

# RESEARCH BRIEF



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## A Community Based Study to Explore Determinants of Feeding Practices in a Resettlement Colony of East Delhi

### Background

Optimal infant and young child feeding is crucial to child survival and appropriate growth and development. According to the Lancet report breastfeeding could save 820,000 lives annually, i.e. preventing 13% of all deaths of children under five. Breastfeeding could reduce one third of respiratory infections and about half of all diarrhoea episodes in low- and middle-income countries. For India it could reduce 156,000 child deaths each year, reduce a minimum of 3,436,560 respiratory infections and 3,900,000 episodes of diarrhoea, particularly in young children. Breastfeeding also provides short- term and long- term health, economic and environmental advantages to children, women and society.<sup>i, ii</sup> Studies have shown that initiation of breastfeeding within the first hour of birth decreases neonatal deaths by 22 %.<sup>iii</sup> Exclusive breastfeeding during the first six months and continued breastfeeding for two years and beyond could contribute significantly in reducing childhood malnutrition and improving child survival.<sup>iv, v, vi</sup>

In spite of the crucial role of optimal Infant and Young Child Feeding in preventing child mortality, NCDs and malnutrition, the situation of IYCF practices in India remains dismal. Although the timely initiation of breast feeding and exclusive breastfeeding has increased from 24.5% to 44.6% and 46.4% to 64.5% in eight years between National Family Health Survey-3(NFHS-3) and (Rapid Survey on Children) RSOC 2013-14 ;out of 26 million babies born in India annually, 14.5 million are not able to get optimal feeding practices during first year of life.<sup>vii, viii</sup> There are few available data on the status of IYCF practices in urban poor population. This study is aimed to assess the feeding practices among mothers in an urban resettlement colony of Delhi.

### Objective

To determine the current feeding practices among the mothers of infants less than 6 months of age.

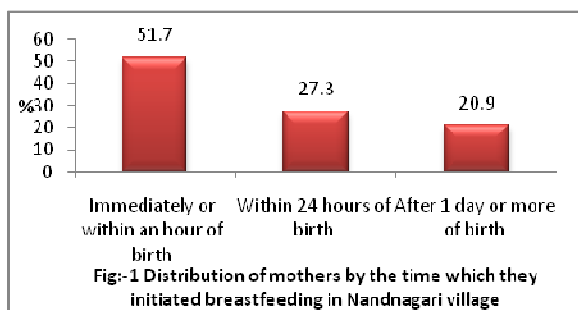
### Material and Methodology

A community based cross- sectional study was carried out in Nandnagari (population 65000), a resettlement colony of East Delhi among mothers with infants less than 6 months of age. Considering the prevalence of exclusive breastfeeding as 34.5% (NFHS-3) in Delhi and with an absolute difference of 5% on either side, with a confidence interval of 95%, a sample size of 350 was calculated using the Epi Info Software. Since Nandnagri has 5 blocks (A, B, C, D, E) & 4 sub-blocks in each block for a sample size of 350, 70 subjects from each block & 18 subjects from each sub-block were taken. The subjects were selected from Anganwadi centres (AWCs). To identify associated factors, first a bivariate analysis using Chi square test was performed for each independent variable with the outcome of interest. The age of the child was analyzed as a continuous variable and thus 't' test was done for the bivariate analysis. Finally, multivariable logistic regression was done to determine independent predictors of exclusive breastfeeding. Ethical clearance was obtained from Institutional Ethics Committee, Human Research, University College of Medical Sciences, University of Delhi.

### Result

In the present study 87.7% mothers had institutional delivery but only 178 (51.5%) of the mothers initiated breastfeeding within one hour, while 27% initiated within 24 hours and 20.9% initiated after 1 day or more of birth. (Fig:-1) The most common reasons for delay of initiation of breastfeeding to infants stated by mothers (n=71) were mother's tiredness/ unconscious (58.4%), insufficient milk supply (15.6%) and child admitted in NICU / separated from mother (18%).

Similarly, out of 350 respondent, 65 (15.8%) of mothers gave pre-lacteal feeding to their infants. Milk other than breastmilk 21 (32.3%) and infant formula 18 (27.6%) was the most common pre-lacteal used by the mothers.



### Factors associated with Initiation of breastfeeding and pre-lacteal feeding

In bivariate analysis, types of delivery, place of delivery, advice on initiation of breastfeeding at the time of delivery or postnatal ward found to be significantly associated with initiation of breastfeeding within one hour of birth and introduction of pre-lacteal feeding. Pre-lacteal feeding was also significantly associated with types of family and gender. (Table -1 & 2)

Childbirth by caesarean section appeared as the one of the important factor with negative association with early initiation of breastfeeding. Mothers who gave birth vaginally were 6.41 times more likely to initiate

breastfeeding within one hour of birth as compared to those who had caesarean delivery [COR= 6.41; 95% CI: 3.56-11.51]. On the other hand, frequency of pre-lacteal was lower among the mothers who had vaginal delivery as compare who has caesarean delivery. [COR= 0.46; 95% CI: 0.26-0.81] This finding suggests that caesarean delivered mothers need further support, and encouragement to initiate breastfeeding such as those recommended by the BFHI.

Mothers who delivered their infant at public health institution were 2.98 times likely to initiate breastfeeding as compared to those who delivered at private health institution and at home. [COR= 2.98; 95% CI 1.61-5.55] On the contract, mothers who gave birth at home were 1.60 time more likely to practice pre-lacteal feeding as compared to mothers who gave birth at health institution. [COR= 1.60; 95% CI 0.70-3.64]. Importance of breastfeeding and risk of pre-lacteal feeding should be addressed by the community health workers during their regular household visits.

It is evidence from our study that breastfeeding advice and support at the time of delivery or immediately after delivery has an important role for initiation of

**Table-1: Bivariate and multivariate analysis of factors associated with initiation of breastfeeding practices among mothers having children less than 6 months old**

Variables	Initiation of breastfeeding		Unadjusted OR with 95% CI	P-value	Adjusted OR with 95% CI	P-value
	<1 hour N (%)	>1 hour N (%)				
<b>Types of delivery</b>						
Normal	161 (61.9)	99 (38%)	6.41(3.56-11.51)	<0.001*	7.27 (3.84-13.78)	<0.001*
Cesarean	17 (20.2)	67 (79.8%)	1		1	
<b>Place of Delivery</b>						
Home	17 (42.5)	23 (57.5)	1.60 (0.69-3.71)	0.272	1.08(0.40-2.88)	0.889
Govt Institute	143 (57.9)	104 (42.1)	2.98(1.61-5.55)	<0.001*	2.22(1.10-4.49)	0.027*
Pvt Institute	18 (31.6)	39 (68.4)	1		1	
<b>Received advice on initiation of breastfeeding at the time of delivery</b>						
Yes	165 (54.6)	137 (45.5%)	2.69(1.34-5.37)	0.004	3.18(1.42-7.12)	0.005*

**Table 2:- Bivariate and multivariate analysis of factors associated with pre-lacteal feeding practices among mothers having children less than 6 months old**

Variables	Pre-lacteal feeding		Unadjusted OR with 95% CI	P-value	Adjusted OR with 95% CI	P-value
	Given (%)	Not given (%)				
<b>Types of delivery</b>						
Normal	41 (15.4)	225 (84)	0.46(0.26-0.81)	0.007	0.32(0.16-0.66)	0.002
Cesarean	24 (28.6)	60 (71.4)	1.0		1.0	
<b>Place of Delivery</b>						
Home	18 (41.9)	25 (58.1)	1.60 (0.70-3.64)	0.263	1.92(0.66-5.34)	0.229
Govt Institute	29 (11.6)	220 (88.4)	0.29 (0.15-0.58)	<0.001	0.34(0.16-0.75)	0.007
Pvt Institute	18 (31)	40 (69)	1.0		1.0	
<b>Gender</b>						
Male	43 (23.6)	139 (76.4)	2.05 (1.17-3.61)	0.011*	2.41(1.24-4.69)	0.10
Female	22 (13.1)	146 (86.9)	1.0		1.0	
<b>Received advice on initiation of breastfeeding at the time of delivery</b>						
Yes	46 (15.2)	256 (84.8)	1.0		1.0	
No	13 (31)	29 (69)	2.50 (1.21-5.15)	0.018	1.76(0.74-4.19)	0.198

breastfeeding within one hour of birth and it is found significant. Mother who were advised on initiation of breastfeeding at the time of delivery or postnatal ward were 2.69 times more likely to practice timely initiation of breastfeeding than those who had not. [COR= 2.69; 95% CI 1.34-5.37] On the contract, mothers who didn't receive advice on initiation of breastfeeding at the time of delivery/postnatal ward were more likely to practice pre-lacteal feeding as compared to those who didn't receive advice. [COR=2.50; 95% CI: 01.21-5.15]

Mothers belonged to nuclear families were 1.77 times more likely to give pre-lacteal feeding as compared to mothers belonged to joint families. [COR= 1.77; 95% CI 1.03-3.05] Practice of pre-lacteal feeding was twice time higher among the male children as compared to female children. [COR= 2.05; 95% CI 1.17-3.61] Increasing number of illiterate mothers showed a tendency towards increasing probability of early initiation though not statistically significant (p=0.065).

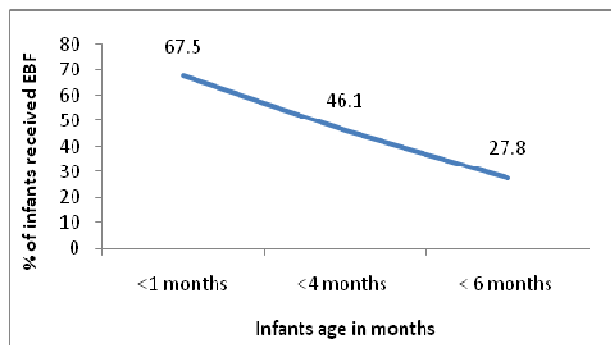
On multivariable regression analysis after adjusting for other variables in the model, types of delivery, place of delivery and advised on initiation of breastfeeding at the time of delivery or postnatal ward remained the independent predictor of initiating of breastfeeding and introduction of pre-lacteal feeding.

#### Exclusive breastfeeding practices

In the present study, although 86.6% mothers had four or more antenatal visits, and 50.8% mothers received advice regarding breastfeeding during their antenatal visits or pregnancy but these two factors did not show any significant association with not with initiation of breastfeeding nor prevalence of EBF.

In the present study, 147 (42%) of mothers had reported practicing exclusive breastfeeding as per previous day recall period. The exclusive breastfeeding rate dropped from 67.5% in infants aged less than one month to 46.1% at less than 4 months and 27.8% at less than 6 months of age. (Fig -2)

Fig -2 Trend of exclusive breastfeeding in infants less than six months of age



In the present study out of 350, 117 (33.4%) of mothers gave artificial feeding to their infants in the form of animal milk 90 (76.9%) or infant formula 27(23%) in last 24 hours preceding the survey. Practice of diluting animal milk was very common, majority (91.2%) of infants received diluted animal milk. Regarding the advice on artificial feeding, 16 (59.2%) of the mothers who used infant formula were advised by the health professionals while 53 (58.2%) mothers self decided to use animal milk. Majority (88.8%) of mothers used bottle for artificial feeding.

#### Factors associated with exclusive breastfeeding (EBF)

In bivariate analysis, other than mother's family income and pre-lacteal feeding none of the factors were associated with EBF at 0.05 level of alpha (Table-2). Odds of EBF was 3 times higher among mothers with family income less than Rs.5000 per month as compared to family income more than Rs. 5000 per month. (COR=3.03; 95% CI: 1.26-7.30). In contrast to the EBF, consumption of artificial feeding (animal milk/ infant formula) was higher among the mothers who belonged to higher family income as compared to those belonging to lower family income. (P=0.009). The reasons might be that mothers of higher income group may have more opportunity to get expose to the markets and social media which is major influence these days and also they can afford buying expensive infant formula which is easily available in the market. Another reason could be that the mothers may not be aware about the risk of formula feeding and diluted animal milk.

Similarly, those mothers who did give pre-lacteal feeds to their infants were 2.15 less likely to exclusively breastfeed compared to those who did not give pre-lacteal feeds. (COR = 2.15; 95% CI: 1.19, 3.90) An explanation could be the fact that the infants inability to suckle their mothers' breast adequately may cause decrease in milk production which will in-turn compel mothers to introduce artificial pre-lacteal feeding early for their infants.

Exclusive breastfeeding was higher among the mothers who were homemakers (42.8%) than in working mothers (18.2%) but was not found statistically significant due to smaller number. On the other side, the consumption of artificial feeding was significantly associated with working mothers. The frequency was higher among the working mothers (63.6%) as compared to homemakers (24.8%). (P<0.05) This could be because of mother's perception that she has to give artificial feed when she is away from home for work & also lack of family and health professionals support to give skilled help to these working mothers about how to give EBF. ( Table 3 & 4)

**Table 3:- Bivariate and multivariate analysis of factors associated with Exclusive breastfeeding among mothers with children less than 6 months of age**

Variables	Exclusive breastfeeding		Unadjusted OR with 95% CI	P-value	Adjusted OR with 95% CI	P-value
	Given (%)	Not given (%)				
<b>Mother's occupation</b>						
House maker	145 (42.8)	194 (57.2)	3.36(0.72-15.80)	0.087	4.64(0.83-25.86)	0.080
Working outside from home	2 (18.2)	9 (81.8)	1.0		1.0	
<b>Monthly Income</b>				0.013*		0.086
<5000	15 (62.5)	9 (37.5)	3.03(1.26-7.30)	0.014*	2.92 ( 1.09- 7.83)	0.033*
5001-9999	67 (46.9)	76 (53.1)	1.60(1.02-2.50)	0.039*	1.43 (0.81- 2.50)	0.208
>=10000	65 (35.5)	118 (64.5)	1.0		1.0	
<b>Pre-lacteal feeding given</b>						
Yes	18 (27.6)	47 (72.3)	2.15 (0 1.19-3.90)	0.011*	0.40(0.20-0.80)	0.010*
No	129 (45.2)	156 (54.7)	1.0		1.0	
<b>Infant age in months*</b>						
Mean age (SD)	2.54 (1.66)	3.56 (1.41)	0.66(0.57-0.76)		0.61(0.52-0.721)	< 0.001

\*T test was used to study association of EBF with age

**Table 4:- Factors associated with introduction of artificial feeding at less than 6 months**

Variables	Infant received artificial feeding (animal milk/ infant formula) in last 24 hrs		Chi-Square	P-Value	Odds Ratio	95% confidence Interval
	Given (n=117)	Not given (n=233)				
<b>Mother's occupation</b>						
Illiterate	18(34.0)	35(66.0)			1.03	0.56-1.91
Literate	99(33.3)	198(66.7)	0.008	0.929	1.0	
<b>Mother's Occupation</b>						
House maker	110 (32.4)	229 (67.9)			1.0	
Working outside from home	7 (63.6)	4 (36.4)	4.66	*0.031	3.64	1.04-12.71
<b>Monthly Income</b>						
<5000	4 (16.7)	20 (83.3)			1.0	
5001-9999	39 (27.3)	104 (72.7)	9.504	*0.009	1.88	0.60-5.83
>=10000	74 (40.4)	109 (59.6)			3.39	1.12-10.34

## Conclusion

In the present study feeding practices in the mothers of the resettlement colony were not satisfactory, the prevalence of initiation of breastfeeding within one hour of birth was 51.7% and exclusive breastfeeding was just 42% which is lower than the national figure. The practice of giving artificial feeds was common with majority of the mothers giving diluted feeds. Place of delivery, types of delivery, breastfeeding advice at the time of delivery or postnatal ward were significantly associated with initiation of breastfeeding and introduction of pre-lacteal feeding. The initiation

of breastfeeding practices were better in children born in government institutions highlighting the role of health facilities in improving IYCF practices. Similarly the only factor related to exclusive breastfeeding was family income and pre-lacteal feeding while for artificial feeding family income and working status of the mothers were found to be significant. Thus, the present study reveals a need for skilled, sustained and practical help to the pregnant and lactating mothers by skilled counsellors at health facilities & at the community level along with uniform provision for maternity leave for 6 months for all working mothers to alleviating the poor feeding practices so as to improve EBF

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BPNI is a registered, independent, non-profit, national organisation that works towards protecting, promoting and supporting breastfeeding and appropriate complementary feeding of infants and young children. BPNI works through advocacy, social mobilization, information sharing, education, research, training and monitoring the company compliance with the IMS Act. BPNI is the Regional Focal Point for South Asia for the World Alliance for Breastfeeding Action (WABA) and Regional Coordinating Office for International Baby Food Action Network (IBFAN) Asia.

As, a policy, BPNI does not accept funds of any kind from the companies producing infant milk substitute, feeding bottles, related equipments, or infant foods (cereal foods) or from those who have been ever found to violate the IMS Act or the International Code of Marketing of Breast-milk-Substitute or from organization/ industry having conflict of interest.

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