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A Study of Breast Feeding and Neonatal Care Practices in Some Ethnic Communities in Periurban Slums at Jaipur Rajasthan

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ABSTRACT A cross-sectional study of 335 mothers having children up to 5 years of age in the urban migrant tribes was undertaken. The aim was to assess pattern of infant feeding and neonatal care among them. The study revealed that breast feeding was initiated in all newborns within 24-48 hours of birth. 35.8 percent used colostrum. 93.15percent children were given exclusive breast feeding for six months. Average duration of breast feeding was 17.1SD±7.7 months. Average age at weaning was 8.82, SD±2.57 months. Prevalence of malnutrition was 49.43percent at 36 months of age. 78.5% deliveries were institutional. None of the mothers had any antenatal care. No morbidity episode occurred in exclusively breastfed infants. While breast feeding of all infants in the communities is encouraging, delay in weaning need behavior modification. Providing focused promotive health care and nutritional supplementation services to this population are urgent health needs.

INTRODUCTION

Quality of infant feeding is decisive determinant of child survival. The pattern of these is strongly influenced by socio-cultural milieu and some of these influences could be detrimental to growth and development (Viveklal et al. 2008; Bandopadhyaya 2009). Breast feeding is the natural and healthiest feeding for the newborn. It is an important determinant of survival; birth spacing and prevention of childhood infections (World Health Organization 2003; Britton et al. 2007). Exclusive breast feeding for infants until six months of age is recommended as national guidance for feeding infants and young child (Indian Association of Pediatrics 2010). This is not only to overcome nutritional inadequacies but also for additional advantages of breast feeding like cognitive skill and motor development (Dee et al. 2007). Practice of breast feeding is all pervasive in most part in India. Several studies have demonstrated that this practice varies in initiation, use of colostrum and exclusive breast feeding. Delay in age at introduction to supplementary feeding is the raison d'être malnutrition in children 4 months of age and above (Ghosh 2004). India is home to one- third of malnourished children in world ranked second after Bangladesh (World Bank Report 2009). Prevalence of malnutrition under three years of age is forty- five percent in India (National Family Health Survey3 2006). Much of this is due to inappropriate feeding practices. India is committed to halving the prevalence of underweight children by 2015 as one of the key indicators of progress towards the Millennium Development (Indian Pediatric Association 2010). Studies by Nutrition Foundation of India in three major cities Mumbai, Kolkata, Chennai among migrant slum dwellers has revealed serious erosion in practice of breast feeding practices (Roy et al. 2009). Other studies in urban slums have also documented similar findings (Kulkarni et al. 2004; Kumar et al. 2006). Urban poor constitute fastest growing section of the population. Millions migrate to urban areas for better economic pursuits. Infant feeding practices among them tend to change under economic, social and urban influences. Often these lead to varying conditions of malnutrition and ill health (Kumar et al. 2006). The objectives of this study were to assess the pattern of infant feeding and neonatal care practices among these urban migrant ethnic groups and the factors associated. No such study has been done in this city in the past among such population. The researchers, therefore, decided to explore the infant feeding pattern in these migrant ethnic communities .The researchers hypothesized that among these ethnic groups of

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communities infant feeding practices and newborn care would remain unchanged due to strong cultural influences.

METHODOLOGY

Study Area and Study Subjects

Community based cross- sectional study was untaken in the catchment area of Urban Health Training Centre, of MG Medical College, Jaipur. Study subjects comprised of 335 mothers having children up to 5 years of age belonging to ethnic population. Cluster sampling was used. The study was undertaken during January-February 2011.

Data Collection

House to house visit was made. Data were collected by focused interview of the care taker/ mother. Pre- designed and pre- tested semi- structured schedule was used. Detailed history of neonatal care, breast feeding, weaning was obtained by memory recall. Immunisation history was verified by the scar and immunization card wherever available.

Anthropometric measurements were made at the site with infantometer, stadiometer and spring weighing machine. Weight was measured in kilograms (kg) to the nearest 0.1Kg and length in centimeter (cm) to the nearest 0.1 cm (Ghosh 1997). Nutritional status of child was also assessed by clinical examination –crown to heel - with reference to signs of wasting, stunting, micronutrient deficiencies.

Statistical Analysis

The data were compiled, tabulated and analyzed using appropriate statistical methods. The continuous data is presented as mean value along their standard error. The qualitative variables are presented as percentages. Z test was applied to proportions. P- Value, < 0.05 was considered for the statistical significance.

RESULTS

Population Profile

A total of six different ethnic groups were identified (Table1).These groups are aboriginal of Vindhya Aravali area of Rajasthan and keep moving from one place to other for better economic opportunities. Most mothers (95.13%) were young between 15-25 years of age, mean age was19.2years All of them (100%) were illiterate. More than fifty- four percent (54.92%) were Hindus and forty- five percent (45.08%) Muslims. Around seven percent (7.77%) mothers were working. Fifty seven percent (57.01%) children were of birth order 3 or more (Table 2).

Table 1: Distribution of study ethnic groups

Ethnic groups	*Number*	*Percentage*
Nath (Drum Beater)	83	27.70
Mirasi (Musicians)	49	14.60
Madari (Magicians)	10	02.90
Garia Luhar (Blacksmith)	67	20.40
Jogi (Sansi)	20	05.80
Rana (Musicians)	106	31.60
Total	335	100.00

Table 2: Socio demographic characteristic of study population

Characteristic	*n=335*
Mothers	
*Age*15-20 yrs	164 (48.49%)
21-25 yrs	157 (46.86%)
26-30 yrs	11 (03.28%)
>30 yrs	3 (00.89%)
Average Age of Mother	19.2 yrs
Religion	
Hindu	54.92%
Muslim	45.08%
Mothers Employment	
House wife	309 (92.23%)
Working	26 (7.77%)
Formal Education	
Nil	335 (100%)
Average Number of Children Per Couple	
Hindu	2.5
Muslim	3.5
Sex Distribution	
Male	157 (46.86%)
Female	178 (53.13%)
Parity	
Birth order 1	24.7%
Birth order 2	17.91%
Birth order 3 and >	57.01%
Place of Delivery	
Hospital deliveries	263 (78.5%)
Home	72 (21.5%)

Breast Feeding

Initiation of Breast Feeding

All mothers initiated breast feeding within 24 to 48 hours after delivery. About twenty percent

(20.9%) of mothers initiated breast feeding within one hour of delivery, followed by those who did so within six hours (10.5%) and those within 12 hours (5.32%). Proportion of those breast feeding their babies at 18, 24 and 36 hours of birth was similar at eighteen percent (18.2%) and all could initiate within 48 hours of birth (Table 3). Thus, a majority seventy- three percent (73.1%) initiated breast feeding on first day of child birth and remaining initiated on second day. The main reasons for withholding breast feeding were that both baby and mother need rest after delivery and to discard colostrum. Colostrum was discarded by sixty- four percent (64.2%) of mothers due to misbelief that the colostrum was thick, stale and unhealthy for the newborn. Demand breast feeding was practiced by all.

Table 3: Distribution of mothers according to time of initiating breast feeding

Time after birth	*No.*	*(%)*	*Cumulative percentage*
Within 1 hour	70	20.90	20.90
Within 6 hour	35	10.50	31.40
Within 12 hours	18	5.32	36.80
Within 18 hours	61	18.20	54.90
Within 24 hours	61	18.20	73.10
Within 36 hours	61	18.20	91.30
Within 48 hours	29	8.65	100.00
Total	335	100.00	

Exclusive Breast Feeding

Exclusive breast feeding up to six months of age was given to ninety three percent infants (93.15%). Near sixty- nine percent (69.25%) were on exclusive breast feeding till nine months and more than one percent (1.79%) till one year of age.

Duration of Breast Feeding

Most mothers practiced prolonged breast feeding. About seventy- seven percent (77.32%) gave breast feeding up to and more than 12 months, about eleven percent (11.64%) between 12 and 24 months and around four percent (4.47%) continued beyond 24 months. The average duration of breast feeding was 17.1 SD± 7.7 months.

Weaning Practices

About six percent (6.85%) children were weaned before six months of age, near twenty-three percent (23.89%) between 6-9 months of age and majority sixty-seven percent (67.46%) weaned between 9-12 months of age. However, 1.79% of infants were not introduced to any supplementary food even after one year of age. Average age at weaning was 8.82 SD ±2.57 months. Top feed or formula feed were not used. Bottle feeding was not practiced at all.

Newborn Care Practices

More than seventy- eight percent (78.5%) deliveries were institutional, rest (21.5%) were conducted at home by family members or untrained *dais.* Cord was severed with shaving blade. Nothing was applied on umbilical stump in most cases (68.95%). In others turmeric powder or coconut oil was applied. All the newborn were bedded in soon after delivery. About twenty- eight percent (28.95%) newborns were given warm water bath within one hour of birth.

Near eighty- four percent (84.18%) of mothers were aware about benefits of antenatal clinics and wanted to attend, while fourteen percent (14.32%) mothers definitely did not want to attend due to fear of hospital and its expenses.

Immunisation

BCG was given to near seventy- eight percent (78.5%) of children; DPT first dose was given to near eighty- two percent (82.68%), second dose seventy percent (70.44%), third dose fifty- eight percent (58.50%). For OPV the first dose around forty- one percent (41.19%), second dose forty-three percent (43.88%), third dose near thirty- six percent (36.4%). All children had many doses in Pulse Polio Campaign. Measles coverage was only around five percent (5.07%). Vaccinations were given at the hospital where delivery was conducted initially and later with the help of some unknown non-governmental organization (NGO) workers.

Nutritional Status

Mean Length

Mean length of children at six months of age was 64.25 cm and increased with age to reach a mean of 104.5cm at 60 month age (Table 4).The mean length in study is comparable with WHO reference value at one year of age and starts

Table 4: Distribution of study children according to age and body length

Age in month	*Mean length*	*SD in cm*	*WHO Ref*	*Harvard 50th percentile*	*Indian affluent*
06	64.25	3.22	67.20	67.80	65.90
12	73.30	3.01	73.10	76.10	74.30
24	77.57	5.34	87.60	87.80	86.00
36	91.25	7.61	96.10	96.50	94.40
48	91.25	13.37	103.30	106.60	100.80
60	104.50	8.15	11O.00	109.90	103.85

Table 5: Distribution of study children according to age and body weight

Age in month	*Mean weight*	*SD in kg*	*WHO Ref*	*Harvard 50th percentile*	*Indian affluent ref*
6	6.26	0.20	7.80	9.10	7.20
12	8.00	1.12	9.60	10.20	9.15
24	8.80	0.80	12.20	12.60	11.90
36	11.20	1.47	14.30	14.70	13.80
48	12.25	1.67	16.30	16.69	14.90
60	13.40	1.20	18.30	18.67	17.00

faltering thereafter. The stunting is most marked at 48 months of age.

Mean Weight

The mean weight at the age of 6 months was 6.26 kg and increased with age to reach a mean of 13.4 kg at 60 month of age (Table 5).

Mean weight in study group is uniformly low in all age groups. It is markedly low between 24 and 36 months of age. Weight at 6 month is about seventy- five percent (75.6%) of WHO reference, at 12 months it is around eighty- three percent (83.33%), at 24 months it is around seventy -two percent (72.13%), at 36 months it is seventy- eight percent (78.32%), at 48 months it is seventy- five percent (75.15%) and at 60 months it is near seventy three percent (73.22%) of the reference. Malnutrition was thus present in all ages.

Morbidity Episodes

No child had any morbidity episode till six month of age which confirms the protective effect of exclusive breast feed on infection in the study. Morbidity episodes were most frequent after the introduction to weaning foods. The average number of episodes per child in a year was Diarrhea 2.6, URI 0.9, Pneumonia 1.5 and Fever 2.37 till 60 month of age. Frequency of morbidity episodes were high between 24 months to 36 months of age.

DISCUSSION

Initiation of Breast Feeding

Several studies world over have shown that breast feeding is the universal practice. It seems that mothers don't even consider alternative to this (Ghosh 1997; Saka et al. 2005; Khaswneti et al.2006). In our study also, all the mothers had initiated breast feeding and have continued doing so well beyond two years. This pattern has been consistently reported over years in most studies in rural areas and urban slums (Singh et al. 1997; Roy et al. 2009). Optimum time to initiate breast feeding is within 30 minutes after delivery except in cesarean section; delay may suppress oxytocin reflex and may pose difficulties in establishing successful lactation later (Ronald 2007). However in India initiation of breast feeding is delayed up to 3-4 days and yet the mothers successfully breast feed for a long time (Agarwal et al.1986; Singh et al. 1997; Bandopadhyaya 2009; Dutta 2009). In this study also similar pattern has emerged wherein only close to twenty percent (20.9%) mothers had initiated breast feeding within one hour of delivery and rest delayed it which is a strong case for behavior change intervention.

Use of Colostrum

Colostrum for newborns is very useful and should be given to all. It is a rich source of vari-

ety of immune and non- immune substances; it provides protection against infection and is also a laxative which ensures smooth flow of meconium (Agarwal et al.1986; Ronald 2007). Sadly it is discarded in most part of rural and urban slums area except tribal areas where its use is near hundred percent (Bhatnagar1986; Tiwari et al. 2007). In this study about thirty- five percent (35.8%) of mothers have used it. This is more than the national average of fifteen percent (15%) (NFHS 3 2006) and rural areas (Nanda et al. 1999) but less than the tribal and urban areas (Yeggamal 2005). Literacy in either case seem to affect use of colostrum. High use of colostrum among illiterate mothers in tribal areas is the impact of cultural influences while more awareness among literate mothers in urban areas. This underlines the need of vigorous campaign for promotion of colostrum use in them.

Exclusive Breast Feeding

Exclusive breast feeding up to six months of age is now recommended as a child saving measure. It protects the child from infection and nutritional insults. In our study near ninety- three percent (93.14 %) mothers gave exclusive breast feeding for six months which is far above the reported figures of thirty- four percent(34%) in urban and thirty- five percent(35%) in rural areas (NFHS-3 2006) and sixty- five percent (65%) in unemployed women at Coimbatore (Yeggamal 2005).

High percentage of mothers giving exclusive breast feeding in this study seems more out of compulsions of extreme poverty rather than awareness since many mothers have continued it much beyond six months resulting in widespread malnutrition.

Duration of Breast Feeding

Prolonged breast feeding in India is quite common especially in rural areas. Breast feeding up to four to five years has been reported (Bandopadhyaya 2009). In the present study also 4.18% children were on breast feeding more than two years. Mean duration of breast feeding in this study is 17.17SD ± which is in conformity with most studies in India barring a few in urban areas like 5.53 months (Singh 2007). Optimum duration for breast feeding is yet to be agreed upon but most experts agree that breast feeding more than a year and extended thereafter is useful for both mother and child as child keep getting immune substances and mother reduces her risk of breast cancer (Merrill 2001; Piovanetti 2001).

Introduction of Supplementary

Delayed introduction to supplementary food much beyond six months of age is very common practice in whole of India (Singh et al.1997; NFHS-3 2006; Tiwari et al. 2007; Aggarwal et al. 2008). Timely introduction is critical for optimum growth and nutritional status of child (Indian Pediatric Association 2010). In this study also there is delay in starting supplementary feeding. Average age of introducing weaning food was 8.82SD±2.57 month. Persistence of the practice despite intensive educational drive and many nutritional programs calls for review of the strategy followed to bring behavior change.

Malnutrition

Low weight for age was found in all age groups (Table 5) beginning from six months of age. The same has been reported in other studies also and is suggestive of insufficient lactation (Jaydeep et al.2010). WHO database in child growth and malnutrition has also concluded that mean weight starts faltering at 3 month of age and deteriorates rapidly thereafter. Nationwide, about twenty- nine percent (29.5%) of children below six months of age are already underweight (NFHS 3 2006). In this study, a similar picture has emerged. Malnutrition begins at 6 months of age and at 12 months it is close to twenty percent (20.37%). It was near forty- seven percent (47.25%) at 24 months and further increased to forty- nine percent (49.43%) at 36 months of age and then starts regressing gradually. Similar observations have been reported among children of laboring class (Chakraborty et al. 2006). Poverty and ignorance are the obvious reason but the reluctance of mothers to use state run health services could be another contributing factor. (Agarwal et al. 2007).

Neonatal Care Practices

High proportion of institutional deliveries (78.1%) as compared to national average (33.6%) (Pandey et al. 2007) is in conformity with other studies conducted in similar population in east-

ern and southern part of country (Roy et al.2009; Madhu et al.2009). This could be due to easy access to health facilities but in this study it seems more due to cash incentive of rupees fifteen hundred given to below poverty line mothers under special scheme of state *Janani Suraksha Yojna* in hospital delivery. In our study close to twenty- one percent (21.9%) of deliveries were conducted at home by untrained *dai*. The cord was cut by shaving blade. Nothing was applied on stump in most cases. Some studies in southern India have reported a similar practice (Madhu et al.2009). Early bedding in of the newborn is desired as it reduces risk of hypothermia and helps in early initiation of breast feeding. In this study all newborns were bedded in early after delivery. Prelacteal feed is not indicated as it may be potentially harmful. But prelacteal feeds were given to in this study to near sixty- four percent (64.18%) newborn. Few years before the practice was more widely prevalent (Nanda et al. 1999). Persistence of this ancient belief is indicative of strong cultural influence.

Immunization coverage of National schedule was found to be low for all vaccinations except for BCG vaccination where scar could be checked. However, the figures recorded are unreliable and further studies are needed to confirm. Some studies in similar setup have documented high coverage in rural Bangalore (Madhu et al. 2009). Very low immunization coverage could be due to poor acceptance of health promotive program by the community and due to non existence of outreach network in health infrastructure.

CONCLUSION

Breast feeding continues to be the commonest feeding practice for infants but faulty weaning practices undo the gains of good beginning. Malnutrition was wide spread in the in all age groups starting from 6 months onwards and worsens between 12 to 36 months of age. Lack of health promotive services combined with poor motivation to use them contribute much to malnutrition. Thus there is a need for interventions which improve health care seeking behavior of the community. Innovative low cost strategies improving community participation in health programs have been demonstrated to be useful in Uganda and Nepal (Nankunda et al.2006; Dutta 2007).

RECOMMENDATIONS

Appreciating the existing of such population in the periurban areas who are impoverished and ignorant enough to use the basic health care available to them is the first step required in addressing their health problems. Planning outreach health care services through mobile health teams may achieve immediate goal. Focused Nutrition education infiltrating to all segments of the community and nutrition supplementation with regular evaluation is the intervention required. Peer group counseling, Mother –child outreach, home based care have proved their effectiveness in encouraging acceptance and participation in health promotional activities in improving newborn care, breast feeding and weaning practices and also maternal nutritional status .

REFERENCES

Aggarwl Anju, Verma Sanjay, Faridi MMA, ChandDaya 2008. Complimentary feeding-Reasons for inappropriateness in timing, quantity and consistency. *Ind Pediatr,* 75: 49.

Agarwal RK 2008. Importance of optimal infant and young child feeding (IYCF) in achieving millennium development goals. *Ind Pediatr,* 45: 719.

Agarwal P, Singh MM, Garg S 2007. Maternal health care utilization among women in urban slum in Delhi. *Ind J Comm Med,* 32: 203-205.

Bandopodhyay Mridula 2009. Impact of ritual pollution on lactation and breast feeding practices in rural West Bengal India. *Int Breast feed J,* 4: 2.

Bhatnagar S 1986. *Breast Feeding and Infant Feeding Practices in Tribal Areas of India*. Delhi: National Institute of Health and Family Welfare.

Britton C, Mc Cormack, Renfrew MJ, Wade A, King SE 2007.Support for breast feeding mothers. *Cochrane Database Syst Review,* 1: CD001141.

Chakraborty S, Gupta SB, Chaturvedi B, Chakarborty SK 2006. A study of Protein Energy Malnutrition (PEM) in children (0 to 6 years) in a rural population of Jhansi (UP). *Ind J Comm Med,* 31(4): 10-12.

Dutta Ashok 2009. Home based newborn care: How effective and feasible? *Ind Pediatr,* 46: 839.

Dee DL Li R, Lee LC, Grummer-Strawn LM 2007. Association between practices and young children' language and motor skill development. *Pediatrics,* 119: 592-598.

Ghosh S 1997. *Nutrition and Child Care. A Practical Guide*. Delhi: Jaypee Brothers Medical Publishers, pp. 52-53.

Ghosh S, Shah D 2004. Nutritional problems in urban slum children. *Ind Pediatr,* 41: 682-689.

Indian Academy of Pediatrics 2010. Infant and young child feeding guidelines: 2010. Infant and young child feeding chapter. *Ind Pediatr,* 47: 995.

IIPS 2006. *National Family Health Survey (NFHS3) 2005-2006*. Mumbai: International Institute of Population Sciences (IIPS).

Illingworth Ronald S 2007. *Normal Child*. Edinburgh: Livingstone Edinburgh

Kulkarni RN, Anjenaya S, Gujjar R 2004. Breast feeding practices in an urban community of Kalamboli Navi Mumbai. *Ind J Comm Med*, 29: 179-180.

Kevin Merrill 2001.Breast Feeding: How Long is best? Nutrition Bytes, 7: 1. From< http: //escholarship. ucop.edu/uc/item /2fz0c 2bp- > (Retrieved April 9, 2012).

Khasawneta M, Khadu Y, Amarin Z, Alkafeste A 2006. Knowledge, attitude and practices of breastfeeding in the North Jordan. *Int Breast Feed J*, 23: 1-17.

Kumar D, Aggarwal N, Swami HM 2006.Socio-demographic correlates of breast feeding in urban slum of Chandigarh. *Ind J Comm Med*, 60: 461-646.

Madhu K, Choudhary S, Masthi R 2009. Breast Feeding practices and newborn care in rural area: A descriptive cross sectional study. *Ind J Comm Med*, 34: 243-246.

Nanda S, Samanntray R 1999. Pattern of introducing prelacteal feeding to the infants. *Ind J Prev Soc Med*, 30: 537.

Nankunda J, Tumwine J , Soltvedt A, Semiyaga N, Ndeezi G, Tylleskar T 2006.Community based peer counselors for support of exclusive breast feeding: Experiences from rural Uganda. *Int Breast Feed J*, 29: 19.

Pandey S, Ravishankar C, Rawat MS ,Gupta VM 2007. Socio-economic factors and delivery practices in urban slum of district Nainital Uttaranchal. *Ind J Comm Med*, 32: 210-211

Piovanetti T 2001. Breast feeding beyond12 months an historical perspective. *Pediatric Clinic of North America*, 48: 199-206

Saka AG, Musayeva Erlem M, Ceylan A, Koeturk T 2005. Breast feeding pattern, belief and attitude among Kurdish mothers in Diyarbakir Turky. *Acta Pediatr*, 94(9): 1303-1309.

Singh MB, Haldiya RR, Lakshminarayan 1997. Infant feeding and weaning practices in some semiarid rural areas of Rajasthan. *J Ind Med Assoc*, 95(11): 576-578.

Tiwari BK, Rao VG, Thakur CSS 2007.Infant feeding practices among Kol Tribal community of Madhya Pardesh. *Ind J Comm Med*, 32: 228.

WHO 2003. *Global Strategy for Infant and Young Child Feeding*. Geneva: WHO.

World Bank 2009. Report on Malnutrition in India. From< http//: web.worldbank.org/wbsite /external/countries/southasiaext/0,,contentMDK: 20916955-page PK: 146736-piPK: 146830-the site PK: 223547.00.html.> (Retrieved 13 March 2009).

Yeggamal C, Chitra K 2005. Nutritional state of infants of employed and unemployed mothers. *The Ind J Nutr Diete*, 42: 47.