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The Relationship Between Breast Care and Breast Milk Production Among Postpartum Mothers

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ABSTRACT

The postpartum period plays a critical role in establishing successful breastfeeding. Adequate breast milk production is essential to meet the nutritional needs of infants, particularly during the first 1,000 Days of Life (HPK), a window that significantly impacts a child's growth and development. Among the various factors that influence lactation, consistent and proper breast care practices by postpartum mothers are believed to support milk production. This study employed an analytical observational design using a cross-sectional approach. A total of 32 postpartum mothers at Klinik Pratama Hugo Hasena were selected through a total sampling technique. Data on breast care practices and breast milk production were collected using structured questionnaires and analyzed using the chi-square statistical test. The findings revealed that the majority of mothers (81.3%) performed breast care routinely, and the same proportion (81.3%) reported sufficient breast milk production. Statistical analysis showed a significant relationship between breast care and breast milk production ($p = 0.000$). The study concludes that breast care has a significant association with breast milk production among postpartum mothers. These results highlight the importance of educating and empowering mothers on proper breast care techniques as part of postnatal support to promote successful breastfeeding. Healthcare providers are encouraged to enhance postpartum education programs, particularly focusing on the role of breast care in supporting optimal lactation and infant health during the critical early stages of life.

Keywords: Breast care, breast milk production, postpartum mothers

INTRODUCTION

The first 1,000 days of life from conception to a child's second birthday are known as the "golden period" or "window of opportunity" due to the rapid and critical development occurring during this time. Optimal nutrition is essential, mothers should maintain proper nutritional intake during pregnancy, followed by exclusive breastfeeding for the first six months and continued breastfeeding with appropriate complementary foods until the child is two years old (Rahayuningsih et al., 2018).

Inadequate nutrition during the first 1000 days of life can lead to poor child growth and development. Other contributing factors include low socioeconomic status, lack of exclusive breastfeeding, and poor environmental conditions. Breast milk is the most complete and ideal source of nutrition for infants up to six months. However, only 39% of babies worldwide are

exclusively breastfed. Despite being a natural process, many mothers stop breastfeeding early due to reasons such as returning to work, fear of weight gain, or low milk production. These challenges highlight the need for greater support for breastfeeding mothers (Lusje et al., 2014).

Globally, the rate of exclusive breastfeeding has seen some improvement, but the increase remains modest. Between 2015 and 2020, only about 44% of infants aged 0–6 months were exclusively breastfed still below the global target of 50%. In Indonesia, data from 2020 showed that out of 3,196,303 infants under six months old, around 2,113,564 received exclusive breastfeeding, representing approximately 66.1%. While this figure is higher than the global average, there is still room for progress to ensure more babies receive the full benefits of exclusive breastfeeding during this critical stage of development (WHO, 2023).

Postpartum mothers are often at risk of developing breast infections. Early education on proper breast care can increase awareness of its benefits. Regular and appropriate care not only enhances maternal comfort but also supports the baby's health and well-being (Mangumpaus et al., 2017). Around 70% of mothers in Indonesia, or about 3.8 million women, report difficulty with breast milk flow after childbirth, often due to a lack of proper breast care techniques. A study found 20% of new mothers had early breastfeeding issues. In 2019, 794 postpartum mothers in Java could not breastfeed due to breast engorgement (Maqfiro & Tyas, 2018).

Breast care can stimulate the milk glands, helping to improve breast milk production. By performing oxytocin massage, the oxytocin reflex is enhanced, working together with the prolactin reflex to support sufficient breast milk production (Handayani & Rustiana, 2020). A study by Alhadar and Umaternate (2017) concluded that pregnant women prefer breast care through breast exercises or massage. Those who practiced these techniques experienced smoother breast milk production. The research also found that breast care during pregnancy significantly contributes to increased breast milk production.

According to Ningsih and Lestari (2019), there is a strong link between regular breast care and frequent breastfeeding with increased milk production. Proper and consistent breast care, along with breastfeeding as often as possible, helps boost milk supply. Babies who receive exclusive breastfeeding tend to have healthier perinatal growth and a lower risk of obesity. Additionally, feeding on demand can raise oxytocin levels in postpartum mothers and help prevent breast engorgement or blocked milk ducts during lactation (Sutanto, 2018).

Research by Muslim and Halimatusyaadiah (2022) found that breast care has a positive effect on the smooth flow of breast milk in postpartum mothers. Similarly, Damanik (2020) stated that there is a significant relationship between breast care and the effectiveness of breast milk production during the postpartum period.

The initial survey results by researchers at Hugo Hasena Pratama Clinic on postpartum mothers with 5 mothers, 2 of whom said they did not fully understand breast care and its benefits for breast milk production for postpartum mothers. Based on the aforementioned events or phenomena, and aimed at determining the relationship between breast care and breast milk production among postpartum mothers at the Hugo Hasena Pratama Clinic.

METHODS

This research is an analytical quantitative study employing a cross-sectional approach, chosen because data collection was carried out at a single point in time. The study was conducted at Hugo Hasena Primary Clinic in December 2023. The population consisted of all postpartum mothers undergoing the puerperium period, totaling 32 individuals. A total sampling technique was used, in which the entire population was included as the sample.

The inclusion criteria used in this study include postpartum mothers at Klinik Pratama Hugo Hasena, those willing to be respondents, and those who can speak Indonesian. Meanwhile, the exclusion criteria include mothers who are not postpartum patients at the clinic, are unwilling to be respondents, and are not proficient in Indonesian.

The independent variable in this study is breast care, while the dependent variable is breast milk production. The operational definition for breast care is the actions taken by the mother to stimulate oxytocin hormone to facilitate milk production, measured using a questionnaire and categorized as “performed” if scoring 6–10, and “not performed” if scoring 0–5. Meanwhile, breast milk production is defined as the quantity and smoothness of milk flowing from the mother's breast, which is also measured using a questionnaire and categorized as “sufficient” with a score of 6–10, and “insufficient” with a score of 0–5. Both of these variables use an ordinal scale.

The instrument used in this research is a closed questionnaire compiled by the researcher based on relevant theories. The questionnaire consists of 10 questions for each variable, and each item is scored 1 for a “yes” answer and 0 for a “no” answer.

Data collection techniques were carried out through primary data, which is data obtained directly from respondents. The researcher first obtained research permission from the educational institution and the clinic where the research was conducted, then explained to the respondents the purpose and benefits of the research and requested their willingness through informed consent before distributing the questionnaire. This research upholds three key ethical principles: informed consent, anonymity, and confidentiality, ensuring voluntary participation, respondent privacy, and secure use of data solely for research purposes.

To ensure validity and reliability, the instrument was tested using product moment correlation and Cronbach's Alpha. An item is considered valid if the r-count exceeds the r-table (0.3610), and reliable if the p-value is above 0.6. The results showed high reliability, with Cronbach's p-values of 0.892 for breast care and 0.887 for breast milk production indicating the instrument is both valid and reliable.

The data analysis techniques used include univariate and bivariate analysis. Univariate analysis is conducted to determine the frequency distribution of each variable, while bivariate analysis is performed to examine the relationship between breast care and breast milk production using the Chi-Square statistical test. The testing criterion used is that if the p-value < 0.05, the null hypothesis (H_0) is rejected, which means there is a significant relationship between the two variables.

RESULTS

This study involved 32 postpartum mothers and was conducted at Hugo Hasena Pratama Clinic in 2023. The findings on the relationship between breast care and breast milk production, based on data collected from the respondents, are presented in the table below:

Table 1. Frequency Distribution of Breast Care for Postpartum Mothers

Breast Care	Frekuensi (f)	Percentage (%)
Done	26	81,3
Not Done	6	18,7
Total	**32**	**100,0**

Based on Table 1, it can be seen that out of 32 respondents, the majority had breast care performed by 26 respondents (81.3%) and the minority did not have it performed by 6 respondents (18.7%).

Table 2. Frequency Distribution of Breast Milk Production in Postpartum Mothers

Breast Care	Frekuensi (f)	Percentage (%)
Enough	26	81,3
Less	6	18,7
Total	**32**	**100,0**

Based on Table 2, it can be seen that out of 32 respondents, the majority had sufficient breast milk production with 26 respondents (81.3%) and the minority had insufficient production with 6 respondents (18.7%).

Table 3. Frequency Distribution of the Relationship Between Breast Care and Breast Milk Production in Postpartum Mothers

Breast Care	Breast Milk Production				Total		Asymp. Sig
	Enough		Less				
	n	%	n	%	n	%	
Done	21	80,8	5	83,3	26	81,2	0,000
Not done	5	19,2	1	16,7	6	18,8	
Total	26	100,0	6	100,0	32	100,0	

Based on Table 3, it can be seen that out of 32, the majority of breast care was performed with sufficient breast milk production by 21 respondents (80.8%), and the minority of breast care was not performed with insufficient breast milk production by 1 respondent (16.7%).

The results of the hypothesis test to see the relationship between variable X and variable Y with a significance level (α) = 5% (0.05) and df = 1 obtained an asymp.sig result = 0.000 at df = 1 where sig < α (0.000 < 0.05) so H0 is rejected, thus it can be concluded that there is a relationship between Breast Care and Breast Milk Production in Postpartum Mothers at the Pratama Hugo Hasena Clinic in 2023.

DISCUSSION

Frequency Distribution of Breast Care Among Postpartum Mothers

The study found that most postpartum mothers performed breast care during the early days after childbirth. Breast care involves maintaining breast hygiene and stimulating milk flow, either independently or with the help of others, starting from the first or second day after delivery. One of the effective techniques in breast care is gentle breast massage. This method can help overcome challenges in milk flow by stimulating the hormones prolactin and oxytocin, which are essential for milk production and release. These findings emphasize the importance of early, consistent, and proper breast care in supporting a smoother breastfeeding process and enhancing the comfort and confidence of new mothers (Khotimah et al., 2022).

One way to increase breast milk production is through breast care by stimulating the breast muscles. This care should be done regularly to prevent issues such as breast engorgement or sore nipples. Information about breast care can be obtained during antenatal classes, at health centers, hospitals, or postpartum visits. However, not all mothers receive adequate education and care, making counseling and proper support essential (Amalia, 2016). Breast care is essential from pregnancy through breastfeeding, as the breasts are the sole source of nutrition for newborns. It should begin as early as possible to support milk production. The goal of breast care is to maintain breast hygiene and help increase or smooth the flow of breast milk. (Sinurat et al., 2021).

The researcher assumes that majority have practiced breast care. This is likely due to their awareness of the benefits of breast care in supporting smooth breast milk production for postpartum mothers. Additionally, this assumption is supported by their possible access to information through healthcare facilities or prenatal classes, which helps increase their understanding and encourages regular breast care practices.

Frequency Distribution of Breast Milk Production Among Postpartum Mothers

The study found the majority (81.3%) had sufficient breast milk production, while a minority (18.7%) had low production. Many mothers reported that their babies refused to breastfeed, often due to issues such as poor milk flow, engorgement, inverted nipples, or incorrect breastfeeding positions. Besides these technical factors, breast milk production is also influenced by the mother's psychological state and nutritional intake. A balanced diet rich in protein, vitamins, and minerals is essential during breastfeeding. Breast engorgement is especially common among first-time mothers (primiparas), but with early knowledge of proper breast care techniques, they can avoid difficulties. Regular and correct breast care helps strengthen and soften the breast tissue, prevent blockages, ease milk flow, and improve the success of breastfeeding Alhadar and Umaternate (2017).

The researcher found that adequate breast milk production was associated with mothers who practiced proper and effective breast care. This practice includes maintaining good breast hygiene and providing stimulation to support smooth milk flow, especially during the postpartum period when breastfeeding is being established. The findings suggest that a mother's knowledge and awareness of breast care play a crucial role in supporting effective milk production. This highlights the importance of providing education and guidance to postpartum mothers as part of comprehensive breastfeeding support (Dewi et al., 2022).

The Relationship Between Breast Care and Breast Milk Production Among Postpartum Mothers

The results of this study indicate that the majority of mothers who performed breast care experienced sufficient breast milk production. Hypothesis testing results concluded that there is a significant relationship between breast care and breast milk production among postpartum mothers. Breast milk (ASI) is the most nutritious natural food required for infant growth. The success of breastfeeding and exclusive breastfeeding for 0-6 months is influenced by many factors, including the mother's knowledge about the importance of breastfeeding and breast care to support breast milk production.

Increasing the rate of exclusive breastfeeding can be supported through various efforts, one of which is performing proper breast care. Breast care is beneficial in stimulating the milk ejection reflex in postpartum mothers (Wulandari et al., 2022). According to a study by Hipson et al. (2023), there is a significant relationship between breast care during pregnancy and the smooth release of breast milk in postpartum mothers. In the postpartum period, a mother's emotional state is often unstable, which is closely related to the oxytocin reflex. Oxytocin massage is considered an effective alternative to overcome insufficient breast milk production (Nurainun & Susilowati, 2021).

Based on these findings, the researcher assumes that if breast care is performed properly and correctly, breast milk production will be smooth, and the infant's nutritional needs will be adequately met. Conversely, if breast care is not performed, breast milk production may be disrupted or insufficient, potentially resulting in the infant's nutritional needs not being fully met. The results of this study are expected to encourage healthcare professionals to continuously provide education regarding proper breast care and to teach breast care techniques directly or through educational media such as videos.

CONCLUSION

Based on the results of a study conducted on 32 postpartum mothers at Pratama Hugo Hasena Clinic, it can be concluded that there is a significant relationship between breast care and breast milk production. The majority of respondents who regularly performed breast care showed adequate breast milk production. The chi-square statistical test showed a p-value of 0.000 ($p < 0.05$), indicating that breast care has a significant influence on the smoothness and adequacy of breast milk production.

Breast care is an effective effort that can be carried out by postpartum mothers to increase breast milk production. It is recommended that healthcare professionals be more proactive in

providing education and assistance to pregnant and breastfeeding mothers regarding the importance of breast care as part of exclusive breastfeeding promotion programs.

LIMITATION

In this study, the researcher set several limitations to ensure that the research remained focused and aligned with the predetermined objectives. The study was conducted exclusively at Pratama Hugo Hasena Clinic, located in Buluh Telang Village, Padang Tualang District, Langkat Regency. The research was carried out starting in December 2023, with a relatively small sample size.

This study employed an analytical method using a cross-sectional approach, which assesses the relationship between breast care and breast milk production at a single point in time, without any intervention or specific treatment provided by the researcher.

This study relied on self-reported data obtained through questionnaires, which may introduce response bias or subjectivity in participants' answers. Additionally, if the questionnaire used was developed by the researchers and not previously validated, this limitation should be acknowledged, as it may affect the reliability of the findings. Furthermore, the study did not account for potential confounding variables such as maternal health status, nutritional intake, or breastfeeding frequency, all of which could influence breast milk production and should be considered in future research.

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