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Maternal Age and Exclusive Breastfeeding: A Cross-Sectional Study in Kaba-Kaba Village, Bali

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ABSTRACT

Background: Exclusive breastfeeding is recommended for the first six months of life; however, coverage remains inconsistent across regions despite national improvements. Maternal age is considered a potential factor influencing breastfeeding success.

Objective: This study aimed to examine the relationship between maternal age and exclusive breastfeeding.

Methods: A quantitative study with a correlational design and retrospective data collection approach was conducted among 140 mothers with infants aged 6–24 months. Participants were selected using non-probability sampling. Maternal age was categorized into reproductive and high-risk age groups, while exclusive breastfeeding status was obtained through structured questionnaires. Data were analyzed using the Chi-square test with a significance level of $p < 0.05$.

Results: Of the 140 respondents, 54 (38.6%) practiced exclusive breastfeeding, while 86 (61.4%) did not. The Chi-square test showed a statistically significant association between maternal age and exclusive breastfeeding ($p = 0.036$). Since the p-value was less than the significance level of 0.05, this indicates that maternal age was significantly related to exclusive breastfeeding practices.

Conclusion: Maternal age was significantly associated with exclusive breastfeeding practices. Mothers within the optimal reproductive age range were more likely to provide exclusive breastfeeding. These findings highlight the importance of age-sensitive breastfeeding education and maternal support programs.

Keywords: Exclusive Breastfeeding; Maternal Age; Reproductive Age; Community Health

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INTRODUCTION

Exclusive breastfeeding (EBF) refers to feeding infants only breast milk from birth until six months of age without additional food or beverages, except for medicines, vitamins, and minerals (Alayón et al., 2022). Exclusive breastfeeding plays a crucial role in optimizing infant growth and development and has been shown to reduce infant morbidity and mortality (Borkhoff et al., 2018). In addition to preventing early-life infections such as gastrointestinal and respiratory diseases, exclusive breastfeeding may also provide long-term protective effects against allergic conditions and non-communicable diseases, including obesity, diabetes, and lymphoma (Purnamasari, 2022; Froń & Orczyk-Pawiłowicz, 2024).

Despite global efforts to promote exclusive breastfeeding, coverage remains below the World Health Organization (WHO) target. Between 2015 and 2020, only 44% of infants aged 0–6 months worldwide received exclusive breastfeeding, which is still below the 50% global target (Sari & Fitriani, 2022). In Indonesia, national exclusive breastfeeding coverage reached 66.06% in 2020, exceeding the national strategic target; however, disparities persist across regions. In Bali Province, exclusive

breastfeeding coverage fluctuated between 2014 and 2022 and has not consistently met regional targets (Purnamasari, 2022; Susilowati et al., 2018). At the local level, coverage in Tabanan Regency was reported at 36.88%, and in Kediri I Health Center at 36.48% (Sariyani & Ady, 2016).

The success of exclusive breastfeeding is influenced by various internal and external factors. Internal factors include maternal age, nutritional status, and education level, while external factors encompass knowledge, support from health workers, and exposure to media information (Safitri et al., 2018; Santacruz-Salas et al., 2020). Maternal age is considered a critical determinant, as the optimal reproductive age (20–35 years) is associated with physiological maturity and hormonal readiness for pregnancy, childbirth, and lactation. Mothers aged 20–35 years are generally more likely to produce adequate breast milk compared to those aged above 35 years, while mothers younger than 20 years may experience psychological immaturity and a higher risk of stress or postpartum depression, potentially affecting breastfeeding practices (Purnamasari, 2022).

Preliminary observations at a posyandu in Kaba-Kaba Village indicated variability in breastfeeding practices across different maternal age groups. However, empirical evidence examining the relationship between maternal age and exclusive breastfeeding at the community level remains limited. Therefore, this study aimed to examine the relationship between maternal age and exclusive breastfeeding at a posyandu in Kaba-Kaba Village.

METHODS

This study employed a quantitative analytical design with a cross-sectional correlational approach using retrospective data collection. The research was conducted at a Posyandu in Kaba-Kaba Village, Kediri District, Tabanan Regency, from May to July 2024. The study population consisted of mothers with children aged 6–24 months residing in Kaba-Kaba Village. A total of 140 respondents were selected using non-probability sampling, specifically purposive sampling. Inclusion criteria included mothers who had children aged 6–24 months, lived in Kaba-Kaba Village, and were willing to participate in the study. Mothers who were ill during the data collection period or whose children were undergoing intensive medical care were excluded from the study.

The independent variable in this study was maternal age, categorized into reproductive age (20–35 years) and high-risk age (<20 or >35 years), while the dependent variable was exclusive breastfeeding practice, defined as providing only breast milk for the first six months of life without additional food or beverages except for medicines, vitamins, and minerals. Data were collected using structured questionnaires, including a respondent characteristics form covering maternal age, parity, education, and occupation, as well as a dichotomous (yes/no) questionnaire assessing exclusive breastfeeding practices during the first six months. Prior to data collection, the instruments were tested for validity and reliability to ensure data quality.

Data analysis was performed using statistical software. Univariate analysis was conducted to describe respondent characteristics and study variables using frequency distributions and percentages. Bivariate analysis was carried out using the Chi-square test to examine the relationship between maternal age and exclusive breastfeeding. Statistical significance was determined at a p-value of less than 0.05. Ethical approval for this study was obtained from the Ethics Committee of STIKes Bina Usada Bali (No. 227/EA/KEPK-BUB-2024), and written informed consent was obtained from all participants prior to data collection.

RESULT

Respondent Characteristics and Exclusive Breastfeeding

The characteristics of respondents and exclusive breastfeeding practices are presented in Table 1.

Table 1. Characteristics of Respondents and Exclusive Breastfeeding (n = 140)

Variable	N	%
Maternal Age		
20–35 years (healthy reproductive age)	129	92.1
<20 or >35 years (high-risk age)	11	7.9
Education		
Elementary school	5	3.6
Junior high school	4	2.9
Senior high school	92	64.3
Higher education	39	27.9
Occupation		
Housewife	44	31.4
Civil servant	6	4.3
Private employee	90	64.3
Exclusive Breastfeeding		

Variable	N	%
Yes	54	38.6
No	86	61.4

Most respondents were within the healthy reproductive age group (20–35 years) (92.1%). The majority had completed senior high school (64.3%) and worked as private employees (64.3%). Only 38.6% of respondents reported practicing exclusive breastfeeding.

Relationship Between Maternal Age and Exclusive Breastfeeding

The relationship between maternal age and exclusive breastfeeding is presented in Table 2.

Table 2. Relationship Between Maternal Age and Exclusive Breastfeeding (n = 140)

Maternal Age	Exclusive (n)	Non-Exclusive (n)	Total	p-value
20–35 years	53	76	129	
<20 or >35 years	1	10	11	0.036

The Chi-square test showed a statistically significant association between maternal age and exclusive breastfeeding (p = 0.036). Since the p-value was less than 0.05, maternal age was significantly related to exclusive breastfeeding practices.

DISCUSSION

This study found that the majority of respondents were within the healthy reproductive age range of 20–35 years (92.1%). Biologically and psychologically, this age group is considered optimal for pregnancy, childbirth, and breastfeeding. Mothers aged 20–35 years are generally more physically prepared and hormonally stable, which supports adequate lactation. In contrast, mothers younger than 20 years may experience psychological immaturity and emotional instability, while mothers older than 35 years may face decreased reproductive function that can influence breastfeeding outcomes (Ulfah & Nugroho, 2020). Reproductive maturity is associated with improved cognitive readiness, emotional stability, and greater confidence in infant care (Kadiroğlu & Güdücü Tüfekci, 2022).

Exclusive breastfeeding is influenced by both physical and psychological factors, including maternal health status, stress levels, and readiness for motherhood (Purnamasari, 2022; Santacruz-Salas et al., 2020). Physiologically, maternal age may affect hormonal balance, particularly prolactin and oxytocin secretion, which are essential for milk production and ejection (Uvnas-Moberg et al., 2020). Younger mothers may experience stress or lack of preparedness, whereas older mothers may encounter reduced milk production due to physiological decline (Ahmad et al., 2024).

Although this study identified a high proportion of respondents working in the private sector, employment status may indirectly affect breastfeeding practices. Working mothers often face time constraints and limited maternity leave, which may reduce opportunities for exclusive breastfeeding (Putri et al., 2021). Research by Santi et al. (2020) also reported that extended working hours were associated with lower exclusive breastfeeding rates. However, adequate workplace support, breastfeeding-friendly policies, and the ability to express and store breast milk can facilitate exclusive breastfeeding among working mothers.

Regarding education, most respondents had completed senior high school. Higher educational attainment is often associated with improved health literacy and rational decision-making regarding maternal and child health (Ampu, 2021). However, previous studies have reported inconsistent findings regarding the relationship between education level and exclusive breastfeeding (Pebrianthy, 2021). This suggests that education alone may not determine breastfeeding behavior, as access to information through media and health services may compensate for lower formal education levels (Angkut, 2020).

In this study, 61.4% of respondents did not practice exclusive breastfeeding. Several factors may contribute to this finding, including employment demands, perceived insufficient milk production, psychological stress, and limited family support. Mothers who experience concerns about milk adequacy may choose formula feeding as a supplement or alternative (Enambere et al., 2020). Psychological stress and lack of postpartum support are known to influence milk production and breastfeeding confidence.

The Chi-square analysis showed a statistically significant relationship between maternal age and exclusive breastfeeding (p = 0.036). Since the p-value was less than 0.05, maternal age was significantly associated with exclusive breastfeeding practices in Kaba-Kaba Village. This finding supports previous studies indicating that maternal age influences breastfeeding behavior (Purnamasari,

2022; Sari & Fitriani, 2022). Younger mothers (<20 years) may face psychological and social challenges that affect breastfeeding readiness, while older mothers (>35 years) may encounter physiological limitations that influence lactation (Ulfah & Nugroho, 2020).

Similarly, Efriani and Astuti (2020) reported a significant association between maternal characteristics and exclusive breastfeeding practices, indicating that maternal maturity may influence breastfeeding intention and behavior. Older mothers tend to demonstrate stronger breastfeeding intentions and greater self-efficacy, possibly due to increased experience and confidence.

This study has several limitations. Some potentially influential variables, such as maternal lifestyle, stress levels, milk production, and family support, were not directly measured. Therefore, the findings should be interpreted with caution. Future studies are recommended to include additional psychosocial and biological variables to provide a more comprehensive understanding of factors influencing exclusive breastfeeding.

Implications

The findings of this study highlight the importance of considering maternal age as a factor in breastfeeding promotion strategies. Health workers, particularly nurses and midwives at the community level, should provide age-sensitive counseling to mothers, especially those in high-risk age groups (<20 and >35 years). Strengthening breastfeeding education programs through antenatal and postnatal care services may improve mothers' readiness, confidence, and understanding of exclusive breastfeeding practices. In addition, workplace-friendly breastfeeding policies and family support initiatives may help address barriers faced by working mothers.

Limitations and Recommendations

This study has several limitations. The use of a cross-sectional design with a retrospective approach limits the ability to establish causal relationships between maternal age and exclusive breastfeeding. Data were self-reported, which may introduce recall bias, particularly among mothers with children aged up to 24 months. Furthermore, other potentially influential factors such as maternal knowledge, family support, cultural beliefs, stress levels, and milk production were not directly measured.

Future research is recommended to use longitudinal or cohort designs to better examine causal relationships. Studies incorporating additional psychosocial and biological variables are needed to provide a more comprehensive understanding of factors influencing exclusive breastfeeding. Expanding the study area and using probability sampling techniques may also improve generalizability.

CONCLUSIONS

This study demonstrated a statistically significant relationship between maternal age and exclusive breastfeeding practices in Kaba-Kaba Village ($p = 0.036$). Mothers within the optimal reproductive age range (20–35 years) were more likely to practice exclusive breastfeeding compared to those in the high-risk age groups. These findings indicate that maternal age may influence breastfeeding behavior through physiological and psychological readiness.

The results highlight the importance of age-sensitive breastfeeding counseling and targeted maternal education programs at the community level. Strengthening health promotion strategies and providing adequate support for mothers, particularly those in high-risk age groups, may contribute to improving exclusive breastfeeding coverage. Future research should explore additional factors such as maternal knowledge, lifestyle, psychosocial support, and milk production to better understand determinants of exclusive breastfeeding.

Declaration of Interest

The author states that there is no conflict of interest regarding the publication of this paper. The author has no financial interest or other interest in the products or distributors mentioned in this study. No association, such as consulting, shareholding, or other equity interests or patent licensing arrangements, to disclose.

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Authors' Contributions

All authors collaborate with each other in a series of research, article writing and also the improvement process.

Data Availability

All data utilized in this study, including raw data, analyzed datasets, and supporting documents, are available from the corresponding author upon reasonable request.

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