

Knowledge and Attitude of Mothers towards Nutritional Benefits of Exclusive Breast Feed in Rural Communities of Igabi LGA, Kaduna State

Bello Ahmad^{1*}, Zakari Isiaka Osheku²¹School of Preliminary Studies, Kaduna Polytechnic, Kaduna, Nigeria²Primary Health Care Initiative AfricaDOI: [10.36348/sijtc.2023.v06i10.001](https://doi.org/10.36348/sijtc.2023.v06i10.001)

| Received: 08.10.2023 | Accepted: 15.11.2023 | Published: 24.11.2023

*Corresponding author: Bello Ahmad

School of Preliminary Studies, Kaduna Polytechnic, Kaduna, Nigeria

Abstract

Children's growth, health, and development depend on proper nutrition in infancy and early childhood. Worldwide, nursing is advantageous for both mother and child since breast milk is the best source of baby nourishment. This study examined mothers' knowledge and attitude about exclusive breast feeding's nutritional benefits. A cross-sectional survey of 384 mothers was conducted in rural Igabi LGA. The data was acquired using structured questionnaires. SPSS 21 was used to enter and evaluate data. Chi-square determined categorical data associations. Statistical significance was set at $p < 0.05$. By knowledge score, 13.80% of mothers had adequate knowledge, 51.04% intermediate, and 35.15% deficient. Attitude score: 63.80% of mothers were positive. Most mothers (52.5%) reported breast problems as major issues. A local language campaign to educate women about the nutritional benefits of exclusive breastfeeding and renewing the Baby-Friendly Hospital Policy can reduce child mortality, according to the study.

Keywords: Exclusive Breast Feed, Knowledge, Attitude, Nutritional Benefits, Rural Communities.

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INTRODUCTION

In the year 2018, a global total of 2.7 million children succumbed to mortality as a result of malnutrition. According to a report by UNICEF in 2018, this figure constituted 45% of worldwide fatalities. The preponderance of these fatalities occurred in the continents of Africa and Asia. In the context of sub-Saharan Africa, it is observed that despite the widespread advocacy for exclusive breastfeeding, a significant proportion of children in the region do not receive the nutritional benefits associated with this practice for a period of up to six months. The prevalence of malnourished children has exhibited an upward trend, with figures rising from 3.7 million in 2017 to 6.3 million in 2018, as reported by UNICEF (2018). Research indicates that a considerable percentage of neonates who experience mortality annually could have potentially been prevented if they had received breastfeeding as a form of nourishment (Ekambaram *et al.*, 2010; Victora *et al.*, 2016).

Inadequate nutrition during early childhood has the potential to exert detrimental effects on a child's physical and emotional development, both in the

immediate and prolonged periods. Furthermore, it can impose constraints on an individual's accomplishments and productivity during adulthood. The recommendation to provide young infants with the necessary nutrients for healthy growth and development through breastfeeding is widely acknowledged in the literature (Hansen, 2016). Furthermore, it is worth noting that breastfeeding confers economic and environmental benefits to society, as highlighted by Rollins *et al.*, (2016).

Exclusive breastfeeding refers to the practice of providing an infant with breast milk as the sole source of nutrition, without the introduction of any additional liquids or solid foods, including water. Nevertheless, exclusive breastfeeding (EBF) permits the utilization of oral rehydration solution (ORS), as well as the administration of vitamins, minerals, and medications in the form of drops or syrups. After 6 months breast milk is not able to fulfil their needs, therefore, infants should start receiving nutritionally adequate and safe complementary foods while continuing with breastfeeding for up to 2 years or more. Breast feeding is a blessing both for mothers and babies, as a recent lancet breastfeeding series estimates that optimal breastfeeding

could help prevent 20,000 maternal deaths from breast cancer every year (Rollins *et al.*, 2016; UNICEF, 2018).

The World Health Organization (WHO) recommends that mothers exclusively breastfeed their children for 6 months, with a goal of breastfeeding for up to 2 years of age and beyond, but few women achieved it (Hamze *et al.*, 2019). Globally, only 47% of mothers were exclusively breastfeeding their offspring until 6 months of age in 2018. But in reality, this rate varies from continent to continent: Europe 43.7%, America 43.9%, Asia 55.2%, Africa 41.7% (Zong *et al.*, 2021). Regarding sub-Saharan Africa, although almost all mothers practice breastfeeding, the rate of exclusive breastfeeding is still low, varying between 23% and 53.5% (SUN, 2018).

Like in many of the sub-Saharan African countries, the practice of breastfeeding in Nigeria has been a major aspect of infant feeding but exclusive breastfeeding practice is poor. Presently in Nigeria it has been shown by the Multiple Indicator Cluster Survey (MICS 2017) data and National Demographic Health Survey (NDHS, 2008) that only 13% of nursing mothers practiced exclusive Breastfeeding, this is a decline from 17% reported in NDHS (2004). This is far below the 90% level recommended by the WHO (Jones *et al.*, 2003).

Breastfeeding exclusively will be much easier and attractive to mothers if the right health education, support and motivation are given (Mogre *et al.*, 2016). An idea about the level of knowledge, attitude and practice of exclusive breastfeeding and the social support system available to mothers are very imperative for improvement in breastfeeding practices. It helps in reducing child mortality, promotes growth and immunity (WHO/UNICEF, 2017). Breastfeeding attitudes refer to women's tendency to express their feelings, thoughts, and behaviors related to mental mindfulness as they develop their subsequent EBF behaviors (Casal *et al.*, 2017). As a modifiable element, breastfeeding knowledge and attitudes are one of the strategic intervention directions to improve breastfeeding (Chekol *et al.*, 2022). Therefore, the aim of this study is to assess the level of knowledge and attitude of mothers towards nutritional benefits of exclusive breast feed in rural communities of Igabi LGA, Kaduna State.

MATERIALS AND METHODS

Study Design and Setting

The study was carried out in the Igabi Local Government area of Kaduna state, Nigeria. The geographical coordinates of the area range from longitude of 7°10'00"E to 8°7'30"E, and from a latitude of 11°00'00"N to 10°24'00"N. The region spans a total land area of 3727 square kilometers, and based on the data obtained from the national population census conducted in 2006, it is estimated that the population reached 581,500 individuals by the year 2016. The Local Government Area (LGA) relies predominantly on agriculture as its primary means of sustenance. The

availability of food exhibits seasonal fluctuations, wherein agricultural products tend to be more abundant during the transition from the rainy season to the onset of the dry season. The research utilized a cross-sectional survey design. The data collection period spanned from May to August of 2023. The study sample consisted of women of reproductive age who had at least one child aged six months or younger during the designated study period.

Sample size and sampling procedure

The sample size was determined using the formula for a single population proportion, which is $N = Z^2 * p * (1-p) / d^2$. The formula used in this study calculates the minimum sample size (N) based on several parameters. These parameters include a marginal error (d) of 0.05, a non-response rate of 10%, a confidence level of 95%, a population proportion (p) of 50%, and an alpha level of 0.05. Based on these assumptions, the researchers determined that a total sample size of 384 was necessary for their study (Semego *et al.*, 2001; Guerrero *et al.*, 1999).

The selection of four administrative wards in Igabi Local Government Area (LGA), namely Igabi, Turunku, Kwarau, and Zangon aya, was conducted with the specific intention of representing rural areas. The population size of various communities was obtained from the Kaduna State Primary Health Development Agency, which served as the foundation for implementing a multi-stage cluster sampling methodology.

Data Collection

The data was gathered through the utilization of a structured interview questionnaire. The participants were sequentially interviewed using the standardized survey form for infant and young child nutrition developed by the Food and Agriculture Organization of the United Nations (FAO) (Macias and Glasauer, 2016). The variables under investigation encompassed socio-demographic characteristics of mothers, their knowledge and attitude regarding the nutritional benefits of exclusive breastfeeding and the challenges encountered by mothers during the practice of exclusive breastfeeding. The researchers conducted face-to-face interviews with eligible mothers to collect data using a questionnaire. Prior to data collection, all participants were required to provide a signed informed consent.

Data Analysis

The acquired data underwent editing and were subsequently transformed into numerical codes prior to being entered into the computer. The data underwent analysis using the Statistical Package for Social Sciences (SPSS) version 21. The study employed descriptive statistics, such as frequency, percentages, and mean, to analyze socio-demographic characteristics, knowledge levels, and attitudes. Charts and tables were utilized to present the findings. Chi-square models were utilized to

evaluate the potential correlation between the status of Knowledge and attitude and other independent factors. A p-value of less than 0.05 was considered significant, indicating a significant relationship between the dependent and independent variables. The researchers also obtained authorization from the health department of the Local Government Area to conduct the study.

RESULTS

Out of a total of 384 mothers studied, almost half 51% falls between 26 – 30 age groups. High proportions of women 81.77% were married and from extended family (61.45%). 58.59% of mothers completed primary/ secondary school with 44.53% of them are housewives. Almost half of mothers are earning $\leq 10,000$ per month (Table 1).

Table 1: Distribution of subjects according to the Socio-demographic variables

Variables	Frequency	Percentage (%)
1. Age of mother in years		
≤ 20	43	11.19
21 – 25	50	23
26 - 30	195	51
≥ 31	96	25
2. Marital status		
Single	10	2.6
Married	314	81.77
Divorced	21	5.46
Widowed	39	10.15
3. Type of family		
Nuclear	148	38.54
Extended	236	61.45
4. Religion		
Islam	318	82.81
Christianity	50	13.02
Others	16	4.16
5. Educational status		
Primary/secondary	255	58.59
Tertiary	44	11.45
Illiterate	85	22.13
6. Occupation		
Housewife	171	44.53
Civil servant	59	15.36
Business/ Labour	154	40.10
7. Monthly income		
$\leq 10,000$	189	49.21
11,000 – 20,000	101	26.30
Above 20,000	94	24.48

The data reveals that among the respondents, 13.80% possessed sufficient knowledge, 51.04% possessed a moderate level of knowledge, and 35.15% possessed an insufficient level of knowledge (see Figure 1). The findings indicate that a majority of participants, specifically 63.80%, reported a positive attitude towards the nutritional benefits of exclusive breastfeeding (EBF). Conversely, approximately one-third of participants, accounting for 36.20%, reported a negative attitude (see Figure 2).

In terms of the information sources for the nutritional EBF, it is observed that mass media constitutes approximately 33.59% of the total. The remaining individuals obtained information from books

and health institutions, constituting 9.89% and 24.73% respectively (see Figure 3).

Out of the total sample size of 384 mothers, all of them (100%) faced various challenges. The majority of these mothers (52.5%) reported experiencing breast problems. The breast-related issues encompassed obstructed nipples, unilateral breast pain, and unilateral insufficient milk production. Additional obstacles encountered by participants in this study encompassed suboptimal lactation output (23.7%), difficulties in properly positioning and latching the infant (10.2%), maternal ailments (8.5%), infant distress during breastfeeding (3.4%), and a minority (1.7%) of women experiencing difficulties with expressing breast milk through pumping (see Figure 4).

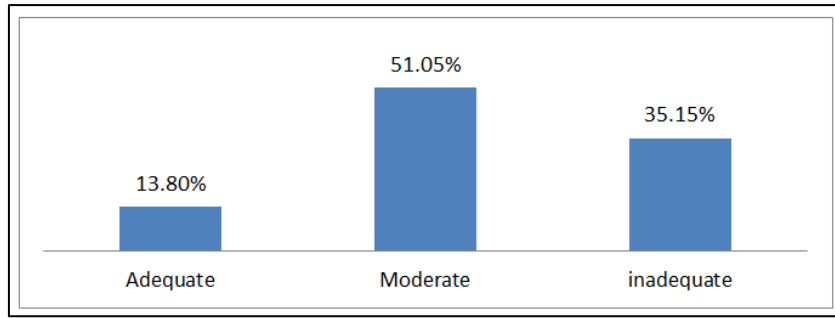


Figure 1: Level of knowledge regarding nutritional benefit of EBF

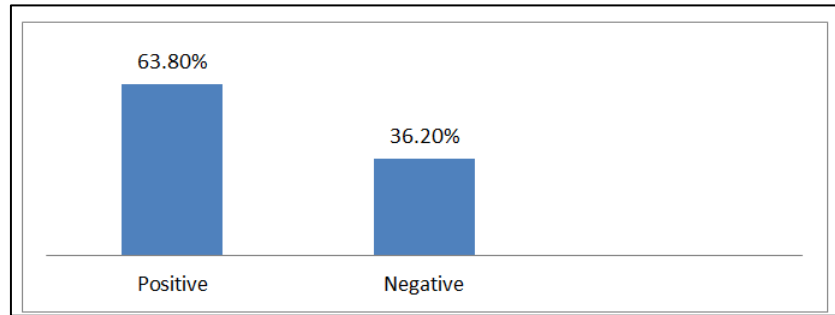


Figure 2: Level of attitude regarding nutritional benefit of EBF

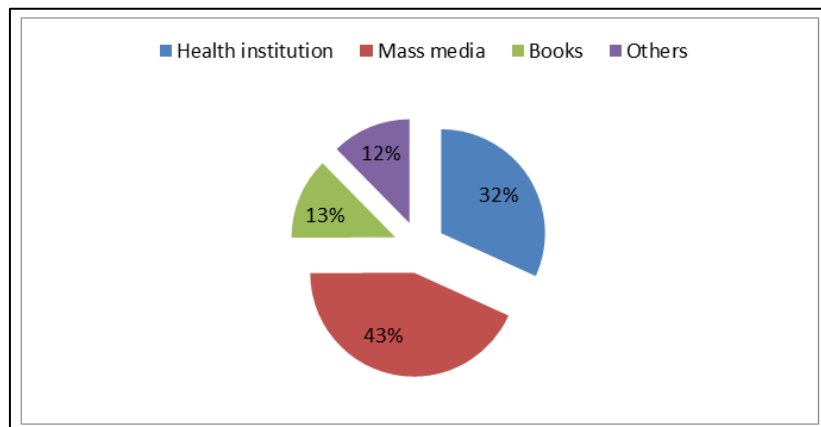


Figure 3: Source of information

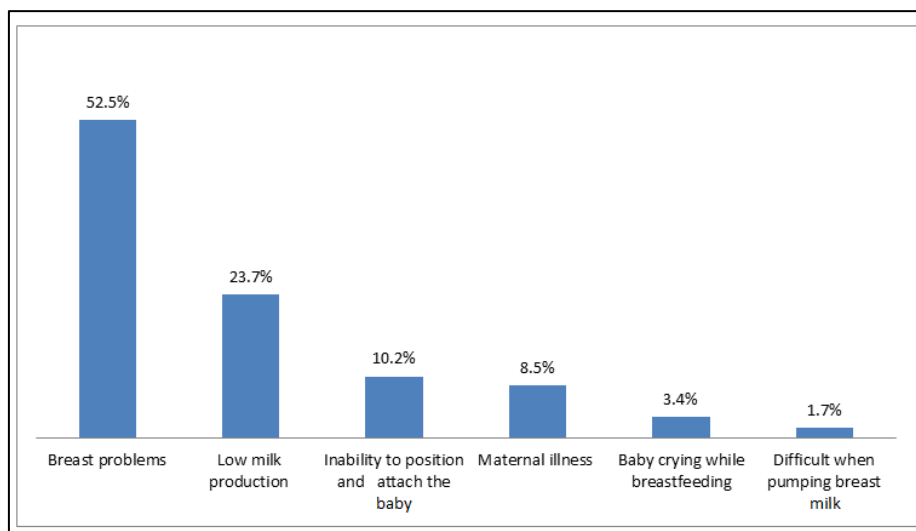


Figure 4: Challenges Experienced by Mothers

There is significant relationship between knowledge and some socio-demographic characteristics (type of family $p= 0.00001$, religion $p= 0.00001$ and educational status $p= 0.00001$). All the other variables (age $p= 0.993288$, marital status $p= 0.375557$, occupation $p= 0.126252$, monthly income $p= 0.079084$) did not showed a significant relationship (table 2).

Attitude status shows significant relationship with some socio-demographic characteristics (Age $p= 0.00002$, marital status $p= 0.000075$, educational status $p= 0.00001$, monthly income $p= 0.00001$). All the other variables (occupation $p=0.604113$, religion $p= 0.181483$, type of family $p= 0.334089$) did not showed a significant relationship (Table 3). The results also showed a significant relationship between knowledge level and Attitude $p= 0.00001$ (Table 4).

Table 2: Association between Knowledge and Socio-demographic characteristics

Variables	Level of Knowledge			Total	Chi Sq	p-value
	Inadequate	Moderate	Adequate			
1. Age of mother in years						
≤20	16	21	6	384	0.7525	0.993288
21 – 25	19	25	6			
26 - 30	67	99	29			
≥31	33	51	12			
2. Marital status						
Single	4	4	2	384	6.4418	0.375557
Married	107	166	41			
Divorced	10	10	1			
Widowed	14	16	9			
3. Type of family						
Nuclear	49	51	48	384	73.8193	0.00001
Extended	86	145	5			
4. Religion						
Islam	108	176	34	384	69.7913	0.00001
Christianity	25	19	6			
Others	2	1	13			
5. Educational status						
Primary/secondary	105	140	10	384	84.8485	0.00001
Tertiary	10	40	35			
Illiterate	20	16	8			
6. Occupation						
Housewife	50	100	21	384	7.1886	0.126252
Civil servant	25	25	9			
Business/ Labour	60	71	23			
7. Monthly income						
≤ 10,000	40	50	11	384	8.3651	0.079084
11,000 – 20,000	67	101	21			
Above 20,000	28	45	21			

Table 3: Association between Attitude and Socio-demographic characteristics

Variables	Level of Attitude		Total	Chi Sq	p-value
	Positive	Negative			
1. Age of mother in years					
≤20	33	20	384	24.2574	0.00002
21 – 25	31	19			
26 - 30	110	85			
≥31	81	15			
2. Marital status					
Single	7	3	384	21.7717	0.000075
Married	188	126			
Divorced	12	9			
Widowed	38	1			
3. Type of family					
Nuclear	90	58	384	0.933	0.334089

Variables	Level of Attitude		Total	Chi Sq	p-value
	Positive	Negative			
Extended	155	81			
4. Religion					
Islam	197	121	384	3.4132	0.181483
Christianity	35	15			
Others	13	3			
5. Educational status					
Primary/secondary	155	100	384	39.7951	0.00001
Tertiary	75	10			
Illiterate	15	29			
6. Occupation					
Housewife	111	60	384	1.008	0.604113
Civil servant	40	19			
Business/ Labour	94	60			
7. Monthly income					
≤ 10,000	61	40	384	47.7332	0.00001
11,000 – 20,000	149	40			
Above 20,000	35	59			

Table 4: Association between knowledge and Attitude

Variables	Level of Attitude		Chi Sq	p-value
	Positive	Negative		
Knowledge				
Unsatisfactory	56	79	56.9528	0.00001
Satisfactory	138	58		
Excellent	51	2		

DISCUSSION

Breastfeeding continues to serve as a vital source of essential nutrients for infants and young children, even after the introduction of complementary foods. It supplies approximately 50% of an infant's energy requirements until the age of one, and up to 33% during the second year of life. According to Ogbonnaya *et al.*, (2012), breast milk maintains a superior nutritional profile compared to complementary foods, and additionally contains protective components. According to a study conducted by the World Health Organization (WHO) in 2002, the optimal benefits of breastfeeding are achieved through exclusive breastfeeding for the initial six months, prior to the introduction of complementary foods. The well-being of the family, particularly the infants, is closely linked to the mother. Therefore, it is crucial to evaluate the knowledge and attitudes of mothers concerning dietary practices during lactation. Thompson *et al.*, (2008) assert that possessing sufficient knowledge and adhering to suitable nutritional practices are crucial factors in determining one's overall health.

The study revealed that 13.80% of the participants possessed sufficient knowledge, while 51.04% demonstrated a moderate level of knowledge, and 35.15% exhibited insufficient knowledge. The current study reveals a lower prevalence of sufficient knowledge compared to previous reports in Abu Dhabi, United Arab Emirates (51.2%) (Al Ketbi *et al.*, 2018), Somaliland, Ethiopia (42.9%) (Jama *et al.*, 2020), and

Kersa district, Ethiopia (27.5%) (Adem *et al.*, 2021). The potential correlation between a lower proportion of participants possessing sufficient knowledge and the prevalence of breast-related issues among nearly half of the respondents. When mother is not well-informed about exclusive breast feeding, she may not understand the correct positioning and latch techniques for the baby, leading to improper breastfeeding practices which will impact the nutritional benefits for both mother and infant.

Contrary to previous research conducted by Tampah-Naah and Kumi-Kyereme (2013) and Mogre *et al.*, (2016), a larger proportion of mothers hold the belief that breast milk is the optimal source of nourishment for infants. These mothers also endorse the practice of exclusive breastfeeding for a duration of six months, with many attributing their awareness of this recommendation to healthcare professionals.

A comparable investigation was conducted in India to evaluate the knowledge, attitudes, and practices related to breastfeeding among mothers. The findings revealed that mothers possessed a satisfactory level of knowledge regarding breastfeeding, which was quantified as 12.05 ± 1.74 (mean \pm standard deviation). However, it was observed that a significant proportion of mothers (36.4%) expressed discomfort due to perceived inadequacy in meeting their child's nutritional requirements. According to a study conducted by Vijayalakshmi *et al.*, (2015), a significant majority of

mothers (69%) demonstrated awareness regarding the nutritional benefits associated with colostrum.

In a study conducted by Aliyu (2016) in Nigeria, the objective was to evaluate the knowledge, attitude, and practice of exclusive breastfeeding among multigravid women attending antenatal clinics. The findings revealed that a significant proportion (69.6%) of the participants acknowledged that breast milk alone is adequate for infants during the initial six months of life. Furthermore, nearly all respondents (94.4%) agreed that exclusive breastfeeding offers nutritional advantages to the infant.

The influence of society on the perceptions and behaviors of individuals within that society is a significant factor that should not be overlooked. Based on the findings of this study, it was observed that 63.80% of the participants exhibited a favorable attitude towards exclusive breastfeeding, whereas 36.20% displayed a negative attitude towards exclusive breastfeeding, as indicated by their attitudinal scores. These findings are consistent with previous research conducted in Ethiopia (Alamirew *et al.*, 2017) and Rwanda (Bahemuka *et al.*, 2013), which also reported higher levels of positive attitudes, specifically 76% in Ethiopia and 71% in Rwanda. Based on the guidelines provided by the Food and Agriculture Organization (FAO) regarding thresholds that indicate the need for nutrition intervention, it is deemed urgent to intervene when an attitude score falls below or equal to 70% (Macia & Glasauer, 2014).

A significant proportion of mothers, approximately 33.59%, have acquired knowledge regarding the nutritional advantages of exclusive breastfeeding through exposure to mass media. Approximately 9.89% of the remaining individuals obtained their information from books, while 24.73% acquired it from health institutions. According to Diawara's (2015) study conducted in Mali in 2015, the prevalence of the reported rate of 23.5% was observed specifically in rural areas. The sources of information utilized in this study included the media and Information, Education, and Communication (IEC) sessions conducted at the health center.

The study also demonstrates noteworthy correlations between knowledge level and attitude, knowledge and factors such as type of family, religion, and educational status, as well as attitude and variables including age, marital status, educational status, and monthly income. Similar to the findings of Mohammed *et al.*, (2014) pertaining to exclusive breastfeeding in Egypt during the year 2014, a notable correlation was observed between maternal education and knowledge regarding exclusive breastfeeding. The observed outcome can be explained by the notion that mothers with higher levels of education tend to be more receptive to health-related information, particularly when it

pertains to their children. Consequently, they are more likely to possess knowledge regarding the significance of exclusive breastfeeding.

Consistent with the findings of Mohammed *et al.*, (2014), there was limited impact of maternal age on the level of knowledge and adherence to exclusive breastfeeding. The majority of mothers, regardless of their age at the time of childbirth, demonstrated awareness of the concept, in contrast to the findings of Fosu-Brefo and Arthur's (2015) study, which indicated a notable correlation between maternal age and knowledge regarding exclusive breastfeeding. A small proportion of mothers demonstrated a notable level of comprehension regarding the nutritional importance of breastfeeding for infants. For example, the role of breastfeeding in safeguarding an infant against diseases, its status as an optimal source of nutrients, and the nutritional advantages it provides to lactating mothers and their infants.

CONCLUSION

This study demonstrates that the level of knowledge and attitude among mothers residing in rural communities of Igabi LGA with regards to the nutritional advantages of exclusive breastfeeding is inadequate, despite a majority of mothers exhibiting positive attitudes. Mothers faced various challenges related to breastfeeding, which encompassed issues such as blocked nipples, unilateral breast pain, and insufficient milk production in one breast. There exists a correlation between the level of knowledge and attitude, as well as between knowledge and certain socio-demographic factors such as family type, religion, and educational status. Additionally, attitude is associated with socio-demographic characteristics including age, marital status, educational status, and monthly income. In conclusion, enhancing maternal understanding of the nutritional advantages associated with exclusive breastfeeding in the native language would significantly contribute to the reduction of child mortality rates.

Funding: The research conducted did not receive any financial support from external sources.

Acknowledgements: The research team expresses gratitude to the female participants for their valuable contribution in dedicating their time to participate in the interviews.

Conflicts of Interest: The authors assert that they have no conflicts of interest.

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