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# Factors Influencing Exclusive Breastfeeding: The Role of Knowledge, Attitude, and Family Support in Plaosan, Magetan

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**ABSTRACT** Exclusive breastfeeding (EBF) plays a critical role in enhancing infant health and reducing child morbidity and mortality. Despite national and global efforts to promote EBF, its implementation remains suboptimal in many regions, including Plaosan, Magetan. This study aimed to analyze the influence of maternal knowledge, attitude, and family support on the practice of exclusive breastfeeding among mothers with infants aged 6–12 months. Employing a quantitative approach with a cross-sectional design, the study involved 40 respondents selected through total sampling. Data were collected using a structured questionnaire assessing knowledge, attitude, and family support, and analyzed using the chi-square statistical test with a significance level of $p < 0.05$. The results indicated that 52.5% of respondents practiced exclusive breastfeeding. Statistical analysis revealed a significant association between maternal knowledge and EBF practice ($p = 0.015$), attitude and EBF ($p = 0.019$), as well as family support and EBF ($p = 0.014$). These findings suggest that mothers who possess adequate knowledge, maintain a positive attitude, and receive strong support from their families are more likely to exclusively breastfeed their infants during the first six months of life.In conclusion, the study underscores the importance of strengthening educational initiatives, fostering supportive attitudes, and engaging families in breastfeeding promotion strategies. Healthcare providers, particularly midwives and community health workers, should prioritize targeted counseling and empowerment programs to improve breastfeeding outcomes. Future research with larger samples and longitudinal designs is recommended to further explore causal relationships and the effectiveness of specific interventions aimed at improving exclusive breastfeeding rates.

**INDEX TERMS** Exclusive breastfeeding, maternal knowledge, attitude, family support, infant health

## I. INTRODUCTION

Exclusive breastfeeding (EBF), defined as feeding infants solely with breast milk for the first six months of life without the addition of formula, water, or solid food, is a vital public health intervention known to significantly reduce infant morbidity and mortality [1], [2]. The World Health Organization (WHO) and UNICEF emphasize that EBF provides essential nutrients, strengthens immunity, and fosters optimal growth and development [3]. However, despite the well-documented benefits, the global rate of EBF remains suboptimal, particularly in developing countries [4], [5]. In Indonesia, the 2022 Indonesia Health Profile reported that only 55.4% of infants under six months received exclusive breastfeeding, falling short of the national target of 70% [6]. In regions such as Plaosan, Magetan, multiple barriers hinder the successful implementation of EBF, including inadequate maternal knowledge, negative attitudes, and lack of family support [7]–[9]. Numerous studies have highlighted the influence of maternal awareness, beliefs, and social support systems on breastfeeding practices [10], [11]. However, interventions often focus solely on maternal education without addressing attitudinal and familial aspects, which may limit their effectiveness [12], [13].

To date, various state-of-the-art strategies have been employed to promote EBF, including hospital-based lactation counseling, mobile health (mHealth) applications, and community-based peer support models [14]–[16]. These methods have shown varying degrees of success depending on contextual factors such as cultural norms, healthcare accessibility, and caregiver involvement [17], [18]. Nonetheless, a comprehensive approach that simultaneously addresses knowledge, attitude, and family dynamics is rarely implemented or rigorously evaluated in rural Indonesian contexts [19]. This gap highlights the need for localized research to understand the complex interplay of maternal knowledge, attitudes, and family support in influencing EBF behavior. While some studies have individually examined these variables, few have investigated their combined impact on EBF outcomes, especially in underserved areas like Plaosan [20], [21]. Moreover, recent evidence suggests that improving EBF practices requires not only individual behavior change but also systemic engagement of families and communities [22]–[24].

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Therefore, this study aims to analyze the relationship between maternal knowledge, attitude, and family support with exclusive breastfeeding practices among mothers with infants aged 6–12 months in the working area of UPTD Puskesmas Plaosan. The goal is to generate contextually relevant insights that can inform more holistic and culturally sensitive breastfeeding promotion strategies.

The contributions of this study are threefold:

1. It examines the integrated effect of knowledge, attitude, and family support on EBF practices, filling a significant research gap in rural Indonesian maternal health.
2. It provides empirical data to support the design of multi-dimensional interventions, incorporating educational, behavioral, and social support components.
3. It offers actionable recommendations for healthcare providers, particularly community midwives and public health planners, to improve breastfeeding promotion strategies in low-resource settings.

## II. METHODS

### A. STUDY DESIGN

This study employed a quantitative approach with a cross-sectional design to investigate the relationship between maternal knowledge, attitudes, and family support with exclusive breastfeeding (EBF) practices among mothers of infants aged 6–12 months. A cross-sectional design is suitable for assessing the prevalence of specific health behaviors and their associated factors at a single point in time [31].

### B. STUDY LOCATION AND TIME FRAME

The research was conducted within the working area of UPTD Puskesmas Plaosan, located in Magetan Regency, East Java, Indonesia. Data collection occurred over a one-month period in June 2024.

### C. POPULATION AND SAMPLE

The study population included all mothers who had infants aged 6–12 months registered at the UPTD Puskesmas Plaosan during the study period. The inclusion criteria were: (1) mothers with infants aged between 6 and 12 months, (2) willingness to participate and sign informed consent, and (3) ability to read and understand Indonesian. Exclusion criteria included mothers with medical conditions that contraindicated breastfeeding or infants with congenital anomalies affecting feeding.

A total sampling technique was used, involving all 40 eligible mothers who met the inclusion criteria. Total sampling ensures that every member of the target population has an equal opportunity to be included, thus reducing selection bias in small populations [32].

### D. INSTRUMENTS AND VARIABLES

Data were collected using a structured questionnaire developed based on previous validated tools and adapted to the local context [33], [34]. The questionnaire consisted of four sections: demographic information, knowledge of exclusive breastfeeding, maternal attitudes, and family support.

1. Knowledge was assessed using 10 multiple-choice questions covering the benefits, duration, and management of EBF. Scores were categorized as low (0–3), moderate (4–7), and high (8–10).
2. Attitude was measured using 10 Likert-scale statements ranging from “strongly disagree” (1) to “strongly agree” (5). Responses were classified as negative (score ≤30), moderate (31–40), or positive (>40).
3. Family support was evaluated using 10 items assessing emotional, informational, and instrumental support. Total scores were categorized as low, moderate, or high based on established thresholds [35].

The validity of the questionnaire was tested in a preliminary trial with 10 respondents not included in the final sample. Content validity was reviewed by three public health experts, while reliability testing yielded a Cronbach’s alpha of 0.81, indicating good internal consistency [36].

### E. DATA COLLECTION PROCEDURE

Respondents were approached during routine postnatal visits or posyandu sessions. After obtaining written informed consent, the researcher administered the questionnaire in a face-to-face interview format to ensure clarity and completeness. Each interview lasted approximately 20–30 minutes. Data were collected under the supervision of the local midwifery coordinator to maintain compliance with ethical and procedural standards.

### F. DATA ANALYSIS

Data were coded and entered into Microsoft Excel and subsequently analyzed using SPSS version 26. Descriptive statistics were used to present frequency distributions and percentages for demographic characteristics, knowledge, attitude, family support, and breastfeeding practices.

Bivariate analysis was conducted using the chi-square test to examine the association between independent variables (knowledge, attitude, family support) and the dependent variable (exclusive breastfeeding). The chi-square test is appropriate for assessing relationships between categorical variables and has been widely used in similar maternal and child health research [37], [38]. A p-value of <0.05 was considered statistically significant.

### G. ETHICAL CONSIDERATIONS

This study obtained ethical clearance from the Health Research Ethics Committee of the Health Polytechnic of the Ministry of Health Surabaya (Approval No. [insert number here]). All participants were informed of the study's objectives, procedures, and their rights to withdraw at any time without repercussions. Confidentiality and anonymity were maintained throughout the research process. Data were used solely for academic purposes and securely stored to prevent unauthorized access.

## III. RESULT

The research was conducted in the working area of Puskesmas Plaosan, which includes 2 urban villages and 6 rural villages, namely Kelurahan Plaosan, Kelurahan Sarangan, Desa Bulugunung, Desa Ngancar, Desa Dadi, Desa Plumpung, Desa Puntukdoro, and Desa Pacalan. Puskesmas Plaosan has 46 integrated health posts (posyandu) for toddlers spread across all villages/urban areas. Routine posyandu activities are

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conducted every month with the assistance of approximately 230 active posyandu cadres. The working area of Puskesmas Plaosan is characterized by hills and valleys sloping down from Mount Lawu.

### A. CHARACTERISTICS OF RESPONDENTS

**TABLE 1**
**Characteristics of Age, Education Level, Occupation, and Parity of Mothers with Infants Aged 0-6 Months in the Working Area of Puskesmas Plaosan Magetan in 2024.**

| Family Support | f | % |
|---|---|---|
| Not Support | 7 | 18,9 |
| Support | 30 | 81,1 |
| Total | 37 | 100,0 |

There are 37 mothers of infants aged 0-6 months, with the majority being aged 26-30 years, accounting for 12 (32.5%). The characteristics of the mothers' education level mostly include basic education (elementary and junior high school), totaling 19 (51.4%). The majority of mothers work in the private sector (entrepreneurs), accounting for 19 (51.4%). Most mothers have a multipara parity status, with 21 (56.8%), as shown in TABLE 1.

### B. CHARACTERISTICS OF KNOWLEDGE LEVELS

**TABLE 2**
**Frequency Distribution of Knowledge Levels of Mothers with Infants Aged 0-6 Months in the Working Area of Puskesmas Plaosan, Magetan,**

| Knowledge levels | f | (%) |
|---|---|---|
| Low | 4 | 10,8 |
| Enough | 15 | 40,5 |
| Good | 18 | 48,7 |
| Total | 37 | 100,0 |

Among 37 mothers with infants aged 0-6 months in the working area of Puskesmas Plaosan, the majority of mothers have a good level of knowledge, totaling 19 respondents, as shown in TABLE 2.

### C. FREQUENCY DISTRIBUTION OF ATITTUDE

**TABLE 3**
**Frequency Distribution of Atittude of Mothers with Infants Aged 0-6 Months in the Working Area of Puskesmas Plaosan, Magetan, in 2024.**

| Attitude | f | % |
|---|---|---|
| Negative | 5 | 13,5 |
| Positive | 32 | 86,5 |
| Total | 37 | 100,0 |

Among the 37 mothers of infants aged 0-6 months, the majority have a positive attitude, with 32 respondents (86.5%), while a minority have a negative attitude, with 5 respondents (13.5%), as shown in TABLE 3.

### D. FREQUENCY DISTRIBUTION OF ATITTUDE

Among the 37 mothers of infants aged 0-6 months, the majority receive family support, with 30 respondents (81.1%), while only a minority do not receive family support, with 7 respondents (18.9%), as shown in TABLE 4.

### E. FREQUENCY OF PROVIDE BREASTFEEDING

Among the 37 mothers of infants aged 0-6 months, the majority provide exclusive breastfeeding, with 29 respondents (78.4%), while only a minority do not provide exclusive breastfeeding, with 8 respondents (21.6%), as shown in TABLE 5.

**TABLE 4**
**Frequency Distribution of Family Support of Mothers with Infants Aged 0-6 Months in the Working Area of Puskesmas Plaosan, Magetan, in 2024 (51.4%), and a sufficient level of education, totaling 18 respondents (48.6%),**

| Characteristics | f | (%) |
|---|---|---|
| Age (Year) | | |
| 20-25 | 10 | 27,0 |
| 26-30 | 12 | 32,5 |
| 31-35 | 11 | 29,7 |
| 36-40 | 4 | 10,8 |
| Total | 37 | 100,0 |
| Education levels | | |
| Basic (SD-SMP) | 19 | 51,4 |
| Intermediat (SMA/SMK) | 15 | 40,5 |
| High Education (Diploma-Sarjana) | 3 | 8,1 |
| Total | 37 | 100,0 |
| Occupation | | |
| PNS/TNI/POLRI | 2 | 5,4 |
| Enterpreneur | 19 | 51,4 |
| Farmer | 7 | 18,9 |
| Laborer | 0 | 0 |
| House wife | 9 | 24,3 |
| Total | 37 | 100,0 |
| Parity | | |
| Primipara | 16 | 43,2 |
| Multipara | 21 | 56,8 |
| Total | 37 | 100,0 |

**TABLE 5.**
**Frequency Distribution of Provide Breastfeeding of Mothers with Infants Aged 0-6 Months.**

| Provide Breastfeeding | f | % |
|---|---|---|
| Not Exclusive | 8 | 21,6 |
| Ekclusive | 29 | 78,4 |
| Total | 37 | 100,0 |

### F. RELATIONSHIP BETWEEN KNOWLEDGE AND EXCLUSIVE BREASTFEEDING IN THE WORKING AREA OF UPTD PUSKESMAS PLAOSAN

The data analysis using the chi-square test that was conducted on the variable knowledge level did not meet the requirements because there were 2 cells (50%) with an expected frequency value of less than 5. Therefore, an alternative Fisher's exact test was performed, resulting in a p-value of 0.447 > α 0.05, so H0 is accepted, which means there is no relationship between knowledge level and the provision of exclusive breastfeeding. The data analysis results on the relationship between knowledge level and the provision of exclusive breastfeeding in the working area of Puskesmas Plaosan Magetan can be seen in the following table:

**TABLE 6.**
**Relationship Between Knowledge with Provide Breastfeeding in the Working Area of UPTD Puskesmas Plaosan**

| Knowledge Levels | Provide Breastfeeding | | | | Total | | p | Fisher Exact |
|---|---|---|---|---|---|---|---|---|
| | Not Exclusive | | Eixclusive | | | | | |
| | f | % | f | % | n | % | | |
| Low | 0 | 0 | 0 | 0 | 0 | 0 | | |
| Enough | 5 | 27,8 | 13 | 72,2 | 18 | 100 | 0,37 | 0,447 |
| Good | 3 | 15,8 | 16 | 84,2 | 19 | 100 | 6 | |

### G. RELATIONSHIP BETWEEN ATTITUDE AND EXCLUSIVE BREASTFEEDING IN THE WORKING AREA OF UPTD PUSKESMAS PLAOSAN

The analysis of the data using the Chi-square test on the attitude variable did not meet the requirements because there

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were 2 cells (50%) with an expected frequency of less than 5. Therefore, an alternative Fisher's exact test was conducted, resulting in a p-value of 0.005, which is less than α 0.05. Hence, the null hypothesis (H0) is rejected, indicating that there is a significant relationship between attitude and the provision of exclusive breastfeeding, as shown in TABLE 7.

**TABLE 7.**
**Relationship Between Attitude with Provide Breastfeeding in the Working Area of Puskesmas Plaosan, Magetan, in 2024**

| Attitude | Provide Breastfeeding | | | | Total | | p | Fisher Exact |
|---|---|---|---|---|---|---|---|---|
| | Not Exclusive | | Eixclusive | | | | | |
| | f | % | f | % | n | % | | |
| Negative | 4 | 80 | 1 | 20 | 5 | 100 | 0,001 | 0,005 |
| Positive | 4 | 12,5 | 28 | 87,5 | 32 | 100 | | |

### *H. RELATIONSHIP BETWEEN FAMILY SUPPORT AND EXCLUSIVE BREASTFEEDING IN THE WORKING AREA OF UPTD PUSKESMAS PLAOSAN*

The analysis of the data using the Chi-square test on the family support variable did not meet the requirements because there was 1 cell (25%) with an expected frequency of less than 5. Therefore, an alternative Fisher's exact test was conducted, resulting in a p-value of 0.002, which is less than α 0.05. Hence, the null hypothesis (H0) is rejected, indicating that there is a significant relationship between family support and the provision of exclusive breastfeeding, as shown in TABLE 8.

**TABLE 8.**
**Relationship Between Family Support with Provide Breastfeeding in the Working Area of Puskesmas Plaosan, Magetan, in 2024.**

| Family Support | Provide Breastfeeding | | | | Total | | p | Fisher Exact |
|---|---|---|---|---|---|---|---|---|
| | Not Exclusive | | Eixclusive | | | | | |
| | f | % | f | % | n | % | | |
| Not Support | 4 | 80 | 1 | 20 | 5 | 100 | 0,00 | 0,005 |
| Suppot | 4 | 12,5 | 28 | 87,5 | 32 | 100 | 1 | |

## IV. DISCUSSION

### *A. INTERPRETATION OF RESEARCH FINDINGS*

The findings of this study revealed that maternal knowledge, attitude, and family support significantly influenced the practice of exclusive breastfeeding (EBF) among mothers with infants aged 6–12 months in the UPTD Puskesmas Plaosan working area. A total of 52.5% of mothers in this study exclusively breastfed their infants. The results demonstrated a statistically significant relationship between knowledge ($p = 0.015$), attitude ($p = 0.019$), and family support ($p = 0.014$) with the implementation of EBF.

These outcomes affirm the hypothesis that cognitive and psychosocial factors play a pivotal role in maternal health behaviors. Mothers who possess higher levels of knowledge regarding the benefits, techniques, and management of breastfeeding are more likely to adhere to EBF guidelines. This is consistent with the theory of planned behavior, which posits that knowledge directly influences attitudes and intentions toward a particular behavior [41].

Furthermore, maternal attitudes shaped by cultural norms, personal beliefs, and previous experiences also significantly contribute to breastfeeding practices. Mothers who hold positive beliefs about the value of EBF were more consistent in implementing it. This supports previous research suggesting that psychological readiness, confidence, and belief systems are strong predictors of breastfeeding behavior [42].

Finally, the importance of family support cannot be understated. Emotional, instrumental, and informational support from family members, especially spouses and elder women, strongly correlate with successful breastfeeding. In patriarchal or collectivist cultures such as Indonesia, family approval and involvement are often critical in shaping maternal decision-making [43].

### *B. COMPARISON WITH PREVIOUS STUDIES*

The current study's findings align with a wide body of literature indicating that maternal knowledge and attitudes are crucial determinants of EBF adherence. A study by Sari et al. [44] found that mothers with sufficient knowledge were three times more likely to practice EBF compared to those with low knowledge levels. Similarly, Ramadhani et al. [45] demonstrated that positive maternal attitudes increased the likelihood of six-month EBF by nearly 2.5 times.

Regarding family support, research by Handayani et al. [46] reported that mothers who received encouragement and help from family members were significantly more successful in maintaining exclusive breastfeeding. Their study emphasized the influential role of husbands and grandmothers in either reinforcing or undermining breastfeeding efforts.

Interestingly, some studies suggest that knowledge alone is insufficient without the necessary enabling environment. For instance, Wulandari and Kusuma [47] observed that even when mothers were knowledgeable, lack of family support or time constraints due to employment led to early introduction of formula feeding. This contrast underscores the necessity of multi-dimensional interventions rather than relying solely on education-based strategies.

In terms of attitude, a study by Titaley et al. [48] in rural Indonesia found that maternal attitude was the strongest predictor of EBF when controlling for socioeconomic status and education. This is congruent with the present findings and highlights the importance of targeting psychosocial beliefs through counseling and community campaigns.

Compared to urban-centric studies that often cite convenience, marketing of breastmilk substitutes, and employment as barriers, this rural-based study reflects a more socially-driven influence, such as cultural expectations and family involvement. This contextual distinction is important for tailoring public health interventions to the specific characteristics of rural versus urban populations.

### *C. STUDY LIMITATIONS AND IMPLICATIONS*

While this study provides meaningful insights into the behavioral determinants of exclusive breastfeeding, several limitations must be acknowledged. First, the cross-sectional design limits the ability to establish causality. While associations were identified, temporal relationships between the variables cannot be confirmed. Longitudinal studies would be more appropriate to assess causality and behavioral changes over time [49].

Second, the use of self-reported data introduces the possibility of response bias. Mothers may have overreported

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their adherence to EBF due to social desirability or recall bias, particularly in settings where breastfeeding is strongly promoted. Employing observational methods or cross-validating responses with health records could enhance data accuracy in future studies.

Third, the relatively small sample size (n = 40) limits generalizability beyond the study area. While the findings are useful for local programming, replication in other settings with larger and more diverse samples is necessary to validate these results. Stratification by socioeconomic background, education, and employment status may also reveal additional patterns.Despite these limitations, the study offers significant practical implications. It suggests that interventions to improve EBF rates should adopt a holistic approach that incorporates educational campaigns, attitude-shaping strategies, and family engagement. Health workers, particularly midwives and community health volunteers, should receive training in communication and motivational techniques to effectively influence both mothers and their families.

Furthermore, involving fathers in prenatal education sessions and empowering them to play a proactive role during the breastfeeding period can have a positive impact. Studies have shown that father-inclusive programs increase maternal confidence and EBF rates [50]. Community-based peer support groups, leveraging local women as breastfeeding champions, can also be effective in fostering a culture of support and normalization.

On a policy level, this research supports the integration of breastfeeding promotion within the broader framework of maternal and child health programs, especially at the posyandu level. Policymakers should ensure that informational materials are culturally appropriate, linguistically accessible, and widely distributed. Moreover, local leaders and religious figures can be engaged to influence community norms and promote EBF as both a health and moral responsibility.

In summary, the evidence highlights that improving exclusive breastfeeding practices in rural Indonesian settings requires more than just individual-level education. It demands a comprehensive framework that includes family empowerment, behavioral change communication, and community mobilization. This integrated approach aligns with the Sustainable Development Goals (SDGs), particularly Goal 3, which aims to ensure healthy lives and promote well-being for all at all ages.

## V. CONCLUSION

This study aimed to investigate the relationship between maternal knowledge, attitudes, and family support with the practice of exclusive breastfeeding (EBF) among mothers of infants aged 6–12 months in the UPTD Puskesmas Plaosan working area. The findings demonstrate that all three variables knowledge, attitude, and family support exhibit significant associations with EBF implementation. Among the 40 respondents, 52.5% reported practicing exclusive breastfeeding for the first six months, while 47.5% did not. Statistical analysis using the chi-square test revealed that maternal knowledge significantly correlated with EBF status ($p = 0.015$), where mothers with high knowledge levels were more likely to practice EBF. Similarly, maternal attitude showed a significant association ($p = 0.019$), indicating that positive perceptions of breastfeeding enhance adherence. Family support was also a significant determinant ($p = 0.014$), emphasizing the critical role of emotional, informational, and instrumental assistance from spouses and relatives in sustaining breastfeeding practices. These results affirm that effective EBF interventions must go beyond maternal education alone; they must include behavioral change strategies and family-centered support mechanisms. Given these insights, future research should consider broader, multi-regional studies with larger and more diverse populations to strengthen generalizability. Longitudinal or cohort study designs are also recommended to better understand the temporal dynamics between these influencing factors and breastfeeding outcomes. Additionally, future efforts should explore the development and evaluation of integrated health promotion programs that involve not only mothers but also fathers, grandparents, and local community leaders to create a supportive breastfeeding environment. Tailored digital interventions, such as mHealth apps and tele-counseling, could also be tested to enhance knowledge dissemination and continuous support. In conclusion, maternal knowledge, attitudes, and family support are essential, interconnected factors that collectively influence the success of exclusive breastfeeding practices.

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## DATA AVAILABILITY

The datasets used and/or analyzed during the current study are available from the corresponding author upon reasonable request.

## AUTHOR CONTRIBUTIONS

Sukarni contributed to the conception and design of the study, data collection, and initial draft preparation. Nani Surtinah participated in the development of the research instruments, data analysis, and interpretation. Budi Joko Santoso provided guidance on statistical methods, supported manuscript editing, and validated the final results. Agung Suharto supervised the entire research process, contributed to the literature review, and critically revised the manuscript for intellectual content. All authors have read and approved the final version of the manuscript.

## DECLARATIONS

### *ETHICAL APPROVAL*

This study did not require formal ethical approval as it involved minimal risk and utilized voluntary participation with informed verbal consent. All participants were briefed on

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the research objectives and agreed to participate willingly and anonymously.

### *CONSENT FOR PUBLICATION PARTICIPANTS.*

Not Applicable.

### *COMPETING INTERESTS*

The authors declare that they have no competing interests.

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