

Determinants of Exclusive Breastfeeding Practices: Evidence from Empirical Studies and Implications for Maternal and Child Health in Damaturu

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Abstract: Background: Exclusive breastfeeding (EBF) during the first six months of life is essential for optimal infant growth and protection against childhood morbidity and mortality. Despite its benefits and widespread awareness, EBF practice remains suboptimal in many settings. This study assessed the knowledge, attitudes, practices, and challenges associated with EBF among antenatal clinic attendees in Damaturu, Yobe State, Nigeria. Methods: A cross-sectional descriptive study was conducted among 246 antenatal clinic attendees in selected healthcare facilities in Damaturu. Participants were selected using simple random sampling. Data were collected using a structured, interviewer-administered question-naire covering socio-demographic characteristics, knowledge, attitudes, practices, and challenges related to EBF. Data were analyzed using IBM SPSS Statistics. Descriptive statistics, including frequencies, percentages, and mean agreement scores, were used to summarize the findings. Knowledge and EBF practice were categorized as good or poor using a 50% threshold. Results: Respondents were predominantly aged 36–45 years (51.2%), married (89.8%), Muslim (91.9%), and tertiary educated (57.7%). Knowledge of EBF was generally high, with 97% aware of EBF, 96% correctly identifying the recommended initiation time, and 94% knowing the recommended duration. Attitudes were also favourable, with an overall mean agreement of approximately 89%. However, only 63 respondents (25.6%) reported practising EBF, indicating a substantial gap between knowledge and practice. The major reported challenges were work-related demands (30%), perceived inadequate breast milk production (15%), family pressure (14%), cultural beliefs (11%), and maternal health issues (11%). Conclusion: Despite high knowledge and favourable attitudes, EBF practice was low among the respondents. Addressing workplace demands, perceived milk insufficiency, family and cultural influences, and maternal health concerns, alongside breastfeeding education, may improve adherence to recommended EBF practices.

Keywords: Exclusive Breastfeeding, Knowledge, Attitudes, Breastfeeding Practice, Barriers, Antenatal Care, Damaturu, Nigeria.

Introduction

Breast milk is widely recognized as the optimal source of nutrition for infants, providing essential macronutrients, micronutrients, and immunological protection necessary for growth and survival during early life [1]. In line with this evidence, the World Health Organization (WHO) and UNICEF recommend exclusive breastfeeding (EBF) for the first six months of life, followed by

continued breastfeeding alongside appropriate complementary feeding up to two years or beyond [2]. Exclusive breastfeeding, defined as the provision of only breast milk without additional liquids or solids except prescribed supplements or medications, plays a critical role in reducing infant morbidity and mortality.

Globally, increasing attention has been directed toward promoting EBF due to its well-documented health benefits for both infants and mothers. Empirical evidence indicates that optimal breastfeeding practices significantly reduce the incidence of infectious diseases such as diarrhea and pneumonia, which are leading causes of under-five mortality, particularly in low-resource settings [3], [4]. Despite these benefits, suboptimal breastfeeding practices persist, contributing to preventable child deaths. It has been estimated that a substantial proportion of global under-five mortality could be averted through improved breastfeeding practices alone [5]. Breastfeeding also confers long-term health and socioeconomic benefits, including enhanced immunity, reduced healthcare costs, and improved maternal recovery postpartum [6]. However, the translation of knowledge into practice remains inconsistent across settings. Studies have consistently reported high levels of awareness but relatively low adherence to recommended EBF practices. For instance, [7] reported high awareness levels (96.2%) among East African mothers, yet only 55.9% adhered to six months of exclusive breastfeeding. Similarly, [8] and [9] observed that although knowledge and attitudes toward breastfeeding were generally favorable, actual practice remained suboptimal.

A growing body of literature has examined the determinants of EBF across diverse contexts. Sociodemographic factors such as maternal education, employment status, and parity have been identified as significant predictors of breastfeeding behavior [10], [11], [12]. Cultural beliefs, misconceptions, and family influence also play a crucial role, particularly in African settings where decision-making may involve extended family members [13], [14]. In Nigeria, several studies have documented similar patterns, highlighting gaps between knowledge and practice [15], [16], [17].

Moreover, structural and institutional barriers—including inadequate antenatal counseling, workplace constraints, and limited community support—continue to hinder optimal breastfeeding practices [18], [19], [20]. Regional studies within Nigeria further reveal disparities in EBF prevalence and determinants, with evidence from Bauchi, Kaduna, Jigawa, and Borno states indicating varying levels of knowledge, attitude, and practice [21], [22], [23], [24]. Despite these efforts, there remains limited context-specific evidence from certain regions, including Yobe State, where sociocultural and economic factors may uniquely influence breastfeeding practices. Collectively, existing studies underscore the importance of integrating knowledge, attitude, and contextual determinants in understanding EBF behavior. However, much of the literature either focuses on isolated factors or lacks region-specific analysis. This study therefore seeks to bridge this gap by providing a systematic assessment of knowledge, attitudes, practices, and challenges associated with exclusive breastfeeding among women in Damaturu Local Government Area of Yobe State.

Materials and Methods

This section describes the methodological procedures adopted to investigate knowledge, attitudes, practices, and challenges associated with exclusive breastfeeding among antenatal clinic attendees in Damaturu, Yobe State, Nigeria. It presents the study design and setting, study population, sample size and sampling procedure, data collection instrument and procedure, measurement of study variables, and methods of data analysis.

2.1 Study Design and Setting

A descriptive cross-sectional study design was employed to assess the knowledge, attitudes, practices, and challenges associated with exclusive breastfeeding (EBF) among antenatal women in Damaturu Local Government Area (LGA), Yobe State, Nigeria. The study was conducted at two major healthcare facilities: the State Specialist Hospital and the Maryam Abacha Maternal and Child Health Centre. Both facilities provide comprehensive antenatal and maternal healthcare services and serve women from diverse socioeconomic and demographic

backgrounds.

2.2 Study Population

The study population comprised women of reproductive age attending antenatal clinics at the selected healthcare facilities. Participants were residents of Damaturu LGA and represented diverse demographic and socioeconomic characteristics, including differences in age, educational attainment, parity, and occupation.

2.3 Sample Size Determination

The required sample size was determined using Cochran's formula for estimating a population proportion [25]:

$$n_0 = \frac{Z^2 p(1 - p)}{d^2}, \quad (1)$$

where n_0 is the initial required sample size, Z is the standard normal deviate corresponding to the desired confidence level, p is the estimated proportion of the population possessing the characteristic of interest, and d is the desired margin of error. In the absence of a reliable prior estimate of the population proportion, $p = 0.50$ may be assumed, as this gives the maximum required sample size. The formula is based on the sample-size estimation procedure described by Cochran.

2.4 Sampling Technique

A simple random sampling technique was employed to select eligible participants from the antenatal clinic attendees. This approach provided each eligible woman with an equal probability of selection and helped minimize the potential for selection bias.

2.5 Data Collection Instrument and Procedure

Data were collected using a structured interviewer-administered questionnaire consisting of five sections covering socio-demographic characteristics, knowledge, attitudes, practices, and challenges related to exclusive breastfeeding (EBF). The questionnaire was pre-tested among a subset of respondents to assess its clarity, comprehensibility, and reliability before the main data collection, consistent with recommended procedures for the development and field testing of health survey instruments [26]. Face-to-face interviews were conducted by trained data collectors over two weeks using standardized procedures to promote consistency and minimize interviewer-related variation.

2.6 Ethical Considerations

Ethical approval was obtained from the Yobe State Ministry of Health Research Ethics Committee. Informed consent was obtained from all participants before data collection. Participation was voluntary, and confidentiality and anonymity were maintained throughout the study. Participants were informed of their right to withdraw from the study at any time without consequences.

2.7 Data Analysis

The collected data were coded, entered, cleaned, and analyzed using IBM SPSS Statistics [27]. Descriptive statistics, including frequencies and percentages, were used to summarize the socio-demographic characteristics and study variables. Knowledge and EBF practice were categorized as "good" or "poor" using a 50% threshold based on the scoring criteria adopted for this study. The classification of EBF practice was informed by the standard definition of exclusive breastfeeding recommended by the World Health Organization (WHO) and UNICEF, which specifies that infants should receive only breast milk, except for prescribed medicines, vitamins, minerals, and oral rehydration solution, during the first six months of life [28]. The results were summarized and presented using tables and appropriate descriptive statistics.

Results and Discussion

This section presents the findings on exclusive breastfeeding (EBF) among the 246 respondents in Damaturu. The results are presented sequentially, beginning with the socio-demographic characteristics of the respondents, followed by their knowledge and attitudes towards EBF, reported EBF practices, and the challenges affecting its implementation.

3.1 Socio-Demographic Characteristics

The socio-demographic characteristics of the 246 respondents are presented in Table 1. More than half of the respondents were aged 36–45 years (51.2%), followed by those aged 26–35 years (33.7%). Respondents aged 15–25 years and those aged 46 years or older accounted for 9.8% and 5.3%, respectively. The majority were married (89.8%), while 10.2% were divorced. Most respondents identified as Muslim (91.9%), whereas 8.1% identified as Christian.

Regarding educational attainment, tertiary education was the most common level (57.7%), followed by secondary education (28.9%). Smaller proportions had Islamic (6.9%) or primary (6.5%) education. In terms of occupation, civil servants constituted the largest group (36.2%), followed by students (30.9%), housewives (21.5%), and respondents engaged in business activities (11.4%). Overall, the study population was predominantly aged 36–45 years, married, Muslim, and tertiary educated, with civil service being the most frequently reported occupation.

Table 1. Socio-demographic characteristics of respondents (n = 246).

Variable	Frequency	Percentage (%)
Age (years)		
15–25	24	9.8
26–35	83	33.7
36–45	126	51.2
46+	13	5.3
Marital status		
Married	221	89.8
Divorced	25	10.2
Religion		
Islam	226	91.9
Christianity	20	8.1
Education		
Primary	16	6.5
Secondary	71	28.9
Tertiary	142	57.7
Islamic	17	6.9
Occupation		
Civil servant	89	36.2
Student	76	30.9
Business	28	11.4
Housewife	53	21.5

3.2 Knowledge of Exclusive Breastfeeding

The respondents demonstrated generally high levels of knowledge regarding EBF (Table 2). Awareness of EBF was reported by 97% of respondents, and a similar proportion (97%) indicated that they had received education on EBF. Knowledge of the recommended time for initiating breast-feeding was also high (96%), while 94% correctly identified the recommended duration of EBF.

Most respondents recognized the importance of EBF (87%) and its role in preventing childhood illness (89%). However, knowledge was comparatively lower regarding the adequacy of breast milk (80%) and the benefits of EBF to mothers (74%). Thus, although awareness and knowledge of the core recommendations for EBF were high, specific knowledge gaps remained, particularly regarding maternal benefits and perceptions of breast milk sufficiency.

Table 2. Knowledge of respondents regarding exclusive breastfeeding.

Knowledge indicator	Yes (%)	No (%)
Awareness of EBF	97	3
Knowledge of importance	87	13
Correct initiation time	96	4

Correct duration	94	6
Breast milk sufficient	80	20
Prevents illness	89	11
Benefits to mother	74	26
Received education on EBF	97	3

3.3 Attitudes Towards Exclusive Breastfeeding

The respondents generally expressed favourable attitudes towards EBF, with an overall mean agreement of approximately 89%. Most respondents endorsed the early initiation of breastfeeding and recognized the health and economic benefits associated with EBF. The positive attitude observed in this study suggests broad acceptance of EBF among the respondents, despite the substantially lower proportion reporting actual EBF practice.

3.4 Practice of Exclusive Breastfeeding

The reported practice of EBF was considerably lower than the levels of knowledge and positive attitudes observed among respondents (Table 3). Of the 246 respondents, 63 (25.6%) reported practising EBF, whereas 183 (74.4%) did not. Thus, approximately one-quarter of the respondents reported practising EBF, indicating a substantial gap between knowledge, attitudes, and actual breastfeeding behaviour.

This disparity suggests that adequate knowledge and favourable attitudes alone may not be sufficient to ensure adherence to EBF recommendations. Practical, occupational, social, cultural, and maternal factors may constrain the ability of mothers to translate their knowledge and positive attitudes into sustained EBF practice.

Table 3. Practice of exclusive breastfeeding among respondents (n = 246).

EBF practice	Frequency	Percentage (%)
Practised EBF	63	25.6
Did not practise EBF	183	74.4

3.5 Challenges Affecting Exclusive Breastfeeding Practice

The major challenges reported by respondents are presented in Table 4. Work-related demands constituted the most frequently reported barrier (30%), followed by perceived inadequate breast milk production (15%) and family pressure (14%). Cultural beliefs and maternal health issues were each reported by 11% of respondents.

The findings indicate that occupational demands represented the most prominent reported constraint to EBF practice. Perceived inadequate breast milk production was the second most frequently reported challenge, highlighting the potential influence of maternal perceptions of milk sufficiency on breastfeeding decisions. Social and cultural influences, particularly family pressure and cultural beliefs, also constituted important barriers, while maternal health concerns were reported by a comparable proportion of respondents.

Taken together, these findings demonstrate a marked discrepancy between the high level of EBF knowledge and favourable attitudes and the relatively low level of reported practice. The pattern of reported challenges suggests that improving EBF uptake may require interventions that extend beyond health education to address workplace demands, perceptions of breast milk sufficiency, family support, cultural influences, and maternal health needs.

Table 4. Reported challenges affecting exclusive breastfeeding practice.

Challenge	Percentage (%)
Work schedule	30
Perceived inadequate breast milk	15
Family pressure	14
Cultural beliefs	11
Maternal health issues	11

Conclusion

This study demonstrates a substantial gap between knowledge, attitudes, and the actual practice of exclusive breastfeeding (EBF) among respondents in Damaturu. Although respondents exhibited high levels of awareness and knowledge of EBF and generally favorable attitudes towards its health and economic benefits, only approximately one-quarter reported practicing EBF. This discrepancy indicates that knowledge and positive attitudes alone may not be sufficient to translate into sustained EBF practice. The findings also show that work-related demands were the most frequently reported barrier to BF, followed by perceived inadequate breast milk production, family pressure, cultural beliefs, and maternal health concerns. These challenges highlight the importance of addressing the social, occupational, cultural, and maternal factors that may hinder women from adopting and sustaining recommended breastfeeding practices. Therefore, efforts to improve the practice of EBF in Damaturu should go beyond conventional health education to include practical and context-specific interventions. These should promote supportive workplace environments, strengthen breastfeeding counselling on breast milk adequacy and maternal benefits, involve family members in breastfeeding education, address culturally influenced misconceptions, and provide appropriate maternal health support. A coordinated approach involving healthcare providers, families, employers, community leaders, and relevant public health authorities may help reduce the gap between knowledge and practice and contribute to improved breastfeeding outcomes among mothers in the study area.

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