SOCIO-DEMOGRAPHIC CORRELATES OF BREAST-FEEDING IN URBAN SLUMS OF CHANDIGARH

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ABSTRACT

RESEARCH QUESTION: *Whether socio-demographic factors are associated with initiation of breast-feeding in urban slums of Chandigarh.* ***OBJECTIVES:*** *(1) To study the prevailing breast-feeding practices adopted by mothers, (2) To study the socio-demographic factors associated with initiation of breast-feeding.* ***STUDY DESIGN:*** *Cross-sectional.* ***PARTICIPANTS:*** *Mothers of infants willing to participate in the study in the selected area.* ***SAMPLE SIZE:*** *A total of 270 respondents.* ***STUDY VARIABLES:*** *Social and demographic characteristics like age, socioeconomic status, educational level, birth interval, parity, gender preference, natal care practices, etc.; and variables related to various aspects of breast-feeding practices like prelacteal feed, initiation of feeding, colostrum feeding, reasons of discarding colostrum, etc.* ***STATISTICAL ANALYSIS:*** *Chi-square test and odd ratios along with their respective 95% confidence intervals, multiple logistic regression analysis.* ***RESULTS:*** *Out of all 270 respondents, 159 (58.9%) initiated breast-feeding within 6 h of birth, only 43 (15.9%) discarded colostrum and 108 (40.0%) mothers gave prelacteal feed. Illiterate/ just literate mothers who delivered at home were found at significantly higher risk of delay in initiation of breast-feeding on the basis of multiple logistic regression analysis.* ***SUGGESTIONS:*** *Promotion of institutional deliveries and imparting health education to mothers for protecting and promoting optimal breast-feeding practices are suggested.*

Key words: *Breast-feeding behavior, colostrum feeding, prelacteal feed*

It is believed that breast-feeding is universally and traditionally practiced in India. National Family Health Survey (NFHS)[1] reports that 96% of children in India are breast-fed. Medical and public health experts advocate breast-feeding as the best method of feeding young infants for a wide variety of reasons. Breast-feeding improves growth and development of children and also has some significant effects on mothers. Majority of infant deaths can be averted by promoting proper breast-feeding practices. WHO and UNICEF recognize well the beneficial effects of breast-feeding on maternal and child health.

There is a great inconsistency in findings

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regarding prevalence and correlates of breast-feeding behavior of mothers in different parts of the country.[2-4] Knowledge, ignorance, undesirable sociocultural beliefs and misconceptions prevailing in the community are reported to influence breast-feeding behavior of mothers.[5,6]

Detailed account of breast-feeding practices in peri-urban community of Chandigarh is available in a recent study,[7] but this study lacks socio-demographic correlates of breast-feeding. Growing urbanization and rapidly changing lifestyle in Chandigarh may also affect the breast-feeding behavior of mothers. Therefore, the present study was undertaken to study the prevailing breast-feeding practices and to investigate socio-demographic factors associated with initiation of breast-feeding in urban slums of Chandigarh.

MATERIALS AND METHODS

A cross-sectional study was conducted during October to November 2004 in catchment area of rural health training centre (RHTC), Palsora, affiliated to the Department of Community Medicine, Government Medical College and Hospital, Chandigarh. Chandigarh is the most economically advanced Union Territory of India and also the capital of two states: Punjab and Haryana. According to 2001 Census, the population of Chandigarh was 900,914, with a sex ratio of 773 females per 1,000 males. According to statistical abstract of Chandigarh (2003), urban slum population of Chandigarh has a literacy rate of 55.46% and a sex ratio of 707 females per 1,000 males. RHTC caters health services to a population of about 35,000, spread in 10 urban wards / slums of Chandigarh.

An optimum sample size of 268 respondents was calculated on the basis of a pilot survey result reporting about 45% mothers initiating breast-feeding late - after 6 h of birth, with 90% confidence coefficient and 5% permissible error. A random sample of four slum areas covering a sampled population of about 12,000 was selected in order to get a sample of requisite size. All mothers of infants in selected slums were identified and 270 of these mothers who gave their consent to participate in the study were included as study subjects. A pre-tested semi-structured schedule was used to collect the information from mothers regarding background and social and demographic characteristics like age, socioeconomic status, educational level, birth interval, natal care practices, parity, gender preference, etc. Mothers were also interviewed for various aspects of breast-feeding practices like prelacteal feed, initiation of feeding, colostrum feeding and reasons of delay in initiation of breast-feeding and discarding colostrum, etc.

Modified Prasad classification[8] adjusted for current income levels was used for socioeconomic classification. Chi-square test and odds ratios along with their 95% confidence intervals were used for finding factors associated with breast-feeding behavior on the basis of bivariate analysis. Multiple logistic regression analysis with stepwise forward selection of variables was used to find risk factors of delayed initiation of breast-feeding.

RESULTS

A total of 270 mothers of infants were interviewed. The overall mean age of respondents was found to be 25.4 ± 4.01 years. Majority of respondents (55.5%) belonged to age group 19-25 years; they were mostly Hindus (81.1%) belonging to low socioeconomic status (74.8%). Out of the total respondents, 132 (48.9%) were either illiterates or just literate who could read and write but had no formal education. In 142 (52.6%) cases, deliveries were conducted at home but only 26 (9.6%) by untrained birth attendants [Table 1].

The mean parity of mothers was 2.10 ± 1.08 and the mean interval between two successive births was observed to be 39.18 ± 2.12 months. Out of 175 mothers having at least two children, 73 (41.7%) had birth spacing of more than 36 months. Only 66 (24.4%) mothers were having a 'son' preference for their last delivery. The mean age of infants was found to be 6.34 ± 3.69 months [Table 2].

Table 1: Respondents by background characteristics

Characteristics	*No.*	*%*
Age in years		
< 18	07	(2.6)
19 - 25	150	(55.5)
26 - 35	98	(36.3)
36 - 45	15	(5.6)
Mean ± SD		25.40 ± 4.01
Educational status		
Illiterate/just literate	132	(48.9)
Primary (class I to V)	28	(10.4)
Middle (class V to VIII)	48	(17.8)
High school (class IX to X)	38	(14.1)
Others higher classes	24	(8.9)
Religion		
Hindu	219	(81.1)
Muslim	16	(5.9)
Sikh	29	(10.7)
Other	6	(2.2)
Socio-economic status		
Low	202	(74.8)
Middle	53	(19.6)
High	15	(5.6)
Place of delivery		
Home	142	(52.6)
Institution	128	(47.4)
Birth attendant		
Trained dai	132	(48.9)
Doctor	112	(41.5)
Untrained personnel	26	(9.6)
Total	270	(100.00)

Most of the mothers studied (142 [52.6%]) initiated breast-feeding within 1-6 h of birth and only 17 (6.3%) could initiate breast-feeding within 1 h of birth. There were 88 (32.6%) mothers who reported initiating breast-feeding after 24 h of birth. The average time of initiating breast-feeding was found to be 16.44 h. Median time at initiation of breast-feeding was found to be 5.7 h. Family restrictions (38.8%), followed by social customs and religious beliefs prevalent in the community (25.2%), were mainly found to be responsible for the delay in initiating breast-feeding [Table 3].

Only 43 (15.9%) mothers discarded colostrum. Family restrictions (30.2%),

Table 2: Respondents by reproductive characteristics

Characteristics	*No.*	*%*
Parity		
1	95	(35.2)
2	88	(32.6)
3	63	(23.3)
4-6	24	(8.9)
Mean ± SD		
Birth spacing* in months (n = 175)		
12 - 24	53	(30.3)
25 - 36	49	(28.0)
36+	73	(41.7)
Mean ± SD		
Gender (son) preference		
Yes	66	(24.4)
No	204	(75.6)
Age of Infant (months)		
Below one	31	(11.5)
2 - 4	71	(26.3)
5 - 6	39	(14.4)
7 - 9	61	(22.6)
10 - 12	68	(25.2)
Mean ± SD	6.34 ± 3.69	
Overall	270	(100.00)

*Between two successive births

Table 3: Breast-feeding initiation practices of mothers

Practice	*No.*	*%*
Initiation of BF (hrs.) (n = 270)		
Within one hour	17	(6.3)
1-6	142	(52.6)
7-24	23	(8.5)
25-72	80	(29.6)
72+	8	(3.0)
Mean ± SD	16.44 ± 6.34	
Reasons of delay in initiation of breast feeding beyond 6 hours (N=111)	43	(38.8)
Family restrictions	28	(25.2)
Social customs and religious reasons	12	(10.8)
Delayed lactation	11	(9.9)
Mother's illness	9	(8.1)
Inability/disinterest of baby to suck	4	(3.6)
Cessarian section delivery	5	(4.5)
Others		

followed by social customs (25.6%), were the main reasons for discarding colostrum. Prelacteal feed was given in 108 (40.0%) cases; cow's milk (64.8%) and honey (13.9%) came out to be the two most common prelacteal feeds [Table 4].

Risk factors of late initiation of breast-feeding were analyzed by calculating odds ratios based on bivariate analysis and adjusted odds ratios based on logistic regression model [Table 5]. On the basis of bivariate analysis, the following were found to be significantly associated (P<0.05) with delay

Table 4: Practices related with colostrum feeding, prelacteal feed and frequency of feeding

Practice	*No.*	*%*
Colostrum given (n = 270)	227	(84.1)
Reasons of not giving (n = 43)		
Family restrictions	13	(30.2)
Social customs	11	(25.6)
Problem in secretions	9	(20.9)
Misconceptions	7	(16.3)
Others	7	(16.3)
Prelacteal feeds (n=108)		
Cow's milk	70	(64.8)
Honey	15	(13.9)
Sweet water	7	(6.5)
Ghutti	4	(3.7)
Sister in law's milk	4	(3.7)
Diluted milk (not cow)	3	(2.3)
Others	5	(4.6)

in initiation of breast feeding: maternal age, literacy, socioeconomic status and place of delivery. Religion, birth attendant, parity, birth spacing, gender of baby and gender preference were not found to be its significant correlates. Delayed initiation of breast-feeding was found more common among illiterate mothers of low socioeconomic status. However, other factors like religion, birth attendant, parity, birth spacing, gender, etc, did not affect significantly (P>0.10) the initiation of breast-feeding. On the basis of multivariate logistic regression analysis, some of these factors associated with initiation of breast-feeding lost their significance. Mothers delivering at home and who were illiterate were found at a significantly higher risk of delay in initiation of breast-feeding beyond 6 h. Other factors lost their significance in logistic regression analysis.

DISCUSSION

The average time of initiating breast-feeding was found to be 16.44 h, which was quite high. There was considerable delay in initiation of breast-feeding. Breast-feeding was delayed mostly due to family restrictions. In the present study, 67.4% mothers initiated breast-feeding within 24 h. An increasing trend of mothers starting breast milk within 24 h was reported in Chandigarh (25% in 1974; 41% in 1984)[9] and 41.4% was reported in the peri-urban community of Chandigarh.[7] In some other studies,[4,10] comparatively smaller proportions of mothers initiating breast-feeding within 24 h has been reported. Very low percentages of mothers initiating breast-feeding within 1 h (13%) and within 1 day of birth (29%) have been reported in

Table 5: Bivariate and multivariate analysis of risk factors of delayed initiation of breast-feeding

Risk Factor	*Bivariate analysis*			*Multivariate logistic regression analysis*		
	Odds ratio	*95% CI of OR*	*P-value*	*Adjusted odds ratio*	*95% CI of AOR*	*P-value*
Religion other than Hindu	0.82	(0.42 - 1.60)	0.53	0.99	(0.51 - 1.94)	0.99
Low SES	1.80*	(0.97 - 3.37)	0.04	1.28	(0.58 - 2.13)	0.45
Untrained birth attendant	1.49	(0.62 - 3.59)	0.33	1.06	(0.43 - 2.43)	0.88
Home delivery	2.15*	(1.27 - 3.64)	0.002	2.25*	(1.02 - 2.51)	0.005
Birth order above two	1.54	(0.89 - 2.67)	0.09	0.82	(0.58 - 2.13)	0.51
Birth spacing >24 months	1.94	(0.86 - 4.42)	0.08	1.10	(0.58 - 2.13)	0.71
No gender preference	0.86	(0.47 - 1.56)	0.59	0.60	(0.58 - 2.13)	0.10
Age >25	2.27*	(1.33 - 3.88)	<0.01	1.33	(0.58 - 2.13)	0.45
Literacy	0.58*	(0.58 - 0.98)	0.03	0.64*	(0.58 - 1.13)	0.04

*Represents significant value of odds ratios, OR - Odds ratio, AOR - Adjusted odds ratio

NFHS-2 data[1] also.

Only about 16% of surveyed mothers discarded colostrum compared to 34% found earlier in peri-urban area of Chandigarh,[7] 5% in Haryana[3] and about 33% in another study.[11] Some other studies report high percentages of mothers discarding colostrum[12-14] in different populations. Data complied by NFHS-2 also give a high incidence of discarding colostrum in both rural and urban areas.[1] Reasons given by mothers for discarding colostrum in the present study were mainly family restrictions and social customs.

The prevalence of giving prelacteal feeds was found to be 40%, in contrast to 97.7% found earlier in the peri-urban community of Chandigarh.[7] Some other studies[4,14] also reported high prevalence of giving prelacteal feeds in different populations. The low prevalence of giving prelacteal feed observed in the present study may be due to high prevalence of colostrum feeding and a comparatively early initiation of feeding. Prelacteal feeds are usually administered due to colostrum deprivation and delayed initiation of breast-feeding, apart from some social customs and beliefs. Cow's milk was the most common prelacteal feed administered.

Illiteracy and 'delivery at home' were found to be significant risk factors of delay in initiation of breast-feeding. Other two factors, namely, SES and maternal age, were found to be significant correlates on the basis of bivariate analysis but lost their significance in multivariate logistic regression analysis. This finding does not agree with that observed in another study,[15] conducted in urban Calcutta, wherein mothers with higher educational levels delivering in hospitals initiated breast-feeding late as compared to their counterparts.

This study has some limitations in terms of study area and selected parameters of breast-feeding practices. The study was confined only to catchment area of RHTC affiliated to our department due to feasibility of infrastructure and represents the slum population only. All aspects of breast-feeding could not be investigated because only mothers of infants were included.

CONCLUSIONS

The study concludes that breast-feeding was initiated late by mothers in slum areas of Chandigarh, mainly due to family restrictions and interference of elderly females. Delayed initiation of breast-feeding was more common among illiterate mothers delivering at home, irrespective of their other socio-demographic characteristics like religion, parity, birth spacing, gender of baby, gender preference, etc. The study suggests a need for dissemination of information and education regarding optimal breast-feeding practices and for protecting and promoting healthy traditional practices. Involvement of pregnant and lactating mothers, elderly women and also adolescent girls in various IEC activities is desirable as they all have an important role in initiation of breast-feeding and other healthy feeding practices at the community level. They should be made aware of advantages and psychological implications of optimal breast-feeding practices. Efforts should also be made for promoting institutional deliveries for providing them better opportunities of health education for early initiation of breast-feeding.

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REFERENCES

1. National Family and Health survey 1998-99, International Institute for Population Sciences, Mumbai, India ORC Macro: Maryland, USA; October 2000.
2. Bhardwaj N, Hasan SB, Yunus M, Zaheer M. High risk pregnancy and its relation with maternal care receptivity (MCR) - A rural study from India. J R Soc Health 1991;111:43-6.
3. Singh S, Bhasin SK, Ingle GK, Raut DK. Pattern of breast-feeding practices in a rural community from Haryana. J Trop Pediatr 1990;36:334-5.
4. Srivastava SP, Sharma VK, Kumar V. Breast feeding pattern in neonates. Indian Pediatr 1994;31:1079-82.
5. Jeeson UC, Richard J. Factors influencing breastfeeding behavior. Indian Pediatr 1989;26:997-1002.
6. Kumar S, Nath LM, Reddaiah VP. Factors influencing prevalence of breastfeeding in a resettlement colony of New Delhi. Indian J Pediatr 1989;56:385-91.
7. Swami HM, Bhatia V, Bhatia SP. Breast-feeding practices in peri-urban community of Chandigarh. Indian J Prev Soc Med 2002;33.
8. Kumar P. Social classification - Need for constant updating. Indian J Commun Med 1993;18:60-1.
9. Walia BN, Gambhir SK, Sroa SR, Chaudhary S. Decline in breast-feeding practices in urban population of Chandigarh, during a decade. Indian Pediatr 1987;24:879-87.
10. Gupta AK, Sood RK, Vatsayan A, Dhadwal DK, Ahluwalia SK, Sharma RK. Breast feeding practices in rural and urban communities in a hilly district of North India. Indian J Commun Med 1997;23:33-7.
11. Reddy S. Breastfeeding - Practices, problems and prospects. J Fam Welfare 1995;41:43-51.
12. Banapurmath CR, Nagaraj MC, Banapurmath S, Kesaree N. Breast feeding practice in villages of Central Karnataka. Indian Pediatr 1996;33:477-9.
13. Bavdekar SB, Bardekar MS, Kasla RR, Raghunandana KJ, Joshi SY, Hathi GS. Infant feeding practices in Bombay slums. Indian Pediatr 1994;31:1083-7.
14. Sethi V, Kashyap S, Seth V. Effect of nutrition education of mothers on infant feeding practices. Indian J Pediatr 2003;70:463-6.
15. Kar M, Dey R. Breast feeding practices - Impressions from an urban community. Indian J Pub Health 1991;35:93-6.

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