significantly increased lipid levels in the late breastfeeding period but not at the beginning of the breastfeeding period. At the beginning of the breastfeeding period casein increased but not at the end of the breastfeeding period. Breast massage increases total solidification on days 1 to 11 months postpartum. Gross energy at the end of breastfeeding increases with breast massage but not in the early phase of breastfeeding. Lactose did not significantly change with breast massage (Mervat I. Foda, et al, 2004).

The sixth article of research by Princy Thomas Et Al in New Delhi entitled "Effectiveness Of Breast Massage On Mild Breast Engorgement, Breast Milk Ph And Suckling Speed Of Neonate Among The Postnatal Mothers" with purposive sampling technique. Providing intervention to 30 breastfeeding mothers with their babies who have moderate-level breast swelling problems, the assessment uses the breast engorgement scale tool. Research results There is a significant difference between the pre-post test days 1-3 where it was found significantly The findings revealed that there was a significant difference between the pre-test score and posttest (Princy Thomas, et al, 2017).

The seventh article of Sumarni's research, Puspasari I, Mallongi A, Yane E, Sekarani entitled "Effect of moringa oleifera cookies to improve quality of breastmilk" using experimental studies with pre and post control group design. Data were analyzed using independent T test. Providing intervention The subjects were 17 breastfeeding mothers and

infants aged 0-4 months, that were selected by purposive sampling technique. One group of respondents consumed 50 grams of moringa cake for 1 month, one control group was not given moringa cake. The quality of ASI assessed was carbohydrate, protein, fat, and vitamin A. Using an experimental study with pre and post control group design. Data were analyzed using independent T test. Research results There was an increase in levels of fat, protein, carbohydrates and vitamin A in both groups (Sumarni, et al, 2020)

The eighth article by Nani Jahriani with the title "The effect of lactation massage on milk production in breastfeeding mothers in the kel.sendang sari district, Kab.Asahan." The Cross Sectional method is a prospective study with a one group pretest-postest design. Providing intervention to 30 breastfeeding mothers who have babies less than 1 year old, lactation massage is performed. This type of cross sectional study is a prospective study with a one group pretest-postest design. An assessment of breastmilk production before and after lactation massage was carried out. Breast milk production is assessed by the frequency and duration of breastfeeding before and after lactation massage. The results showed an increase in milk production from before lactation massage, the production of breast milk was 23.3%, and after lactation massage, the production of breast milk was good by 73.3%. The frequency of babies breastfed both by 40% before lactation massage and after lactation massage to be good at 76.7% (Nani Jahriani, 2019).

The ninth article by Agustina, et al entitled "The effect of lactation massage on breast milk production in post partum primiparous mothers in the city of Semarang" used a Quasi-experimental method with a non-equivalent control group design. Provided intervention to 22 post partum mothers who were divided into two groups, one group was given lactation massage with sun essential oil for 45-50 minutes, 2 times, namely the 3rd and 4th day post partum and one control group did not undergo lactation massage, Production Breast milk is measured by weighing the baby before and after breastfeeding for 24 hours. Measurements before treatment on day 2-3 and after treatment on days 3-4 post partum. The data were analyzed by chi square test, paired sample test and Independent sample T test. The results of the study showed that there was no difference in breast milk production in the intervention group and control group before treatment and there were differences after treatment (Agustina, et al, 2018).

The tenth article of research by Siti Nur Sholeha with the title "The effect of breast care on the production of breast milk for post-partum mothers" with the Cross Sectional method. Provided intervention to 30 postpartum mothers and performed breast care. The results showed that there was an effect of breast care on breast milk production in postpartum mothers (Siti Nur Sholeha, 2019).

The eleventh article of Tuti's research, Melyana Nurul Widyawati with the title "Oxytocin massage and lavender aroma therapy increases breast milk production" using a literature review method. Provided intervention to 30 postpartum mothers and carried out oxytocin massage and lavender aroma therapy. The results of the study an increase in breast milk production after oxytocin massage and lavender aroma therapy (Tuti, et al, 2018).

Judging from the 11 studies that met the criteria to be examined, the research was conducted 2 in India, 1 in Japan, 1 in New Delhi and 7 in Indonesia. The method used was 2 studies using Propotionate Systematic Random Sampling, 2 studies using cross sectional design, 5 studies using quasy experiment design, 1 study using experimental studies with pre and post control group design and 1 study using literature review. Of the 11 articles reviewed, all interventions support the production and smoothness of breast milk so that babies get quality breast milk. The interventions provided were 2 articles of breast massage, 6 articles of lactation massage, 1 article of virgin coconut oil (VCO), 1 article of neck massage and 1

article of moringa cake. All articles state that there is an increase in milk production, volume of milk, quantity of milk, increase in protein, casein and solids. 8 out of 11 articles discuss lactation massage and breast care such as okitani massage, oxytocin massage, use of lavender oil to increase breast milk production, one article discusses neck massage on breast milk quantity, one article about the benefits of VCO on breast milk excretion and one article about giving cake consumption moringa against increased protein in breast milk. Age of respondents ranged from 20-35 years, normal nutritional status, postpartum mothers 2-15 days, 60% Primi para, full term gestational age at delivery, normal delivery mothers. 4 of the 8 research articles on lactation massage using the Quasi-experimental method and 2 articles of the cross-sectional method are prospective studies with a one group pretest-postest design.

The quality of breast milk can be identified by the adequacy of breast milk which can be seen from the signs of infant development, namely stable weight gain, sufficient milk volume. Breast milk quality can be assessed by assessing the increased milk production and meeting the needs of the baby. The quality of breast milk is also by assessing the composition of breast milk, the nutritional content of quality breast milk. Breast care is useful for preventing blockage of the milk ducts so as to facilitate breastfeeding by keeping the breasts clean and well maintained (nipples) because when breastfeeding the mother's breast will be in direct contact with the baby's mouth (Maryunani, 2012).

Another type of lactation massage found in the article is the ocethane massage which is performed in Japan (Mervat I. Foda et al, 2004). This study was to assess the quality of breast milk from the composition of the milk before oketani massage and after oketani massage. The results of the study found that casein was high in breast milk before the oketani massage and other nutrients lipid, solid, energy was very high after the massage was carried out. For lactose the value is the same before and after the massage. Occasionally applied massage of the connective tissue of the breast before breastfeeding improves the quality of breast milk and stimulates the baby's physical and mental development, improves mood and sleep patterns. The effect of oketani massage on the composition of breast milk causes the excretion of prolactin and oxytocin so that the quality of breast milk increases. Oketani massage is also performed on mothers who have problems breastfeeding.

Another article reviewed was the effect of giving virgin coconut oil (VCO) on breast milk secretion and examination of medium chain fatty acids (Astuti, Rina, 2015). The use of VCO here is not as a massage ingredient but is consumed directly. The measurement of breastmilk volume is done by comparing the weight of the baby before and after breastfeeding multiplied by the specific gravity of the milk (1.03), where the calculation results are converted into the amount of milk that the baby sucks. Anthropometric measurements of babies are carried out using baby scales and length meters. The chain fatty acid analysis is being carried out by using the gas chromatography method.

The results of the comparison of the volume of breastmilk for groups A and B, there was no significant difference ($P > 0.05$) using the independent t test in week I, while from week II to week V there was a significant difference ($P < 0.05$). The volume of breastmilk in group B at week IV was 10.62% higher than group A. The results of observations on the anthropometric growth rate of infants showed a significant difference in measurement results ($P < 0.05$), namely the anthropometric growth rate of infants in group B was faster after group B consume VCO. The results of this study prove that VCO can improve the quality of breast milk. The benefits of using VCO as a lactation massage oil moisturizes the skin. VCO has an antibacterial effect on the skin, the antibacterial properties of medium chain fatty acids can reduce inflammation in the body, help wound healing by increasing antioxidants. Apart from VCO, the oil that is often used for massage is lavender.

Studies have found the effect of oxytocin massage and lavender aromatherapy to increase breast milk production (Tuti et al, 2018). Oxytocin massage is one solution to overcome the improper production of breast milk. This action of oxytocin massage provides a relaxing sensation in the mother and improves the flow of nerves and milk ducts in both breasts. Oxytocin massage is useful for increasing relaxation and the comfort level of the mother, thereby triggering the production of the hormone oxytocin and affecting breastfeeding.

The use of lavender aromatherapy essential oil can help mothers to relax and feel comfortable so that it is hoped that milk production can increase. Lavender is one of the essential oils whose active ingredients play a role in anti-anxiety (relaxation) effects, namely linalool and linalyl acetate. (Jamilah, et al., 2013 research conducted by Koulivand, et al. In 2013 stated that the relaxing effect on the central nervous system is caused by inhaling lavender aromatherapy. The relaxing effect on the central nervous system helps increase the production of the hormone oxytocin which has an impact on increasing breast milk production. The main point of this review article is that various types of lactation massage such as oxytocin massage, oxytocin massage, breast care can increase milk production after an average of 3 days post partum.

VCO contains lauric acid / monolaurin which is useful for fighting bacteria, reducing fungi and viruses so that it can increase body immunity. Polyphenols in VCO function as antioxidants, able to fight unhealthy bacteria in the digestive system. VCO can be consumed directly and can also be used as massage oil. The benefits of using VCO as a lactation massage oil moisturizes the skin. VCO has an antibacterial effect on the skin, the antibacterial properties of medium chain fatty acids can reduce inflammation in the body, help wound healing by increasing antioxidants and collagen levels and inhibiting the production of proinflammatory compounds, the antimicrobial properties present in VCO can prevent infection. Vitamin E in VCO can disguise black spots (stretch marks) due to pregnancy and can remove dead skin cells. Because of the many benefits of VCO, it is highly recommended that VCO be used as a lactation massage oil.

CONCLUSSION

Based on the literature review analysis that the researchers conducted, it was proven that there was an effect of lactation massage, namely breast care, oxytocin massage, oxytocin massage, breast massage with sun essential oil, lactation massage and lavender aromatherapy, giving virgin coconut oil (VCO) to the quality of breast milk seen from the production Breast milk and milk volume averaged 3 days postpartum. The results of this study were recommended for midwives to improve the quality of breast milk in postpartum mothers by doing lactation massage by combining sun essential oil and lavender aroma therapy, so that the target of exclusive breastfeeding can be achieved. It is suggested for further researchers to carry out research on the effect of lactation massage with VCO on the quality of breast milk using a quasi-experimental method.

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