

Factors associated with Exclusive Breast Feeding (EBF) and Complementary Feeding in an Indian Urban Community: A Cross Sectional Study

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Abstract

Context: Inappropriate feeding practices are very much prevalent in India in areas where there is a high cultural influence on dietary habits, which starts right from the birth and remains throughout the life.

Aims: To study the infant and young feeding practices and factors affecting the exclusive breast feeding in children aged 6-23m.

Methods and Material: A community based cross sectional study was conducted during the period Jan 2008 - Dec 2008 in Mehrauli (New Delhi). Feeding practices in the community was assessed using a semi structured questionnaire from the mother/ guardian of 309 children in the age group of 6-23m.

Results: Breast feeding was initiated within an hour of the birth in only 10.7% (33) of children. Around half (153) of the children were fed with prelacteals and colostrum was discarded in two-thirds (208) of the total. Exclusive breast feeding was dismally low with only 6.8% (21) mothers having practiced it. EBF was found more in institutional delivered and normal birth weight babies in comparison to domiciliary delivered and low birth weight babies respectively ($p < 0.05$). Only 31.7% (98) children were given complementary feeding at the appropriate age, and feeding in terms of calories was inadequate in three-fourth (232) of the total subjects. Knowledge assessed about IYCF (Infant and Young child Feeding) was seemingly poor amongst the mothers in the community.

Conclusions: Feeding practices are considerably errant in the community due to the widely prevalent myths and rituals. There is a need of consistent reinforcement of IEC regarding IYCF by the health workers and AWWs to dispel the misconception from the community to improve the health status of the children.

Keywords: Exclusive Breast feeding, Colostrum, Prelacteals, Complementary feeding.

Introduction

Inappropriate feeding practices and their consequences are major obstacles to sustainable socio- economic development and poverty reduction. Governments will be unsuccessful in their efforts to accelerate economic development in any significant long- term sense until optimal growth and development, especially through appropriate feeding practices are ensured. More than Twenty

years after adoption of the International Code of Marketing of Breast- milk Substitutes and 10 odd years into giving practical effect to the World Declaration and Plan of Action for Nutrition, the Innocenti Declaration and the Baby- friendly Hospital Initiative, it is time for governments, the international community and other concerned parties to renew their commitment for promoting the health and nutrition of infants and young children and to work together for this purpose.^{1,2}

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Rapid social and economic change only intensifies the difficulties that families face in properly feeding and caring of children. The resources devoted to supporting health especially nutrition related services are dwindling, accurate information on optimal feeding practices is lacking with widely imbibed myths and rumors in community and the number of food insecure urban households on the rise.³This study was undertaken to understand the actual picture of newborn, infant and young child feeding practices and to determine the factors associated with exclusive breast feeding.

Subjects and Methods

This was a community based cross sectional study of children aged 6-23 months and was conducted in Ward no.6 of Mehrauli which was randomly selected from the 1-9 wards of the area. It had a mixed population of approximately 10,000 as per the population survey by MCW center, Mehrauli and was the representative of Mehrauli. In this ward, families of almost all strata were found from upper socioeconomic class to lower according to modified Kuppuswamy scale. This ward has representation from all religion, and families residing here were varied and constituted migrated population and the ones who were living for more than 100 years. Since the population was varied, so were their diverse cultural practices; which reflected in the feeding practices of their children. The study units were all the children aged 6-23 months, and every attempt was made to cover all the children of this age group. There were 309 children studied in the present study who were found eligible and whose family gave their informed consent for the study.

In the present study, door to door visit was done from one end of the ward to enlist the children in the age group of 6-23 months and were studied as per the aims and objectives of the study. At least two more visits were done if the house was locked or child was unavailable on the first visit. In total, 37 children were not included and taken as non responders due to their non availability or not having agreed to give their consent.

A predesigned, pretested and semi structured questionnaire was prepared and used to collect information on socio- demographic data, birth profile, breastfeeding, weaning practices and current dietary intake by 24 hour recall method and in case of illness, calorie consumed during illness free period was taken into consideration of the study subjects. Every effort was made to extract the right information and in case of any

difficulty regarding language barrier, help from neighbor/ local influencer was sought.

Data and information were coded and compiled using SPSS (Statistical Package for Social Sciences) software version 16 and appropriate analysis was done using Chi-square test to test the significance of difference between the proportions. The study was approved by Ethics committee of Lady Hardinge Medical College, New Delhi. Informed consent was taken from the mother of the subjects and proper consultation regarding nutrition was given to parents and where referral was needed, provisions were made for the same to the nearest MCW center.

Results

A total of 309 subjects were studied and assessed for the breast feeding and weaning practices. Out of the 309 study subjects, 54.4% (168) were males and 45.6% (141) were females. Infant and young feeding practices are vital in view of their effect on sustained growth and development but it was disheartening to note that only 10.7% (33) of the total children were initiated breast feeding within an hour and one-third (103) discarded colostrums out of the ignorance. Prelacteals were given in nearly half of the study subjects in form of janmghutti (51), milk other than mother's milk (39), honey (33) and various forms of palatable water based drinks (39) and multiple prelacteals given to the same child was also observed. Although breast feeding was phenomenal and only 3% (10) mothers didn't feed their children with their breast milk due to the nil production of milk in their breast as reported by mothers, but exclusive breastfeeding up to six months was practiced only in meager 6.8% (21) subjects as 76% (235) of the total mothers fed their children with water at some point of time considering it indispensable for survival and 45.6% (141) children were given bottle/ top feeds when breast milk was not felt to be adequate within first six months of life. It was good to see that 91.6% (283) mothers were still continuing with breast feeding. Complementary feeding started at appropriate age in 31.7% (98) of children and half of the families started giving weaning foods before attainment of 6 months of age. Energy (Kcal) gained by feeding practices was calculated using 24hr recall method or in case of illness, dietary intake of most recent illness- free period was taken into consideration. Age- wise calorie requirement was calculated and 90-110% of the total recommended calories was taken to be normal. As per the feeding history given by the mother or caregiver, there were approximately 75% (232) children who were

receiving inadequate amount of energy from their present feeding practices. The knowledge regarding infant and young child feeding was remarkably low but the practices followed by the community was even worse as depicted in Table 1.

A detailed analysis of the factors affecting exclusive breast feeding was carried out and was based upon whether EBF or not and the possible determinants (Table 2). Exclusive breast feeding was more common in male children, Muslim by religion, literate and housewife mothers and children belonging to Upper socio- economic

status but the difference was not statistically significant. Natal history also affected exclusive breast feeding as babies who were born in health facilities, delivered normally, having normal birth weight, or birth order 2 and started their breast feeding within an hour were more likely to breastfeed exclusive for 6 months. The important determinants which created statistically significant difference ($p < 0.05$) were institutional deliveries and normal birth weight in comparison to domiciliary deliveries and LBW/ Unknown birth weight respectively.

S. No.		Number (n=309)	Percentage (%)
1. Initiation of breast feeding	<1 hour	33	10.7
	1-4 hr	110	35.6
	4-6 hr	96	31.1
	>6 hr	70	22.7
2. Colostrum given	Yes	208	68.2
	No	101	32.8
3. Prelacteals given	Yes	153	49.3
	No	156	50.7
4. Exclusive Breast feeding	Up to 4m	50	16.2
	Up to 6m	21	6.8
	No exclusive BF	238	77
5. Continuation of Breast Feeding	Yes	283	91.6
	No	26	8.4
6. Introduction of complementary feeding	<6m	171	55.3
	6-8m	98	31.7
	>9m	19	6.1
	Not started yet	21	6.8
7. Energy from feeding (Last 24 hours)	Adequate	77	24.9
	Inadequate	232	75.1
8. Correct knowledge about IYCF	Initiation of breast feeding	141	45.63
	Colostrum feeding	290	93.85
	Exclusive Breast feeding	56	18.12
	Breast feeding up to 2yr	253	81.88
	Complementary feeding at appropriate age	159	51.46

Table 1. Infant and young child Feeding practices

Variables		EBF (n=21)	Non EBF (n=288)	p value
1.Sex				
	Male	15(8.9)	153(91.1)	0.1
	Female	6(4.3)	135(95.7)	
2.Religion				
	Hindu	15(6.8)	207(93.2)	0.96
	Muslim	6(7.5)	74(92.5)	
	Others	0(0.0)	7(100)	
3.Mother's literacy status				
	Illiterate	8(6.0)	125(94)	0.63
	Literate	13(7.4)	163(92.6)	
4.Occupation				
	Housewife	21(6.5)	257(93.5)	0.11
	Employed	0(0.0)	31(90.3)	
5.Socioeconomic Status				
	Upper	3(14.3)	18(85.7)	0.16
	Upper Middle	0(0)	18(100)	
	Lower Middle	3(5.9)	48(94.1)	
	Upper Lower	15(7.7)	180(92.3)	
	Lower	0(0)	24(100)	
6.Type of family				
	Nuclear	15(6.8)	207(93.2)	0.96
	Joint and Others	6(6.9)	81(93.1)	
7.Duration of pregnancy				
	Preterm	4(9.8)	37(90.2)	0.85
	Term	17(6.3)	251(93.7)	
8.Place of Delivery				
	Institutional	19(9.5)	180(90.5)	0.01
	Home	2(1.8)	108(98.2)	
9.Mode of Delivery				
	NVD	21(7.6)	251(92.3)	0.08
	CS/ Assisted	0(0.0)	37(100)	
10.Birth Weight				
	Normal BW	14(14.4)	83(85.6)	<0.01
	Low BW	4(8.5)	43(91.5)	
	Unknown BW	3(1.8)	162(98.2)	
11.Birth Order				
	1	7(7.5)	86(92.5)	0.74
	2	8(8.2)	91(91.8)	
	3	6(7.5)	74(92.5)	
	>3	0(0.0)	42(100)	
12.Initiation of Breastfeeding				
	Within an hour	3(9.1)	30(90.8)	0.58
	>1 hour	18(6.5)	258(93.2)	
Percentages are in parentheses				

Table 2.Determinants of Exclusive Breast feeding

Discussion

In the current study, despite the better health facilities existing in the capital of India, home deliveries were seen in more than one- third of the total cases. This can be attributed to the fact that in India, there is a trend of mothers to deliver the

child at their father's place and my study area included a significant number of migrant laborers so more than 50% delivery were conducted outside Delhi, resulting in faulty feeding practices right from the birth itself. There were only 10.7% (33) of total 309 children who initiated breast feeding within an hour and 40.5% (15) of the 37

children born through caesarean section were not breastfed even within 6 hours so there is further need to understand the reasons of not following the IYCF (Infant and Young Child Feeding) guidelines in some institutions.⁴ It was noteworthy to see that only one-third mothers discarded colostrums which was remarkably lower than the previous study conducted in Delhi by Sethi et al. and other studies conducted in different parts of country.^{5, 6, 7, 8}

In the current study, around half of the children were given prelacteals which is slightly higher than reported by Kumar et al. and lower than that by Tiwari et al.^{9, 10} Complementary feeding at appropriate age (6-8m) was only 31.7% whereas NFHS-3 and UNICEF confers it to be 52.7% nationally.^{11, 12} It was observed in this study that complementary feeding was grossly inadequate in quality, quantity, frequency and consistency and provided adequate energy to 25% children only which is similar to the other studies.^{5, 13}

The prevalence of EBF in this study is lower than the other studies but similar to the findings of Tiwari et al.¹⁰ As per WHO, EBF should be calculated as an indicator taking the previous day recall of children under 6m of age and by doing so the proportion will be overestimated. It therefore does not represent the proportion of infants who are exclusively breastfed until just under 6 months of age and should not be interpreted as such. WHO has accepted that the proportion of children who are exclusively breastfed until just under 6 months of age is lower than the number derived from the indicator of current status. This is the reason there is so much of discrepancy in EBF prevalence in different studies which should be clear to the authors. Most of the mothers were confused about the concept of EBF and resorted to water and top feeds intermittently during first six months resulting in only 6.8% of EBF. For this purpose, WHO has suggested a different indicator k/a Predominant breastfeeding which is defined as consumption of breast milk as the predominant source of nourishment and certain liquids including water, water based drinks and ritual fluids.¹⁴ Some mothers were also worried about the changing guidelines regarding EBF; as previously, EBF for 4 months was promoted and weaning should start thereafter.¹⁵ The determinants for EBF proposed in different studies were not very strong in this study as the overall prevalence was very low. No doubt health facility contact results in better information regarding EBF as evident from the fact that significant proportion of institutionally delivered children were given EBF than the children delivered at

home ($p < 0.01$). Normal weight babies also performed better statistically in regard to EBF (14.4%) as mothers were less apprehensive in regard to health whereas mothers of LBW children were suggested differently from sources other than health workers. It was noteworthy to see that a higher proportion of preterm babies (9.8%) have been exclusively breast fed in present study in congruence with the Gwalior study which is probably due to the reason that they would have attended by a number of consultations with doctors and have been counseled about EBF.¹⁰ Contemporarily, Indian families are facing a double edged problem, the nuclear families are less informative and knowledgeable whereas in joint families there is a tendency of carrying over the traditional practices regarding nutrition and hence the overall feeding practices are very poor and unhealthy which has resulted in continued problem of under nutrition and illnesses amounting to high morbidity and mortality. Nowadays, one more factor i.e. status of mother is playing a crucial role affecting current feeding problems of infants. High class or highly educated ladies are more concerned about their image and figures or they are employed in a place where there is no facility of maternity leave and unavailability of day care center and hence do not give proper attention to breast feeding rather resorting to milk substitutes. The problem with mother of lower section of society is that they have less awareness and are nutritionally deprived which has adversely affected their production of breast milk and other feeding practices of their young ones. The problem is very much linked to the prevailing structure of society and there is a need to study these social parameters in detail to actually co- relate the factors responsible for such poor findings of the study.

Conclusions

Gross knowledge about the feeding practices was present in the community but they were mainly confused about the right time/ duration which has resulted in their poor knowledge outcome. The inappropriate feeding practices is the result of widely prevalent myths and misconceptions in the community and which can only be dealt with consistent hammering of the right practices by the government and non government institutions in the community. This highlights the importance of repeated health education regarding feeding practices by health workers/ AWWs/ ASHAs and then it will be helpful to translate knowledge into practice by reinforcement by the health contacts. Every visit or contact e.g. ANC/ PNC or Immunization visits made by the health workers

should be utilized to counsel about infant and young child feeding and promote EBF. Therefore the first and foremost step needed is to utilize all the existing channels of communication and ensure that the entire population knows about the importance of breast feeding for infant survival and growth; once they realize the importance, they will try to provide the needed support for the breast feeding mother. All breast feeding mothers have at times doubts regarding their ability to breastfeed and adequacy of breast milk. They require patient and empathetic listening and reassurance; their questions should be answered patiently. The response of the counselor should be factually correct, timely and practical. Over the last five decades there has been a steep increase in the number of women working outside home. They face several problems in their effort to successfully continue breastfeeding and provide appropriate complementary feeding. Appropriate support from the family and community to sort out these problems will help these women to ensure appropriate infant and young child feeding; this, in turn, can be expected to improve infant nutrition.

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Conflict of Interest: Nil

References

1. WHO/UNICEF. Global Strategy on Infant and Young Child Feeding. Geneva: World Health Organization, 2003.
2. WHO/UNICEF. Planning guide for national implementation of the global strategy for infant and young child feeding. Geneva: World Health Organisation, 2007.
3. WHO/UNICEF. Strengthening action to improve feeding of infants and young children 6- 23 months of age in nutrition and child health programmes. Geneva: World Health Organization, 2008.
4. Infant and Young Child Feeding, 2006. National Guidelines on Infant and Young Child Feeding. Ministry Of Women And Child Development (Food and Nutrition Board), Government Of India: 2nd edition; 2006.
5. Sethi V, Kashyap S, Seth V. Effect of nutrition education of mothers on infant feeding practices. *Indian J Pediatr* 2003; 70(6): 463-66.
6. Kumar D, Agarwal N, Swami HM. Socio demographic correlates of breastfeeding in urban slums of Chandigarh. *Indian J Med Sci* 2006; 60: 461-66.
7. Singh S, Bhasin SK, Ingle GK et al. Pattern of breastfeeding practices from a rural community in Haryana. *J Trop Pediatr* 1990; 36: 334-35.
8. Reddy S. Breastfeeding-practices, problems and prospects. *J Fam Welfare* 1995; 41: 43-51.
9. Kumar D, Agarwal N, Swami HM. Socio demographic correlates of breastfeeding in urban slums of Chandigarh. *Indian J Med Sci* 2006; 60: 461-66.
10. Tiwari R, Mahajan PC, Lahariya C. The Determinants of Exclusive Breast Feeding in Urban Slums: A Community Based Study. *J Trop Pediatr* 2008; 55(1): 49-54.
11. International Institute for Population Sciences (IIPS). National Family Health Survey (NFHS-3), 2005-06 India. IIPS: Mumbai, 2007.
12. UNICEF. The State of World's Children: UNICEF, 2009.
13. Kapur D, Sharma S, Agarwal KN. Dietary intake and growth pattern of children 9-36 months of age in an urban slum in Delhi. *Indian Pediatr* 2005; 42: 351-56.
14. WHO. Indicators for assessing infant and young child feeding practices. Part1. Definitions. Geneva: World Health Organization, 2008.
15. WHO. Report Of The Expert Consultation On The Optimal Duration Of Exclusive Breastfeeding. Geneva: World Health Organization, 2001.