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Original Article

Factors Associated with Exclusive Breastfeeding among Mothers in Rural Chattogram of Bangladesh

Md. Shah Alam[1*]
Kamrun Nahar[1]
Muhammad Jabed Bin Amin Chowdhury[1]
Aparup Kanti Das[1]
Dhiman Chowdhury[1]
Dazy Barua[1]

[1]Department of Pediatrics
Chittagong Medical College
Chattogram, Bangladesh.

Abstract

Background: *Exclusive Breastfeeding (EBF) is recommended for the first six months of age by the World Health Organization (WHO). Mothers' good knowledge and positive attitude play key roles in the process of EBF practices. The study aimed to assess maternal knowledge, attitudes, and other factors associated with EBF practices in a rural area of Chattogram, Bangladesh.*

Materials and methods: *This descriptive cross-sectional study was conducted in two rural private hospital outpatient departments in Lohagara, Chattogram, Bangladesh, during the COVID-19 pandemic from July 2021 to December 2021. Two hundred and forty mothers with children of age 6 to 24 months selected by purposive sampling were interviewed using a questionnaire to elicit information on infant breastfeeding practices and their associated factors. Data were collected throughthe face-to-face interview from hospital's outdoors, following a convenient sampling method. Chi-squared test and binary logistic regression models were used to explore the association.*

Results: *The prevalence of EBFfor the first six months of an infant's life was 64.6%. Good knowledge (p<0.001) and a positive attitude (p<0.001) toward breastfeeding were significantly associated with EBF practices. A binary multivariable logistic regression model demonstrated that for mothers with SSC or higher-level education (AOR=3.21, 95% CI: 1.20-13.14) family monthly income >50000 BDT (AOR=2.11, 95% CI: 1.04-15.23) normal delivery (AOR=1.99, 95% CI: 1.11-8.23) and hospital delivery (AOR=3.34, 95% CI: 1.67-10.11) mothers were more likely to follow EBF practices compared to their counterparts. Moreover, joint family (AOR=0.32, 95% CI: 0.15-0.68) and younger mother (AOR=0.42, 95% CI: 0.45-0.99) mothers had less likelihood of EBF practices than their counterparts.*

Conclusion: *One in every three children in the study sitedoes not breastfeed exclusively, which needs special attention from the policymakers.Besides good knowledge and a positive attitude, the most important predictors were modifiable factors for EBF; hence should be addressed to improve EBF practices.*

Key words: Attitude; Exclusive breastfeeding; Knowledge; Practice.

*Correspondence to:
Dr. Md. Shah Alam
Assistant Professor
Department of Pediatrics
Chittagong Medical College
Chattogram, Bangladesh.
Mobile : +88 1819 61 36 70
Email : shahalamk49@gmail.com

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INTRODUCTION

The WHO recommended EBF for the first six months of age and giving the infant no other food or drink, not even a single drop of water in this period.[1] EBF is an important public health strategy for improving children's and mothers' health by reducing child morbidity and mortality and helping control societal healthcare costs.[2] Although EBF is vital to promote infants' growth, development, and health, however, in 57 Low- and Middle-Income Countries (LMICs) during 2010–2018, the global weighted prevalence was 51.9% for early initiation of breastfeeding, 45.7%

for exclusive breastfeeding under six months, 32.0% for exclusive breastfeeding at 4–5 months, 83.1% for continued breastfeeding at one year, 56.2% for continued breastfeeding at two years, 14.9% for introduction of solid, semi-solid or soft foods under six months, and 63.1% for introduction of solid, semi-solid or soft foods at 6–8 months.[3]

Previous studies have indicated several socio-demographic factors like lower maternal age, lower level of schooling, and lower-income status were positively associated with the lower rate of EBF practice.[4-6] Birth characteristics, including vaginal delivery and adequate counseling on infant feeding, were the factors associated with increased odds of EBF practice in an Ethiopian study.[7] Authors of that Ethiopian study also emphasized the role of prenatal EBF plan and found the strongest significant effect on the increasing duration of EBF. Child factors such as child age less than three months and female gender were found as positive predictors of EBF in two studies conducted in Nigeria and Ethiopia.[8,9] Healthcare services utilization, including antenatal care, delivery care, and postnatal care services, were also found as significant positive predictors of EBF practice.[9,10]

Few studies have recently been conducted in Bangladesh on associations among knowledge, attitudes, and sociodemographic factors with EBF practices.[11-13]The EBF determining factors have been shown to vary between countries and within the same country.[14]As a result, there is an urgent need to evaluate knowledge, attitude, and associated sociodemographic factors with EBF practice. The information will be useful to policymakers to improve policy that focuses on resources and interventions to promote EBF practices. Ultimately, it would help to achieve SDG-3 (Sustainable Development Goals) and reduce infant morbidity and mortality rates. Therefore, this study has been designed to evaluate maternal knowledge, attitude, and factors associated with EBF among mothers who had a child aged 6-24 months old.

MATERIALS AND METHODS

This cross-sectional study was conducted at the Outpatient Department of two rural private hospitals in Lohagara, Chattogram, Bangladesh, from July 2021 to December 2021. Mothers from all socioeconomic statuses attend these hospitals due to the availability of maternal and child healthcare services. Therefore, these hospitals were representative of the study population. Ethical clearance was obtained from the Ethical and Review Committee of Chittagong Medical College. The study subjects were informed clearly and in detail about the importance of the study and written consent was obtained.

A total of 240 mothers who were permanent inhabitants of the study place, having infants aged 6-24 months interviewed and included consecutively. Sick children requiring emergency care, irritable children, and mothers who were unwilling to participate were excluded from the study.

Research assistants were recruited and trained for the study's fieldwork and data collection by reviewing the questionnaire through teamwork with a researcher. Structured questionnaires were used to collect data.

The outcome variable of this study was EBF during the first six months of an infant's life. EBF has considered only the mothers who are breastfeeding and who did not give any supplementary food during the first six months of their infant's life. The duration of EBF was divided into two groups: (i) less than six months (No = 0) and (ii) 6 completed months (Yes = 1) by present authors. This categorical variable was used as a dependent variable in the present study.

In this study, we considered the following socioeconomic, demographic, service-related, and behavior variables as independent variables: Socioeconomic variables: Religions, mother's education, mother's occupation, and monthly family income. Demographic variables: the current age of the motherand family type. Service-related: the place of delivery, mode of delivery, Behavior variables: Mothers' Knowledge of EBF and attitude towards EBF.

Knowledge of EBF was measured by asking the mother ten questions. Each correct answer was given a score of 1, while a wrong answer was a score of 0. The total knowledge score was then calculated and graded on a scale based on standards carried out in previous research, as follows: Good (≥7), medium (4–6), and poor (≤3).[12] In the same way, attitude toward breastfeeding was assessed using a series of questions such as EBF is beneficial for infant and mother, baby can survive without water up to 6 months of age, formula milk is unsuitable for baby and not a better choice for working mothers, and breast milk is more easily digested than formula milk. If the mother agreed with this opinion, she was given a score of one and 0 if she disagreed or was neutral with the opinion. The total score was then calculated, and the attitude was graded as positive (≥7), moderate (4–6), or poor (≤3).[15]

Statistical analyses were performed using SPSS (Version 23). Frequency and percentages were used for categorical data. Chi-squared test was used to assess the association of knowledge and attitude on breastfeeding with exclusive breastfeeding practices. Binary logistic regression analyses were done to assess sociodemographic factors on exclusive breastfeeding practices. The Adjusted Odds Ratio (AOR) was calculated to evaluate the strength of the association of sociodemographic factors with exclusive breastfeeding practices at a 95% Confidence Interval (CI) for the significance test. A value of $p<0.05$ was considered statistically significant.

RESULTS

A total number of 240 ever-married and able breastfeeding mothers were analyzed for this study with mean age of a mean (±SD) age of 26.1 (±5.3) years (Ranging from 17 to 39). The prevalence of EBF among study participants was 64.6% (155/240) (Figure 1).

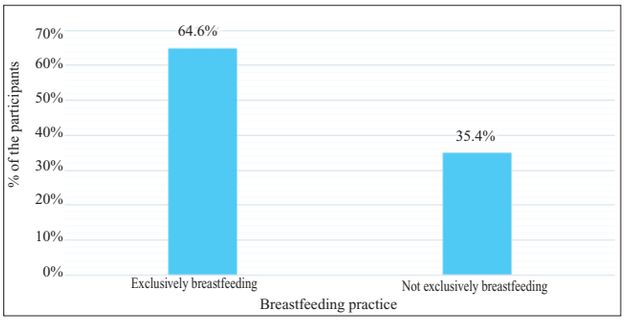

Figure 1 Prevalence of exclusive breastfeeding in rural Lohagara

The Chi-square test demonstrated that some variables were significantly associated with EBF in bivariate analysis (Table 1). Maternal age, education, monthly family income, family type, place of delivery, and mode of deliverywere significantly associated with EBF practice in the study ($p<0.05$).

Table I Association of demographic, socio-economic, and health service-related factors with EBF practice among rural mothers of Lohagara, Chattogram, Bangladesh, during the first six months of an infant's life in 2021

Characteristics	Total (n=240)	Exclusive breastfeeding (n=155)		
	n	n	%	p value*
Maternal age (Years)				
≤20 years	29	14	48.3	0.031
21-30 years	180	125	69.4	
>30 years	21	17	81.0	
Religion				
Muslim	225	148	65.8	0.328
Non-Muslim	15	8	53.3	
Maternal education level				
Illiterate	36	15	41.7	0.003
Primary	55	34	61.8	
SSC & higher	149	107	71.8	
Maternal occupation				
Housemaker	198	148	74.7	0114
Employed outside	42	8	19.0	
Monthly family income				
<20,000 Tk	54	26	48.1	0.015
20,000-50,000 Tk	124	85	68.5	
>50,000 Tk	62	44	71.0	
Family type				
Single	140	101	72.1	0.004
Joint	100	54	54.0	
Place of delivery				
Home	55	22	40.0	<0.001
Hospital	185	133	71.9	
Mode of delivery				
Normal/vaginal	173	124	71.7	<0.001
Caesarian section	67	31	46.3	
Child's birth order				
First	118	81	68.6	0.677
Second or higher	122	74	60.7	

*Chi-square test.

The association of maternal knowledge and attitude scores with EBF practice is shown in Table II. More than half (58.6%) of the mothers had a good knowledge score, and 52.1% had a positive attitude. The chi-squared test found that maternal knowledge score and attitude score were statistically associated with EBF practices among mothers (Table II).

Table II Association of maternal knowledge and attitude on EBF practice in rural Lohagara

Characteristics	Total (n=240)	Exclusive breastfeeding (n=155)		
	n (%)	n	%	p value*
Knowledge score (Out of 10)				
Good	139 (58.6)	107	77.0	<0.001
Medium	79 (31.8)	38	48.1	
Poor	22 (9.1)	10	45.5	
Attitude score (Out of 10)				
Positive	125 (52.1)	88	70.4	<0.001
Neutral	91 (37.9)	58	63.7	
Negative	24 (10.0)	10	41.7	

*Chi-square test.

The significantly associated factors in bivariate analysis (Table I) were considered independent variables in binary logistic models (Table III). The adjusted regression model found the following sociodemographic factors were statistically significant with EBF practice among mothers: Maternal age, education, monthly family income, family type, place of delivery, and mode of delivery.

Table III Effect of demographic, socio-economic, and health service-related factors on EBF practice by the mothers in rural Lohagara

Characteristics	COR	95% CI of COR	p value	AOR	95% CI of AOR	p value
Maternal age (Years)						
≤20 years	0.62	0.32-0.98	0.023	0.41	0.45-0.99	0.036
21-30 years	0.71	0.41-1.32	0.142	0.31	0.40-1.42	0.223
>30 years (Ref.)	1			1		
Maternal education level						
Illiterate (Ref.)	1					
Primary	4.35	1.82-15.41	0.005	3.45	1.45-15.86	0.029
SSC & higher	5.14	1.91-12.5	0.041	3.21	1.20-13.14	0.034
Monthly family income						
<20,000 Tk (Ref.)	1			1		
20,000-50,000 Tk	2.32	1.05-10.47	0.004	2.01	0.89-14.11	0.084
>50,000 Tk	3.81	1.41-9.45	0.001	2.11	1.04-15.23	0.041
Family type						
Single (Ref.)	1			1		
Joint	0.27	0.12-0.59	0.004	0.32	0.15-0.68	0.008
Place of delivery						
Home (Ref.)	1			1		
Hospital	4.45	1.45-9.15	<0.001	3.34	1.67-10.11	0.006
Mode of delivery						
Normal/vaginal	2.98	1.64-5.27	<0.001	1.99	1.11-8.23	0.001
Caesarian section (Ref.)	1			1		

COR: Crude Odds Ratio, AOR: Adjusted Odds Ratio, CI: Confidence Interval.

DISCUSSION

EBF practice during the first six months of an infant's life is the most effective intervention for providing balanced nutrition and preventing child mortality and morbidity.[1] In this study, we observed that the overall prevalence of EBF practice among rural mothers of Lohagara, Chattogram, Bangladesh was 64.6% which is close to the national level (65%) in Bangladesh, and a recent study conducted in an urban area of Bangladesh (63.4%).[16,13] The prevalence of EBF in this study was higher than in other studies conducted in Bangladesh, such as a study conducted among Bangladeshi mothers in a rural area, which reported a prevalence of EBF of 35.9% and another study conducted in the rural area of Rajshahi district, which reported an EBF practice rate of 34.5%.[12,17] In both studies, the rural areas lacked health facilities, and many participants were illiterate. EBF practice rate was relatively lower among illiterate mothers compared with literate mothers, as found in another study.[18] So, health facilities and educational level were associated with lower EBF practice in that study area. In this study, the prevalence of EBF reported could be attributed to many educated mothers, health facilities and NGOs implementing programs to improve breastfeeding and reduce child malnutrition.

Following previous studies, this study found that mothers' good knowledge and attitude scores on breastfeeding were statistically significant with EBF practice.[13,19,20] Good knowledge score indicates an awareness of the advantages of exclusive breastfeeding and the disadvantages of formula milk/bottle feeds. Mothers who were positive toward exclusive breastfeeding agreed that breastfeeding is beneficial both for infant and mother, that the baby can survive without water up to 6 months of age, formula milk is unsuitable for baby and not as easily digested as breast milk.

Our study identified several other socio-demographic factors associated with EBF in Bangladesh. Mothers' age has been found as a major determining factor significantly associated with EBF. Younger mothers were less likely to adhere to the EBF practice, and the EBF rates increased among the mothers with the increase in age. Mothers aged below 21 years were almost 0.41 times less likely to exclusively breastfeed their infants than their mothers aged 31 years and above (p=0.036). This was consistent with the previous studies conducted in Bangladesh.[12,13] This could be because younger mothers may lack awareness and knowledge of breastfeeding.

Many studies found that mothers' education and family income were similarly proportional to EBF practice.[13,16,17] In this study, illiterate mothers were less likely to provide EBF to their infants. The practice rate of EBF significantly increased with the increase in mothers' educational status and monthly family income.

This study found few health service-related factors such as types and mode of delivery associated with EBF. However, women with caesarian delivery were less likely to practice EBF than those with vaginal delivery; similar results were found in previous studies.[7,12,13,22] Caesarian mothers required more time to recover from cesarean illness and difficulty moving; families were likely to introduce formula milk and not exclusive breastfeeding.[21] Furthermore, it was found that hospital delivery mothers had good EBF practices compared with home delivery mothers. Study results were consistent with other studies.[12,22,23] Delivery in the hospital made counseling easier to prepare the mother to be more positive toward EBF practices by duty doctor/nurse. In this study area, this program implements the Bangladesh Breastfeeding Foundation, part of the Ministry of Health and Institute of Public Health and Nutrition services, which might affect the study findings.

LIMITATIONS

This study has few potential limitations. Since this is a cross-sectional hospital outdoor-based study, it isn't easy to establish a causal relationship between the determinant factors and EBF. Information was taken from mothers on a recall basis, which may have resulted in bias, as the recall information may not be accurate. The study did not address important service-related factors like antenatal and postnatal care practice.

CONCLUSIONS

This study found several factors, such as good knowledge and positive attitude, aged mothers, hospital and vaginal delivery, education level, and monthly family income, were significantly associated with EBF practices. These findings help to design interventions that need to improve EBF.

RECOMMENDATIONS

Counselling programs at the community and individual levels to promote exclusive breastfeeding practices are needed. Government and NGOs should take steps to designinterventionsto discourage home delivery in the absence of healthcare providers or skilled birth attendants and encourage vaginal delivery to increase EBF practices among Bangladeshi mothers.

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DISCLOSURE

All the authors declared no conflicting interest.

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