

Social, Cultural, and Psychological Determinants of Exclusive Breastfeeding: A Cross-Sectional Study in Gorontalo

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ABSTRACT

Exclusive breastfeeding is one of the most effective strategies to support infant nutritional status and prevent nutritional problems during early childhood. However, the coverage of exclusive breastfeeding in the working area of Tilango Public Health Center remains low, indicating the need to identify factors associated with breastfeeding practices. This study aimed to analyze the determinants of exclusive breastfeeding among mothers with infants aged 7–12 months in the Tilango Public Health Center area, Gorontalo Regency. This quantitative study employed a cross-sectional design and was conducted from January to May 2026. The study involved 152 mothers selected using total sampling. Data were collected through structured questionnaires and analyzed using univariate and bivariate analyses with the Chi-square test at a significance level of 0.05. The results showed that only 27.0% of mothers practiced exclusive breastfeeding, while 73.0% did not. Formula milk promotion was significantly associated with exclusive breastfeeding practices ($p=0.003$; $OR=4.22$). Husband support was also significantly associated with exclusive breastfeeding ($p=0.004$; $OR=2.99$), indicating that mothers who received good husband support were approximately three times more likely to provide exclusive breastfeeding than those with poor support. In contrast, maternal stress level ($p=0.681$) and cultural factors ($p=0.649$) were not significantly associated with exclusive breastfeeding practices. This study concludes that formula milk promotion and husband support are significant determinants of exclusive breastfeeding practices in the Tilango Public Health Center area. Strengthening family involvement, particularly husband support, and improving breastfeeding promotion programs are essential to increase exclusive breastfeeding coverage.

INTRODUCTION

Nutritional problems among infants and young children remain a major public health challenge in Indonesia. Malnutrition during early life can impair physical growth, cognitive development, and increase susceptibility to infectious diseases. Exclusive breastfeeding (EBF) is considered the most effective nutritional intervention for supporting infant growth and development during the first 1,000 days of life. Breast milk provides complete macro- and micronutrients as well as numerous bioactive components that promote immune system development, healthy growth, and optimal infant development. Numerous studies have demonstrated that exclusive breastfeeding reduces the risk of gastrointestinal and respiratory infections, obesity, and contributes to improved cognitive development and long-term health outcomes into adulthood^{1,2}. Therefore, the World Health

Organization (WHO) recommends exclusive breastfeeding for the first six months of life without the introduction of any additional food or drink.

Despite its well-established benefits, the global prevalence of exclusive breastfeeding remains below the WHO target. According to the WHO, only approximately 48% of infants worldwide are exclusively breastfed during the first six months of life. In Indonesia, the 2023 Indonesian Health Survey (Survei Kesehatan Indonesia, SKI) reported a national exclusive breastfeeding rate of 66.7%; however, substantial regional disparities remain. In Gorontalo Province, particularly in the working area of Tilango Primary Health Center, the exclusive breastfeeding rate declined from 12.54% in 2023 to 7.21% in 2024. This decline indicates that current breastfeeding promotion strategies have not achieved optimal outcomes. It also suggests that successful exclusive breastfeeding is influenced not only by maternal knowledge but also by social, cultural, and psychological factors within the local community³.

Previous studies have shown that successful exclusive breastfeeding is influenced by the interaction of social, cultural, and psychological factors. Family support, particularly from husbands, plays a crucial role in promoting exclusive breastfeeding by enhancing maternal motivation, self-confidence, and continuation of breastfeeding practices⁴. Conversely, exposure to formula milk promotion remains a major challenge because it may influence mothers' perceptions of breast milk adequacy and increase the likelihood of early formula feeding. Maternal psychological well-being and cultural beliefs may also influence breastfeeding decisions, although their effects vary across populations⁵.

Family support, particularly from husbands, plays a crucial role in promoting exclusive breastfeeding by enhancing maternal motivation, self-confidence, and the continuation of breastfeeding practices^{6,7}. Emotional and practical support from husbands has consistently been associated with higher rates of exclusive breastfeeding during the first six months postpartum⁸.

Breastfeeding education, lactation counseling, and continuous professional support have been shown to enhance maternal knowledge, breastfeeding self-efficacy, and the ability to sustain exclusive breastfeeding⁹. Conversely, exposure to formula milk promotion remains a global challenge because it may influence mothers' perceptions of breast milk adequacy, thereby increasing the likelihood of early formula feeding¹.

Besides social influences, maternal psychological well-being is another important determinant of successful exclusive breastfeeding. Previous studies have reported that postpartum stress may interfere with the oxytocin reflex and breast milk production, thereby increasing the risk of early discontinuation of exclusive breastfeeding^{10,11}. Mothers experiencing psychological stress often report anxiety, fatigue, and reduced confidence in breastfeeding, making it more difficult to maintain exclusive breastfeeding¹².

Cultural factors also remain significant determinants of breastfeeding practices, particularly in developing countries. Traditional beliefs regarding the introduction of food or beverages before six months of age, prelacteal feeding practices, and the influence of senior family members often conflict with evidence-based health recommendations¹³. In communities with strong cultural traditions, mothers' breastfeeding decisions are frequently influenced more by family norms and community expectations than by information provided by healthcare professionals. These findings suggest that successful exclusive breastfeeding results from the interaction of multiple determinants rather than a single influencing factor¹⁴.

Although these determinants have been widely investigated, most previous studies have examined family support, formula milk promotion, cultural influences, or maternal stress independently. Research integrating social, cultural, and psychological factors within a single analytical model remains limited, particularly among communities in Gorontalo, which possesses unique cultural characteristics compared with other regions of Indonesia. Furthermore, most previous studies have been conducted in urban settings, limiting their applicability to semi-rural communities such as the Tilango Primary Health Center service area.

This limitation highlights an important research gap, namely the lack of empirical evidence regarding the relative contribution of social, cultural, and psychological factors to exclusive breastfeeding practices within the local context of Gorontalo. Understanding the interaction among these determinants is essential for developing health promotion programs that extend beyond improving maternal knowledge by incorporating family involvement, cultural values, and maternal psychological well-being.

The novelty of this study lies in its simultaneous analysis of social, cultural, and psychological determinants of exclusive breastfeeding using multiple logistic regression among mothers with infants aged 7–12 months in the working area of Tilango Primary Health Center, Gorontalo Regency. This study also provides contextual evidence regarding the influence of local cultural practices on breastfeeding behavior, thereby supporting the development of family- and culture-based health promotion interventions aimed at improving exclusive breastfeeding coverage.

Therefore, this study aimed to analyze the influence of social, cultural, and psychological factors on exclusive breastfeeding practices among mothers with infants aged 7–12 months in the working area of Tilango Primary Health Center, Gorontalo Regency. The study hypothesized that social factors (husband's support and exposure to formula milk promotion), cultural beliefs, and maternal stress were associated with exclusive breastfeeding practices.

MATERIALS AND METHODS

This study employed a quantitative design with a cross-sectional approach. The study was conducted in the working area of Tilango Public Health Center, Gorontalo Regency, from January to May 2026. The study population consisted of all mothers with infants aged 7–12 months, totaling 152 respondents. The sampling technique used was total sampling; therefore, the entire population was included as the research sample.

The independent variables in this study included formula milk promotion, stress, husband's support, and cultural beliefs. The dependent variable was exclusive breastfeeding. Maternal stress levels were measured using the Perceived Stress Scale (PSS-10) questionnaire, which consists of 10 questions categorized into mild, moderate, and severe stress levels.

Data were analyzed using IBM SPSS. Univariate analysis was performed to describe the distribution of respondents' characteristics and study variables. Bivariate analysis was conducted using the Pearson Chi-square test to examine the association between the independent variables and exclusive breastfeeding practice. Before performing the Chi-square test, all assumptions were verified, including that all variables were categorical, each participant belonged to only one category (independence of observations), at least 80% of the cells had an expected count of ≥ 5 , and no cell had an expected count of < 1 . Multivariable analysis was subsequently performed using multiple logistic regression with the Enter method to identify the factors most strongly associated with exclusive breastfeeding practice. The strength of the associations was reported as Odds Ratios (ORs) with corresponding 95% Confidence Intervals (95% CIs), and statistical significance was set at $p < 0.05$.

This study received ethical approval from the Health Research Ethics Committee with ethical clearance number RK.200/KEPK/STIK/XI/2025. Prior to data collection, all respondents were informed about the study objectives, and the confidentiality of their personal information was guaranteed.

RESULTS

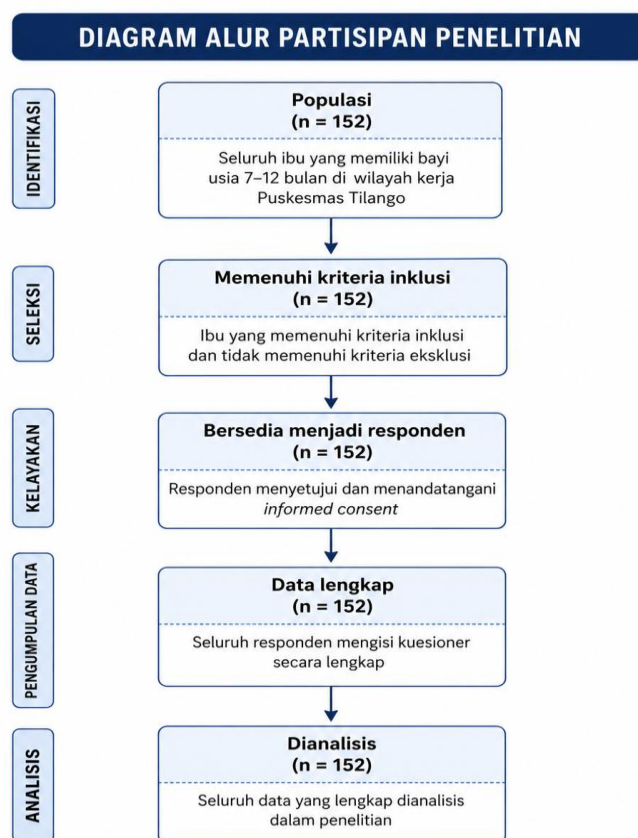


Figure 1. Research Participant Flow Diagram

A total of 152 mothers met the inclusion criteria, and all agreed to participate in the study. No respondents declined participation, withdrew from the study, or had incomplete data; therefore, all participants were included in the final analysis. Complete data were available for all study variables, resulting in no missing data (0%) during the analysis.

Table 1. Distribution of Respondents' Characteristics Based on Age, Education, and Occupation

Characteristics	n	%
Mother's Age		
<20 years	15	9,9
20–35 years	118	77,6
>35 years	34	22,4
Education		
Elementary School	29	19,1
Junior High School	31	20,4
Senior High School	76	50,0
Bachelor's Degree	16	10,5

Characteristics	n	%
Occupational		
Housewife	128	84.2
Private Employee	3	2.0
Entrepreneur	5	3.3
Contract Employee	3	2.0
Village Official	5	3.3
Civil Servant	8	5.2
Total	152	100

Source: Primary Data, 2026

Table 1 indicates that most respondents were aged 20–35 years (77.6%). The majority had a Senior High School education (50.0%), while only 10.5% held a Bachelor's degree. In terms of occupation, most respondents were housewives (84.2%), with smaller proportions working as civil servants, entrepreneurs, village officials, private employees, and contract employees.

Table 2. Frequency Distribution of Exclusive Breastfeeding, Advertising Exposure, Stress Level, Husband's Support, and Culture

Variabel	N	(%)
Exclusive Breastfeeding		
Exclusive Breastfeeding	41	27.0
Non-Exclusive Breastfeeding	111	73.0
Advertising Exposure		
Exposed	106	69.7
Not Exposed	46	30.3
Stress Level		
Mild	129	84.9
Moderate	21	13.8
Severe	2	1.3
Husband's Support		
Good	41	27.0
Poor	111	73.0
Culture		
Supportive	107	70.4
Not Supportive	45	29.6
Total	152	100

Source: Primary Data, 2026

As shown in Table 2, 41 respondents (27.0%) practiced exclusive breastfeeding. The majority of respondents were exposed to formula milk promotion 106 respondents (69.7%), experienced mild stress 129 respondents (84.9%), received inadequate husband's support 111 respondents (73.0%), and lived in a cultural environment supportive of exclusive breastfeeding 107 respondents (70.4%).

Table 3. Cross-Tabulation of Exclusive Breastfeeding and Formula Milk Promotion in the Tilango Health Center Area, 2026

Formula Milk Promotion	Exclusive Breastfeeding				Total		P Value
	Exclusive Breastfeeding		Non-Exclusive Breastfeeding				
	(n)	(%)	(n)	(%)	(n)	(%)	
Not exposed to formula milk promotion	5	10,9	41	89,1	46	100	0,003
Exposed to formula milk promotion	36	34,0	70	66,0	106	100	
Total	41	27,0	111	73,0	152	100	

Source: Primary Data, 2026

Table 3 indicates that only 10.9% of respondents who were not exposed to formula milk promotion practiced exclusive breastfeeding, compared to 34.0% among those exposed. Statistical analysis showed a significant association between formula milk promotion and exclusive breastfeeding ($p = 0.003$) in the Tilango Health Center area in 2026. Exposure to formula milk promotion was significantly associated with exclusive breastfeeding practice (OR = 0.34, 95% CI: 0.16–0.72; $p = 0.003$).

Table 4. Cross-Tabulation of Exclusive Breastfeeding and Stress in the Tilango Health Center Area, 2026

In the Triangle Health Center Area, 2020							
Stress Level	Exclusive Breastfeeding					Total	P Value
	Exclusive Breastfeeding		Non-Exclusive Breastfeeding		(n)		
	(n)	(%)	(n)	(%)			
Mild (0–10)	35	27,1	94	72,9	129	100	0,681
Moderate (11–20)	6	28,6	15	71,4	21	100	
Severe (21–30)	0	0	2	100	2	100	
Total	41	27,0	111	73,0	152	100	

Source: Primary Data, 2026

Table 4 shows that respondents with mild stress levels had an exclusive breastfeeding rate of 27.1%, while 72.9% did not practice exclusive breastfeeding. Among respondents with moderate stress, 28.6% practiced exclusive breastfeeding and 71.4% did not. Meanwhile, all respondents with severe stress (100%) did not practice exclusive breastfeeding. The statistical analysis showed a p-value of 0.681, indicating that there was no significant relationship between stress level and exclusive breastfeeding in the Tilango Health Center area in 2026. No significant association was observed between maternal stress and exclusive breastfeeding practice (OR = 0.88, 95% CI: 0.43–1.81; $p = 0.681$).

Table 5. Cross-Tabulation of Exclusive Breastfeeding and Husband's Support

in the Tilango Health Center Area, 2026							
Exclusive Breastfeeding							
Husband's Support	Exclusive Breastfeeding		Non-Exclusive Breastfeeding		Total		P Value
	(n)	(%)	(n)	(%)	(n)	(%)	
Good Husband's Support	18	43,9	23	56,1	41	100	0,004
Poor Husband's Support	23	20,7	88	79,3	111	100	
Total	41	27,0	111	73,0	152	100	

Source: Primary Data, 2026

Table 5 shows that respondents who received good husband's support had a higher proportion of exclusive breastfeeding (43.9%) compared to those with poor husband's support (20.7%). Meanwhile, non-exclusive breastfeeding was more common among respondents with poor husband's support (79.3%). The statistical analysis showed a p-value of 0.004, indicating a significant relationship between husband's support and exclusive breastfeeding in the Tilango Health Center area in 2026. Mothers receiving adequate husband's support had significantly higher odds of practicing exclusive breastfeeding than those receiving inadequate husband's support (OR = 2.98, 95% CI: 1.45–6.08; $p = 0.004$).

Table 6. Cross-Tabulation of Exclusive Breastfeeding and Culture in the Tilango Health Center Area, 2026

Culture	Exclusive Breastfeeding				Total		P Value
	Exclusive Breastfeeding		Non-Exclusive Breastfeeding				
	(n)	(%)	(n)	(%)	(n)	(%)	
Supportive Culture	30	28,0	77	72,0	107	100	0,649
Non-Supportive Culture	11	24,4	34	75,6	45	100	
Total	41	27,0	111	73,0	152	100	

Sumber : Data Primer Tahun 2026

Table 6 shows that respondents living in a supportive culture had a slightly higher proportion of exclusive breastfeeding (28.0%) compared to those in a non-supportive culture (24.4%). However, non-exclusive breastfeeding remained dominant in both groups. The statistical analysis showed a p-value of 0.649, indicating that there was no significant relationship between culture and exclusive breastfeeding in the Tilango Health Center area in 2026. Cultural beliefs were not significantly associated with exclusive breastfeeding practice (OR = 1.21, 95% CI: 0.58–2.52; $p = 0.649$).

Table 7 presents the results of the bivariate analysis examining the associations between the independent variables and exclusive breastfeeding practice. The strength of each association was expressed as Odds Ratios (ORs) with corresponding 95% Confidence Intervals (95% CIs) and *p*-values.

Table 7. Bivariate Analysis of Factors Associated with Exclusive Breastfeeding

Variable	OR	95% CI	p-value
Formula Milk Promotion	0.34	0.16–0.72	0.003
Husband's Support	2.98	1.45–6.08	0.004
Cultural Beliefs	1.21	0.58–2.52	0.649
Maternal Stress	0.88	0.43–1.81	0.681

Source: Primary Data, 2026

Bivariate analysis showed that exposure to formula milk promotion (OR = 0.34, 95% CI: 0.16–0.72; *p* = 0.003), and husband's support (OR = 2.98, 95% CI: 1.45–6.08; *p* = 0.004) were significantly associated with exclusive breastfeeding practice. In contrast, cultural beliefs (OR = 1.21, 95% CI: 0.58–2.52; *p* = 0.649) and maternal stress (OR = 0.88, 95% CI: 0.43–1.81; *p* = 0.681) were not significantly associated with exclusive breastfeeding practice.

DISCUSSION

This study examined the associations between social, cultural, and psychological factors and exclusive breastfeeding practices among mothers with infants aged 7–12 months in the working area of Tilango Primary Health Center. Because this study employed a cross-sectional design, the findings should be interpreted as statistical associations rather than evidence of causal relationships.

The present study found that exposure to formula milk promotion was significantly associated with exclusive breastfeeding practice. Mothers who were exposed to formula milk promotion had lower odds of practicing exclusive breastfeeding than those who were not exposed. This finding is consistent with the Lancet Breastfeeding Series, which reported that aggressive marketing of commercial milk formula shapes parental perceptions, influences infant feeding decisions, and reduces breastfeeding practices worldwide¹⁵¹⁶. Formula milk promotion through television, digital media, and social networking platforms may reduce maternal confidence in breastfeeding by portraying formula as an equivalent alternative to breast milk¹⁷. Although this study cannot establish a causal relationship because of its cross-sectional design, the observed association suggests that strengthening implementation of the International Code of Marketing of Breast-milk Substitutes and improving breastfeeding counseling may contribute to increasing exclusive breastfeeding coverage¹⁸.

Mothers receiving adequate support from healthcare professionals had higher odds of practicing exclusive breastfeeding than those receiving inadequate support¹⁹. Previous systematic

reviews have consistently demonstrated that breastfeeding education, lactation counseling, and professional support improve breastfeeding initiation, duration, and exclusivity^{8,20}.

Husband's support also demonstrated a significant positive association with exclusive breastfeeding practice. Mothers receiving adequate husband's support had nearly three times higher odds of practicing exclusive breastfeeding than those with inadequate support. Similar findings have been reported by Ogbo et al. (2021) and Sharma and Byrne (2021), who emphasized that partner support enhances maternal confidence, emotional well-being, and breastfeeding continuation^{6,21}. Fathers who actively participate in infant care and provide emotional encouragement may facilitate successful breastfeeding by reducing maternal anxiety and improving adherence to exclusive breastfeeding recommendations²². However, because this study was observational and cross-sectional, these findings should not be interpreted as evidence that husband support directly causes successful breastfeeding but rather that both variables were statistically associated. These findings support family-centered breastfeeding promotion strategies that actively involve fathers during antenatal education, postnatal counseling, and community health programs²³.

In contrast, maternal stress was not significantly associated with exclusive breastfeeding practice²⁴. Although previous studies have reported that postpartum stress may interfere with oxytocin release, reduce breast milk production, and increase the likelihood of breastfeeding discontinuation^{10,11}, no statistically significant association was observed in this study. One possible explanation is that most respondents experienced only mild stress, resulting in limited variability across stress categories. In addition, adequate family support may have buffered the negative influence of psychological stress on breastfeeding practices. These findings therefore should not be interpreted as evidence that maternal stress has no influence on breastfeeding, but rather that no statistically significant association was detected within this specific study population.

Similarly, cultural beliefs were not significantly associated with exclusive breastfeeding practice (OR = 1.21; 95% CI: 0.58–2.52; $p = 0.649$). This finding differs from previous studies reporting that traditional beliefs, prelacteal feeding, and early complementary feeding practices are important barriers to exclusive breastfeeding in many low- and middle-income countries^{13,1}. One possible explanation is that most respondents in the present study lived in communities categorized as having supportive cultural environments, thereby reducing variability between comparison groups. Furthermore, breastfeeding education delivered through primary healthcare services may have reduced the influence of traditional beliefs on maternal feeding decisions. Consequently, the absence of statistical significance should not be interpreted as evidence that culture has no role in breastfeeding behavior; rather, it suggests that the influence of cultural beliefs may vary according to local context, health promotion intensity, and community characteristics²⁵.

Overall, the findings suggest that social determinants, particularly husband's support and exposure to formula milk promotion, were more strongly associated with exclusive breastfeeding practice than maternal stress or cultural beliefs in this study population. These findings have important implications for public health policy^{26,27}. Breastfeeding promotion programs should extend beyond improving maternal knowledge by strengthening family involvement, empowering community health workers (kader), and ensuring strict enforcement of regulations governing the marketing of breast milk substitutes in accordance with WHO recommendations^{20,1}. Community-based interventions involving husbands, grandparents, and community leaders may create a more supportive environment for exclusive breastfeeding.

Several limitations should be considered when interpreting these findings. First, the cross-sectional design prevents conclusions regarding temporal or causal relationships between the studied variables and exclusive breastfeeding practice. Second, the use of self-reported questionnaires may have introduced recall bias and social desirability bias. Third, although several important determinants were examined, other potential confounding variables such as maternal employment, household income, parity, mode of delivery, breastfeeding self-efficacy, maternal knowledge, and infant morbidity were not included in the analysis and may have influenced the observed associations. Finally, because the study was conducted in a single primary healthcare service area in Gorontalo using total sampling, the findings should be generalized cautiously to populations with different socio-demographic, cultural, or healthcare characteristics. Future multicenter prospective cohort studies are recommended to confirm these findings and better clarify the causal pathways linking social, cultural, psychological, and healthcare-related factors to exclusive breastfeeding practice.

CONCLUSION

This study found that formula milk promotion and husband's support were significantly associated with exclusive breastfeeding practices, whereas maternal stress and cultural beliefs were not significantly associated. Because this study employed a cross-sectional design, these findings should be interpreted as statistical associations rather than causal relationships.

These findings suggest that improving exclusive breastfeeding coverage requires interventions that extend beyond maternal education alone. Strengthening family involvement, particularly husband support, and limiting inappropriate formula milk promotion may contribute to creating a more supportive breastfeeding environment.

Because this study was conducted in a single primary healthcare service area using a cross-sectional design, the findings should be generalized cautiously. Future longitudinal and multicenter studies are recommended to clarify the temporal relationships between social, cultural, and psychological factors and exclusive breastfeeding practices.

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