ORIGINAL RESEARCH ARTICLE
pISSN 0976 3325 | eISSN 2229 6816
Open Access Article
www.njcmindia.org

Feeding Practices by Mothers Having Children Under 6 Months of Age – A Community Based Study in Urban Slum Areas of Vadodara City

Kajal Davara[1], Chandresh Pandya[2], Parag Chavda[3], Dipak Solanki[4], Kedar Mehta[3], Kalpita Shringarpure[1]

Financial Support: None declared
Conflict of Interest: None declared

How to cite this article:
Davara K, Pandya C, Chavda P, Solanki D, Mehta K, Shringarpure K. Feeding Practices by Mothers Having Children Under 6 Months of Age – A Community Based Study in Urban Slum Areas of Vadodara City. Natl J Community Med 2019;10(2):86-90.

Author's Affiliation:
[1]Tutor; [2]Associate Professor; [3]Assistant Professor; [4]Professor, Dept of Community Medicine, GMERS Medical College, Gotri, vadodara, Vadodara

Correspondence
Dr Chandresh Pandya
Drcmpandya@gmail.com

Date of Submission: 05-11-18
Date of Acceptance: 19-01-19
Date of Publication: 28-02-19

ABSTRACT

Background: Inspite of rise in institutional deliveries, early initiation of breastfeeding and exclusive breastfeeding (EBF) remains an area of concern especially in urban slums. This study was done to assess the current feeding practices of mothers having children under 6 months of age residing in urban slums of study city and to identify the predictors of EBF.

Methods: This cross-sectional study was conducted in urban slums of the study city, Gujarat from July 2016 to December 2016. A total of 210 mothers were selected using cluster sampling method. Primary variables studied were initiation of breastfeeding, frequency of breastfeeding in 24 hrs, EBF and other food given. Multiple logistic regression analysis was carried out to find the factors associated with EBF.

Results: Forty five percent of the mothers initiated breastfeeding within one hour of birth. 76.7% mothers had given EBF. The predictors for EBF found on multivariate analysis were male child (AOR: 2.2, 95% CI: 1.1-4.5) and prior information about breastfeeding received by the mothers (AOR: 2.7, 95% CI: 1.3-5.9).

Conclusion: Although the prevalence of EBF was high, the frequency of feeding in 24 hours was low among many mothers. EBF was seen more in children whose mothers received prior information about breastfeeding.

Key Words: Exclusive breastfeeding, Infant feeding, Urban slums, Initiation of breastfeeding, Cluster sampling, Lactation, Colostrum

INTRODUCTION

World Health Organization (WHO) recommends early initiation of breastfeeding and Exclusive Breastfeeding (EBF) for the first 6 months of life.[1] Breastfeeding is important for survival, growth and development, health and nutrition of infants and confers from physiological to psychological benefits to both child and mother.[2] Breastfeeding could prevent 15.6% of under-5 mortality as per the reported data.[3]

In spite of the countless benefits, the prevalence of EBF rarely exceeds 40% in most regions of the developing world. As per National Family Health Survey-4 (NFHS-4), only 41.6% infants are able to begin breastfeeding within one hour despite the high institutional births (78.9%). Only 55% infants are exclusively breastfed for the first six months.[4] Constraints to EBF could be breastfeeding problems, delivery by caesarean section, perceived or real breast milk insufficiency, advice from elders at home, resumption of official work by the mother and cultural practices. Studies have reported that the practices of early introduction of top feeds and late introduction of semisolid food are widely prevalent, especially in urban slum areas.[5-7]

Slums are unserved and underserved pockets in urban areas with wide variation in feeding practices. We carried out this study with an objective to assess the current feeding practices by mothers having children under 6 months of age residing in urban slums. This in turn, can help us to identify the incorrect feeding practices at the earliest age and can help the mothers to correct them by proper counselling to them.

MATERIALS AND METHODS

Ethics: The ethical clearance was obtained from the Institutional Ethics Committee before commencement of the study. A written informed consent was obtained from the mothers for participation in the study in local vernacular language (Gujarati).

Study setting is the third most populous city located in the state of Gujarat with an estimated population of 16.7 lakhs.[8]It has more than 300 listed and unlisted slums with an estimated population of 5.5 lakhs. This community based (analytical cross-sectional) study was carried out in the selected slum areas (clusters) of the city over a period of 6 months from July 2016 to December 2016. Mothers having children under 6 months of age, residing in the urban slum areas were enrolled in the study.

Sampling was done in two stages. In the first stage, each slum area of the Vadodara city was considered as a cluster. We selected 30 clusters using probability proportionate to size cluster sampling method.[9] In the second stage, from each cluster, seven mothers having children under 6 months of age were selected from the list of beneficiaries available at the respective anganwadi centres by simple random sampling technique using a random number table. Thus, a total of 210 mothers were selected for the study. If any mother refused to participate in the study, next mother was selected from the same cluster.

The data collection was done by the first author using pre-designed questionnaire. We did content validation and pilot testing of the questionnaire. The questions were asked in local vernacular language (Gujarati) to the mothers. The study questionnaire included (i) basic demographic details and (ii) feeding practices. The basic demographic details included following variables – mother's age, religion, education, occupation, parity and child's age, preterm/full term and birth weight. The following variables were included on feeding practices - time of initiation of breastfeeding, period of exclusive breastfeeding, frequency of breast feeding during day and night time, type of other feeds, source of information received by mothers on feeding practices. In accordance with WHO definition, for this study 'exclusive breastfeeding' was defined as taking no other food or drink, not even water, except breast milk (including milk expressed or from a wet nurse) for 6 months of life, but allows the infant to receive ORS, drops and syrups (vitamins, minerals and medicines).[10] If the investigator found faulty feeding practices, she counseled the mother about the importance of early initiation of breastfeeding and EBF practices.

Data entry and analysis: Double data entry and validation was done using EpiData software to ensure quality assured data entry and minimize data entry errors. As per the validation report, data entry error was 0.56%, which was rectified by cross-checking the filled proforma. The data was analyzed using EpiData analysis software version V.2.2.2.183. Results are presented as percentage for categorical data. Multivariate analysis using multiple logistic regression model was done to find the association of various factors with EBF in Epi Info version 7.1. A P-value of less than 0.05 is considered to be statistically significant.

RESULTS

In this study, a total of 210 mothers were interviewed, 7 from each of the cluster (slum areas). Majority (70.5%) were in the age group of 21-29 years. Almost three-fourth of the mothers were literate. More than 90% of mothers were housewives and two third of the mothers belonged to joint family.

Table 1: Current feeding practices of mothers in urban slum areas, Vadodara (n=210)

Variables	Mothers (%)
Initiation of breastfeeding after birth	
Within 1 hr	94 (44.8)
Between 1 - 24 hrs	59 (28.1)
Between 24 - 72 hrs	47 (22.4)
After 72 hrs	10 (4.8)
Day time breastfeeding	
< 8 times	129 (61.4)
≥ 8 times	81 (38.6)
Night time breastfeeding	
< 4 times	95 (45.2)
≥ 4 times	115 (54.8)
Exclusive breastfeeding	
Yes	161 (76.7)
No	49 (23.3)
Type of other food given (n=49)	
Water	26 (53.1)
Milk, water	11 (22.4)
Others*	12 (24.5)
Feeding with (n=49)	
Bottle	5 (10.2)
Katori-spoon	40 (81.6)
Dropper	4 (8.2)

*Others: dal water, biscuit, dal, rice, fruit, tea, khichdi, fruit juice, water, milk

Table 2: Information received by mothers about breastfeeding

Variables	Number (%)
Information about breastfeeding given (n=210)	
Yes	157 (74.8)
No	53 (25.2)
Information given by (n=157)	
Doctor	55 (35)
Nurse	72 (45.9)
FHW / ANM	17 (10.8)
Anganwadi worker	13 (8.3)

FHW- female health worker, ANM – auxiliary nurse midwife

About 94(45%) of mothers initiated breastfeeding within 1hr after birth. Only 81(38.6%) of mothers had given daytime breastfeeding for more than eight times, and 115(55%) of the mothers had given nighttime breastfeeding for more than four times. Almost three-fourth of mothers had given exclusive breastfeeding till the date of our visit, while rest of the mothers started giving food other than breastmilk before the age of 6 months. (Table 1) Majority of the mothers (75%) received information about breastfeeding. Out of them, nearly half of the mothers received information from nursing staff and only one fifth received it from front line health workers like auxiliary nurse midwife or anganwadi worker. (Table 2)

The outcome variable exclusive breastfeeding was measured on dichotomous scale for multivariate analysis. On multivariate analysis, factors like male child (AOR: 2.2, 95% CI: 1.1-4.5) and prior information about breastfeeding received by the mothers (AOR: 2.7, 95% CI: 1.3-5.9) were found to be significantly associated with EBF. (Table 3)

Table 3: Multiple logistic regression analysis for predictors of exclusive breastfeeding among mothers (n=210)

Variables	Denominator	EBF (%)	aOR	95% CI for aOR	p value
Mother's age (Years)					
≤20	25	19 (76)	Ref		0.7
20-30	168	127 (75.6)	0.9	0.3-2.8	0.8
≥30	17	15 (88.2)	1.5	0.2-11.3	0.6
Religion					
Hindu	165	131 (79.4)	1.6	0.7-3.6	0.28
Others**	45	30 (66.7)	Ref		
Education					
Literate	159	129 (81.2)	2.1	0.9-4.8	0.08
Illiterate	51	32 (62.8)	Ref		
Occupation					
Non-working	194	148 (76.3)	Ref		
Working	16	13 (81.2)	1.7	0.4-7.4	0.51
Type of Family					
Nuclear	70	55 (78.6)	1	0.5-2.2	0.95
Joint	140	106(75.7)	Ref		
Parity					
Primipara	74	58 (78.4)	1	0.5-2.3	0.93
Multipara	136	103 (75.7)	Ref		
Child sex					
Male	116	94 (81.8)	2.2	1.1-4.5	0.03*
Female	94	67 (71.3)	Ref		
Term birth					
Full term	194	150 (77.3)	0.7	0.2-2.7	0.57
Preterm	16	11 (68.8)	Ref		
Delivery place					
Government hospital	108	82 (76)	4.3	0.6-27.8	0.13
Private hospital	96	76 (79.2)	6	0.9-40.3	0.06
Home	6	3 (50)	Ref		0.16
Type of delivery					
Normal	151	113 (74.8)	Ref		
Caesarean	59	48 (81.4)	1	0.4-2.2	0.92
Birth weight (kg)					
≥2.5	166	132 (79.5)	2.4	1-5.8	0.06
<2.5	44	29 (66)	Ref		
Information on breast feeding					
Yes	157	128 (81.6)	2.7	1.3-5.8	0.01*
No	53	33 (62.2)	Ref		

CI= Confidence Interval, Ref= Reference category, aOR=Adjusted Odds Ratio
*statistically significant, **Muslims, Christians

DISCUSSION

In urban slums, there is wide variation of feeding practices in children under 6 months of age, including EBF, early initiation of breastfeeding and bottle feeds from 40% to 60%. This community based study was done to assess the feeding practices in urban slum areas.

In the present study, although the rate of initiation of breastfeeding within the first 24 hours was 73%, only 45% of them could initiated within the first hour. It is known that breastfeeding within the first hour of life is an important measure which can decrease neonatal mortality and morbidity. Mothers are more likely to successfully initiate lactation and maintain optimal breastfeeding if they initiate breastfeeding shortly after birth because new born is very active during the first half an hour. The possible reasons for the late initiation of breastfeeding could arise from faulty beliefs such as colostrum considered to be dirty and harmful to child, insufficient milk output or medical conditions such as delivery by caesarian section, obstetric complications, child under intensive medical care. Although many mothers had enough knowledge about early initiation of breastfeeding, various studies show the rate of early initiation of breastfeeding varies from 18% to 53%.[11-14] The reasons for the variation in timings in initiation of breastfeeding could be different socio cultural practices and education of the mothers and motivation by the health care providers.

An infant needs to be breastfed at least 8-12 times in 24 hrs. When enquiring about the frequency of breastfeeding to the mothers, we found that only 39% of mothers had given daytime breastfeeding for more than eight times. Nighttime breastfeed is important to prevent hypoglycemia in the child and for the weight gain. Very few studies in India, have reported the frequency of breastfeeding in 24 hours. A study done by S. Noor et al., in urban slum areas of Rourkela, reports that frequency of feeding was more than 8 times in 54% of the mothers.[12]

In this study, almost three fourth of the mothers had given EBF till the day of our visit as compared to 55% mothers in NFHS 4 findings.[4] In our study, we had observed EBF till the day of our visit and many mothers would be discontinuing EBF in the later months, this could be the possible reason for such a high number of mot hers giving EBF. Various studies have reported that 20% to 30% of the mothers had given EBF till 6 months of child age.[12,13,15] One of the most common reasons voiced by women throughout the world for the early termination of lactation and the early introduction of food other than breastmilk is insufficient breast milk, which threatens the well-being of infants. [16]

In our study, about 23% of the mothers had started giving foods other than breast milk before the age of 6 months. Out of them, more than half of the mothers were giving only water other than breast milk, while the remaining mothers were giving milk, dal water, biscuit, dal, rice, fruit etc. There is wide variation in starting food other than breast milk before 6 months of age from 12% to 66% in various studies.[15, 17] This may be due to various cultural practices, influential from family member and perception of mothers regarding breast milk insufficiency.

Majority of the mothers (75%) received information about breastfeeding. Out of them, nearly half of the mothers received information from nursing staff and very few mothers received it from front line health workers like auxiliary nurse midwife or anganwadi worker. There is wide variation in knowledge about breastfeeding received the by the mothers from 3.8% to 40% in different studies conducted in different settings.[13, 15, 17, 18]

In our study, gender of the child (male) was found to be significantly associated with EBF on multivariate analysis indicating that the odds of EBF was twice in male child as compared to female child. This finding indirectly highlights one of the important social issue of gender inequality. Moreover, the odds of EBF was almost 3 times higher among mothers who received information about breastfeeding as compared to those who did not receive any such prior information. This indicates that information by health care providers about EBF during antenatal and postnatal care is likely to improve feeding practices of the mothers. Similar finding was observed in a study done by T Sanghore et al., showing significant association between EBF and predictors like counselling by health care providers.[19]

In this study, although EBF was more practiced by literate mothers, mothers having children of more than 2.5 kg birth weight and mothers who had delivered child in private hospital but these factors were not found to be statistically significant. However, a study done by Creswell et al. has shown that the infants of less than 6 months of age were exclusively breastfed if delivered at a health facility and mother had attended a postnatal consultation at a facility within a week of the delivery.[18]

There are several strengths of the study. First, this is a community based study representing all the slum areas of Vadodara city. Second, the standard technique of cluster sampling has been used in this study. Third, we did double data entry and validation to ensure quality assured data entry.

There are some limitations in the study as well. Firstly, we had to rely on information given by the

mothers for EBF. Second, the study population included the mothers having children less than 6 months of age, so EBF till the day of our visit was considered as the main outcome variable.

CONCLUSION

Inspite of recommendation of initiation of breastfeeding within the first hour of birth, only few mothers had initiated it within the first hour. Majority of the mothers were giving EBF, but the frequency of feeding in 24 hours was low. Considering high potential benefits of EBF, the every opportunity of mothers' interaction with the health facilities like immunization and Ante Natal Clinic visits should be utilized for promoting correct feeding practices.

Acknowledgement

This research was carried out as a part of the faculty training program in biomedical research conducted by the central research unit of GMERS Medical College, Vadodara. We thank the faculty members who served as mentors and peers during this training program and contributed to improving the quality of this research study. We thank the Dean and Medical Superintendent for supporting this research project.

REFERENCES

1. Global strategy for infant and young child feeding. Geneva: World Health Organization. 2003;41
2. Ip S, Chung M, Raman G, Chew P, Magula N, Devine D, Trikalinos T, Lau J. Breastfeeding and maternal and infant health outcomes in developed countries. Evid Rep Technol Assess. 2007;153:1-186
3. The Million Death Study Collaborators. Causes of neonatal and child mortality in India representative mortality survey. 2010;376(9755):1853-1860
4. Government of India. Ministry of Health and Family Welfare. NFHS-4. 2015-16. India Fact Sheet. http://rchiips.org/NFHS/pdf/NFHS4/India.pdf
5. Ghosh S, Shah D. Nutritional problems in urban slums. Indian Pediatr. 2004;41:682-96
6. Rajesh D, Bhavana D. A study on infant feeding practices in the urban slums: a cross sectional study. Int J Contemp Pediatr. 2016;3(2):350-354
7. Manish C, Deoki N. Rapid assessment of infant feeding practices in Agra district. Indian Journal of Community Medicine. 2007;32(3)
8. Census of India. http://www.census2011.co.in/census/city/338-vadodara.html.
9. Steve Bennett, Tony Woods, Winitha M Liyanage, Duana L Smith. A simplified general method for cluster sample surveys of health in developing countries. World Health Statistics. 1991(44) http://apps.who.int/iris/bitstream/handle/10665/47585/WHSQ_1991_44(3)_98-106_eng.pdf;
10. World Health Organization. http://www.who.int/ nutrition/topics/infantfeeding_recommendation/en/.
11. Devang Raval, D V Jankar, M P Singh. A study of breast feeding practices among infants living in slums of Bhavnagar city, Gujarat, India. Healthline. 2011(2)
12. Sofia Noor, A Hani Rajesh, G Krishna Babu. A Study on Breast Feeding Practices among Mothers of Urban Slums of Rourkela. Journal of Dental and Medical Sciences. 2015; 14(5):77-80.
13. Oche MO,Umar AS, Ahmed H. Knowledge and practice of exclusive breast feeding in Kware, Nigeria. Afr Health Sci. 2011;11(3):518-523.
14. Maheswari Ekambaram, Vishnu Bhat B, Mohammed Asif Padiyath Ahamed. Knowledge attitude and practice of breastfeeding among postnatal mothers. Current Pediatric Research. 2010;14(2).
15. Sima Roy, Aparajita Dasgupta, Bobby Pal. Feeding Practices of Children in an Urban Slum of Kolkata. Indian Journal of Community Medicine. 2009;34(4).
16. Gussler JD, Briesemeister LH. The insufficient milk syndrome: A biocultural explanation. Med Anthropol 1980; 4:145-56 .
17. Tiwari R, Mahajan P C, Lahariya C. The Determinants of Exclusive Breast Feeding in Urban Slums: A Community Based Study. Journal of Tropical Pediatrics. 2008;55(1).
18. Cresswell JA, Ganaba R, Sarrassat S,Cousens S, SomeÂ H, Diallo AH. Predictors of exclusive breastfeeding and consumption of soft, semi-solid or solid food among infants in Boucle du Mouhoun, Burkina Faso: A cross-sectional survey. PLoS ONE 2017.
19. Thomas Senghore, Tobiloba Alex Omotosho, Omar Ceesay and Daisy Clara H. Williams. Predictors of exclusive breastfeeding knowledge and intention to or practice of exclusive breastfeeding among antenatal and postnatal women receiving routine care: a cross sectional study, International breastfeeding journal. 2018;13(9).