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IMPLEMENTATION OF BREASTFEEDING TO LOW BIRTH WEIGHT BABIES WITH A GESTATIONAL AGE OF UNDER 37 WEEKS IN THE PERINATOLOGY ROOM OF KARSA HUSADA BATU REGIONAL HOSPITAL

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Abstract
Low birth weight (LBW) babies are newborns whose weight at birth is less than 2500 grams. The problem that often occurs in LBW is oral feeding which will cause delays in breastfeeding. The aim of this research is to find out how to implement breastfeeding for low birth weight babies with gestational age < 37 weeks in the perinatology room at Karsa Husada Batu Hospital. This research design uses a case study design with 2 subjects. Data collection time was carried out on 1-14 May 2024 in the perinatology room at Karsa Husada Batu Hospital. Data collection techniques use interview and observation techniques using instruments that have been prepared previously. Data is presented in the form of narratives, tables and graphs. The results of the study showed that subject 1 (Mrs. the mother's age is 35 years or above and the fetus' placenta is below. Premature rupture of membranes, age 35 years and over, poor nutritional status of the mother and total placenta previa are causes of low birth weight babies. Future researchers are expected to continue this research by increasing understanding of the implementation of breastfeeding.

Keywords: *Breastfeeding, Low Born Weight*

INTRODUCTION

Exclusive breastfeeding for 6 months and continued adequately for 2 years has been proven to be one of the most effective interventions in reducing infant mortality rates (Delima et al., 2016; Pujiastuti et al., 2022). Postpartum mothers who have undergone normal deliveries, especially primiparous mothers, experience childbirth as a first-time event, which can cause stress during and after delivery. The stress experienced by primiparous mothers can increase cortisol hormone levels, which in turn decreases oxytocin hormone levels, leading to a delay in the onset of lactation (Sulaeman et al., 2019). The issue of breast milk not being produced on the first day of a baby's life should ideally be anticipated during pregnancy through lactation counseling. Therefore, it is essential to find solutions to reduce feelings of anxiety and prevent the use of formula milk (Malonda & Sanggelorang, 2020; Pujiastuti & Wahyuningsih, 2019).

In Indonesia, only 45.55% of babies receive exclusive breastfeeding, which is still below the target coverage of 80%. In reality, only 27.5% of mothers in Indonesia successfully provide exclusive breastfeeding (Kemenkes R.I, 2015). Data from the 2018 RISKESDAS (Basic Health Research) survey shows that among babies aged 0-5 months, 43% received exclusive breastfeeding, 50% received partial breastfeeding, and 55% received predominant breastfeeding (Kementerian Kesehatan RI, 2018). According to data from the East Java Provincial Health Office in 2016, the coverage of exclusive breastfeeding for

babies in East Java in 2016 was 74%. This coverage has increased year by year since 2011 (61.5%), but it still has not met the established target (Kementerian Kesehatan Republik Indonesia, 2017).

Providing early breastfeeding on the first day after childbirth can be challenging due to low breast milk production. A mother's emotional state, which is linked to the oxytocin reflex, plays a significant role, accounting for about 80-90% of breast milk production. When a mother feels emotionally well, comfortable, and stress-free, it can positively impact and promote milk production (Ni Komang et al., 2018; Saputri et al., 2019). An essential factor that influences effective milk production is the baby's efficient sucking. Proper sucking optimizes brain stimulation, which then triggers the release of prolactin and oxytocin hormones, leading to increased milk production (Elison et al., 2020; Pujiastuti, 2020). A reduction in milk production during the initial days postpartum can result from inadequate stimulation of these hormones. Various factors, such as the mother's psychological state, physical condition, the baby's response, and hormonal changes after delivery, can hinder the stimulation of oxytocin, thereby affecting the breastfeeding process (Aryani & Alyensi, 2019; Lestari, 2017).

Efforts to stimulate prolactin and oxytocin hormones in mothers after childbirth, aside from expressing breast milk, can also include breast care, early breastfeeding initiation (IMD), frequent and on-demand breastfeeding, and oxytocin massage (Putri & Sumiyati, 2015). Oxytocin massage, applied to mothers post-delivery, aids in the release of the oxytocin hormone, which is crucial for milk ejection. This massage accelerates the transmission of signals from the parasympathetic nervous system to the brain, promoting oxytocin release and facilitating milk flow. Additionally, it can influence prolactin levels, further encouraging milk production during breastfeeding. The massage also helps the mother relax, ensuring the smooth function of nerves and milk ducts in both breasts (Umbarsari, 2017). The oxytocin reflex is affected by the mother's thoughts, feelings, and emotions. A mother's emotional state can either enhance or hinder the release of oxytocin. This hormone triggers the contraction of muscle cells around the milk ducts, pushing milk out and making it accessible for the baby to suckle. Therefore, strong or negative emotions can suppress the oxytocin reflex, potentially reducing milk production (Wulandari et al., 2018). Oxytocin massage is performed to stimulate this reflex, also known as the let-down reflex. Besides stimulating the let-down reflex, oxytocin massage provides additional benefits such as comfort for the mother, reduction of breast engorgement, relief of milk duct blockages, stimulation of oxytocin release, and maintenance of milk production when either the mother or baby is unwell (Maita, 2016; Riau et al., 2020).

Based on the explanation above, the research question is: "Does oxytocin massage affect breast milk production in postpartum mothers?" The study aims to assess the impact of oxytocin massage on breast milk production in mothers after childbirth. With this context in mind, the researcher is interested in

exploring existing literature on how oxytocin massage influences breast milk production in postpartum mothers.

METHOD

This research relies on secondary data, meaning the information is gathered from studies previously conducted by other researchers rather than through direct observation. The secondary data sources include articles and journals related to the topic, accessed through databases like ScienceDirect, PubMed, and Google Scholar (Nursalam, 2017). The literature search strategy for this research follows the PICOS framework, as outlined in Table 1.

Tabel 1. PICOS format in Literature Review

Criteria	Inclusion	Exclusion
Population	International journals related to the research topic, which is postpartum mothers	International journals that are not related to the research topic, which is pregnant mothers
Intervention	Oxytocin massage	Breastcare postpartum
Comparasion	No comparative factors	No comparative factors
Outcome	The impact of oxytocin massage on enhancing breast milk production in postpartum mothers	The impact of oxytocin massage on enhancing breast milk production in postpartum mothers
Study Design	Quasi experiment	Cross sectional, observational study, pra experiment, cohort study, case-control
Publication Years	Articles or journals published after 2015	Articles or journals published before 2015
Language	English and Indonesian	Another

To find relevant journals and articles, you can use keywords obtained from the titles in the research. Keywords can be obtained from MeSH. The keywords used by researchers during the search are:

Table 2. Keyword of Literature Review

Oxytocin massage	**Breast milk**	**Postpartum mother**
OR	*OR*	*OR*
Pijat oksitosin	*ASI*	Ibu Post Partum

Based on the literature search results using 3 databases (PubMed, Google Scholar, and ScienceDirect), the researcher found 459 journal articles, consisting

of 127 journals from PubMed, 215 journals from Google Scholar, and 117 journals from ScienceDirect that matched the predetermined keywords. These research journals were then screened again, resulting in 220 journals that met the inclusion criteria, which are publications from the last 5 years and written in Indonesian or English. The journals were then further filtered based on the inclusion criteria set by the researcher, such as journals with the same research title, totaling 124 journals. The journals were further categorized by identifying the abstracts, resulting in 55 journals. Journals that did not meet the criteria were excluded, leaving 9 articles for analysis. The results of the article or literature selection can be illustrated in the PRISMA flowchart as follows:

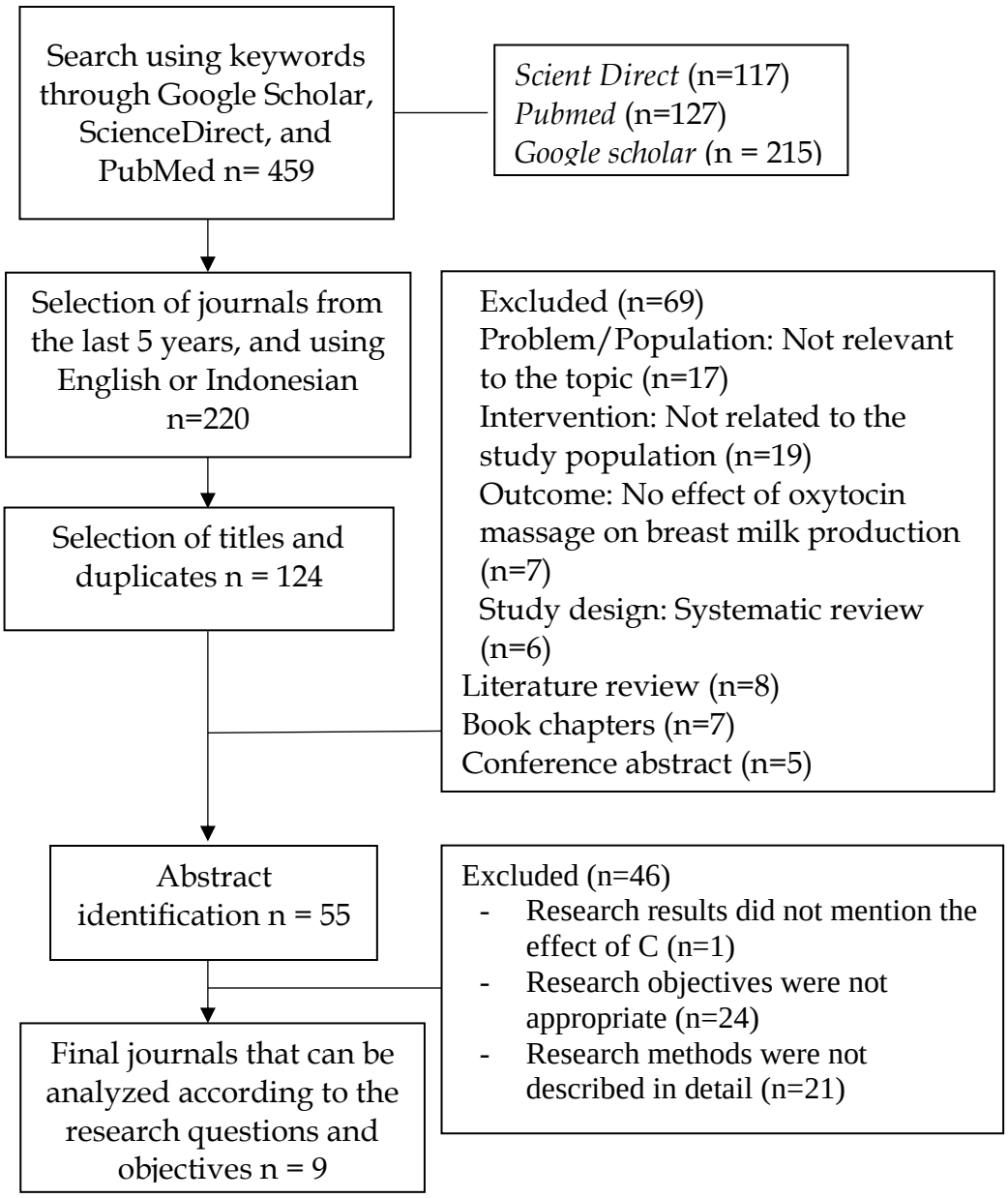

Figure 1. Flow Diagram Flow of Literature Review

RESULT AND DISCUSSION

Characteristics of the study

Nine articles that met the inclusion criteria all presented the impact of oxytocin massage on postpartum breast milk production across various regions in Indonesia. The articles reviewed were assessed for quality using the JBI Critical Appraisal Tools. All nine articles indicated a relationship between oxytocin massage and the smoothness of postpartum breast milk production. The nine articles showed that breast milk production was lower before the intervention, and after the intervention, there was an increase in breast milk production. Of the nine articles, 4 were conducted on Java Island and 5 were conducted outside Java Island. Among the nine articles, 5 were from Google Scholar, 2 from ScienceDirect, and 2 from PubMed. All nine journals used oxytocin massage as the independent variable. Seven journals used breast milk production as the dependent variable, and 2 used milk ejection as the dependent variable. Eight journals used oxytocin massage as the research instrument, and 1 journal used oxytocin massage combined with the Marmet technique. Of the nine journals, 1 used Shapiro-Wilk analysis, 5 used Wilcoxon analysis, and 3 used T-test analysis. Among the nine journals, 8 used oxytocin massage interventions according to SOP, and 1 used an oxytocin massage intervention combined with the Marmet technique.

Breast milk production in postpartum mothers before oxytocin massage is performed

After reviewing 9 articles, it was found that the weight difference between the control group and the intervention group was not very significant, at 18.25 grams. The average breastfeeding frequency was 7 times per day, the average sleep duration for babies was 10 hours per day, and for bowel movements (defecate) and urination (urination), the frequency was defecate 1 time per day and urination 5 times per day.

The study by Purnamasari, et al (2021) showed that the average weight of babies before oxytocin massage was 3772 grams for the intervention group and 3571 grams for the control group. A factor affecting the decrease in breast milk production is the low amount of oxytocin hormone, which impairs the milk ejection process, leading to difficulties in milk flow (Shah et al., 2022). Baby weight is one indicator of the adequacy of breast milk. According to the criteria, if breast milk is adequate, the baby's weight should not decrease by more than 10% during the first week after birth. In fact, if the baby is exclusively breastfed, weight loss should only be 3-5% by day 3, and by the second week, the weight should be at least the same or even increased. Another indicator is that if the baby is receiving enough breast milk, they should have bowel movements 6 to 8 times within 24 hours, with a clear, yellowish color (Fitri, 2018; Rinata et al., 2016). Rest factors affect breast milk production. If the mother is too tired and does not get enough rest, milk production will also decrease (Niar et al., 2021).

According to researchers, insufficient breastfeeding frequency can lead to weight loss or stagnant weight gain in the baby, causing the baby to be fussy or

cry frequently, which in turn results in inadequate sleep for the breastfeeding mother. This can lead to stress for the mother, which in turn can reduce breast milk production and result in insufficient food intake for the baby.

Breast milk production in postpartum mothers after oxytocin massage

After reviewing 9 articles, it was found that the weight difference between the control group and the intervention group was 357.75 grams. The average breastfeeding frequency was 10 times per day for the control group and 11 times per day for the intervention group. The average sleep duration for babies was 15 hours per day. For bowel movements (defecate) and urination, the intervention group had defecate 3 times per day and urination 8 times per day, while the control group had defecate 2 times per day and urination 9 times per day.

Oxytocin massage is a solution to address challenges in breast milk production. This massage technique involves massaging along the sides of the spine up to the fifth and sixth ribs, aiming to stimulate the prolactin and oxytocin hormones after childbirth. Since the massage is performed along the mother's spine, it cannot be done by the mother herself (Kuswati & Istikhomah, 2017; Triansyah et al., 2021). The purpose of oxytocin massage is to activate the oxytocin reflex, also known as the let-down reflex. Besides stimulating this reflex, oxytocin massage offers several benefits, including providing comfort to the mother, reducing breast engorgement, relieving milk duct blockages, promoting oxytocin release, and maintaining milk production when the mother or baby is unwell (Pujiastuti et al., 2022).

Researchers have found that oxytocin massage influences breast milk production in postpartum mothers. This is due to its ability to stimulate the hormones prolactin and oxytocin while also improving blood circulation, which helps prevent milk duct blockages. Efficient breast milk production positively impacts the baby's weight gain, breastfeeding frequency, regular bowel movements, and urination. Additionally, it helps both mother and baby return to normal sleep patterns.

The effect of oxytocin massage on breast milk production in postpartum mothers

After reviewing 9 articles, it was found that breast milk production increased following oxytocin massage administered twice a day, in the morning and evening, for 15 minutes each session up to day 14 (Purnamasari et al., 2021).

Oxytocin massage is performed by massaging the mother’s back and providing comfort to her. Physiologically, this can stimulate the oxytocin reflex or let-down reflex to secrete oxytocin into the bloodstream. Oxytocin then causes the myoepithelial cells around the alveoli to contract, which helps move breast milk from the alveoli to the ducts, then to the sinuses and the nipple, where it is subsequently sucked by the baby (Hesti et al., 2017; Umbarsari, 2017). Oxytocin massage performed on postpartum mothers can help them relax and feel comfortable, reducing fatigue after childbirth, especially when done 3 hours postpartum. Mothers who received oxytocin massage reported feeling

comfortable and relaxed during the massage, noting that they experienced milk flow dripping out.

Milk production is influenced by two key processes: production and ejection. The hormone prolactin governs milk production, while oxytocin controls milk ejection. Oxytocin is released when the baby sucks on the nipple or through massage of the mother's back. This massage helps the mother feel calm and relaxed, reduces pain sensitivity, and enhances bonding with her baby, all of which trigger the release of oxytocin and facilitate milk ejection. Oxytocin massage impacts the timing of milk ejection by promoting oxytocin production through the mother's feelings of comfort and relaxation, which reduces stress. This stimulation encourages the posterior pituitary gland to release more oxytocin, which then signals the anterior pituitary gland to produce prolactin. Higher prolactin levels further enhance oxytocin release, speeding up the milk ejection process (Mulyani & Astutiningrum, 2019; Shah et al., 2022).

Researchers have found that oxytocin massage can stimulate the release of the oxytocin hormone, which aids in breast milk production. Additionally, this massage helps breastfeeding mothers feel comfortable and relaxed, which reduces the secretion of cortisol. Lower cortisol levels can help prevent inhibition of lactation hormone secretion.

CONCLUSION

Before receiving oxytocin massage, the difference in baby weight between the control group and the intervention group was not very significant, at 18.25 grams. The average breastfeeding frequency was 7 times per day, the average sleep duration for babies was 10 hours per day, and for bowel movements (defecate) and urination, the frequency was defecate 1 time per day and urination 5 times per day.

After receiving oxytocin massage, the weight difference between the control group and the intervention group increased to 357.75 grams. The average breastfeeding frequency for the control group was 10 times per day, while for the intervention group it was 11 times per day. The average sleep duration for babies was 15 hours per day. For bowel movements and urination, the intervention group had defecate 3 times per day and urination 8 times per day, while the control group had defecate 2 times per day and urination 9 times per day.

After reviewing 9 articles, it was found that there was an increase in breast milk production after oxytocin massage was administered twice a day, in the morning and evening, for 15 minutes up to day 14.

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