

## Breast Feeding Patterns in an Urban Resettlement Colony of Delhi

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**Abstract:** *Studies on duration and patterns of breast feeding based on recall may lead to a bias about the exact feeding status. The present study was designed to overcome this bias using the 'current status analysis method'. Mothers of 650 infants from 0 to 12 months of age attending a Health Center were interviewed about the current feeding patterns of the infants and other socioeconomic variables. Month-wise prevalence of feeding patterns was determined. It was observed that breast feeding was maintained at a high level (more than 90%) throughout infancy while exclusive breast feeding showed a rapid decline. At 1 month, 74% and at 4 months, 46% of infants were exclusively breast-fed. The median duration of exclusive breast feeding was 3.83 months. Mothers with lesser education and lower family income were more likely to exclusively breast feed ( $p < 0.05$ ). The time interval between birth and first breast feed was 24-48 hours in most (48.9%) of the infants. Majority (76.9%) of the infants received pre-lacteal feeds. Hospital-born infants received their first feed earlier and were less likely to receive pre-lacteal feeds as compared to those born at home ( $p < 0.001$ ). Thus, the practice of exclusive breast feeding has to be promoted amongst pregnant and lactating mothers by health personnel. Also knowledge regarding infant feeding has to be imparted in schools and colleges. (Indian J Pediatr 1998; 65: 867-872)*

Key words: Breast feeding, Pre-lacteal feeds

Breast feeding remains the best food for the proper growth and development of the infant. It's often cited advantages especially relevant to the developing countries include anti-infection properties, nutritional superiority over animal milk, low cost, freedom contamination, contraceptive effects and psychological benefits [1]. In the early 1970's a declining trend in the prevalence of breast feeding was documented in almost every country of the world [2]. Recent studies in India have also shown a declining trend in breast feeding especially in the urban areas [3] [4] [5].

Recently, there has been a stress on exclusive breast feeding for the first four to six months of life, data for which is scanty for our country [5] [6]. Previous studies on breast feeding are based on recall leading to a bias regarding the exact feeding status. The present study was designed to overcome these deficiencies by using the 'current status analysis' at the time of the interview to provide high quality estimates of infant feeding in an urban resettlement colony [7].

## **Materials and Methods**

The study was conducted in an urban resettlement colony of East Delhi amongst infants attending a Health Center for immunization. The current status analysis uses the status of a variable in each individual at the time of survey to find the pattern in the study population. This method creates a synthetic cohort on assumption that subjects of 'early' cohorts will behave like that of 'late' cohorts when the time interval between the former and latter has elapsed. Statistical analysis with this method in general requires- at least 50 births on average per month in the reference period which was taken as 13 months in the present study. Thus 50 infants of each month age group were randomly selected from 0 to 12 months of age totaling 650. Age was taken in months completed. A pre coded, pre-structured questionnaire was used to record information from the mothers. This included details regarding the parents age, education, occupation and income, family type and breast feeding pattern and pertained to whether being presently breast fed, exclusively breast fed or partially breast fed, taking semisolids, onset of breast feed after birth, pre-lacteal feeds etc.

Breast feeding referred to receiving breast milk while exclusive breast feeding referred to infant receiving only breast milk (including expressed milk or milk from wet nurse, and allowing the infant to receive small amounts of water, vitamins, minerals, medicines and ORS but barring non human milk and food based liquids). Thus breast fed infants included those who were exclusively and partially breast fed. Infants on top feeds were referred to those receiving non human milk.

Data was compiled and analyzed on a computer using SPSS software. The data was arranged to show the proportion of infants whose current status was positive, expressed according to the age in months for the reference period. This gave the prevalence of exclusive breast feeding, breast feeding and top feeding for each month. For calculating median duration, survival curves were constructed after streamlining the data by determining three month moving averages. The median duration of exclusive breast feeding, median time of

starting top feeds and semisolids was determined directly from the curves. The relation between variables and breast feeding patterns was determined using univariate and multivariate analysis.

**Table 1:** Feeding Status of Infants (0 to 12 Months)

Age (in months)	No. breast fed	No. exclusively breast fed	No. on top feeds	No. on semisolids
0	49 (98)	37 (74)	13 (26)	0
1	50 (100)	32 (64)	18 (36)	0
2	49 (98)	32 (64)	18 (36)	0
3	46 (92)	26 (52)	24 (48)	0
4	46 (92)	23 (46)	27 (54)	11 (22)
5	45 (90)	17 (34)	30 (60)	16 (32)
6	48 (96)	8 (16)	30 (60)	28 (56)
7	45 (90)	7 (14)	34 (68)	35 (70)
8	48 (96)	2 (4)	35 (70)	42 (84)
9	42 (84)	4 (8)	34 (68)	40 (80)
10	47 (94)	3 (6)	36 (72)	44 (88)
11	44 (88)	2 (4)	36(72)	45 (90)
12	46 (92)	5 (10)	34 (68)	43 (86)

Figures in parenthesis indicate percentages.

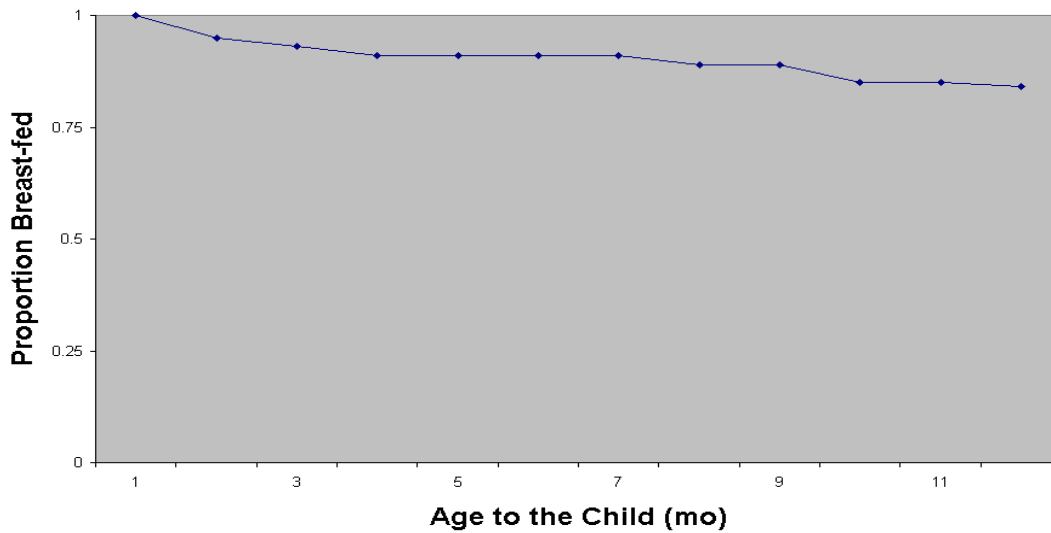
## Results

Table 1 shows the month wise prevalence of the current status for breast feeding, exclusive breast feeding, top feeding and semisolid intakes of the 650 study infants. Breast feeding as such was maintained at a high level for the first 12

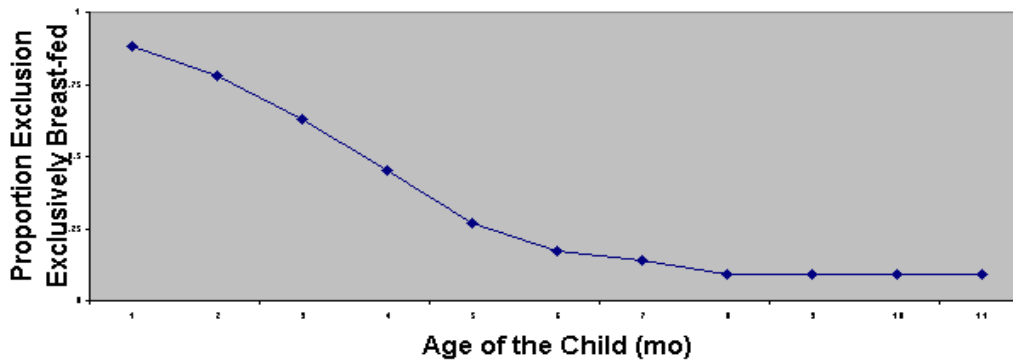
months of life while the practice of exclusive breast feeding was much lower. In the first month itself, 26% of the infants had received top feeds. The prevalence of exclusive breast feeding declined rapidly with age. The exclusive breast feeding rate at 4 months was only 46%.

The curves for breast feeding and exclusive breast feeding are shown in [Figure 1](#) and [Figure 2](#). The median duration for exclusive breast feeding was 3.83 months while the median age for starting top feeds was 3.83 months and semisolids was 6 months.

**Fig 1: Survival curve for breast feeding in infants**



**Fig. 2: Survival curve for exclusive breast feeding**



The prevalence of exclusive breast feeding was significantly higher in illiterate mothers as compared to those with higher education ( $p < 0.05$ ). Seventy six per cent of infants with a family income of less than Rs. 1000/- per month were exclusively breast fed as compared to 47.6% of infants belonging to families with income more than Rs. 3000/- per month, ( $p < 0.05$ ) (Table 2). The age of the infant was also an important factor determining exclusive breast feeding ( $P < 0.001$ ) (Table 1). However, the family type, birth order and sex of the child etc. did not emerge as significant factors.

Table 3 depicts the result of multiple regression analysis, taking exclusive breast feeding as the dependent variable. Education of the mother and age of the infant were observed to be significant while sex and birth order of the child, family type and income were not related to the exclusive breast feeding status.

The time interval between birth and first breast feed was less than one hour in only 66 (10.1%) of the infants. Majority (48.9%) were breast fed on the second or third day of birth. Twenty six per cent of infants born in the hospital received their first feed within one hour while only 5.3% born at home did so. Thus the interval was significantly related to the place of delivery of the infants ( $p < 0.001$ )\*. It was not related to the sex and birth order of the child, family type and income or mother's education.

Majority (76.9%) of the infants received pre-lacteal feeds. A preparation of jaggery called 'Gur ghutti' was the most popular form of pre lacteal feed used. It was significantly associated with the place of delivery of the infant. Children born at home were more likely to receive pre lacteal feeds as compared to hospital born children ( $p < 0.0001$ ). It was not related to the sex and birth order of the child, family type and income or education of the mother.

**Table 2:** Exclusive Breast Feeding in 350 Infants upto 6 Months of Age

		No. exclusively breast feeding	Statistical significance
<b>Mother's education</b>	Illiterate (165)	84 (50.9%)	P < 0.05
	Primary (61)	31 (50.8%)	
	Middle Secondary n = 106	45 (41.9%)	
	Higher Secondary above n = 18	6 (33.4%)	

<b>Family income (Rs per month)</b>	< 1000 n = 50	38 (76.0%) 99 (50.8%)	P = 0.01
	1001-2000 n = 195	39 (47.2%) 11 (47.6%)	
	2001-3000 n = 83		
	> 3000		
	> n = 22		
<b>Sex of child</b>	Male n = 175	84 (48.0%) 85 (48.6%)	P > 0.05
	Female n = 175		
<b>Birth order of child</b>	First n = 101	48 (47.5%) 70 (50.0%)	P > 0.05
	Second n = 140	45 (53.6%) 13 (52.0%)	
	Third n = 84		
	Fourth more		
	n = 25		

## Discussion

The present study used the current status methodology to determine the true prevalence of exclusive breast feeding and other feeding practices in infants aged 0 to 12 months. Breast feeding was maintained at a high level of more than 92% throughout infancy. This corroborates the findings of the recent National Health Survey 1994 [8] and other studies [9] [10]. However, exclusive breast feeding was practiced by only 74% of mothers in the first months which further decline. The exclusive breast feeding rate was 46% which is much lower than the recommendation of universal exclusive breast feeding for 4 to 6 months of age. This figure is comparable to the NFBS report [8] and that of rural Karnataka [10]. Others have reported much lower rates [4] [5] [6].

Exclusive breast feeding was practiced more by illiterate mothers as compared to those with higher education. Younger infants and those belonging to families

with lower income were more likely to be exclusively breast fed as compared to older infants and those belonging to families with higher income. Several other studies have also shown a higher prevalence of breast feeding amongst mothers with lesser education and a lower socio-economic status [9] [12] [13]. Women of higher socio-economic status and more education may be influenced by the glamour associated with top feeding by the media etc. Also, they are more inhibited about breast feeding as compared to their under privileged counter parts [11]. The cost of feeding has been shown to be less in exclusively breast fed infants dm partially breast fed infants. Exclusive breast feeding was not related to the sex or birth order rate of breast feeding in younger mothers [12] and some for boys [13].

The median duration of exclusive breast feeding was 3.83 months which is much less than the recommended 4 to 6 months by WHO. The median age for introduction of semisolids was 5.9 months; by the age of 9 months 80% of the infants were receiving semisolids. This is much higher than the figure reported in the NFHS report [8] and other studies [12] [13]. Advice given regarding proper weaning at the Center may have influence, the feeding pattern of the study children.

Breast feeding was initiated within one hour of birth in only 9.7% of infants, while in the majority it was initiated on the second or third day of life. The interval between birth and first feed was significantly related to the place of delivery, with children born in hospitals reporting a much higher timely suckling rate. This observation shows that the 'Baby Friendly Hospital Initiative' has made some impact on the promotion of early breast feeding. Vatsayan et al have also shown a rate of 10.3% [14] while other studies have reported much lower rates [3] [6] [10]. As majority of deliveries are conducted at home by dai, (midwife), early initiation of breast feeding needs emphasis in the dai's training.

**Table 3:** Multiple Logistic Regression Analysis of Variables for Exclusive Breast Feeding

Predictor variable	Coefficient	SE	OR 95% CI
Age of child	0.5190	0.0820	1.68 (1.50-1.79)
Weight of child	0.2076	0.1185	0.81 (0.92-0.61)
Mother's	0.4129	0.1206	1.51 (1.26-1.81)

Pre-lacteal feeds were given by as many as 81% of the mothers and a preparation of jaggery called "gur ghutti" was commonly given. The practice of giving honey, jaggery, top milk, water etc. is very common across the country [10] [14]. We observed this practice to be significantly more prevalent amongst infants born at home as compared to hospital born infants. This has to be discouraged while educating about early feeding.

To conclude, exclusive breast feeding has to be promoted by educating mothers during pregnancy and lactation. Ironically, educated women and those belonging to higher socio-economic status are less inclined to breast feed. This reflects the need for imparting knowledge regarding infant feeding practices at the school and college level.

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