Maternal Factors Associated with Exclusive Breastfeeding Practices in Situbondo, Indonesia: A Cross-Sectional Study

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ABSTRACT

Exclusive breastfeeding in the first six months significantly prevents morbidity and mortality. However, the coverage of exclusively breastfed 6-month-old infants in several sub-districts of Situbondo remains low. Understanding the determinants of breastfeeding practices is necessary to ensure successful breastfeeding promotion strategies. Therefore, this study aimed to assess the prevalence of exclusive breastfeeding and determine the maternal factors that relate to exclusive breastfeeding practices. This cross-sectional study involved 74 mothers with infants aged 6-9 months, selected using a systematic random sampling technique. Data was collected from May to August 2023 using validated questionnaires in Mangaran Sub-district, Situbondo, Indonesia. Chi-square or Fisher's Exact test was employed to identify the factors associated with exclusive breastfeeding. The exclusive breastfeeding proportion was 18.9%. The maternal factors significantly associated with exclusive breastfeeding included parity (OR= 4.79: 95% CI= 1.21 to 18.96, p-value= 0.018). breastfeeding self-efficacy (OR= 8.66; 95% CI= 1.06 to 70.66), and maternal autonomy (OR= 6.41; 95% CI= 1.32 to 31.14; p-value= 0.011). A large proportion of infants were not exclusively breastfed during the first six months. The results highlighted the significance of maternal factors in exclusive breastfeeding practices, particularly the aspect of breastfeeding empowerment. Women with a high breastfeeding self-efficacy and autonomy are more likely to practice exclusive breastfeeding, which by then suggests the need for comprehensive long-term programs. Interventions should be designed to strengthen empowerment in breastfeeding to improve breastfeeding outcomes.

Keywords: autonomy; exclusive breastfeeding; maternal factors; self-efficacy; women's breastfeeding empowerment

INTRODUCTION

Exclusive breastfeeding practice is defined as feeding the child only breast milk, without any additional food, water, or other liquid (except medicine and vitamins if needed) until six months of age. The World Health Organization (WHO) recommends that infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development, and health (World Health Organization, 2014; Fikawati et al., 2015). Breast milk contains nutrients and protective substances that can ensure the nutritional status of infants during the first six months of life. Breastfeeding protects babies from various diseases, such as pneumonia, gastrointestinal infections, and other potentially life-threatening ailments, and suppresses and reduces stunting, wasting, malnutrition, and infant mortality rates (Kementerian Kesehatan Republik Indonesia, 2014; Badan Pusat Statistik, 2024). Breast milk also contains white blood cells, anti-inflammatories, antibodies, and other biologically active substances that can maintain the baby's immune system. The promotion of exclusive breastfeeding is the single most cost-effective intervention for reducing infant mortality in developing countries (World Health Organization, 2014).

Evidence shows that forty-five percent of under-five mortality is attributable to malnutrition. Those are associated with inappropriate breastfeeding practices during infancy. Many infants and children do not receive optimal nutrition. For example, only about 44% of infants aged 0–6 months worldwide were exclusively breastfed throughout 2015-2020 (World Health Organization, 2023). As exclusive breastfeeding is prominent, increasing the exclusive breastfeeding rate to 50% globally is one of the six nutrition-related global targets to achieve by 2025 (World Health Organization, 2014; Badan Pusat Statistik, 2024). At the national level, based on Indonesia's health profile in 2022, the coverage of exclusively breastfed 6-

month-old infants in Indonesia in 2022 is 61.5%. This coverage still needs to be increased due to the importance of exclusive breastfeeding for infants (Kementerian Kesehatan Republik Indonesia, 2023). In Situbondo District, exclusive breastfeeding coverage in 2021 was 74.2% (Dinas Kesehatan Kabupaten Situbondo, 2022). Most Public Health Centers (PHCs) have met the exclusive breastfeeding coverage target of 50% set out in the Performance Assessment Target in 2021. However, Mangaran PHC, which oversees six villages, did not reach the target with 49.9% coverage (Dinas Kesehatan Kabupaten Situbondo, 2022).

Indonesian Ministry of Health recommends that every mother exclusively breastfeed her baby to six months of age, axcept in cases of medical indications, separation from the baby, or maternal death. This recommendation is outlined in Articles 6 and 7 of the Government Regulation of the Republic of Indonesia Number 33 Year 2012 (Kementerian Kesehatan Republik Indonesia, 2012). Since then, interventions emphasizing the key messages of exclusive breastfeeding have been implemented at the health institution and community levels. However, these efforts need to demonstrate evidence of optimal outcomes. Previous studies have assessed the magnitude and determinant factors of exclusive breastfeeding. Intensive socio-demographic factors, such as older maternal age, higher education levels, and being a non-employed mother have been reported as determinants of exclusive breastfeeding (Simbolon, 2017; Husaini & Anasril, 2020; Pakilaran et al., 2022). Additionally, parity, type of delivery, and health problems during the antenatal, delivery, early postpartum, and late postpartum period have been identified as contributing factors to exclusive breastfeeding practices (Fakhidah & Palupi, 2018; Roseprilla et al., 2022; Warsini et al., 2015; Sukma et al., 2017; Xanda, 2020). These factors can cause the mother to undergo treatment and be separated from her baby. Moreover, mothers with infectious diseases, such as HIV/AIDS, Hepatitis B, and Tuberculosis require exceptional management in breastfeeding (Kementerian Kesehatan Republik Indonesia, 2017).

Many studies depicted variations in the magnitude and factors related to exclusive breastfeeding across regions and societal contexts. This study introduces new variables, such as components of breastfeeding empowerment, including breastfeeding self-efficacy and maternal autonomy. The object of this study is to assess exclusive breastfeeding practices and their associated factors among mothers in Mangaran Sub-district, Situbondo, Indonesia.

METHOD

This research is a quantitative study with a cross-sectional approach. It involved 74 mothers with infants aged 6-9 months, registered in Mangaran Public Health Center, Situbondo, Indonesia, in May 2023. The subjects were selected using a systematic random sampling technique. The exclusion criteria included mothers who were widowed, had mental disorders, could not speak, had hearing impairments, could not read or write, and were not willing to be interviewed. The study was conducted between May and August 2023. Data on breastfeeding practices, maternal socio-demographic characteristics, delivery and postpartum experience, and components of breastfeeding empowerment were collected through structured face-to-face interviews lasting 30 to 45 minutes.

The outcome of this study was exclusive breastfeeding. Various factors were assessed for their associations with the outcome, including the maternal socio-demographic characteristics (age and education), pregnancy and delivery indicators (parity, mode of delivery, health during delivery and postpartum), and components of breastfeeding empowerment (self-efficacy and autonomy). Breastfeeding self-efficacy was measured using the Breastfeeding Self-efficacy Scale-Short Form (BSES-SF). Each item was measured on a 5-point scale. The total score was dichotomized based on the median value. Maternal autonomy was assessed using a questionnaire developed based on the derived attributes for the concept of maternal autonomy in breastfeeding. This questionnaire, previously translated into Indonesian and validated, was used to calculate a total score that was then regrouped into two categories based on the median value.

Data were entered, coded, and analyzed using SPSS for Windows 25.0. Absolute frequencies and percentages were used to express all variables. Bivariate analyses were conducted to assess the crude associations between the selected factors and exclusive breastfeeding. Chi-square tests (Test of Independence) or Fisher's Exact test was performed, with p-values and odds ratio (OR) reported. All tests were two-sided, and p < 0.05 was considered statistically significant. The research has received approval from the Faculty of Dentistry Ethics Committee, Universitas Jember Number: 1973/UN25.8/KEPK/DL/2023.

RESULTS

A total of 74 mothers participated in this study. A small percentage of mothers exclusively breastfeed their infants (18.9%). Most mothers had elementary or secondary education (89.2%), with slightly of them (10.8%) having attended

college or university. Half of the mothers were primiparous (50.0%), and most had a vaginal delivery (66.3%). Over half of mothers reported no health problems during delivery and postpartum (55.4%). Most of them had high breastfeeding self-efficacy (66.2%) and autonomy (55.4%). (Table 1).

Table 1. Maternal Factors Influencing Exclusive Breastfeeding Practice

Variable	Total	Exclusive breastfeeding		n value	OD (050/ C!)
		Yes	No	p-value	OR (95% CI)
Maternal socio-demographic cha	aracteristics				
Age					
20-35	62 (83.8%)	12 (19.4%)	50 (80.6%)	1.000	1.20 (0.23-6.20)
<20 or >35	12 (16.2%)	2 (16.7%)	10 (83.3%)		Ref.
Education					
Higher education	8 (10.8%)	1 (12.5%)	7 (87.5%)	1.000	0.58 (0.06-5.15)
Secondary or less	66 (89.2%)	13 (19.7%)	53 (80.3%)		Ref.
Delivery and postpartum indicate	or				
Parity					
Multiparous	37 (50.0%)	11 (29.7%)	26 (70.3%)	0.018*	4.79 (1.21-18.96)
Primiparous	37 (50.0%)	3 (8.1%)	34 (91.9%)		Ref.
Mode of delivery					
Vaginal	49 (66.2%)	11 (22.4%)	38 (77.6%)	0.358	2.12 (0.53-8.44)
C-section	25 (33.8%)	3 (12.0%)	22 (88.0%)		Ref.
Had a health problem					
No	41 (55.4%)	11 (26.8%)	30 (73.2%)	0.053	3.66 (0.93-14.47)
Yes	33 (44.6%)	3 (9.1%)	30 (90.9%)		Ref.
Components of breastfeeding er	mpowerment				
Breastfeeding self-efficacy					
High	49 (66.2%)	13 (26.5%)	36 (73.5%)	0.026*	8.66 (1.06-70.66)
Low	25 (33.8%)	1 (4.0%)	24 (96.0%)		Ref.
Maternal autonomy					
High	41 (55.4%)	12 (29.2%)	29 (70.8%)	0.011*	6.41 (1.32-31.14)
Low	33 (44.6%)	2 (6.1%)	31 (93.9%)		Ref.

Note: OR: Odds Ratio; CI: Confidence Interval; Ref.: Reference category; *p<0.050

Various factors were tested for their association with exclusive breastfeeding (Table 1), which were categorized into three groups: socio-demographic characteristics, delivery and postpartum indicators, and components of breastfeeding empowerment. There was no significant association between maternal socio-demographic characteristics and exclusive breastfeeding practice. Health problems in the delivery and postpartum period were marginally associated with exclusive breastfeeding (p-value= 0.053). Factors significantly associated with exclusive breastfeeding included parity, breastfeeding self-efficacy, and maternal autonomy. Multiparous mothers were more likely to breastfeed exclusively than primiparous mothers (OR= 4.79; 95% CI= 1.21 to 18.96, p-value= 0.018). Women who had high breastfeeding self-efficacy and autonomy were more likely to provide exclusive breastfeeding (OR= 8.66; 95% CI= 1.06 to 70.66; p-value= 0.026 and OR= 6.41; 95% CI= 1.32 to 31.14; p-value= 0.011 respectively).

DISCUSSION

This study confirms the low prevalence of exclusive breastfeeding in a representative sample of women in Mangaran, Situbondo. Majority of the mothers in this study do not exclusively breastfeed. This finding corresponds to that of the Situbondo District Health Office. Barriers to exclusive breastfeeding in Situbondo include the need for more participation of husbands and families in supporting mothers to breastfeed their babies, the lack of trained breastfeeding counseling personnel, and the incessant promotion and advertising of formula milk so that people are easily influenced and switch. Another obstacle is the implementation of Early initiation of breastfeeding (EIBF), which does not meet standards in several health facilities, as well as the existence of myths that do not support exclusive breastfeeding, which is believed by the community (Dinas Kesehatan Kabupaten Situbondo, 2022).

In this study, multiparous mothers were nearly five times more likely to breastfeed exclusively, a finding consistent with other studies (Andriani & Olivia, 2019; Rahmawati & Saidah, 2021). Multiparous mothers are more experienced than

primiparous mothers due to their previous experience in caring for babies (Fakhidah & Palupi, 2018). Most multiparous or grand multiparous mothers exclusively breastfeed, which is related to their breastfeeding experience. Mothers with more than one parity tend to be more confident and capable of overcoming obstacles during breastfeeding (Polwandari & Wulandari, 2021). In contrast, first-time mothers often lack experience, so they often experience problems, such as sore nipples. In this situation, mothers often stop breastfeeding due to the pain they suffer (Sukma et al., 2017). In addition, primiparous mothers are more likely to experience stress because the mother has no previous lactation experience. This stress can increase levels of the hormone cortisol in the blood, which in turn decreases oxytocin levels, resulting in delayed lactation onset. Meanwhile, multiparous mothers with previous lactation experience are better able to manage anxiety about breastfeeding their babies (Sutama et al., 2020).

One of the strongest associations found in this study was between breastfeeding self-efficacy and exclusive breastfeeding practice. Mothers with a high level of self-efficacy in breastfeeding were more likely to provide exclusive breastfeeding compared to those with a low self-efficacy level. These findings are consistent with other research (Rahmadani & Sutrisna, 2022; Vinayastri et al., 2021). A mother's level of breastfeeding self-efficacy influences her willingness or decision to breastfeed, the effort she will invest in breastfeeding, and her mindset and response to various problems and obstacles during breastfeeding (Dennis, 2010). Several studies have shown that mothers with a strong desire and belief to provide exclusive breastfeeding have a more significant potential to provide exclusive breastfeeding (Amini et al., 2019; Muchtar et al., 2021). However, this study also found that some mothers with high levels of breastfeeding self-efficacy do not provide exclusive breastfeeding. This condition is assumed to be due to other factors, such as the belief in giving food and drinks other than breast milk to babies younger than six months, including honey, coconut water, porridge, and mashed bananas. Additionally, maternal autonomy also influences the results of breastfeeding practices.

Maternal autonomy also had a significant impact on exclusive breastfeeding. Women with high autonomy were more than four times as likely to breastfeed exclusively. Women's autonomy is complex and influenced by the nature of a woman and socio-cultural norms in society (Littik, 2017). Maternal autonomy in the context of breastfeeding refers to the mother's ability to make decisions using control, mother's agency, independence, and ethical reasoning to breastfeed and manage the breastfeeding process independently (Hirani & Olson, 2016). The results align with research by Shroff et al. (2011), that maternal autonomy influences maternal behavior in caring for children, especially regarding decision-making regarding family money and household interests. Other research also states that mothers with high autonomy in deciding large expenditures and controlling financial resources in the household have greater odds of providing good baby-feeding practices than those with low autonomy (Synthesa & Hartono, 2023). Mothers with a low level of autonomy during the birthing and breastfeeding process are at a higher risk of experiencing depression during the breastfeeding period (Tsuno et al., 2022). Maternal health directly affects breast milk production and breastfeeding practices, with mothers experiencing postpartum depression being less likely to breastfeed than those who do not (Setianingsih & Yuliwati, 2023). In many societies, women perform almost all reproductive roles and much productive work (Novikarumsari et al., 2023). They also often have no control over their bodies. At the same time, ownership and control of resources and decisions in most Indonesian societies, in general, is still considered the domain of men. The husband, parents, and other relatives influence the decision to breastfeed. Moreover, most of the mothers in the area were homemakers and live in rural areas.

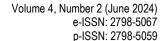
Some variables were not significantly associated with exclusive breastfeeding practices, it might be due to the sample size, which might need to be more adequate to justify the association between the independent and dependent variables. Therefore, any interpretation of this finding should consider the degree of precision. In addition, this study used a cross-sectional study design, which allows difficult establishment of associations, which are the limitations of this study.

CONCLUSION

The study revealed that the prevalence of exclusive breastfeeding is deficient. Multiparous mothers, breastfeeding self-efficacy, and maternal autonomy are more likely to breastfeed their babies exclusively. These factors must be considered when designing interventions and programs to promote breastfeeding. It is recommended that comprehensive long-term programs be designed and implemented to strengthen empowerment in breastfeeding and improve breastfeeding outcomes. Meeting strategic gender needs helps women to achieve greater equality, such as mothers' ability to make decisions using control, which finally influences mothers in providing exclusive breastfeeding.

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