Available online at www.sciencedirect.com

ScienceDirect

journal homepage: www.elsevier.com/locate/cegh

Student's Section

Prevalence of exclusive breastfeeding in slums of Dibrugarh Town and factors affecting the breastfeeding practice

Indrani Gogoi^{a,*}, Tulika Goswami Mahanta^b, Alak Barua^c^a Post Graduate Trainee, Department of Community Medicine, Assam Medical College and Hospital, P.O. Barbari, Dibrugarh 786002, India^b Associate Professor, Department of Community Medicine, Assam Medical College and Hospital, P.O. Barbari, Dibrugarh 786002, India^c Professor and Head, Department of Community Medicine, Assam Medical College and Hospital, P.O. Barbari, Dibrugarh 786002, India

ARTICLE INFO

Article history:

Received 31 August 2015

Accepted 30 October 2015

Available online 24 November 2015

Keywords:

Breastfeeding practices

Prelacteal feed

Slum

Dibrugarh

ABSTRACT

Introduction: Exclusive breastfeeding (EBF) is of critical importance for the growth and the development of children.**Objective:** To assess the prevalence of EBF and to study the factors affecting breastfeeding practices in slums of Dibrugarh district.**Methods:** A community based, cross-sectional study was conducted in an urban slum of Dibrugarh district, Assam, from March to May 2015 on 105 mothers having children 6–24 months of age.**Results:** EBF for 6 months was done only among 41% while 59% practiced mixed feeding or EBF for various duration of time. Cow's milk, goat's milk, artificial infant milk substitute and other items were given in mixed feeding. Breastfeeding was initiated within 30–60 min of birth only in 71.4%. Prelacteal feed was given in 21%.**Conclusion:** There is a need to emphasize on breastfeeding practices among the mothers, as there are many wrong practices going on.

© 2015 INDIACLEN. Published by Elsevier, a division of Reed Elsevier India, Pvt. Ltd. All rights reserved.

1. Introduction

Mother's milk is the best gift to her baby. Evidence-based interventions including initiation of breastfeeding within 1 h

of birth, exclusive breastfeeding (EBF) for the first 6 months of life and introduction of appropriate and adequate complementary food at 6–9 month of age can prevent undernutrition in children.¹ Mother's milk not only provide the babies basic protection from wide range of infections, but is also essential

* Corresponding author at: Department of Community Medicine, Assam Medical College and Hospital, Room No-18, Dr. P.N.B. Ladies Hostel, Dibrugarh, P.O. Barbari, Dibrugarh 786002, Assam, India. Tel.: +91 8749942447.

E-mail address: dr.indranigogoi@gmail.com (I. Gogoi).

<http://dx.doi.org/10.1016/j.cegh.2015.10.009>

2213-3984/© 2015 INDIACLEN. Published by Elsevier, a division of Reed Elsevier India, Pvt. Ltd. All rights reserved.

for proper growth and development.² EBF stands out as a single most effective intervention for child survival. Early (within 1 h) and EBF (for 0–6 month) are viewed as a major intervention to reduce the childhood mortality, particularly, in the neonates and infants.^{3,4} The life-long impact includes poor school performance, reduced productivity, and impaired intellectual and social development.² Breastfed premature infants receive significant benefits in respect to host protection and improved developmental outcomes compared with formula-fed premature infants.⁵

The World Health Organization (WHO) recommends the practice of exclusive EBF of infants for the first 6 months of life after birth. EBF means that the infant receives only breast milk. No other liquids or solids are given, not even water, with the exception of oral rehydration salt solution, or drops/syrups of vitamins, minerals or medicines.⁶ EBF rates in first 6 months of life is 54.3% in Dibrugarh district as reported in DLHS (District Level Household & Facility Survey)-3. Multiple factors can influence breastfeeding practices; among them socio demographic factors, maternal education, and place of living are important. In urban slums, where living standards are low, health problems among infants and children are more.⁷ Proper breastfeeding practices can lower this number. This topic of infant nutrition really demands greater research work regionally, so that we can intervene the local causes and other factors hindering breastfeeding practices. Keeping this view in mind, this research was undertaken.

1.1. Objective

To assess the prevalence of EBF and to study the factors affecting breastfeeding practices in slums of Dibrugarh district.

2. Methods and methodology

The study was under taken in the slums of electoral ward no 22 of Dibrugarh District, Assam. According to 2011 census, the total population of the slums is 4827. There are 136 children from 6 months to 2 years of age (administrative data). It was a community-based cross-sectional study. Mothers having children 6 months to 2 years of age were the study group. The study was carried out during March–May 2015.

2.1. Ethical consideration

Permission for the study was obtained from the Institutional Ethical committee. Written informed consents have been obtained from each participant.

2.2. Sample size

The estimation of sample size was based on the prevalence of EBF. As per the key indicators of Assam, DLHS-3 (2007–2008), the prevalence of EBF in Dibrugarh district is 54.3%. Taking this prevalence into account and permissible level of error as 10% and 95% confidence level, the sample size for the study was calculated to be 105.

2.3. Inclusion criteria

All mothers giving consent were included.

2.4. Exclusion criteria

Mothers who have severely ill child and who are not willing to participate in the study. Mothers who are not present in home after three consecutive visits are also excluded. Out of total visited homes around 25% mothers refused to take part in the study.

2.5. Methodology

There are 10 registered slums in Dibrugarh district. List of slums and the population of 6–24 months of children were obtained from District Census office, Dibrugarh. The slums having least population of 6–24 months is 115. In the study, one slum was selected randomly. In the selected slum, first house was selected randomly; thereafter, consecutive houses were visited until required sample size was achieved. All the study subjects in each selected house were included in the study and their mothers were interviewed using pretested schedule.

2.6. Study tool

A mixed method model was used for the study. A predesigned, pretested questionnaire was used for quantitative data collection, while qualitative data were collected by observation method. Socioeconomic status was assessed using modified B.G. Prasad Classification based on Consumer Price Index of May 2014 of 1130 (correction factor = 55.71).

2.7. Statistical analysis

Data entry was done using Microsoft Office Excel 2007. Data were analyzed using percentages and proportions. Association with variables tested using chi square test, Yates' correction done wherever necessary. P values less than 0.05 were considered statistically significant.

3. Results

The sociodemographic characteristics of mothers are summarized in Table 1. Most of the mothers (46.7%) were in the age group 19–23 years. Most of the mothers were Hindu (48.6%) by religion and 51.4% were from joint family. Most of the mothers (43.8%) belong to general category, while tea tribe, SC, ST and OBC were almost in equal proportion. Majority of mothers (37.1%) completed their education upto primary level. 75.2% mothers belong to class IV socioeconomic status. 18.1% women were working during the first 6 months.

In our study sample, we found 41% women breastfed their baby for recommended first 6 months of life. Rest 20% and 22% babies were breastfed for 2–3 months and 4–6 months respectively, and then they were switched over to mixed feeding. They were given cow's or goat's milk and other formula feed. Method of giving feed was mostly artificial teat and bottle, katori and spoon and soft cotton cloth dipped in

Table 1 – Socio demographic profile of study population.

	Number	Percentage (%)
Age (in years)		
≤18	5	4.8
19–23	49	46.7
24–29	36	34.3
≥30	15	14.2
Religion		
Hindu	51	48.6
Muslim	33	31.4
Christian	15	14.3
Others	6	5.7
Type of family		
Joint	54	51.4
Nuclear	51	48.6
Caste		
General	46	43.8
Schedule caste	17	16.2
Schedule tribe	15	14.3
Tea tribe	18	17.1
OBC/MOBC	9	8.6
Educational qualification		
Illiterate	21	20
Primary school	39	37.1
Middle school	20	19
High school and matriculate	18	17.1
Higher secondary and above	7	6.8
Socioeconomic status		
Class I	0	0
Class II	8	7.6
Class III	10	9.5
Class IV	79	75.2
Class V	8	7.1
Working status		
Working	19	18.1
Non-working	86	81.9

milk. Rest 7.5% babies were on formula feed from the starting. 9.5% women EBF for more than 6 months owing to lack of knowledge regarding proper time and method of preparation of complementary feed and ignorance for care of the health of the baby.

In 71.4%, breastfeeding was initiated within 30–60 min of birth. Colostrum was given to 87.6% of the babies. 21% babies were given prelacteal feed. Honey, fruit juice, cows/goat milk; home made fermented rice wine or other home available fluids were given as prelacteals. In 76.2% babies, breastfeeding was done during night.

In 45.7% babies, complementary feeding was started at 6 months of age while in 33.3% and in 14.3% it was started between 4–6 months and 6–8 months, respectively. While in 6.6%, it was started after 9 months of age.

Practice of EBF for first 6 months of life is influenced by various factors. From Table 2, we observed that proportion of EBF is less in the age group 19–23 years. But age has no statistical association with practice. Mothers from nuclear family exclusively breastfeed more than the mothers from joint family, and the association is found statistically significant. No significant relation was seen between breastfeeding practice and mothers from different caste.

No statistical association was found between practice of EBF and socioeconomic status. Mothers with primi para practiced EBF more than mothers with higher parity. But no

Table 2 – Different factors affecting exclusive breastfeeding practice.

	Exclusively breastfed for 6 months		χ^2	P value
	Yes	No		
Age of mother				
≤18	2 (40)	3 (60)	3.31	0.346
19–23	15 (30.6)	34 (69.4)		
24–29	18 (50)	18 (50)		
≥30	8 (53.3)	7 (46.7)		
Type of family				
Nuclear	29 (56.9)	22 (43.1)	10.38	0.001
Joint	14 (25.9)	40 (74.1)		
Caste				
General	18 (39.1)	28 (60.9)	3.017	0.555
Schedule caste	9 (52.9)	8 (47.1)		
Schedule tribe	5 (33.3)	10 (66.7)		
Tea tribe	5 (27.8)	13 (72.2)		
OBC/MOBC	6 (66.7)	3 (33.3)		
Socioeconomic class				
Class I	0	0	7.07	0.0687
Class II	5 (62.5)	3 (37.5)		
Class III	3 (30)	7 (70)		
Class IV	28 (35.4)	51 (64.6)		
Class V	7 (87.5)	1 (12.5)		
Educational qualification				
Illiterate	6 (28.6)	15 (71.4)	11.4	0.02
Primary school	9 (23.1)	30 (76.9)		
Middle school	12 (60)	8 (40)		
High school	11 (61.1)	7 (38.9)		
Matriculate				
Higher secondary and above	5 (71.4)	2 (28.6)		
Parity				
1	22 (52.4)	20 (47.6)	4.783	0.188
2	14 (42.4)	19 (57.6)		
3	4 (20)	16 (80)		
>3	3 (30)	7 (70)		
Working status				
Working	5 (26.3)	14 (73.7)	2.06	0.15
Non working	38 (44.2)	48 (55.8)		
Number of antenatal visits				
<3	6 (23.1)	20 (76.9)	13.825	0.001
3	14 (31.8)	30 (68.2)		
≥4	23 (65.7)	12 (34.3)		
Place of delivery				
Institutional	41 (41.8)	57 (58.2)	0.085	0.771
Home delivery	2 (28.6)	5 (71.4)		

Bold values represent statistical significance.

statistical association was found. In women with higher parity, the elder siblings used to take care of the baby while the mother was busy with household work.

Out of total mothers, 18.1% were working during the first 6 months of delivery, majority of working women were tea garden laborers, and very few among them (26.3%) only practiced EBF for recommended duration. While rest 73.7% babies were taken care of by other members of family and were mostly fed formula feed when mother was at work. When asked about expressed breastfeeding only a few 42.1% practiced irregularly. But they prefer to practice wet nursing if available, 36.8% were practicing wet nursing when they were at work.

Proportion of mothers practicing EBF is more in mothers having more antenatal visit during gestational period. The reason may be that they were counseled on breastfeeding practice by health worker. And the relation is found statistically significant. 6.7% home deliveries occurred in the study population. Mothers who delivered their babies in institution practice EBF for 6 months than the mothers whose delivery occurred at home but no statistical association was found.

4. Discussion

From the study it is found that overall prevalence of EBF in slums is 41%, which is much less than that of urban area which is 54.3%, DLHS-3, 2007–2008. Low prevalence of EBF needs urgent action to improve practice of breastfeeding to combat high mortality and morbidity. According to Annual Health Survey 2010–11, (AHS) Dibrugarh has as high infant mortality rate as 55, which is very much alarming in comparison to national level demanding higher priority in the sector of maternal and child health. In another study, done by Passi et al. in tea garden workers of Assam, EBF rate was found to be 69.35%.⁸ In a similar study done in urban slums of Nagpur, prevalence of EBF was found to be 36.84%.⁹ Similar low prevalence of EBF was found in study done in Nnewi South-East Nigeria and Malaysia 33.5% and 43.1%, respectively.^{10,11} In place like North Ethiopia much improved as 70.2%, prevalence of EBF was found which is higher than the present study.¹²

In the present study, 71.4% of infants got mother's milk within 30 min to 1 h. Evidence indicates that early breastfeeding initiation increases mother and infant bonding and likelihood of EBF for 1–4 months of life as well as the overall duration of breastfeeding.¹³ Therefore, early initiation of BF is essential to ensure EBF practice. In a study done in Vidarbha region of Maharashtra it was found that 80.48% women initiated early BF.¹⁴ It was found to be as low as 32.56% in a study done in urban slums of Nagpur.⁹ 68.3% mothers initiated EBF within 1 h of birth in a study done in North Ethiopia which is comparable to our study.¹² In a similar study done in rural Tanzania, 51% babies were breastfed within 1 h of birth.¹⁵

In the present study, 21% of the infants got prelacteals. Prelacteals are very harmful as they fill the stomach of baby and also exposes to range of contaminants and harmful bacteria.¹⁶ In a study done in Vidarbha in Maharashtra it was found that 15.85% infants were given prelacteals.¹⁴ A very high proportion 78.61% infants were found to be given prelacteals in a study done in urban slums of Nagpur.⁹ It was as low as 12.1% in a study done in North Ethiopia.¹² The most noticeable practice observed in study population being giving drops of fermented rice wine before initiation of breastfeeding, this practice is specially seen in tribal groups. Few mothers stated insufficient or absent milk production as cause of giving prelacteals. Similar findings was found in studies done in Saudi Arabia and Nigeria.^{17,18} In the present study colostrum was given to 87.6% babies which is comparable to a study done in Enderta woreda, Tigray, North Ethiopia where 92.6% babies got colostrums.¹² Only 21.38% got colostrums in a study done in Nagpur.⁹ Some superstitious believe such as colostrum should not be given as it is very strong and cannot be digested

by the infant are found in the present study, but in a study done in rural Tanzania, it was found that few mothers believe that colostrum is dirty and should thus not be given to newborn babies.¹⁵

In the present study, practice of EBF was found to be associated with type of family, educational qualification and number of antenatal visits whereas EBF was positively associated with rural residence, Malay mothers, non-working and non-smoking mothers, multiparous mothers, term infants, mothers with husbands who support breastfeeding and mothers who practice bed-sharing in a study done in Peninsular Malaysia.¹¹ Mothers belonging to joint family stated that they usually forget to breastfed their babies due to work pressure and someone from household starts feeding the baby complementary feed as substitute. Infants of mothers who got mixed feeding or early initiation of complementary feeding had the notion that their breast milk was too less to fill the stomach of the baby. Performing religious rituals before commencing complementary feeding is an important cause of delay initiation of complementary feeding. Mothers' education also play an important role, as educated mothers are aware of benefits of breastfeeding. Similar study in Dhaka reveals that perceptions of breastfeeding are higher in educated parents than illiterate parents.¹⁹ One of the noticeable finding is approaching private drug store and initiation of artificial infant milk substitute as advice from drug store salesmen, whose qualification is also questionable.

5. Conclusion

In Dibrugarh district infant mortality rate is 52/1000 live births, which is very high in comparison to national level. 40.4% of 0–3 years of children is underweight which is very much preventable with proper breastfeeding practices. Measures to be undertaken to increase EBF and more focused on women, who are most at risk of early discontinuation of breastfeeding practice. We have to address those factors affecting breastfeeding practices and need to emphasize on proper breastfeeding.

Conflicts of interest

The authors have none to declare.

REFERENCES

1. Black RE, Morris SS, Jennifer B. Where and why are 10 million children dying every year? *Lancet*. 2003;361: 2226–2234.
2. World Health Organization. *Global Strategy for Infant and Young Child Feeding*. 2002.
3. Bhutta ZA, Ahmed T, Black RE, et al. What works? Intervention for maternal and child undernutrition and survival. *Lancet*. 2008;371(9610):417–440.
4. Edmond KM, Zandoh C, Quigley MA, Amenga-Etego S, Owusu-Agyei S, Kirkwood BR. Delayed breastfeeding initiation increases risk of neonatal mortality. *Pediatrics*. 2006;117(3):e380–e386.

5. Breastfeeding and the use of human milk. *Pediatrics*. 2005;115(2):496.
6. Shankar Radhakrishnan S, Sangeetha. Balamuruga. Prevalence of exclusive breastfeeding practices among rural women in Tamilnadu. *Int J Health Allied Sci*. 2012;1(2):64–67.
7. Ghosh S, Shah D. Nutritional problems in urban slum children. *Indian Pediatr*. 2004;41(7):682–696.
8. Passi GR, Shad R. Breastfeeding, weaning practices and nutritional status of infants of tea garden workers of Assam. *Indian Pediatr*. 2004;17(41):1277–1279.
9. Bagul AS, Supare MS. The infant feeding practices in an urban slum of Nagpur. *Indian J Clin Diagn Res*. 2012;6(9):1525–1527.
10. Onah S, Osuorah DIC, Ebenebe J, Ekwochi CEU, Ndukwi I. Infant feeding practices and maternal socio-demographic factors that influence practice of exclusive breastfeeding among mothers in Nnewi South-East Nigeria: a cross-sectional and analytical study. *Int Breastfeed J*. 2014;9(6).
11. Tan KL. Factors associated with exclusive breastfeeding among infants under six months of age in peninsular Malaysia. *Int Breastfeed J*. 2011;6(2).
12. Teka B, Assefa H, Hailelassie K. Prevalence and determinant factors of exclusive breastfeeding practices among mothers in Enderta woreda, Tigray, North Ethiopia: a cross sectional study. *Int Breastfeed J*. 2015;10(2).
13. World Health Organization. *Early initiation of breastfeeding. e-Library of Evidence for Nutrition Actions (eLENA)*. 2015.
14. Wagh SV, Wagh SS, Dambhare DG, Sharma DA. A study of breastfeeding practices in a Vidarbha region of Maharashtra, India. *Innov J Med Health Sci*. 2013;3(5):238–241.
15. Exavery A, Kanté AM, Hingora A, Phillips JF. Determinants of early initiation of breastfeeding in rural Tanzania. *Int Breastfeed J*. 2015;10(27).
16. McKenna KM, Shankar RT. The practice of prelacteal feeding to newborns among Hindu and Muslim families. *J Midwifery Womens Health*. 2009;54(1):78–81.
17. Akuse RM, Obinya EA. Why healthcare workers give prelacteal feeds. *Eur J Clin Nutr*. 2002;56(8):729–734.
18. Al-Jassir MS, El-Bashir BM, Moizuddin SK, Abu-Nayan AA. Infant feeding in Saudi Arabia: mothers' attitudes and practices. *East Mediterr Health J*. 2006;12(1–2):6–13.
19. Banu B, Khanom K. Effects of education level of father and mother on perceptions of breastfeeding. *J Enam Med Col*. 2012;2(2):67–73.