Proceeding of The International Conference of Inovation, Science, Technology, Education, Children, and Health

E-ISSN: 2776-9062

Research Article

Exploring the Connection Between Breastfeeding Practices and Milk Production Levels in New Mothers

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Abstract: The World Health Organization (WHO), UNICEF, and the Ministry of Health strongly advocate for the initiation of breastfeeding within the first hour after birth, exclusive breastfeeding for the first six months, and continued breastfeeding up to two years alongside safe and nutritious complementary feeding. Despite these recommendations, one of the main barriers to achieving exclusive breastfeeding is insufficient breast milk production. This study aimed to investigate the relationship between breastfeeding frequency and milk production adequacy among postpartum mothers. To achieve this, an analytical study with a cross-sectional design was conducted, involving 38 participants. Data was collected through questionnaires that assessed breastfeeding patterns, milk production, and other related factors. The data were analyzed using the Chi-square test to determine any significant associations. The univariate analysis revealed that the majority of postpartum mothers (60.5%) reported irregular breastfeeding patterns, and more than half (55.3%) of the participants stated that they experienced inadequate milk production. Further analysis through bivariate tests showed a significant association between the frequency of breastfeeding and the adequacy of milk production, with a p-value of 0.003. This suggests that mothers who breastfeed more regularly may experience better milk production, which can contribute to healthier infant nutrition. These findings highlight the importance of encouraging regular breastfeeding practices in the early postpartum period to enhance milk supply. Improving awareness and providing support for mothers in establishing a consistent breastfeeding routine could play a crucial role in overcoming challenges related to inadequate milk production and achieving the recommended exclusive breastfeeding practices. Further research may be needed to explore other factors that contribute to successful breastfeeding and milk production.

Keywords: Knowledge; Nutritional Status; Toddler Stunting

1. Introduction

Breast milk (ASI) is the main and most ideal source of nutrition for newborns because it contains complete nutrients and meets the needs of infant growth and development. ASI not only provides immunological protection, but also supports emotional development and forms a strong bond between mother and baby (Khotimah et al., 2024).

The World Health Organization (WHO), UNICEF, and the Indonesian Ministry of Health recommend early initiation of breastfeeding within the first hour after birth, exclusive breastfeeding for the first six months, and continued breastfeeding until the age of two years along with safe and nutritious complementary foods (Fitria & Yugi, n.d.). WHO also states that under certain conditions, infants can receive additional substances such as vitamins, minerals, or certain medicines during the exclusive breastfeeding period, but not as a substitute for breast milk (Pratiwi et al., 2024).

Scientific evidence shows that infants who are exclusively breastfed have a 14 times greater chance of surviving the first six months of life compared to infants who are not

Received: 17,May,2025;
Revised: 31,May,2025;
Accepted: 16,June,2025;
Published: 30,June,2025;
Curr. Ver.: 30 June,2025;

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breastfed. Breastfeeding from the first day of life has been proven to reduce the risk of neonatal death by up to 45% (Mulsin et al., 2019). In addition, breast milk also plays a role in supporting cognitive development and reducing the risk of obesity and chronic diseases later in life. Studies in the United States and England even show that exclusive breastfeeding can save health costs because babies are less likely to get sick (Kalew & Pambudi, 2020).

However, global data shows that the coverage of exclusive breastfeeding is still far from the target. In 2012, only around 39% of babies under six months of age in the world received exclusive breastfeeding. Several countries such as Somalia, Chad, and South Africa have very low rates of exclusive breastfeeding, even large-population countries such as China only reach 28% (Sisy Rizkia, 2020). In Indonesia, based on data from the World Breastfeeding Trends Initiative (WBTi) in 2012, only 27.5% of mothers managed to provide exclusive breastfeeding for six months (Wati & Nuzuliana, 2021).

One of the factors that causes failure in exclusive breastfeeding is the production of breast milk that is not smooth (Zahra & Puspitasari, 2024). Khusniyati's research (2025) found that out of 44 postpartum mothers, 44% stopped breastfeeding before the age of 3 months due to low breast milk production, 31% due to breast problems, and 25% due to fatigue. Optimal breast milk production is greatly influenced by the frequency of breastfeeding. The more often the baby breastfeeds, the more the reflexes of the prolactin and oxytocin hormones will be stimulated, which ultimately increases the production and release of breast milk (Khusniyati, 2025).

When the baby sucks the nipple, two important reflexes occur, namely the prolactin reflex (which stimulates the production of breast milk by alveolar cells) and the let-down reflex (which helps the release of breast milk through muscle contractions around the alveoli due to the hormone oxytocin). Therefore, breastfeeding frequently and regularly, especially more than 6 times in the first 24 hours, is very important to maintain smooth breast milk production in the following days (Astarani & Idris, 2020).

The results of initial interviews with 10 breastfeeding mothers showed that only 2 of them breastfed more than 8 times a day and reported smooth breast milk production, indicated by spontaneous breast milk flow and the baby appearing calm. Meanwhile, 8 other mothers breastfed less than 8 times a day and reported irregular breast milk production, indicated by the baby often crying while breastfeeding because the breast milk did not come out much.

Based on these conditions, it is important to further research the relationship between breastfeeding frequency and smooth breast milk production in postpartum mothers as an effort to increase the success of exclusive breastfeeding.

2. Research Methods

This study is a quantitative study with an observational analytical approach using a cross-sectional design, which aims to determine the relationship between breastfeeding frequency and smooth breast milk production in postpartum mothers. The study was conducted in the work area of Berlian Health Center, Paguyaman District, Boalemo Regency, in August–January 2025.

The population in this study were all postpartum mothers with babies aged 0–6 months. The sample was taken using the total sampling technique, with a total of 41 respondents. The inclusion criteria were mothers who were willing to be respondents, had babies aged 0–6 months, and did not have health problems that affected the breastfeeding process. Mothers and babies with certain medical conditions were excluded from the study.

The research instrument used a questionnaire that assessed the frequency of breastfeeding and smooth breast milk production. Data were collected through filling out questionnaires and interviews. This study pays attention to ethical principles, including written consent from respondents (informed consent) and data confidentiality.

Data analysis was carried out univariately and bivariately using the Chi-square test, with a significance level of $p < 0.05$. Data processing was carried out using the SPSS version 25 application.

3. Results and Discussion

3.1. Breastfeeding Frequency

Table 1. Distribution of Breastfeeding Frequency of Postpartum Mothers

No.	Postpartum Mothers' Breastfeeding Frequency	Frequency (F)	Prosentase (%)
1	Regular	15	36.6
2	Irregular	26	63.4
	Total	**41**	**100**

Based on the research data in the table above, it is known that of the 41 postpartum mothers who were respondents, most of them had irregular breastfeeding frequencies, namely 26 people (63.4%), while only 15 people (36.6%) breastfed regularly. These results indicate that the majority of postpartum mothers have not carried out breastfeeding practices according to the recommended recommendations, namely breastfeeding babies as often as possible, especially in the early days after birth.

Irregular breastfeeding frequencies can have a direct impact on the smooth production of breast milk (ASI). Breast milk production is highly dependent on the principle of supply and demand - the more often the baby sucks the mother's nipple, the stimulation of the

hormones prolactin and oxytocin increases, so that breast milk production and release also increase. Conversely, if the baby is rarely breastfed, breast milk production will decrease due to lack of hormonal stimulation (Yulianto et al., 2022).

These results are in line with research by Aprilia et al. (2019), which states that mothers who breastfeed more than 8 times in 24 hours in the first week postpartum tend to have smoother breast milk production and meet the baby's needs. The study also emphasized that breastfeeding with high frequency in the early life of the baby is important to prevent delays in lactogenesis stage II, which is the phase of drastic increase in breast milk production that usually occurs 2-3 days after delivery (Aprilia & Krisnawati, 2019).

The low proportion of mothers with regular breastfeeding frequency in this study could be caused by several factors, such as lack of knowledge of mothers regarding the importance of early and frequent breastfeeding, postpartum fatigue, lack of support from family, and the wrong perception of "breast milk has not come out" or "breast milk is not enough" in the early days of birth. Psychological factors such as stress and lack of self-confidence can also affect the mother's breastfeeding habits (Kiptiyah et al., 2023).

Therefore, educational interventions and intensive assistance for postpartum mothers are very important, especially in primary health facilities such as Posyandu or Puskesmas. Midwives and health workers need to provide correct information and motivation so that mothers not only start breastfeeding early, but also do it regularly to support optimal breast milk production.

3.2. Smooth Breast Milk Production for Postpartum Mothers

Table 2. Distribution of Smooth Production of ASI in Postpartum Mothers

No.	Smooth Breast Milk Production for Postpartum Mothers Frequency	Frequency (F)	Prosentase (%)
1	Fluent	17	41,5
2	Not Smooth	24	58,5
	Total	**41**	**100**

Based on the results of the study, it was found that out of 41 postpartum mothers who were respondents, 24 people (58.5%) experienced irregular breast milk production, while only 17 people (41.5%) experienced smooth breast milk production. This finding shows that more than half of postpartum mothers have not achieved optimal lactation conditions in the early postpartum period.

Irregular breast milk production in the postpartum period is generally caused by several factors, such as low breastfeeding frequency, late initiation of breastfeeding, psychological stress, and lack of support from the surrounding environment. The main causes of disrupted breast milk production is the lack of stimulation of the baby's sucking on the breast, which directly affects the work of the hormones prolactin and oxytocin in the lactogenesis process (Khusniyati & Purwati, 2014).

In addition, research from Chan (2016) revealed that mothers who breastfeed less than 8 times a day in the first week postpartum tend to have difficulty maintaining breast milk production. Inadequate stimulation causes the lactogenesis II phase—the phase of breast milk production that begins to increase drastically on the 3rd day after giving birth—to be delayed or not run optimally (Eka et al., 2024).

The high percentage of mothers with irregular breast milk production can also be associated with a lack of breastfeeding education during pregnancy and after giving birth. Many mothers assume that their breast milk has not come out or is not enough, so they tend to add formula milk or delay breastfeeding, which actually worsens the condition of breast milk production (Ulfa & Setyaningsih, 2020).

Thus, support is needed from health workers, especially midwives, to provide breastfeeding counseling from the last trimester of pregnancy, encourage the practice of early initiation of breastfeeding (IMD), and educate the importance of breastfeeding as often as possible (more than 8 times in 24 hours), especially in the first week postpartum. This aims to stimulate lactation hormones and accelerate smooth breast milk production.

3.3. The Relationship between Breastfeeding Frequency and Smooth Breast Milk Production in Postpartum Mothers

Table 3. Frequency Distribution of the Relationship between Breastfeeding Frequency and Smooth Breast Milk Production in Postpartum Mothers

No.	Breastfeeding Frequency	Smooth Breast Milk Production for Postpartum Mothers						Statistic	
		Positive Behavior		Negative Behavior		Total			
		f	%	f	%	f	%	α	p-value
1.	Regular	10	66.7	5	20.8	15	100	0.05	0.003
2.	Irregular	7	26.9	19	73.1	26	100		
Total		**17**	**41.5**	**24**	**58.5**	**41**			

Based on the analysis results in the table above, it is known that out of 15 mothers who have regular breastfeeding frequency, 10 people (66.7%) showed smooth breast milk production, while only 5 people (33.3%) experienced irregular breast milk production. Conversely, out of 26 mothers who breastfeed irregularly, only 7 people (26.9%) showed smooth breast milk production, while the majority, namely 19 people (73.1%) experienced disruption in the smoothness of breast milk production.

Bivariate analysis using the Chi-square test produced a p-value = 0.003, which means it is smaller than $\alpha = 0.05$. Thus, it can be concluded that there is a significant relationship between breastfeeding frequency and smooth breast milk production in postpartum mothers.

These results support the lactation theory that the more often the baby breastfeeds, the greater the stimulation of the hormones prolactin (which stimulates breast milk production)

and oxytocin (which helps the release of breast milk) (Anggraini dyah setiyarini & Diska Nugraha, 2023). According to Putri (2021), the basic principle of breast milk production is supply and demand—the more often the baby sucks, the more breast milk is produced (Putri & Rahmawati, 2021).

This study is in line with the findings of Asih et al. (2023), which explains that breastfeeding more than 8 times in 24 hours in the first week postpartum is very important in maintaining smooth breast milk production (Asih et al., 2023). Likewise, Yuanita (2021) stated that mothers who breastfeed irregularly are at greater risk of experiencing delayed lactogenesis, which is a delay in breast milk production due to lack of stimulation (Wulandari Yuanita et al., 2021).

Irregular breastfeeding frequency is usually caused by a lack of maternal knowledge, low family support, or myths that develop such as "breast milk has not come out", so that mothers choose to delay breastfeeding or replace it with formula milk. This actually has a negative impact on the hormones that support the breastfeeding process, thus worsening the smooth production of breast milk (Amalia, 2016).

Thus, it is important for health workers, especially midwives, to provide education from the antenatal period regarding the importance of early and frequent breastfeeding, and to actively accompany mothers during the postpartum period so that breast milk production remains optimal.

4. Conclusions

The results of the study showed that most postpartum mothers with irregular breastfeeding frequency experienced irregular breast milk production. Conversely, mothers who breastfeed regularly tend to have better, smoother breast milk production. Statistical tests showed a significant relationship between breastfeeding frequency and smooth breast milk production, with a p value = 0.003 ($p < 0.05$). This confirms that the more often a mother breastfeeds, the greater the possibility of optimal breast milk production.

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