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RESEARCH ARTICLE

EFFECT OF NATAL CARE SERVICES ON BREASTFEEDING PRACTICES IN URBAN AND RURAL AREAS OF LUCKNOW

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ABSTRACT

Introduction: Approximately 80% of maternal and infant death could be averted if pregnant women and newborns had access to basic healthcare services, says UNICEF, State of the World's Children Report 2009. The place of delivery has an influence on whether the child has been exclusively breastfed or not. Many studies confirm the positive role of institutional deliveries on the Breastfeeding practices.

Objective: Natal care services utilization by urban and rural population of Lucknow and it's association with Breastfeeding practices.

Materials and Methods: A community based cross-sectional study was carried out in rural and urban areas of Lucknow. Multistage random sampling was used. A pre designed & pretested questionnaire was used and house to house survey was done. 528 infants with their mothers as respondent were interviewed and information about their socio-demographic factors, natal care services utilization and breast feeding practices were collected.

Results: Out of total 528 respondents, (46%) delivered at Govt. hospital. Most of them (73.9%) delivered by normal vaginal delivery and (48.3%) of delivery was conducted by Doctor. Initiation of breastfeeding within 1 hr, Colostrum feeding and Exclusive breastfeeding were significantly higher in Government hospitals. These practices were also significantly associated with normal vaginal delivery and delivery conducted by ANM/Nurse.(P-value <0.001).

Conclusion and Recommendation: Natal care services play a pivotal role in determining breast feeding practices. Breast feeding is the single most cost effective intervention for good health in childhood.

INTRODUCTION

The first two years of life are critical window of opportunity for ensuring appropriate growth and development of children through optimal feeding. Proper feeding practices during infancy are essential for attaining and maintaining proper nutrition, health, and development of infants and children1. Results of studies on infant and child feeding have indicated that inappropriate feeding practices can have profound consequences for the growth, development, and survival of infants and children, particularly in developing countries (WHO, 2000). India continues to falter in infant and child feeding practices far below ranking neighbors like Sri Lanka, China, Bhutan, Nepal, and Pakistan. India was ranked 25 among 33 developing countries on parameters including early initiation of breastfeeding practices, exclusive breastfeeding for the first six months, complementary feeding and bottle feeding rates. Despite high economic growth and growing literacy levels, India scored only 69 out of 150 in a study conducted by World Breastfeeding Trends Initiative (WBTi). The report — 'State of breastfeeding in 33 countries: 2010, tracking infant and young child feeding policies and programmes worldwide'—identifies specific gaps and makes recommendations in each country. A cause for concern is that exclusive breastfeeding for the first 6 months has remained stagnant at 46% since 1998 (NFHS-3, 2005-06)2 in India while bottle feeding has gone up from 13.4% in 1998 to 17.3% in 2005-2006. In a country like India where a large majority of the population has a low income and poor education, the need for breastfeeding becomes even more marked and in fact, it represents the only way of giving a child a fair chance of survival and good health.

Approximately 80% of maternal and infant death could be averted if pregnant women and newborns had access to basic healthcare services, says UNICEF State of the World's Children Report 2009. The success of this intervention has insured that more and more pregnant women can opt for institutional deliveries and their infants can also receive

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specialized newborn care. The place of delivery has an influence on whether the child has been exclusively brest fed or not. It has been observed that majority of children delivered in institutions are not given prelacteals and are exclusively breastfed. This has an influence on their overall health status[3]. This surely confirms the positive role of institutional deliveries on the health of children. A cross sectional study was carried out with the following objectives

1. Natal care services utilization by urban and rural population of Lucknow
2. Association between Natal care services with Breasteeding practices

MATERIALS AND METHODS

A community based cross-sectional study was done on infants (children less than 1 year of age) with their mothers as respondents living in urban and rural areas of Lucknow district for a period of 1 year (October 2012 till September, 2013).

1. Sampling

1.1 Sample Size

The basis for sample size collection was prevalence of exclusive breast feeding which has been reported to be 27.6%.(NFHS-3, UP, 2005-06 report)

Taking 10% non respondents, the proposed sample size was
= 480 + 48 = 528

1.2 Sampling Technique

A multi-staged random sampling technique was used to select required sample size.

1.3 Selection of sample

Requisite sample size was reached in following stages:

a) First Stage

Firstly the sample size of 528 was divided equally into urban and rural areas.

b) Second Stage

Urban Areas

A list of total number of 110 wards were obtained (Annexure-I). Out of these, 10 wards were selected randomly. From each ward two mohallas were selected by simple random sampling. So that total 20 mohallas were selected from urban area.

Rural areas

In rural Lucknow, there are 8 blocks. Out of these 2 blocks (Kakori and Malihabad) were selected randomly. From each block 6 villages selected by simple random sampling.

c) Third stage

Simple random technique (using the last digit of currency) was used to select the first household for the survey. Then starting from the first household on the left side of the road all the houses, where an infant were available, were surveyed till the desired number of infants met from each of the 12 villages and 20 mohallas.

Inclusion Criteria

1. Infants (Children aged <1 year).
2. Infants residing for at least six months in the area.
3. Infants whose native place was other than present place of residence, but the duration of stay was more than six months.

Exclusion Criteria

1. Infants living in the area for less than six months.
2. Infants whose mother were not available or non cooperative or refused to provide the necessary information.

1.4 Data Collection

Door to door survey was done for the collection of necessary information. Each respondent was explained the purpose of study prior to the administration of tools of data collection and informed consent was obtained.

1.5 Tools of Data collection

The pre-tested questionnaire included socio-demographic information like age, sex religion, education, occupation *etc*. and other information like housing, ventilation, overcrowding etc. Information were collected for various factors that have a potential effect on the initiation and duration of breastfeeding practices. The questionnaire included socio-economic and demographic data, cultural factors, place of delivery, mode of delivery, delivery conducting personnel, details on the initiations and duration of breastfeeding anything given to the baby before giving breast milk, colostrum feeding, exclusive breast feeding.

1.6 Working Definition (as per IYCF Guidelines) (Guidelines for enhancing optimal infant and young child feeding practices, 2013)

Early initiation of breastfeeding: put to the breast within one hour of birth.

Colostrum feeding

Breast milk of first 2 days.

Exclusive breastfeeding

Exclusive breastfeeding for the first six months of life i. e. 180 days (no other foods or fluids, not even water; but allows infant

to receive ORS, drops, syrups of vitamins, minerals and medicines when required)

1.7 Data analysis

Data was analyzed using the statistical software SPSS 17.0 for windows. Chi-square test was used to make categorical comparisons.

RESULTS

Table 1 shows the distribution of infant's mothers according to natal care services utilization. In urban area (53.8%) women attended government hospital for delivery. Utility of private hospital was availed by (53.4%) rural women as compared to (36.7%) of urban women. A total of (9.5%) of urban and (8.3%) of rural women delivered at home. Statistically the difference between two areas was significant (p<0.001).

In rural area (78.8%) women reported normal vaginal delivery while in urban it was (68.9%) and the difference was significant statistically too (p=0.010). In urban area (52.3%) delivery was conducted by doctor, (38.3%) delivery was conducted by ANM/Nurse. In rural area (49.2%) delivery was conducted by ANM/Nurse, (44.3%) delivery was conducted by doctor. TBA conducted (9.5%) deliveries in urban area. Statistically, the difference between two areas was significant (p=0.032).

Table 2 shows that practice of initiation of breastfeeding within 1 hr was significantly higher in Govt. hospitals (48.6%) as compared to home (38.3%) and private hospitals (24.4%). Practice of giving colostrum was also significantly higher at Govt. hospitals (90.1%) as compared to home (74.5%) and private hospitals (75.6%)(p<0.001). Similarly, exclusive breast feeding was significantly higher in Govt. hospital (82.7%) as compared to that for deliveries at home (58.1%) or at private hospital (52%)(p<0.001).

Table 3 shows that as compared to those giving birth by normal vaginal delivery (45.4%), those who gave birth through caesarean delivery (12.3%), the number of mothers initiating breastfeeding within 1 hr was significantly lower (p<0.001). Proportion of those giving colostrum was also lower among those giving birth through caesarean delivery (56.5%) as compared to those giving birth through normal vaginal delivery (91.3%). Similarly, exclusive breast feeding was once again significantly higher among those giving birth through normal vaginal delivery (74.5%) as compared to those giving birth through caesarean section (40.0%)(p<0.001).

Table 4 With respect to person conducting the delivery, among those whose delivery was conducted by a doctor, the number of breast feeding initiation within 1 hr was lower (25.9%) as compared to those whose delivery was conducted by ANM/Nurse (47.6%) or trained birth attendant (42.9%) and the difference was significant statistically (p<0.001).

Table 1. Distribution of infant's mothers according to natal care services utilization

S.No.	Natal care services	Urban (n=264)		Rural (n=264)		Total (n=528)		Significance of difference	
		No.	%	No.	%	No.	%	χ^2	P
1.	Place of Delivery								
	Home	25	9.5	22	8.3	47	8.9	15.244	<0.001
	Government hospital	142	53.8	101	38.3	243	46.0		
	Private hospital	97	36.7	141	53.4	238	45.1		
2.	Mode of delivery								
	Normal vaginal	182	68.9	208	78.8	390	73.9	6.632	0.010
	Caesarean	82	31.1	56	21.2	138	26.1		
3.	Delivery conducted by								
	Doctor	138	52.3	117	44.3	255	48.3	6.894	0.032
	ANM/Nurse	101	38.3	130	49.2	231	43.8		
	TBA	25	9.5	17	6.4	42	8.0		

Table 2. Association of place of delivery with feeding practices

S.No.	Variables	Total No. (N= 528)	Breastfeeding initiated within 1 hr(n=194)		Colostrum given (n=434)		Total No. (N= 281)	Exclusive breast feeding*	
			No.	%	No.	%		No.	%
1.	Place of delivery								
	Home	47	18	38.3	35	74.5	31	18	58.1
	Govt. Hospital	243	118	48.6	219	90.1	127	105	82.7
	Private hospital	238	58	24.4	180	75.6	123	64	52.0
	Significance of difference		χ^2=30.325; p<0.001		χ^2=19.365; <0.001			χ^2=27.485; p<0.001	

Table 3. Association of mode of delivery with feeding practices

S.No.	Variables	Total No. (N= 528)	Breastfeeding initiated within 1 hr(n=194)		Colostrum given(n=434)		Total No. (N= 281)	Exclusive breast feeding*	
			No.	%	No.	%		No.	%
1.	Mode of delivery								
	Normal vaginal	390	177	45.4	356	91.3	216	161	74.5
	Caesarean	138	17	12.3	78	56.5	65	26	40.0
	Significance of difference		χ^2=47.950; p<0.001		χ^2=84.164; p<0.001			χ^2=26.772; p<0.001	

Table 4. Association of delivery conducting personnel with feeding practices

S.No.	Variables	Total No. (N= 528)	Breastfeeding initiated within 1 hr(n=194)		Colostrum given(n=434)		Total No. (N= 281)	Exclusive breast feeding*	
			No.	%	No.	%		No.	%
1.	Delivery conducted by								
	Doctor	255	66	25.9	192	75.3	134	78	58.2
	ANM/Nurse	231	110	47.6	212	91.8	121	94	77.7
	TBA	42	18	42.9	30	71.4	26	15	57.7
	Significance of difference		χ^2=25.373; p<0.001		χ^2=26.113; p<0.001		χ^2=11.845; p=0.003		

Practice of giving colostrum was higher among those whose delivery was conducted by ANM/Nurse (91.8%) as compared to those whose delivery was conducted by doctor (75.3%) and TBA (71.4%)(p<0.001). The practice of exclusive breastfeeding was higher among those whose delivery was conducted by ANM/Nurse (77.7%) as compared to those whose delivery was conducted by doctor (58.2%) and TBA (57.7%) (p=0.003).

DISCUSSION

In present study, evaluation of infant feeding practices were focussed on three major aspects, *viz.*, time of initiation of breastfeeding, practice of giving colostrum to infant and exclusive breastfeeding upto 6 months. These aspects are important from the point of view of physical and emotional growth of an infant and have widely been studied as outcome measures in a number of studies (Madhu *et al.*, 2009; Garg *et al.*, 2010; Mahmood *et al.*, 2012).

With respect to place of delivery 9.5% of urban and 8.3% of rural women delivered at home. This is way ahead from the observation of Mahmood *et al*. (2012) who in their study from Bareilly region of Uttar Pradesh reported half the deliveries having taken place at home. Majority of urban women availed the services of Govt. hospital (53.8%), while rural women availed the services of private hospitals (53.4%). Reason could be the recently launched Janani Suraksha Yojana and NRHM which has empowered the rural and deprived classes to avail the best health services. Natal care services might be instrumental in influencing the immediate feeding practices of the mothers (Shroff *et al*., 2011). In this assessment, we found that government hospitals were positively associated with higher rates of good feeding practices of all the types (breastfeeding initiation within 1 hr, colostrum feeding and exclusive breastfeeding) while private hospitals and delivery at home were negatively associated with these practices.

In present study, caesarean delivery was found to be negatively associated with all types of breastfeeding practices. These observations are in agreement with those made by Patel *et al*. (2013) who found a positive association between vaginal delivery and timely initiation of breastfeeding. Negative impact of caesarean delivery on early initiation of breastfeeding has been enumerated in a meta-analysis of 48 studies across 31 countries (Prior *et al*., 2012), however, contrary to present study where it seemed to affect almost all the aspects, this meta analysis did not find any association between rate of exclusive breastfeeding and caesarean delivery.

Conclusion

Natal care services play a pivotal role in determining Breast feeding practices. Thus in institutional deliveries probability of appropriate feeding is more as the mother is in contact of health personnel. Breast feeding is the single most cost effective intervention for good health in childhood. The predictors for breast feeding vary in different parts of world. We need to understand how these potential predictors operate and contribute to different perspectives and practices of breast feeding.

Recommendations

1. **Promotion of Institutional deliveries:** In present study, we found that initiation of breastfeeding within 1 hr of birth was not done by majority of mothers in both rural and urban areas, thus indicating the need to focus on creating awareness and education regarding appropriate time for initiation of breastfeeding within 1 hr.
2. **Promotion of normal vaginal delivery:** All negative factors associated with normal vaginal delivery should be addressed during antenatal care and fear associated with painful normal vaginal delivery should be abolished.
3. **Education:** Although majority of respondents reported of continuing exclusive breastfeeding yet more than one third (33.5%) children were barred from the benefit of exclusive breastfeeding. This indicating that there is still a large gap that needs to be addressed by creating awareness and education.
4. **Further Studies:** Interventions and further research should address breast feeding practices in study area.

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