Original Article

To assess the prevalence and factors determining timely initiation of breastfeeding among the mothers in resettlement colony in Delhi

Thakur Neelima[1]*, Chhabra Pragti[1]*, J P Dadhich[2], Gupta Anita[3], Chandola Vibharika[4]

From [1]Senior Programme Officer, Breastfeeding Promotion Network of India, [1]Department of Community Medicine, UCMS & GTB Hospital, New Delhi, [2]National Coordinator, Breastfeeding Promotion Network of India, [3]Department of Community Medicine, UCMS & GTB Hospital, New Delhi, [4]Programme Officer, Breastfeeding Promotion Network of India

*Both authors are equally contributed

Correspondence to: Dr. Neelima Thakur, Senior Programme Officer, Research Breastfeeding Promotion Network of India, BP-33, Pitampura, New Delhi - 110 034, India. Phone: +91-9871067083. E-mail: neelima@bpni.org

Received – 15 March 2016 Initial Review – 27 April 2016 Published Online – 25 May 2016

ABSTRACT

Background: The initiation of breastfeeding within 1 h of birth has various benefits and has been found to reduce neonatal mortality and morbidity. **Objective:** This study is designed to assess the prevalence and determinants of timely initiation of breastfeeding among mothers in a resettlement colony of Delhi. **Materials and Methods:** A community-based cross-sectional study was conducted in a resettlement colony of East Delhi among mothers with infants <6 months of age. Mothers were enrolled from Anganwadi Centers using systematic random sampling, and a questionnaire was used to record information on feeding practices. Chi-square test and multiple logistic regression analysis were performed. **Results:** The prevalence of the initiation of breastfeeding within 1 h of birth was 51.7%. Using multiple logistic regression analysis, the factors which were found to be significantly associated were type of delivery ($p<0.005$), place of delivery ($p<0.005$), and advice on the initiation of breastfeeding at the time of delivery or postnatal period ($p<0.005$). **Conclusions:** In this study, the prevalence of the initiation of breastfeeding is better than the national average. It was higher in children born in government health institutions. This study suggests that the importance of the early initiation of breastfeeding should be emphasized during antenatal care visits through trained skilled health professionals in public and private health sector.

Key words: *Initiation of breastfeeding, Pre-lacteal feeding, Slum*

Optimal infant and young child feeding are a 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 diarrhea 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 diarrhea, particularly in young children [1,2]. Breastfeeding also provides short- and long-term health, economic and environmental advantages to children, women and society [1,2]. Studies have shown that initiation of breastfeeding within the first hour of birth decreases neonatal deaths by 22% [3]. The role of optimal breastfeeding in preventing non-communicable diseases such as obesity, diabetes, hypertension, and its positive relation with brain development has been well documented [4]. A systematic review and meta-analysis [5,6] reported that initiation of breastfeeding within the first hour of birth was significantly associated with a reduction in neonatal mortality, morbidity, low birth weight related neonatal mortality, infection-specific neonatal mortality [7], and marked reduction of the rate of diarrhea throughout the first 6 months of life [8].

Despite the strong evidence supporting direct and long-term health benefits of the early initiation of breastfeeding, India, has dismal rates of adequate infant feeding practices. Annually, about 25 million babies are delivered in India. According to the recent Rapid Survey on Children (2013-14), timely initiation of breastfeeding is at only 46.5% [9]. Various studies done across Delhi looked at the practices and outcomes, but there is not much work on the determinants of initiation of breastfeeding. Therefore, this study was conducted to assess the prevalence and determinants of timely initiation of breastfeeding practices among mothers in a resettlement colony in Delhi.

MATERIALS AND METHODS

This study was conducted in Nandnagari, a resettlement colony of East Delhi. It is sub-divided into 5 blocks and

21 sub-blocks, having an approximate population of 65,000. There are 45 Anganwadi Centers (AWCs) in the resettlement colony and each sub-block, on an average, has 2 AWCs. This community-based cross-sectional study was conducted over the period of March 2014 to April 2015. Ethical clearance was obtained from Institutional Ethics Committee, human research. Before interview, written informed consent was obtained from the mothers. The participants were also assured about the confidentiality of the data.

Considering the prevalence of the early initiation of breastfeeding in the studied area as 22% between Delhi (19.3%) and national figure (23.4%) as per National Family Health Survey-3 (NFHS-3), with 20% precision on either side and at 95% confidence level, a sample size of 341 infants was calculated using the Epi Info software. From each sub-block, 1 AWC was randomly selected. Mothers with infants <6 months of age and living in the area for at least 6 months were included in the study from the selected AWC. Severally ill infants were not included. By systematic random sampling, every second child was selected to include a total of 350. The mothers were contacted at home.

The pre-structured and pre-tested questionnaire was used to identify infant feeding practices and collect information on variables likely to be associated with initiation of breastfeeding within 1 h of birth and pre-lacteal feeding including socio-demographic characterises and obstetrics and health related services**.** The questionnaire was pre-tested before the actual data collection and necessary modifications were made. The data was collected by two trained investigators under the supervision of a principal investigator.

Data were entered and analyzed using the SPSS version 20 statistical software. Descriptive statistics were computed to determine the prevalence of early initiation of breastfeeding. To identify associated factors, first a bivariate analysis using Chi-square was done for each independent variable with the outcome of interest. Finally, multivariable logistic regression was done to control the confounding variables and determine independent predictors of the early initiation of breastfeeding. All tests were two-sided and $p<0.05$ was considered statistically significant.

RESULTS

The mean age of the recruited mothers was 25.6±3.9 years. The mean age of the infants was 3.1±1.6 months. 46% (161/350) of mothers were educated up to middle or higher school. The majority of 96.8% (339/350) of mothers was homemaker by occupation. About half (175/350) of them belonged to households with a monthly income of Rs. ≥10000. Out of the total respondents, 59.1% (207/350) had a joint family.

In this study, 98.2% (344/350) of mothers had ever breastfed their child. Of those who had ever breastfed, more than half (51.7%, 178/344) of the mothers initiated breastfeeding within 1 h, while 27.4% initiated within 24 h and 20.9% initiated after 1 day or more of birth. The most common reasons for delay in the initiation of breastfeeding as stated by mothers (n−71) were feeling of lethargy, pain or unconsciousness (58.4%), cesarean delivery (19.2%), child admitted in neonatal intensive care unit or separated from mother (18%), insufficient milk supply (15.6%), and advised by elders (4.2%). The majority (89.2%, 307/344) of the mothers received breastfeeding advice at the time of delivery or in the postnatal ward after delivery and majority (88.2%) were advised by health professionals.

In bivariate analysis (n=344), none of the socio-demographic factors studied were statistically significant with timely initiation of breastfeeding. Although illiterate mothers were more likely to initiate breastfeeding early as compared to literate mothers, the difference was not statistically significant ($p=0.065$) (Table 1).

In this study, 98.2% of the mothers had antenatal care (ANC) visits during pregnancy and 86.6% (298/344) had more than four ANC visits. About half of the mothers (50.8%, 178/350) were advised or informed about breastfeeding during their ANC visits or pregnancy. Regarding the place of delivery, 87% (307/350) of mothers delivered their youngest child at health institution, 71.1% (249/350) in government health facilities and 16.5% (58/350) in private health facilities while 12.2% (43/350) delivered at home. The most (76%) mothers delivered vaginally and 24% (84) mothers had cesarean delivery.

In bivariate analysis (n=344), type of delivery, place of delivery and advice given on initiation of breastfeeding at the time of delivery or postnatal ward were statistically significant ($p<0.005$) with timely initiation of breastfeeding (Table 2). In multivariable regression analysis after adjusting for other variables in the model, type of delivery, place of delivery and advice received on initiation of breastfeeding during delivery or postnatal period remained the independent predictors of initiation of breastfeeding.

Mothers who delivered their infant at public health institution were 2.2 times more likely to initiate breastfeeding as compared to those who delivered at private health institution or at home (odd ratio [OR]=2.22; 95% confidence interval [CI]: 1.10-4.49). Furthermore, mothers who gave birth vaginally were 7.2 times more likely to initiate breastfeeding within 1 h of birth as compared to those who had cesarean delivery (OR=7.27; 95% CI: 3.84-13.7). Similarly, mothers who were advised on initiating breastfeeding at the time of delivery or in postnatal period were 3 times more likely to practice timely initiation of breastfeeding than those who had not (OR=3.18; 95% CI: 1.42-7.12) (Table 3).

Table 1: Breastfeeding initiation by socio-demographic characteristics of mothers in the resettlement colony

Variables	Initiation of breastfeeding, n (%)		Unadjusted OR with 95% CI	p-value
	<1 h	>1 h		
Mothers age				0.365
<20	17 (60.7)	11 (39.2)	2.38 (0.85-6.67)	0.1
21-25	84 (53.5)	73 (46.5)	1.77 (0.82-3.81)	0.144
26-30	64 (50.7)	62 (49.2)	1.59 (0.73-3.47)	0.246
>30	13 (39.3)	20 (60.6)	1	
Mother education				
Illiterate	33 (64.3)	19 (36.5)	1.76 (0.96-3.24)	0.065
Literate	145 (49.7)	147 (50.3)	1	
Mother occupation				
House maker	173 (51.8)	161 (48.2)	1.08 (0.31-3.78)	0.911
Working outside from home	5 (50)	5 (50)	1	
Monthly income				0.1
<5000	15 (62.5)	9 (37.5)	1.93 (0.80-4.63)	
5001-9999	80 (56.7)	61 (43.3)	1.52 (0.97-2.37)	
≥10000	83 (46.5)	96 (53.6)	1	
Types of family				
Nuclear	75 (53.9)	64 (46.0)	1.16 (0.75-1.79)	0.499
Joint	103 (50.2)	102 (49.7)	1	

Statistically significant at (p<0.05). OR: Odd ratio, CI: Confidence interval

Table 2: Breastfeeding initiation by obstetrics and health related factors in the mothers in the resettlement colony

Variables	Initiation of breastfeeding, n (%)		Unadjusted OR with 95% CI	p-value
	<1 h	>1 h		
No of ANC visits				0.34
None	2 (40.0)	3 (60.0)	1	
1-3 visits	12 (40.0)	18 (60.0)	1.0 (0.15-6.91)	1
≥4 visits	164 (53.1)	145 (46.9)	1.70 (0.28-10.30)	0.566
Received advice on initiation of breastfeeding during delivery or postnatal ward				
Yes	165 (54.6)	137 (45.5%)	2.69 (1.34-5.37)	0.004
No	13 (31.0)	29 (69.0%)	1	
Counseling during pregnancy/ANC check-ups				
Yes	91 (51.7)	85 (48.3)	0.997 (0.653-1.552)	0.988
No	87 (51.8)	81 (48.2)	1	
Type of delivery				
Normal	161 (61.9)	99 (38%)	6.41 (3.56-11.51)	<0.001*
Cesarean	17 (20.2)	67 (79.8%)	1	
Place of delivery				0.001
Home	17 (42.5)	23 (57.5)	1.60 (0.69-3.71)	0.272
Government institute	143 (57.9)	104 (42.1)	2.98 (1.61-5.55)	<0.001*
PVT institute	18 (31.6)	39 (68.4)	1	

***: (p<0.05), Statistically significant at (p<0.05). ANC: Antenatal care, OR: Odd ratio, CI: Confidence interval**

Out of 350 respondents, 18.5% (65/350) of mothers gave pre-lacteal feeds to their infants. Animal milk 21 (32.3%), infant formula 18 (27.6%), janam ghutti (11%), and drinks (such as plain water, tea, honey and sugar) or glucose water (5%) were the common pre-lacteal feeds given. Mother's perception of not having enough milk (38.4%), feeling lethargic, pain or unconscious (30.7%), child sickness (21.5%), and advice by elders (9.2%) were justifications given in support of giving pre-lacteal by the mothers. On bivariate analysis, type of delivery, place of delivery, gender, and type of family were

Table 3: Multivariable logistic regression showing factors associated with timely initiation of breastfeeding among mothers in resettlement colony

Variables	Initiation of breastfeeding, n (%)		Unadjusted OR with 95% CI	p-value	Adjusted OR with 95% CI	p-value
	<1 h	>1 h				
Type of family						
Nuclear	75 (53.9)	64 (46)	1.16 (0.75-1.79)	0.499	1.08 (0.60-1.93)	0.805
Joint	103 (50.2)	102 (49.7%)	1		1	
Type of delivery						
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	
Place of delivery				0.001		0.03
Home	17 (42.5)	23 (57.5)	1.60 (0.69-3.71)	0.272	1.08 (0.40-2.88)	0.889
Government 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	
Received advice on initiation of breastfeeding at the time of delivery or in postnatal period						
Yes	165 (54.6)	137 (45.5%)	2.69 (1.34-5.37)	0.004	3.18 (1.42-7.12)	0.005*
No	13 (31.0)	29 (69.0%)	1		1	

***: (p<0.05), Statistically significant (p<0.05). OR: Odd ratio, CI: Confidence interval**

statistically significant (p<0.005) with the introduction of pre-lacteal feeding.

On multivariable regression analysis after adjusting for other variables in the model, type of delivery, place of delivery, and gender remained the independent predictors for the introduction of pre-lacteal feed. Mothers who gave birth at home were 1.9 times more likely to practice pre-lacteal feeding as compared to mothers who gave birth at health institution (AOR=1.92; 95% CI: 0.66-5.34). However, the frequency of pre-lacteal feeding was lower among mothers who had a vaginal delivery as compared to those who had cesarean delivery (AOR=0.32; 95% CI: 0.16-0.66). Similarly, practice of pre-lacteal feeding was 2.4 times higher among mothers with male children as compared to those with female children (AOR=2.41; 95% CI: 1.24-4.69) (Table 4).

DISCUSSIONS

National guidelines on Infant and Young Child Feeding recommend that breastfeeding should be initiated within an hour of birth [10]. In this study, 51.7% of mothers initiated breastfeeding within 1 h of birth. Although, this is higher than the figure of 44.6% reported recently in Rapid Survey in Children (ROSC-2013-14) [9] and Delhi figures (21%) of the NFHS-3 [11]. The rate is also better than a previous study conducted in Delhi (37.2% to 49.5%) and Andhra Pradesh [12-14]. However, a study from Lalitpur has reported higher figure than this study (71%) [15]. The prevalence of pre-lacteal feeding was 15.8% in this study which is far less compared to the corresponding NFHS-3 figures for India (57.2%) [16] as well as for Delhi (45.5%) [11]. It is also lower than a study from Delhi [13] and that reported from previous other studies [17-19]. This decrease may be attributed to the increase in the proportion of institutional deliveries and increased awareness. Animal milk and infant formula were the most common pre-lacteal used by the mothers. Easy availability of infant formula in the markets and mothers receiving advice by elder family members and neighbors for other milk may promote their use. Traditional practices, lack of education and worry for the child's health among families and their perception that the mother is producing less milk in the initial days of delivery may be the leading cause for the use of pre- lacteals. As formula milks are easily available in the market and have been promoted to be equivalent to mother's milk, families choose it over other alternatives. This finding is supported by previous studies [20,21]. Health-care providers can address fear and anxiety among mothers about "not having enough milk" through skilled counseling and support. An earlier study has also proved that breastfeeding support during pregnancy and postpartum was associated with lower odds of pre-lacteal feeding, in general, and infant formula specifically [22].

Childbirth by cesarean section appeared as one of the important factors with a negative association with the early initiation of breastfeeding. Mothers who underwent cesarean section were less likely to breastfeed within the first hour of birth and more likely to give pre-lacteal feeds to their infants as compared to ones who had a normal delivery. Cesarean section has constantly been shown to be a major risk factor for delayed initiation of breastfeeding [13,23,24] and increased risk of pre-lacteal feeding [13,23]. This finding suggests that cesarean delivered mothers need greater support, and encouragement to initiate breastfeeding such as those recommended by the

Table 4: Bivariate and multivariable logistic regression showing factors associated with introduction of pre-lacteal feeding practices among mothers in the resettlement colony

Variables	Pre-lacteal feeding		Unadjusted OR with 95% CI	p-value	Adjusted OR with 95% CI	p-value
	Given (%)	Not given (%)				
Mothers age				0.193		0.780
<20	4 (14.3)	24 (85.7)	1.0		1.0	
21-25	23 (14.5)	136 (85.5)	1.02 (0.32-3.20)	0.980	1.18 (0.33-4.20)	0.794
26-30	29 (22.5)	100 (77.5)	1.74 (0.56-5.42)	0.339	1.67 (0.44-6.39)	0.451
>30	9 (26.5)	25 (73.5)	2.16 (0.59-7.96)	0.247	1.28 (0.26-6.45)	0.763
Mother education						
Illiterate	13 (24.5)	40 (75.5)	0.65 (0.33-1.31)	0.240	1.89 (0.81-4.38)	0.139
Literate	52 (17.5)	245 (82.5)	1.0		1.0	
Mother occupation						
Housewife	63 (18.6)	276 (81.4)	1.03 (0.22-4.87)	0.973	2.24 (0.22-22.70)	0.496
Working	2 (18.2)	9 (81.8)	1.0		1.0	
Monthly income				0.910		0.918
<5000	4 (16.7)	20 (83.3)	0.91 (0.29-2.84)	0.870	0.89 (0.23-3.37)	0.858
5001-9999	28 (19.6)	115 (80.4)	1.11 (0.63-1.94)	0.722	1.12 (0.53-2.37)	0.761
≥10000	33 (18.0)	150 (82)	1.0		1.0	
Type of family						
Nuclear	34 (23.8)	109 (76.2)	1.77 (1.03-3.05)	0.039	1.68 (0.81-3.46)	0.164
Joint	31 (15)	176 (85)	1.0		1.0	
Type of delivery						
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	
Place of delivery				<0.001		<0.001
Home	18 (41.9)	25 (58.1)	1.60 (0.70-3.64)	0.263	1.92 (0.66-5.34)	0.229
Government 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	
Gender						
Male	43 (23.6)	139 (76.4)	2.05 (1.17-3.61)	0.011	2.41 (1.24-4.69)	0.010
Female	22 (13.1)	146 (86.9)	1.0		1.0	
No of ANC visits				0.246		
None	2 (33.3)	4 (66.7)	1.0		1.0	
1-3 visits	9 (28.1)	23 (71.9)	0.78 (0.12-5.05)	0.797	3.16 (0.25-39.31)	0.381
≥4 visits	54 (17.3)	258 (82.7)	0.42 (0.08-2.34)	0.322	2.42 (0.23-25.59)	0.462
Received advice on initiation of breastfeeding at the time of delivery or postnatal ward						
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
Counseling during pregnancy/ANC check-ups						
Yes	29 (16.3)	36 (20.9)	1.0		1.0	
No	149 (83.7)	136 (79.1)	1.36 (0.79-2.34	0.264	1.02 (0.54-1.93)	0.958

Statistically significant at (p<0.05). ANC: Antenatal care, OR: Odd ratio, CI: Confidence interval

BFHI [25]. Previous research has also shown that involvement of trained lactation management counselors had a significant impact on the initiation of breastfeeding among mothers delivered by cesarean section [26]. With respect to place of childbirth, mothers who gave birth in public health institutes were more likely to initiate breastfeeding within 1 h of birth than those who gave birth at private health institutes or home. This is similar to the result obtained from national [13,24] and

international studies [27]. This might be due to the reason that health professionals from public health institutes are more sensitized about the importance of breastfeeding within an hour of birth and facilitate timely initiation of breastfeeding. On the contrary, women who delivered at home were found to have a two-fold increased risk for pre-lacteal feeding compared to mothers who gave birth at a health institution. The finding is supported by previous studies [13,20,28]. Importance of breastfeeding and risk of pre-lacteal feeding should be addressed by the community health workers during their regular household visits.

It is evident from our study that breastfeeding advice and support at the time of delivery or immediately after delivery has an important role for initiation of breastfeeding within 1 h of birth and found to be significant. This is similar to previous findings that women who receive encouragement to breastfeed from health professionals were more likely to initiate and maintain breastfeeding than women who did not receive encouragement [29,30]. On the other side, pre-lacteal feeding was more prevalent among the mothers who did not get advice or support on breastfeeding. However, the disappointing fact is that the number of ANC visits and breastfeeding advice at the time of ANC visits/pregnancy did not show significant impact on the initiation of breastfeeding. This study suggests that the importance of early initiation of breastfeeding should be emphasized during ANC visits and in the postnatal ward through trained skilled health professionals.

In this study, the initiation of breastfeeding was higher among illiterate mothers as compared to literate ones. The reasons could be that the literate mothers have more freedom of choice and decision-making. Thus, the availability of choices and unrestricted decision making, fuelled by the glamor marketed by the formula manufacturers might be a causative reason for the same. On multivariate analysis, type of family was not associated with pre- lacteal feeding; however, some studies have shown joint families as factors that promote pre-lacteal feeding [31,32]. Male infants were 2 times more likely to be given pre-lacteal feeds than female infants. This may be due to the preferential treatment of male child prevalent in our society.

The study has certain limitations, as it was a cross-sectional study based on recall, some bias may have occurred. The study did not assess others factors such as knowledge and attitude of mothers regarding the importance of initiation and pre-lacteal feeding.

CONCLUSIONS

The initiation of breastfeeding practices within 1 h of birth in the area was not satisfactory; although, better than the national average. This study highlights that breastfeeding advice and support at the time of delivery or immediately after delivery had a significant impact on the early initiation of breastfeeding. Similarly, the initiation of breastfeeding practices was better in children born in government institutions emphasizes the role of health facilities in improving IYCF practices. To improve the early initiation of breastfeeding rates, health professionals with breastfeeding counseling skills are required.

REFERENCES

1. Victora CG, Bahl R, Barros AJ, França GV, Horton S, Krasevec J, et al. Breastfeeding in the 21st century: Epidemiology, mechanisms, and lifelong effect. Lancet. 2016;387(10017):475-90.
2. Rollins NC, Bhandari N, Hajeebhoy N, Horton S, Lutter CK, Martines JC, et al. Why invest, and what it will take to improve breastfeeding practices? Lancet. 2016;387(10017):491-504.
3. 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):380-6.
4. Horta BL, Victora CG. Long term effects of breastfeeding: A systemic review. 2013. Available from: http://www.apps.who.int/iris/bitstream/10665/79198/1/9789241505307_eng.pdf. [Last cited on 2016 Apr 30].
5. Khan J, Vesel L, Bahl R, Martines JC. Timing of breastfeeding initiation and exclusivity of breastfeeding during the first month of life: Effects on neonatal mortality and morbidity – A systematic review and meta-analysis. Matern Child Health J. 2015;19(3):468-79.
6. Debes AK, Kohli A, Walker N, Edmond K, Mullany LC. Time to initiation of breastfeeding and neonatal mortality and morbidity: A systematic review. BMC Public Health. 2013;13 Suppl 3:19.
7. Edmond KM, Kirkwood BR, Amenga-Etego S, Owusu-Agyei S, Hurt LS. Effect of early infant feeding practices on infection-specific neonatal mortality: An investigation of the causal links with observational data from rural Ghana. Am J Clin Nutr. 2007;86(4):1126-31.
8. Clemens J, Elyazeed RA, Rao M, Savarino S, Morsy BZ, Kim Y, et al. Early initiation of breastfeeding and the risk of infant diarrhea in rural Egypt. Pediatrics. 1999;104(1):3.
9. Rapid Survey of Children. Ministry of Women and Child Development, Government of India. 2013-14. Available from: http://www.wcd.nic.in/sites/default/files/India%20fact%20sheet.pdf. [Last cited on 2016 Apr 29].
10. National Guideline on Infant and Young Chid Feeding. Ministry of Human Resources Development Department of Women and Child Development. Food and Nutrition Board. Government of India. 2004. Available from http://wcd.nic.in/fnb/fnb/guidelines/nationalguidelines.pdf [Last cited on 2016 Apr 29].
11. National Family Health Survey (NFHS-3) Report, India, 2005-06. New Delhi, Mumbai: International Institute for Population Sciences (IIPS) and Macro International; 2009.
12. Khan AM, Kayina P, Agrawal P, Gupta A, Kannan AT. A study on infant and young child feeding practices among mothers attending an urban health center in East Delhi. Indian J Public Health. 2012;56(4):301-4.
13. Gupta A, Chhabra P. Infant and young child feeding practices and its determinants in an urbanized village of Delhi. Int J Med Public Health. 2015;5(3):228-31.
14. Meshram II, Laxmaiah A, Venkaiah K, Brahmam GN. Impact of feeding and breastfeeding practices on the nutritional status of

infants in a district of Andhra Pradesh, India. Natl Med J India. 2012;25(4):201-6.
15. Kushwaha KP, Sankar J, Sankar MJ, Gupta A, Dadhich JP, Gupta YP, et al. Effect of peer counselling by mother support groups on infant and young child feeding practices: The Lalitpur experience. PLoS One. 2014;9(11):109181.
16. Fact Sheets for Key Indicators Based on Final Data. National Family Health Survey (NFHS 3). Mumbai: International Institute for Population Sciences (IIPS) and Macro International. Available from: http://www.nfhsindia.org/pdf/India.pdf. [Last accessed on 2016 Jan 05].
17. Roy S, Dasgupta A, Pal B. Feeding practices of children in an urban slum of kolkata. Indian J Community Med. 2009;34(4):362-3.
18. Gupta A, Gupta YP. Status of infant and young child feeding in 49 districts (98 blocks) of India, 2003: A National Report of Quantitative Study. New Delhi: Breast Feeding Promotion Network of India, BPNI; 2004.
19. Sinhababu A, Mukhopadhyay DK, Panja TK, Saren AB, Mandal NK, Biswas AB. Infant- and young child-feeding practices in Bankura district, West Bengal, India. J Health Popul Nutr. 2010;28(3):294-9.
20. Roy MP, Mohan U, Singh SK, Singh VK, Srivastava AK. Determinants of prelacteal feeding in rural northern India. Int J Prev Med. 2014;5(3):658-63.
21. Karkee R, Lee AH, Khanal V, Binns CW. Initiation of Breastfeeding and Factors Associated with Prelacteal Feeds in Central Nepal. J Hum Lact. 2014;30(3):353-7.
22. Nguyen PH, Keithly SC, Nguyen NT, Nguyen TT, Tran LM, Hajeebhoy N. Prelacteal feeding practices in Vietnam: Challenges and associated factors. BMC Public Health. 2013;13:932.
23. Akuse RM, Obinya EA. Why healthcare workers give prelacteal feeds. Eur J Clin Nutr. 2002;56(8):729-34.
24. Patel A, Banerjee A, Kaletwad A. Factors associated with prelacteal feeding and timely initiation of breastfeeding in hospital-delivered infants in India. J Hum Lact. 2013;29(4):572-8.
25. World Health Organization. Infant and Young Child Feeding: Model Chapter for Textbooks for Medical Students and Allied Health Professionals. Geneva: World Health Organization; 2009.
26. Banapurmath CR, Ramachandrappa S, Guruprasad G, Biradar SB. Is cesarean section a barrier to early initiation of breastfeeding? Indian Pediatr. 2013;50(11):1062-3.
27. Exavery A, Kanté AM, Hingora A, Phillips JF. Determinants of early initiation of breastfeeding in rural Tanzania. Int Breastfeed J. 2015;10:27.
28. Raval D, Jankar DV, Singh MP. A study of breast feeding practices among infants living in slums of Bhavnagar city, Gujarat, India. Healthline. 2011;2(2):78-83.
29. Lu MC, Lange L, Slusser W, Hamilton J, Halfon N. Provider encouragement of breast-feeding: Evidence from a national survey. Obstet Gynecol. 2001;97(2):290-5.
30. Shinwell ES, Churgin Y, Shlomo M, Shani M, Flidel-Rimon O. The effect of training nursery staff in breastfeeding guidance on the duration of breastfeeding in healthy term infants. Breastfeed Med. 2006;1(4):247-52.
31. Wadde SK, Yadav VB. Prelacteal feeding practices in a rural community. Indian Med Gaz. 2011;145(9):337-41.
32. Kanagasabapathy S, Sadhasivam M. Pre lacteal feeding practice among rural mothers in Tamil Nadu - A questionnaire based study. Int J Biomed Adv Res. 2015;6(6):484-7.

Funding: None; Conflict of Interest: None Stated.

How to cite this article: Neelima T, Chhabra P, Dadhich JP, Gupta A, Chandola V. To assess the prevalence and factors determining timely initiation of breastfeeding among the mothers in resettlement colony in Delhi. Indian J Child Health. 2016; 3(2):147-153.