

Association of Maternal Age, Parity, and Early Initiation of Breastfeeding with Breast Engorgement Among Postpartum Women at Bayiku Lactation Clinic, Sleman, Yogyakarta

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ABSTRACT

Introduction: Breast engorgement is a common lactation problem in postpartum mothers and can hinder the breastfeeding process and increase the risk of exclusive breastfeeding failure. Factors associated with breast engorgement include maternal age, parity, and implementation of Early Breastfeeding Initiation. The study aims to determine the correlation between maternal age, parity, and implementation of Early Breastfeeding Initiation with the incidence of breast engorgement in postpartum mothers at Bayiku Lactation Clinic, Sleman, Yogyakarta.

Methods: Quantitative research with a descriptive-analytical design using a cross-sectional approach was employed. A sample of 33 postpartum mothers was selected using an accidental sampling technique. Data were collected through interviews using factual questionnaires and analyzed using the Spearman Rank test.

Results: A total of 42.4% of respondents experienced breast engorgement. There was a significant correlation between maternal age and the incidence of breast engorgement ($p=0.038$; $r=-0.363$), parity ($p=0.009$; $r=0.448$), and Early Breastfeeding Initiation ($p=0.000$; $r=0.694$).

Conclusion: The Early Breastfeeding Initiation variable showed the strongest correlation with the incidence of breast milk engorgement. There is a significant correlation between maternal age, parity, and implementation of Early Breastfeeding Initiation with the incidence of breast milk engorgement in postpartum mothers, and Early Breastfeeding Initiation becomes the factor with the strongest correlation. Optimizing Early Breastfeeding Initiation implementation and lactation education is recommended as an effort to prevent breast milk engorgement.

Keywords: *breast engorgement; early initiation of breastfeeding; maternal age; parity; postpartum women*

INTRODUCTION

Globally, the rate of exclusive breastfeeding is still far from expectations. WHO reports that only about 44-48% of babies under six months of age receive exclusive breastfeeding, even though this practice has been proven to reduce the risk of infections such as diarrhea and pneumonia and reduce infant mortality. Exclusive breastfeeding also plays an important role in supporting children's growth, immune system, and cognitive development in early life. This condition shows that increasing exclusive breastfeeding coverage is an urgent need to strengthen maternal and infant health and ensure the quality of future generations (World Health Organization, 2024).

The importance of exclusive breastfeeding lies not only in its content as the main source of nutrition, but also in its contribution in supporting the overall growth and development of the baby. Exclusive breast milk contains a variety of bioactive substances that help protect babies from infections, strengthen the immune system, and support organ maturation. In addition to the physical benefits, the breastfeeding process also strengthens the emotional bond between mother and child and reduces the risk of pain and death of the baby. Although the benefits are enormous, the coverage of exclusive breastfeeding in Indonesia is still uneven, one of which is influenced by the lack of knowledge and positive attitudes of

mothers towards the importance of breastfeeding (Purba et al., 2024).

The lack of exclusive breastfeeding practices not only has an impact on short-term health, but also has long-term consequences, one of which is the risk of stunting; therefore, the lack of exclusive breastfeeding from the beginning of a baby's life can be one of the main risk factors that inhibit optimal growth. When nutritional intake is not adequately met during this crucial period, height growth will be disrupted, increasing the likelihood of stunting. Breast milk contains essential nutrients, including calcium that is easily absorbed by the body and plays a major role in bone formation and linear growth of children. Research shows that toddlers who do not receive exclusive breastfeeding have a 3.7 times higher risk of experiencing stunting compared to children who receive exclusive breastfeeding (Chyntaka & Putri, 2020).

In line with the urgency of stunting prevention through breastfeeding, the achievement of exclusive national breastfeeding is still unstable. SKI 2023 reported that the proportion of 0–5-month infants receiving exclusive breastfeeding was 68.6%, while SDKI 2023 recorded 68.5%, up from 66.3% (2022), but still below the target of 80% (2025). The disparity between regions is also wide, with the highest achievement in NTB at 87.9%, followed by Jambi at 81.3% and NTT at 79.7%, while Gorontalo is the lowest at 47.4%, followed by Southwest Papua at 47.7% and North Sulawesi at 52%. This condition emphasizes the need for more targeted interventions and equitable distribution of breastfeeding support across regions to strengthen the protection of child growth and development (Nurmalisa Ananda et al., 2025).

In addition to the above regions, in the Special Region of Yogyakarta (DIY), exclusive breastfeeding coverage experienced a significant decrease in 2018, from 73.04% (2017) to 55.70% (2018), a decrease of 17.34%. (Adawiyah et al.,

2021). However, in the following years, this achievement increased again and even reached 85.71% by 2025. This achievement has exceeded the national target and indicates that various breastfeeding promotion programs at the provincial level are running quite effectively. However, the high achievement at the regional level does not automatically eliminate lactation problems experienced by individuals, including the occurrence of breastfeeding dams in postpartum mothers who are still found in health care facilities (Bappeda Special Region of Yogyakarta, 2025).

Although exclusive breastfeeding coverage in DIY shows an improving trend and has exceeded national targets, various lactation problems such as breast milk dams are still found at the individual level. This condition shows that high regional achievement does not fully reflect the success of breastfeeding practices in the field. In line with these findings, the Indonesian Ministry of Health explained that the 6-month exclusive breastfeeding program is one of the government's strategic steps to improve the health status of babies while reducing infant mortality.

On its official website, the Ministry of Health emphasized that the success of exclusive breastfeeding does not only depend on the mother, but requires strong support from husbands and families. Therefore, the government does not stop at issuing regulations, but also provides practical education ranging from proper breastfeeding techniques to milk storage methods (Ministry of Health of the Republic of Indonesia, 2023).

Factors from the mother herself greatly influence the failure of exclusive breastfeeding. One of the most common is breast milk dams, a condition that usually appears at the beginning of the breastfeeding period and causes pain and discomfort in the breast (Andini et al., 2024). This situation can hinder the smooth production of breast milk, thus increasing the risk of failure of exclusive breastfeeding.

Several interrelated factors, including breastfeeding techniques and frequency, maternal experience, nipple shape, psychological condition, and family support, influence breast milk production. (Baiq Meri Anjalina, Uswatun Kasanah, 2024) explained that improper breastfeeding techniques and frequencies can inhibit optimal breast emptying, increasing the risk of dams. In addition, psychological stress has been shown to decrease the let-down reflex and milk production, which can ultimately trigger the occurrence of dams (Ginting et al., 2022). The lack of emotional support from the family also exacerbates maternal stress and interferes with the lactation process (Hayati & -, 2021). Meanwhile, the mother's level of knowledge about correct breastfeeding techniques also plays a role in preventing the occurrence of breastfeeding dams (Syifa et al., 2025).

In addition to these factors, several studies in Indonesia identified that maternal age, parity and IMD are factors that are significantly related to the incidence of breast milk dams. For example, the age factor of postpartum mothers was identified as one of the factors that affect the incidence of breast milk dams. The results of the analysis showed that the majority of cases of breast milk dams occurred in the age group of 20-35 years. The age of the mother is closely related to physical and psychological readiness in the breastfeeding process (Oktaviani et al., 2023).

In addition to age, parity also plays an important role in the occurrence of breast milk dams. Parity reflects the number of times a mother has given birth, which can physiologically affect the process of milk production. Mothers with a history of more than one birth (multigravida) usually have faster and higher milk production at the beginning of breastfeeding (Reviana et al., 2024). This is followed by research by Solihah et al. (2023), which shows that Early Breastfeeding Initiation (IMD) is closely related to the incidence of breast milk dams in postpartum mothers. Mothers who do not have IMD tend to experience

breast milk dams more often than mothers who do IMD. (Solihah, Rita Ayu Yolandia, 2023).

The impact of the breastfeeding dam, in addition to unsuccessful exclusive breastfeeding, includes the emergence of a series of physical and psychological complaints that worsen the breastfeeding process. Mothers often experience pain and swelling in the breasts that interfere with comfort and inhibit the baby's attachment process while breastfeeding. This barrier can further block the flow of breast milk and increase the risk of complications, such as mastitis, if not treated immediately. This situation can also trigger stress, make mothers reluctant to breastfeed, and reduce the frequency of breastfeeding, thus strengthening the cycle of breast milk dam problems (Nazira & Riyanti, 2023).

Previous research has shown that maternal age, parity, and the implementation of Early Breastfeeding Initiation (IMD) are maternal factors that play a role in the emergence of breast milk dams (Oktaviani et al., 2023; Reviana et al., 2024; Solihah, Rita Ayu Yolandia, 2023). However, there is no published data available describing the relationship between the three factors based on direct assessments in health care facilities. This condition emphasizes the need for research using primary data through interviews and observations on breastfeeding mothers who come to the Babyiku Lactation Clinic. With this approach, the influence of age, parity, and IMD on the incidence of breastfeeding dams can be assessed more accurately and objectively, as well as being the basis for the development of interventions such as breastfeeding education, lactation assistance, and strengthening IMD practices in the clinic.

Previous studies have shown that maternal age, parity, and IMD implementation are related to the incidence of breast milk dams in various health care facilities in Indonesia. However, based on a literature search on Google Scholar, PubMed, and Garuda, no studies have been found that specifically analyze these three variables simultaneously in postpartum mothers at the

Babyiku Sleman Lactation Clinic, Yogyakarta. Differences in the characteristics of lactation services and the characteristics of breastfeeding mothers allow for variations in research results. Therefore, this study was conducted to analyze the relationship between maternal age, parity, and IMD implementation with the incidence of breast milk dams in postpartum mothers at the Babyiku Sleman Lactation Clinic.

METHOD

Study Design

This study is a quantitative research with an analytical descriptive design using a cross-sectional approach. The research was carried out at the Babyiku Sleman Lactation Clinic, Yogyakarta.

Setting & Participants

The study population was all postpartum mothers who visited the Sleman Baby Lactation Clinic during the study period. The research sample amounted to 33 postpartum mothers who met the inclusion criteria during the study period. Sampling was carried out using accidental sampling techniques, namely respondents who came to the research site and met the inclusion criteria during the research period.

This technique was chosen because it adjusted to the availability of respondents during the data collection period, but it had the potential to cause selection bias, making it one of the limitations of the study. Inclusion criteria include postpartum mothers who are willing to be respondents, able to communicate well, and present during the research period. Meanwhile, the exclusion criteria are postpartum mothers who do not complete the questionnaire-filling process or have incomplete data.

Variables & Measuremen

This study involved three independent variables, namely maternal age, parity, and the implementation of Early Breastfeeding Initiation

(IMD), as well as one dependent variable, namely the incidence of breastfeeding dams.

Data Collection

Primary data were obtained through interviews using factual questionnaires containing respondent characteristics, maternal age, parity, implementation of Early Breastfeeding Initiation (IMD), and the incidence of breastfeeding dams. Data collection was carried out directly by the researcher after obtaining consent from the respondents.

Data were collected using factual questionnaires compiled by researchers based on respondent characteristics and research variables. The age of the mother was measured based on the chronological age of the respondents in units of years and then grouped according to the study category. Parity is measured based on the number of births the mother has experienced and is classified into predetermined categories.

The implementation of Early Breastfeeding Initiation (IMD) is measured based on the implementation of skin-to-skin contact and allowing babies to breastfeed within the first hour after birth, then categorized into "done" and "not done". The incidence of breast milk dams was identified based on the results of interviews using questionnaires about the signs and symptoms of breast milk dams, then classified into "yes" or "no". All data were obtained through direct interviews conducted by researchers with postpartum mothers after respondents gave consent to participate in the study.

Data Analysis

Data analysis was carried out univariate to describe the frequency distribution of each variable and bivariously using the Spearman Rank correlation test with a significance level of $\alpha = 0.05$ to determine the relationship between maternal age, parity, and IMD implementation with the incidence of breast milk dams.

RESULTS

Table 1. Frequency Distribution of Characteristics of Postpartum Responders at Babyiku Sleman Clinic Yogyakarta (n=33)

Variabel	Frequency (f)	Percentage (%)
Age		
Risk	15	45.4
No Risk	18	54.5
Paritas		
Primipara	15	45.4
Multipara	18	54.5
Largemultifor	0	0.0
IMD		
Did not work	15	45.4
Successful	18	54.5
Experienced breast milk		
Smooth	14	42.4
Not smooth	19	57.6

Based on Table 1, most of the respondents were in the healthy reproductive age group (20–35

years), had multipara parity, had implemented IMD, and did not experience breast milk.

Table 2. The Relationship between Maternal Age, Parity, and IMD Implementation with the Incidence of Breastfeeding Dams (n=33)

Variabel	Correlation Coefficient (r)	p-value	Remarks
Mother's age	-0.363	0.038	Signifikan
Paritas	0.448	0.009	Signifikan
IMD Implementation	0.694	<0.001	Signifikan

Uji korelasi Spearman Rank; $\alpha = 0,05$

Based on the results of the Spearman Rank correlation test in Table 2, there was a significant relationship between maternal age and the incidence of breast milk dams ($r = -0.363$; $p = 0.038$), parity with the incidence of breast milk dams ($r = 0.448$; $p = 0.009$), and the implementation of IMD with the incidence of breast milk dams ($r = 0.694$; $p < 0.001$). The implementation of IMD showed the highest correlation coefficient value compared to maternal age and parity, so it had the strongest relationship based on the correlation coefficient value.

DISCUSSION

The mother's age is one of the maternal characteristics related to the physiological

adaptation process during the postpartum period, including the success of the lactation process. In this study, it was found that there was a significant relationship between maternal age and the incidence of breast milk dams, although the correlation strength obtained was relatively low. The findings show that mothers of healthy reproductive age (20–35 years) tend to have a lower risk of breast milk dams than mothers who are less than 20 years old or over 35 years old. These results show that age plays a role as one of the factors related to the mother's ability to adapt to physiological changes after childbirth.

Physiologically, the success of the lactation process is influenced by the balance of the hormones prolactin and oxytocin, which regulate

the production of breast milk. If the milk release process does not take place optimally, breast milk can be retained in the alveoli and lymph tract, increasing pressure on the breast tissue and triggering the occurrence of breast milk dams. This condition is more likely to occur if the mother experiences obstacles in the breastfeeding process, including delayed breast emptying and less effective breastfeeding techniques. Although age is not a direct cause of breast milk dams, the physiological conditions and adaptability of mothers in certain age groups can affect the smooth lactation process (Amita et al., 2023).

In addition to physiological aspects, age is also related to the psychological readiness and ability of mothers to carry out their roles as breastfeeding mothers. Mothers of healthy reproductive age generally have a better level of emotional maturity, so they are better able to receive health education, apply correct breastfeeding techniques, and overcome various lactation problems in the early postpartum period. On the other hand, mothers in at-risk age groups often still experience limitations in the breastfeeding adaptation process so that they are more susceptible to lactation disorders, including breastfeeding dams (Yustina Oktarida, 2023).

The results of this study are in line with the research of Hassan et al. (2020), which reported that the age of the mother is significantly related to the degree of breast milk dam. The study showed that younger mothers tended to experience breast milk dams with a higher severity than mothers of more mature reproductive age. Similar findings were also reported by Oktaviani et al. (2023), who stated that age is one of the factors contributing to the incidence of breast milk dams, along with the level of education and breast care practices. The similarity of these results shows that age has an important role in supporting the success of the lactation process through the physiological and psychological readiness of the mother during the postpartum period.

However, this study also found that breast milk dams still occur in some mothers who are in the healthy reproductive age group. This shows that age is not the only factor that affects the occurrence of breast milk dams. Other factors, such as education level, occupation, nutritional status, family support, breastfeeding techniques, and frequency of breastfeeding, also have the potential to affect the success of the lactation process. Therefore, the results of this study need to be interpreted with consideration of the possibility of confounding variables that have not been analyzed in this study.

Recommendations For Future Research

Future studies should include larger and more diverse populations using probability sampling techniques to improve the generalizability of the findings. Longitudinal or prospective cohort studies are recommended to clarify better the temporal relationship between maternal characteristics, Early Breastfeeding Initiation (EBI), and the development of breast engorgement. Future research should also investigate additional factors that may influence breast engorgement, including breastfeeding technique, frequency of breastfeeding, maternal knowledge and self-efficacy, infant latch quality, mode of delivery, psychological factors, and family support. Furthermore, intervention studies evaluating the effectiveness of structured lactation education and EBI promotion programs in reducing the incidence of breast engorgement would provide stronger evidence for clinical practice and maternal health services.

CONCLUSION

Based on the results of the study, it can be concluded that there is a significant relationship between maternal age, parity, and the implementation of Early Breastfeeding Initiation (IMD) with the incidence of breast engorgement in postpartum mothers at the Babyiku Sleman

Clinic, Yogyakarta. Among the three variables studied, the implementation of IMD showed the highest correlation coefficient with respect to maternal age and parity, so it had the strongest relationship based on the correlation coefficient

value. These findings show the importance of optimizing the implementation of IMD as part of efforts to prevent breastfeeding dams in postpartum mothers.

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Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have influenced the work reported in this manuscript.

Authors' Contributions

M.J.; L.R.: Conceptualization, methodology, investigation, formal analysis, writing original draft. **M.J.:** Supervision, validation, writing review and editing. **F.R.:** Data curation, investigation, visualization, writing review and editing. All authors read and approved the final manuscript.

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Declaration of Generative AI Use

The authors affirm that no generative artificial intelligence (AI) technologies were used in the conception and design of the study, data collection, data analysis, interpretation of the results, or writing of this manuscript.

Referensi

- Amita, M. V., Yunanto, E., & Annisa, N. (2023). The Relationship between Postpartum Mothers' Knowledge about Breast Milk Dam and Interest of Breastfeeding Mothers in the Working Area of Eromoko II Health Center. *International Journal of Health Science and Technology*, 5(2), 88–93. <https://doi.org/10.31101/ijhst.v5i2.3209>.
- Clarita, M. C., Ayupir, A., & Adesta, R. O. (2025). Penerapan intervensi perawatan payudara terhadap kelancaran ASI pada ibu post partum di RSUD dr. T.C. Hillers Maumere. *Jurnal Kesehatan Tambusai*, 6(1), 1918–1926.
- Efni, N., Yuniwati, C., & Sastrinawati. (2025). Faktor-Faktor Yang Berhubungan Dengan Kejadian Darussalam Kabupaten Aceh Besar Factors Related To the Occurrence of Breast Milk Glut in Post-Post Mothers in the Darussalam Community Health Center Area , Aceh Besar District. *Jurnal Intelek Insan Cendikia*, 2(8), 16650–16654. <https://jicnusantara.com/index.php/jiic/article/download/5043/5161/27997>
- Hassan, H. E., El-Kholy, G. A., Ateya, A. A., & Hassan, A. A. (2020). Breastfeeding knowledge and practices among primiparous women with caesarean section: Impact on breast engorgement in Upper Egypt. *Communication, Society and Media*, 3(2), 34–64. <https://doi.org/10.22158/csm.v3n2p34>.
- Oktaviani, I., Widiyas, S., & Anggranis, H. (2022). Analisis ibu postpartum dengan bendungan ASI: Literature view. *Prosiding Simposium Nasional Multidisiplin Universitas Muhammadiyah Tangerang*, 4, 310–321. <http://jurnal.umt.ac.id/index.php/senamu/index>
- Reviana, R., Rizki, A. M. F., Ghita, D., & Sumarmi. (2024). Hubungan paritas terhadap kejadian bendungan ASI pada ibu nifas di PMB Hj. Siti Rahayu Kota Tangerang. *Midwife Care Journal (MICARE)*, 1(2), 55–59. <https://ejournal.univbhaktiasih.ac.id/index.php/micare>
- Riordan, J., & Wambach, K. (2024). *Breastfeeding and human lactation* (7th ed.). Jones & Bartlett Learning. https://books.google.com/books/about/Breastfeeding_and_Human_Lactation.html?id=KNkjEQAAQBAJ
- Solihah, Yolandia, R. A., & Ciptiasrini, U. (2023). Hubungan IMD, frekuensi menyusui dan perawatan payudara terhadap kejadian bendungan ASI pada ibu nifas di wilayah kerja Puskesmas Cikalong Kabupaten Tasikmalaya tahun 2023. *SENTRI: Jurnal Riset Ilmiah*, 2(10), 4401–4413. <https://ejournal.nusantaraglobal.ac.id/index.php/sentri>
- Sumaryanti, N. M. A., Lindayani, I. K., & Rahyani, N. K. Y. (2021). Hubungan waktu pertama menyusui pada ibu post seksio sesaria dengan kejadian bendungan ASI. *Jurnal Ilmiah Kebidanan*, 10(1), 94–100. <https://doi.org/10.33992/jik.v10i1.1535>
- Syifa, R. R., Susanti, I., & Oktavia, E. (2025). Hubungan pengetahuan ibu tentang teknik menyusui dengan bendungan ASI di PMB Pratiwi Agustian Kulon Progo. *NEM*. <https://books.google.co.id/books?id=8zcVEQAAQBAJ>
- World Health Organization. (2022). WHO recommendations on maternal and newborn care for a positive postnatal experience. World Health Organization.