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Research Article

Infant and young child feeding practices and its determinants in rural areas of Kamrup district, Assam, India

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ABSTRACT

Background: Infant and young child is the future of the nation and constitute the most important human resource of any country. Adequate nutrition in first 24 months through optimal infants and young child feeding is fundamental for development of a child to its fullest potential. The present study is designed to assess the prevalence of optimal IYCF practices and its determinants in rural area of Kamrup, Assam.
Methods: Mothers of children 0-23 months of age were interviewed using a semi structured schedule to record information on feeding practices.
Results: A total of 200 infant and young children were studied for feeding practices. Breastfeeding (BF) was initiated within 1 h of birth in 49% of children. Early initiation of BF was significantly higher in children born in government institutions, normal births and in families with higher income. Colostrum was given by 79% of the mothers. Children born in the government institution were more likely to receive colostrum ($P < 0.05$).Pre-lacteal feeds were given 34% of mothers, children born at home and private institution and caesarean births received prelacteal feeds more often ($P<0.05$). The prevalence of exclusive BF (EBF) for 6 months or more was 62.5%.It was higher in children of first birth order and institutional births ($P<0.05$). Complementary feeding was started at 6 months in 53.8% of these children.
Conclusions: Early initiation of breast feeding and exclusive breast feeding were higher in children born in government institutions. Therefore, awareness about IYCF practices has to be increased among the mothers.

Keywords: Exclusive breast feeding, Complementary feeding, Infant and young child feeding practices

INTRODUCTION

Appropriate nutritional practices play a key role in proper growth and development of children. It represents a picture of the prevailing socio-economic status, culture, customs, beliefs, and literacy status and health consciousness of the people prevailing in a community. Indian and global studies have shown that during the first 6 months of life, exclusive breast feeding is associated with optimal growth of the infant and low morbidity. After 6 months, breast milk alone is not sufficient to meet the nutritional needs of growing infants. Introduction of semisolid energy rich complementary food from 6 months of age promotes optimal growth. Based on the data, the 55th World Health Assembly has adopted a resolution recommending exclusive breast feeding for the first 6 months, introduction of complementary food after 6 months and continued breast feeding up to the age of two years and beyond. Feeding should be continued during episodes of common childhood illness like diarrhoea, respiratory tract infection etc. unless the medical condition of the child contradicts it. However, many mothers restrict the child's food intake during illness and tend to give small diluted amounts of food. Although the child is anorexic during an episode of

illness, yet he can be fed with small quantities of food but more frequently. Once the child recovers, he needs to eat more than the usual diet to regain the weight loss during an illness. It is found many times, that the cause of malnutrition is not so much the illness as the restricted foods.[1]

The WHO and UNICEF have developed the Global Strategy for Infant and Young Child Feeding (IYCF), which recognizes appropriate infant feeding practices to be crucial for improving nutrition status and decreasing infant mortality in all countries. WHO offers three recommendations for IYCF practices for children aged 6-23 months: continued breastfeeding or feeding with appropriate calcium-rich foods if not breastfed; feeding solid or semi-solid food for a minimum number of times per day according to age and breastfeeding status; and including foods from a minimum number of food groups per day according to breastfeeding status. The present study was conducted to assess the prevalence of IYCF practices in rural area of Kamrup, Assam and the determinants of these practices.[2]

METHODS

The present study was conducted in rural area of Kamrup district, Assam. Rani Community Development Block comes under rural area of Kamrup district of Assam. It was started in 1959. It is situated at a distance of about 30 Km southwest from the capital city of Guwahati, Assam. The block consists of population of 94,728 as per census 2001.[3] Rani, the block consists of 96 villages, out of which 77 revenue villages covering an area of 128 km^2 or 22,754.22 hectares.

Inclusion criteria

Infants and young children (0 -23 months), both males and females residing in selected villages under the Rani Community Development Block for > 6 months.

Exclusion criteria

Infants and children with congenital anomalies and metabolic disorders influencing growth , history of acute respiratory infection , diarrhoea in preceding 15 days, measles in 3 months prior to the date of survey. The sample size was calculated by taking the prevalence of child breast feeding within one hour of birth in Kamrup district of Assam which is (p) 76.4% (According to Annual Health Survey 2010-2011 Fact Sheet, Assam) with 95% confidence interval with the absolute errors (L) of 6% by using the formula.[4]

$n = 4pq/L^2$
n = sample size
p = prevalence = 76.44%
q = (1-p) = 100 – 76.44 = 23.56
L = absolute error = 6

The size of the sample comes around 200. As per Census 2011, Rani Community Development Block consists of 26 Sub-centres.[5] Out of 26 Sub-centres, 10 Sub-centres were selected randomly and out of 10 Sub-centres 20 villages (2 villages from each sub-centre) were selected using simple random sampling method.

From each village 10 infants or young children were selected by systematic random sampling (every 10^{th} house was visited and mothers having children of 0-23 months were interviewed) to get the sample size of 200. If, the required number of sample units is not met in that village, then the adjacent village was taken to get the remaining sample units.

Consent was obtained from the mothers. Those available and willing were interviewed using a pretested and semi structured schedule to record information about socio demographic profile, details of ante natal care, place of birth, type of delivery; and IYCF practices namely initiation of BF, EBF, pre lacteal feeds, feeding of colostrum, and complementary feeding. Age of the child was calculated in completed months on the date of interview.

Data was collected and entered in Microsoft Office Excel and analyzed by using SPSS- Version 17. Descriptive Statistics were done for different study variables. Chi-square test was used for analysis of categorical variables. Criteria of significance used in the study were $p< 0.05$.

RESULTS

Table 1 shows the socio demographic characteristics of 200 children of <24 months included in the study. Almost 61.5% of the children were <1 year while 38.5% were in the 12-23 months. Male constituted 56% and Female 46% of the children. About 37% of fathers and 34.5% of mothers had received no formal education and 55% belonged to nuclear family. Most (88%) of the mothers had registered during pregnancy; 56% during the first trimester and 32% second trimester, while 32% had three or less and 55%, had >3 antenatal check-ups and 82% had normal vaginal delivery. About 82% of the children were delivered at Govt. Institution, 11% at private institution and 7% were delivered at home. As shown in Table 2 Breastfeeding was initiated within one hour of birth in 98 (49%) children.

Mothers with family income of greater than Rs. 5000 were more likely to initiate Breastfeeding early as compared to those with lesser income. The proportion of children who received Breastfeeding within 1 hour of birth as higher in those born in Govt. institutions as compared to those born at private institution or home.

Initiation of breastfeeding was delayed for >24 hours in 25% of children born by caesarean section as compared to 12.9% in those with normal delivery. Table 3 shows

factors associated with the practice of giving prelacteal feeds and colostrum feeding.

TABLE 1: Socio demographic profile of the study population.

Sociodemographic profile	N (%)
Age group of children	
0 - 6 months	70 (35)
7 -12 months	53 (26.5)
13 - 23 months	77 (38.5)
Sex	
Male	112 (56)
Female	88 (44)
Type of Family	
Nuclear	110 (55)
Joint	90 (45)
Educational status of the fathers	
Illiterate	74 (37)
Primary school	23 (11.5)
Middle school	50 (25)
High school	17 (8.5)
Higher secondary	26 (13)
Graduate	10 (5)
Educational status of the mothers	
Illiterate	69 (34.5)
Primary school	33 (16.5)
Middle school	45 (22.5)
High school	15 (7.5)
Higher secondary school	29 (14.5)
Graduate	09 (4.5)
Occupational status of father	
Cultivator	88 (44)
Daily wage earner	54 (27)
Service holder	22 (11)
Shop-keeper	26 (13)
Others	10 (5)
Occupational status of mother	
House wife	136 (68)
Cultivator	20 (10)
Daily wage earner	13 (6.5)
Service	12 (06)
Shop-keeper	19 (9.5)
Socioeconomic status (Per capita income in Rs.)	
Upper high (5156 & above)	10 (05)
High (2578-5155)	20 (10)
Upper middle (1547 – 2577)	60 (30)
Lower middle (773 – 2546)	72 (36)
Poor (<773)	38 (19)
Place of delivery	
Govt. Institution	164 (82)
Private Institution	22 (11)
Home	14 (7)
Type of delivery	
Normal	164 (82)
CS	36 (18)

Table 2: Factors associated with early initiation of breastfeeding.

Factors (n)	<1h n (%)	1-24h n (%)	>24h n (%)	P value
Sex				
Male (112)	65 (58)	33 (29.4)	14 (12.5)	0.015
Female (88)	33(37.5)	39 (44.3)	16 (18.2)	
Socioeconomic status				
Upper high (10)	06 (60)	02 (40)	02 (40)	0.568
High (20)	12 (50	04 (25)	04 (25)	
Upper middle (60)	24 (48.3)	24 (36.7)	12 (15)	
Lower middle (72)	34 (54.2)	30 (27.8)	08(18)	
Poor (38)	22 (52.6)	12 (29)	4 (18.4)	
Place of delivery				
Govt. Inst. (164)	80(48.7)	63 (38.4)	21(12.9)	0.429
Private Inst. (22)	09 (41)	8 (36.3)	05(22.7)	
Home (14)	5 (35.7)	5 (35.7)	04 (28.6)	
Type of delivery				
Normal (164)	82 (50)	61 (37.1)	21(12.9)	0.0895
Caesarean (36)	12 (33.3)	15 (41.7)	09 (25)	

Table 3: Factors associated with prelacteal feeding and colostrum feeding.

Factors (n)	Prelacteal feeds n (%)	P value	Colostrum n (%)	P value
Sex of the child				
Male (112)	39 (34.8)	0.7	94 (83.9)	0.05
Female (88)	29 (32.9)		64 (72.7)	
Place of birth				
Govt. Inst (164)	43 (26.2)	<0.0001	138 (84.1)	0.0007
Private Inst (22)	16 (72.7)		12 (54.5)	
Home (14)	9 (64.2)		8 (57.1)	
Birth order				
<2 (145)	51 (35.1)	0.07	118 (81.3)	0.1
>2 (55)	27 (49)		40 (72.7)	
Type of delivery				
Normal (164)	47 (28.6)	0.0007	135 (82.3)	0.01
Caesarean (36)	21 (58.3)		23 (63.8)	

Prelacteal feeds were given by 34% of mothers; children were born at Private institution and home and caesarean

birth received prelacteal feeds more as compared to those born in Govt. institutions and normal delivery respectively($p<0.0001$). Colostrum was given by 79% of the mothers. Children born in Govt. institution were more likely to receive colostrum's ($p<0.0007$).

Exclusive breastfeeding for 6 months or more was studied 130 children >6 months of age (Table 4). Among these, 62.3% were EBF for at least 6 months. Prevalence of EBF was significantly more in children of birth order <2, those born in govt. institutions and those with a normal birth. EBF for 6 months was significantly associated with the educational status of the mothers. Complementary feeding was started at 6 months in 53.8%. Boys were more likely to be started on complementary feeding at 6 months as compared with girls.

Table 4: Factors associated with the EBF practices for 6 months and complementary feeding practices at 6 months of age.

Factor (number)	EBF for >6 months Number (%)	P value	Complementary feeding for 6 months Number (%)	P value
Mother's education				
Illiterate (56)	28 (50)	0.007	28 (50)	0.8
Primary school (21)	16(76)		13 (61.9)	
Middle school (32)	27(84)		19(59.3)	
High school (11)	5(45.4)		5 (45.5)	
Higher secondary (10)	5(50)		5 (50)	
Place of birth				
Govt. Institution (103)	66(64)	0.6	54 (52.4)	0.6
Private Institution(17)	10 (58.8)		11(64.7)	
Home(10)	5 (50)		5(50)	
Sex of the child				
Male (88)	58(65.9)	0.2	53(60.2)	0.04
Female(42)	23 (54)		17 (47.6)	
Mode of delivery				
Normal (110)	71 (64.5)	0.2	60 (54.5)	0.7
CS (20)	10 (50)		10 (50)	
Birth order				
<2 (97)	68 (70.1)	0.04	55 (56.7)	0.2
>2 (33)	13 (39.3)		15 (45.4)	

DISCUSSION

The present study was conducted in a rural area of Kamrup district, Assam to study the infant and young child feeding practices. Initiation of breastfeeding was done within 1 hour in 49% of the children. This is comparable to the figure of 41% for India reported in World Breastfeeding Trends Initiative, 44% for Delhi reported in Coverage Evaluation Survey (CES) 2009 by UNICEF and DLHS-3 (2007-2008).[6-8]

However, it is significantly higher than a study conducted in the 90's in an urban resettlement colony of Delhi where only 10% of mothers reported giving the first BF within 1 h of birth.[9] It is higher than the figure of 24.5% reported in NFHS-3 and other studies in the past.[10-12] Recent studies from rural Bengal and urban slums of Lucknow have reported a lower figure than the present study. Early initiation was more likely in children born in the government institution as compared to those born at home or a private facility. The NFHS-3 data has also shown the prevalence of initiation of BF to be 34% among children born in the health facility as compared to 17% among those born at home.[10] A study in slums of Chandigarh has similarly reported home delivery as a significant factor for delayed initiation.[13] However, a study from Ethiopia has reported that women delivering at home were less likely to delay initiation of BF. Children born by caesarean section were more likely to have delayed initiation of BF.[13] Delivery by Caesarean section has consistently been shown to be a negative factor for early initiation of BF.[13-15] Efforts should be made for promotion of early initiation of BF even after caesarean section.

Prelacteal feeds were given by 34% of mothers which is very lower in comparison to 45.5% observed in NFHS 3 for Assam and lower than earlier study in Assam and that reported from previous other studies.[6,9,11,12] The decrease may be attributed to the increase in the institutional

deliveries and increased awareness. The practice of feeding colostrum was observed in 79% of the children and is comparable to the CES.[10,16] The probability of early initiation and feeding of colostrum has been observed to be higher with institutional deliveries.

Exclusive breastfeeding for 6 months was reported by 62.3% of mothers; which is a bit lower than the goal of increasing EBF rates at annual rate of 9.6% from baseline of 36% observed in the CES 2009 as laid out in 12th Fifth year plan.[16,17] The rate is through higher than that observed in NFHS 3, previous studies and that reported in World Breastfeeding Trends Initiative, South Asia Report Card 2012.Our neighbouring countries viz. Bangladesh, Nepal and Sri Lanka have higher exclusive breastfeeding rates of 64, 70 and 76 respectively. Children with birth order <2 and born in institutions were more likely to be exclusively breastfed. This is similar to the observation in earlier study in Assam; however a study based on NFHS2 has shown delivery in the health facility to be a risk factor for not exclusively breastfed while another has reported no consistent association.[15,18] The type of facility has not been specified in the studies. The EBF rates were more for births at private institutions than home in the present study indirectly highlighting the role of staff in the government facilities in promotion of BF. The private facilitie makes their institutions BF friendly by adopting Baby Friendly institution initiative.

Almost 53.8% of children were started complementary feeding at 6 months of age. This is similar to 55% reported in NFFHS-3 and studied from other parts of India; but lower than 63.2% in DLHS Delhi and 62% CES 2009.[6,10,12,16,19] A significantly higher number of boys received complementary feeding as compared to girls. This could be due to preferential treatment to boys in our society.

Thus the present study shows that the rates of timely initiation of breastfeeding, EBF and complementary feeding have improved but have not reached the desired targets. The BF practices were better in children born in government institutions highlighting to role of health facilities in improving IYCF practices. Awareness about IYCFF practices has to be increased among the health personnel in mothers and in public and private sectors.

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