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A Comparative Cross-sectional Study on Prevalence of Exclusive Breastfeeding and Its Associated Factors among Primiparous and Multiparous Mothers in an Urban Slum, Agartala, Tripura, Northeast India

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ABSTRACT

Background & aim: The prevalence rate of exclusive breastfeeding (EBF) is continued to be reported low in spite of all the benefits and numerous advantages of EBF. Hence, the aim of the study was to compare the prevalence of EBF and its associated factors among primiparaous and multiparaous women in an urban slum, Agartala, West Tripura, Northeast India.

Methods: A community based cross sectional study was conducted in an urban slum among 200 subjects (100 primipara and 100 multipara mothers), who were selected by simple random sampling technique. Data was collected by interviewing the subjects using a predesigned, pretested, structured interview schedule. Statistical analysis was done using Chi-Square test, Fisher's exact test and Independent t-test.

Results: The prevalence rate of EBF among primiparous and multiparous mothers were 53% and 68%, respectively [OR= 1.88 (1.060, 3.349)]. Those primiparaous mothers who went for antenatal check-up (ANC) minimum four times or more during pregnancy had 2.71 odds (1.009, 7.297) and who delivered at the health care facility had 2.43 odds (0.828, 7.168) of practice more EBF compared to those who had ANC less than 4 times and delivered at home. However, among multiparaous mothers, Muslims mothers had 2.33 odds (0.962, 5.659) of practice more EBF than Hindus.

Conclusion: The findings suggests that to improve the EBF rate among those who are not practicing EBF till six months of age, a special attention is needed to focus. Hence, community based awareness programme should be conducted frequently in the study area to promote EBF.

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Introduction

Promotion of exclusive breastfeeding practices for the first six months of an infant's life is one of the most effective interventions for reducing infant morbidity and mortality in resource-constrained settings. The World Health Organization (WHO) recommends exclusive breastfeeding for the first six months of life. Numerous studies have underlined the advantages of exclusive breastfeeding for growth, immunity and prevention of illness in young infants (1, 2, 3). Despite of the numerous recognized advantages of appropriate feeding practices, the rates of EBF in India continued to be low (4). Past studies have identified socio-economic status, maternal education, family structure, gravida, utilization of antenatal care services, place of residence and access to information as correlates of exclusive breastfeeding (5, 6, 7).

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Primigravidas are regarded as a vulnerable group in which insufficient messages may lead to decreased chances to achieve EBF. Primiparous Mothers, compared to multiparous mothers, have been observed to have more challenges in practicing EBF being their first experience (8). Many studies have demonstrated that multiparty is associated with longer exclusive breastfeeding and breastfeeding duration increases with increasing parity (9, 10, 11). In contrast, some studies have shown that parity has no significant influence on duration of breastfeeding (8, 12). No study was done till date, in Tripura for comparing EBF among primipara and multipara mothers, so the present study was planned with an objectives to estimate the prevalence of EBF and to determine the associated factors among primipara and multipara mothers in an urban slum, Agartala, Tripura, Northeast India.

Materials and Methods

This cross-sectional study was conducted in an urban slum, during October 2014 to December 2014, the field practice area of Urban Health Training Centre (UHTC) of Department of Community Medicine, Agartala Government Medical College. Study was approved by Institutinal Ethics Committee of Agartala Goverment Medical College vide memo F.No 4 (12-41)/AGMC/Academic/PG/thesis/2011/98 78-80, dated 6 th December 2012.

A list of primipara and multipara mothers was prepared from the family registers of the UHTC and mothers were selected from that list by simple random sampling technique. Mothers who were having 6-24 months old children residing in the study area were included and excluded those mothers who were not available during the time of visit. Sample size was calculated by using the formula for comparison of proportion between two groups (sample size of 100 per mothers), $n= \{Z_\alpha + Z_\beta\}^2 \{P_1(100-P_1) + P_2(100-P_2)\}/(P_1-P_2)^2$, where P_1 (Prevalence of exclusive breastfeeding in Multipara mothers) = 70.6% and P_2 (Prevalence of exclusive breastfeeding in Primipara mothers) = 48.1% (Prevalence of EBF among primipara and multipara mothers has taken from study done in Mumbai 2009) (9). Z_α =The Z value level for the significance level, for significance level of 5%, Z_α is 1.96 for a two tailed test and Z_β = the value for power; Z_β= .84, power is 80% and added 10% non-response rate.

ANMs and ASHAs were accompanied to identify the house of the eligible mothers and purpose of the study was explained to the study subjects and their family members. Written informed consent was sought from the subjects and confidentiality had maintained. For the collection of data, a predesigned, pretested, structured interview schedule was used. Structured interview schedule consist of (a) sociodemography information of the mother like mothers age, religion, caste, literacy, occupation, family income/month, type of family and history of pregnancy like parity, number of antenatal checkup, place of delivery , type of delivery and baby's bio data like age of the child, sex of the child. (b) Practice on breastfeeding like EBF history, initiation of breastfeeding after delivery, prelacteal feeding, colostrums feeding, and frequency of feeding.

SPSS Version 17 had been used for data analysis. Descriptive statistics (frequencies, percentages, mean, and standard deviation) were used. To find out significant association between categorical variables, Chi-square test and Fisher's exact test were used and for continuous variable, Independent t-test was used. Multiple logistic regression analysis was used to find out the factors associated with exclusive breastfeeding. P value of < 0.05 was considered as significant.

The study had been conducted after getting ethical approval from the Institutional Ethics Committee of Agartala Government Medical College.

In our study, EBF was considered when the child received only breast milk not even water till the age of six months. However, medicine or oral rehydration solution was prescribed by a qualified doctor, it was accepted. The information about EBF had been collected retrospectively from the study subjects having 06-24 months old children.

Results

A total of 200 mothers (100 primipara and 100 multipara) were interviewed for the study and had a response rate of 100%. There was

statistical difference found in the age between primipara and multipara mothers (P= <0.001). Majorities of the mothers in two groups (56% primipara and 55% multipara mothers) were belonged to Hindu religion and home maker.

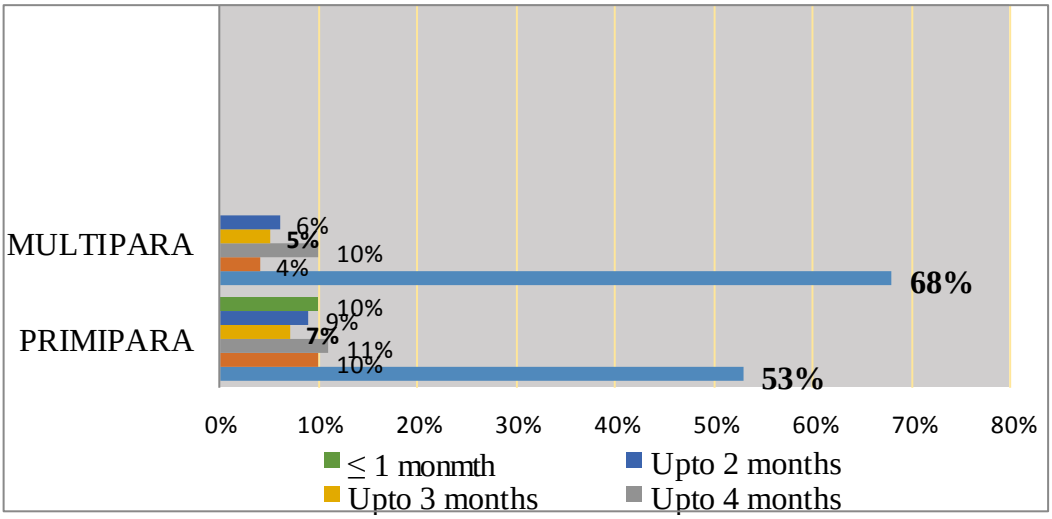

Figure 1. Breastfeeding practices (in months) among study participants (n=200)

Table 1. Infant and maternal socio-demographic characteristics

Variables	Primipara N (%)	Multipara N (%)	Significance p=value
Maternal age in years (mean±SD)	20.7± 2.7	25.5± 3.6	*< 0.001
Religion			
Hindu	56 (56.0)	55 (55.0)	
Muslim	44 (44.0)	45 (45.0)	0.887
Mother's literacy			
Illiterate	10 (10.0)	20 (20.0)	
literate	90 (90.0)	80 (80.0)	*0.048
Mother's occupation			
Non-working mother/homemaker	93 (93.0)	85 (85.0)	
Working mother	7 (7.0)	15 (15.0)	0.071
Monthly income of family (Rs)			
≤ 3000	21(21.0)	12 (12.0)	
3001-5000	19 (19.0)	34 (34.0)	
5001-10000	38 (38.0)	44 (44.0)	*0.009
>10000	22 (22.0)	10 (10.0)	
Type of family			
Joint family	54 (54.0)	66 (66.0)	
Nuclear family	46 (46.0)	34 (34.0)	0.083
Place of delivery			
Home delivery	29 (29.0)	33 (33.0)	
Health care facility	71 (71.0)	67 (67.0)	0.541
Number of ANC			
< 4 Times	34 (34.0)	29 (29.0)	
≥ 4Times	66 (66.0)	71 (71.0)	0.447
Sex of the child			
Male	52 (52.0)	53 (53.0)	
Female	48 (48.0)	47(47.0)	0.887

The present study revealed that most of the subjects in both groups were literate and found statistically significant (P=0.04) and statistical difference was also observed in

monthly income of the family between primipara and multipara mothers (P=0.009) (Table 1).

Caste wise distribution showed that among primipara mothers, 8 % were belonged to general category, 36% schedule caste, 12% OBC and 44% minority whereas among multipara mothers, 7% were general, 38% schedule caste, 10% OBC and 45% were belonged to minority. Maximum participants in both groups went for antenatal checkup at Government health facility (97% primipara and 99% of multipara mothers).

The majority of mothers both primipara and multipara participated in the study reported to have ever breastfed their babies. Of the total, prevalence of EBF among respondents was 60.5% and the EBF rate was observed more in multipara (68%) in compared to primipara (53%) mothers (Figure 1).

The difference in the prevalence of EBF between primipara and multipara mothers were observed statistically significant (P value =0.03). Most of the primipara and multipara mothers had initiated breastfeeding within half an hour.

In most primiparous, delayed lactation (31%) was the main reasons for delayed in initiation of breastfeeding and among multiparaous, were due to sickness of the baby (18%). Majority of the primipara mothers (50%) had given prelacteal feeds to their infants compared to multipara mothers (36%) and found statistically significant (P=0.046) (Table 2).

Table 2. Infant feeding practices among study participants

Variables	Primipara N (%)	Multipara N (%)	Significance (P-value)
Initiation of breastfeeding			
Within half an hour	61 (61.0)	71 (71.0)	
Within 1-2 hours	23 (23.0)	11(11.0)	
Within 3-4 hours	6 (6.0)	5 (5.0)	
Within 5-24 hors	0 (0.0)	1 (1.0)	0.180
After 24 hours	10 (10.0)	12 (12.0)	
Prelacteal feeding			
Yes	50 (50.0)	36 (36.0)	
No	50 (50.0)	64(64.0)	*0.046
Colostrum			
Given	71 (71.0)	85 (85.0)	
Not given	29 (29.0)	15 (15.0)	*0.037
Reasons for not feeding colostrum			
Harmful for baby	11 (11.0)	8 (8.0)	
Traditional beliefs	9 (9.0)	7 (7.0)	
Discourage by family members	9 (9.0)	0 (0.0)	*0.007
Given colostrum	71 (71.0)	85 (85.0)	
Frequency of breastfeeding			
On demand	43 (43.0)	58 (58.0)	
Regular interval	57 (57.0)	42 (42.0)	*0.034

Chi-Square/ Fisher's exact test. * indicate p< 0.05

Whereas, prelacteal feeds were given by most of the primipara and multipara mothers were in the form of honey around 36%, 23% respectively. Other types of prelacteal feeding had practiced by primipara mothers were plain water 10%, sugar water 2%, palm-candy water 2% and practiced by multipara mothers were 6% Plain Water, 4% Sugar Water and 3% Palm-Candy water. There was statistical difference found in regards to cholostrum feeding (P = 0.03) and frequency of breastfeeding (P=0.03) between primipara and multipara mothers (Table 2).

Practice of EBF for first six months was influenced by various factors and no significant

difference was found between EBF and maternal age in both primipara and multipara mothers.

Table 3. Different factors associated with exclusive breastfeeding among respondents

Variables	Primipara N (%)		P- value	Multipara N (%)		P- value
	EBF	No EBF		EBF	No EBF	
Maternal age in years (mean±)	20.8 ±2.7	20.6± 2.7	0.75	25.1± 3.3	26.2 ± 4.2	0.15
Religion						
Hindu	28 (28.0)	28(28.0)		33 (33.0)	22 (22.0)	
Muslim	25(25.0)	19(19.0)	P=0.498	35 (35.0)	10 (10.0)	0.058
Mother's literacy						
Illiterate	3 (3.0)	7 (7.0)		13 (13.0)	7 (7.0)	
Literate	50 (50.0)	40 (40.0)	P=0.125	55 (55.0)	25 (25.0)	0.748
Mothers occupation						
Working mother	4 (4.0)	3 (3.0)		13(13.0)	2 (2.0)	
Non-working mother/ homemaker	49 (49.0)	44 (44.0)	P=0.820	55 (55.0)	30 (30.0)	0.093
Type of family						
Joint family	30 (30.0)	24 (24.0)		47 (47.0)	19 (19.0)	
Nuclear family	23 (23.0)	23 (23.0)	P=0.579	21 (21.0)	13 (13.0)	0.337
Number of ANC						
<4 Times	10 (10.0)	24 (24.0)		21 (21.0)	8 (08.0)	
≥4Times	43 (43.0)	23 (23.0)	***P=0.001**	47 (47.0)	24 (24.0)	0.545
Place of ANC						
Government health facility	51 (51.0)	46 (46.0)		67 (67.0)	32 (32.0)	
Private doctor/ private health facility	2 (2.0)	1 (1.0)	0.630	1 (1.0)	0 (0.0)	0.491
Place of delivery						
Home delivery	8 (8.0)	21(21.0)		21(21.0)	12(12.0)	
Health care facility	45 (45.0)	26 (26.0)	***P=0.001**	47 (47.0)	20 (20.0)	0.511
Sex of the child						
Male	27 (27.0)	25 (25.0)	P=0.822	37 (37.0)	16 (16.0)	
Female	26 (26.0)	22 (22.0)		31 (31.0)	16 (16.0)	0.680

Chi-Square/ Fisher's exact test/ t-test. * indicate p< 0.05

It was observed that EBF was more prevalent among Hindus than Muslims in primipara mothers but it was insignificant (P= 0.498). However among multipara mothers, Muslims were more practiced EBF than Hindus but it was also found insignificant. (P=0.058). EBF was more practiced by literate mothers in both primipara and multipara mothers but no significant relation was seen. In both groups, EBF was practiced mostly in those families, where the mothers were non-workin and mothers who were from joint family, but no statistical association was found (Table 3).

Table 4. Multiple logistic regression analysis showing the predictors of exclusive breast feeding practice

Primipara			Multipara		
Variables	**OR (95% C.I)**	**P- value**	**Variables**	**OR (95% C.I)**	**P- value**
Number of ANC			**Religion**		
≥ 4 Times	2.713(1.009, 7.297)	***0.048**	Muslim	2.333 (0.962, 5.659)	0.061
< 4Times	1		Hindu	1	
Place of delivery					
Health care facility	2.436 (0.828,7.168)	0.106			
Home delivery	1				

OR (95% C.I.) - Odds Ratio (95% confidence interval). * indicate p< 0.05

Multiple logistic regression analysis showed that primipara mothers who went for ANC minimum four times or more during pregnancy had 2.71 odds (1.009, 7.297) of more likely practiced EBF compared to those mothers who went for ANC less than four times. However in primiparaous, who delivered at the health care facility had 2.43 odds (CI 0.828, 7.168) of more likely practiced EBF compared to those mothers who delivered at home. Among multiparaous, Muslims were 2.33 odds (0.962, 5.659) of more likely to practiced EBF than Hindus (Table 4).

Discussion

Although the present study revealed that breastfeeding was done by almost all mothers (100%) to their babies but EBF was more likely practiced by multipara mothers compared to primipara mothers (OR 1.88; CI 1.060, 3.349); similar findings reported in Patil Sapna et al (9) study and also consistent findings was reported in a study done in Klang Malaysia (10). Chekol A.D. et al (11) study revealed that mothers who have three and above children were 3.5 times more likely to breastfeed exclusively than those who had one or two children. This may be due to the fact that the multipara mothers might be more knowledgeable and more experienced about the advantages of EBF. In contrast to our study result, it was found that multipara mothers were less likely to exclusively breastfeed to their babies than primipara mothers in a study done in Bahir Dar city, Northwest Ethopia (13).

Rahalkar A.A. et al (14) study reported that not all the mothers were initiated breastfeeding immediately after birth. However, the reported result was inconsistent with our findings. A study done by G. Indrani et al (15) revealed that some superstitious believe such as colostrum should not be given as it is very strong and cannot digested by the infants but it was in contrast with our study result and also similar observation was reported from southwestern Saudi Arabia (16). Demand feeding was done by almost half of the mothers to their babies in our study which was found high (96.3%) in Shandil A. et al (17) study. Non educated mothers were less likely to discontinue exclusive breastfeeding than educated mothers, found in a three prospective birth cohort studies in South India (6) which was in contrast to our findings. This difference may be due to maximum number of participants in our study were literate. Working mothers were reported to less likely to practice EBF compared to non-working mothers in a study done in Gondar town, Northwest Ethiopia (11) and reported similar result with our study. In this study, among the various socio-demographic factors, only religion of the multipara mothers was significantly associated with EBF. However, we identified two important determinants that influencers of EBF among primipara mothers. That two factors were place of delivery and number of antenatal checkup while by using multiple logistic regression analysis found that number of antenatal checkup was significantly associated with EBF while Anand M Dixit et al (18) study found that mothers education, residence, place of delivery, counseling by health worker/ doctor during post natal period shows significant (< 0.05) independent association with EBF. A study done in Azezo District, Northwest Ethiopia reported that mothers who delivered at home were less likely practiced EBF than the mothers who delivered at the healthcare facility (AOR 2.18; 95% CI 1.22, 4.35) (19) which was similar to our findings and also the result was consistent with other studies (9,13).

There are some limitations of the present study (i) as assessment of feeding and information about EBF was collected by retrospective self-report, there could have present some degree of recall bias, and (ii) the study findings may not be generalizable to other settings as this study was conducted only in an urban slum area of Agartala.

Conclusion

This study revealed that the prevalence rate of exclusive breast feeding is still need to improve in both primipara and multipara mothers. Henceforth, intense IEC about benefits of EBF and more awareness programmes like health education on exclusive breastfeeding and some direct intervention like behavior change communication among the target group is absolutely necessary to improve the EBF rate in the study area.

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Conflicts of interest

Authors declared no conflicts of interest.

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