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Research Article

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Current practices on infant feeding in rural areas of Assam, India: a community based cross sectional study

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ABSTRACT

Background: Understanding of current practices and factors influencing infant care and feeding is imperative to identify various barriers that influence newborn and infant health. The present study was undertaken with the objectives to study the current practices related to infant feeding in rural areas of Kamprup District of Assam state, India and to identify various factors influencing the feeding practices.

Methods: It was a community based cross sectional study done among 380 mothers having children in the age group of 1 to 2 years. Predesigned and pretested semi structured questionnaire was used for the study and statistical analysis was done using appropriate softwares.

Results: We found that 70.5% of mothers in our study initiated breast feeding within 1 hour of birth. Baby separation was found to be the commonest reason (45.05%) for delayed initiation of breastfeeding. Exclusive breast feeding for first six months was found to be 70.3%. Exclusive breast feeding was found to be significantly associated with 4 or more numbers of ANC visits, primipara mothers, higher educational status, younger age and lower socioeconomic status of the mothers.

Conclusions: Major findings of the study includes high percentage of mothers initiating breast feeding within 1 hour of birth of the child and exclusive breast feeding for six or more months. At the conclusion we can say that most of the infant feeding practices were satisfactory in our study.

Keywords: Exclusive breast feeding, Newborn, Infant, Community based cross sectional study, Infant feeding practices

INTRODUCTION

India contributes to 17.5% of the world's population and nearly one-fifth of the total live births. India also contributes to the global burden of newborn and infant deaths in a very high proportion. India contributes to 27% of total newborn mortality in the world. According to recent Sample registration system data infant mortality rate (IMR) in India was 40 per 1000 live birth. Which indicate there is a lot to be done to achieve the Millennium Developmental Goal (MDG) target IMR of

28 per 1000 live births. Data indicate India will need one more decade to achieve that target.³ One of the major underlying causes of infant and neonatal mortality might be the inadequate or discriminatory care practices prevalent in the society. The key care practices during infancy which has long term implications in survival of the infant are early initiation of breast feeding, exclusive breast feeding, timely and adequate complementary feeding.^{4,5} Early initiation and exclusive breast feeding for first six months of age are now recognized interventions for survival of the infant. Together with

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optimal complementary feeding practices contributes to proper growth and development of the child. In India the mother's knowledge of child care is influenced by traditions, customs, rituals and taboos. With change in time there is a lot of positive change in this knowledge of childcare but still in many cases there is inadequate knowledge among mothers about these practices needed for optimal care of the newborn and the infant which contribute to high infant mortality and morbidity.

In India majority of population lives in rural areas. Historically in rural areas neonatal or infant mortality rates remained more than the urban parts of India. This gap is now narrowing with time and there is a higher decline in mortality in rural India than the urban areas. ^{8,9}

So to improve the health of newborn and to further reduce neonatal and infant mortality in rural areas we have to take appropriate steps. One of the main components of these is to enable those mothers in villages to adapt and maintain proper newborn and infant care practices at home to reduce newborn and infant mortality and morbidity. In this regard understanding of current practices and factors influencing infant care and feeding is imperative to help identify various barriers present in the rural community that influence newborn and infant health. Studies on infant care practices in North Eastern part of our country India are very few. So the present study was done with the expectation that it will fill the existing gap to some extent. With this backdrop, the present study was undertaken with the objectives to study the current practices related to infant feeding in rural areas of Kamprup District of Assam state, India and to identify various factors influencing the feeding practices.

METHODS

The present study was a community based cross-sectional study undertaken in Sonapur block PHC area which belongs to Dimaria Development block of Kamrup District of Assam, India. Sonapur is situated in the Southeastern part of Kamrup District, approximately 50 Km away from Guwahati City, comprising of 147 villages with a total population of 56 thousands and majority of the population in the area were Hindu belonged to General Caste followed by Schedules Caste, Schedule Tribe and Other Backward Class. The schedule tribes in the area were Karbis, Tiwas and Bodos. Majority of population belonged to lower socio-economic class and besides cultivation being the main occupation a large strata of them earned their livelihood by working as labourers in various local industries.

For study population mothers of infants in the age group of 1 to 2 years old were taken. Sample size was calculated taking the prevalence of 39% as the proportion who were exclusively breastfeed till six months of age in rural areas of Assam state. ¹⁰ After considering an absolute precision of 5% at 95% confidence interval the required

sample size was obtained as 380. To get this required number of sample 25 villages were selected randomly by lottery method. From each village 15 mothers were interviewed who gave informed consent to be part of the study and whose infants were eligible for the study.

Pre designed pretested semi structured schedule was used as study tool. The schedules were pretested in 50 mothers of the same area who were not part of the study.

Information related to infant feeding practices namely initiation of breastfeeding, colostrum feeding, pre lacteal feeding, and exclusive breastfeeding practice, complementary feeding were noted. Also the socio demographic data were collected from the mothers. Ethical clearance was obtained from the Medical College Ethics committee.

Inclusion criteria

All mothers who gave informed consent to be part of the study and they have children who were in the age group of 1 to 2 years of age.

Exclusion criteria

Those mothers who did not give informed consent, infants who were suffering from some congenital or systemic diseases.

Statistical analysis

The data collected on various aspect of the study were completed, tabulated and subjected to statistical analysis. Data analytical procedures involved frequency distribution cross tabulation and chi square test. The statistical analysis was done using MS Excel 2007 software and SPSS 17.0 software.

RESULTS

On analysis of socio demographic profiles of the mothers (Table 1) it was observed that majority of mothers (70%) belong to the age group 20-29 age group. While 11.8% of mothers were teenage mothers, 18.2% of mothers were above 30 years. Hindu mothers constituted 82.1% of the sample, 15.3% mothers were Muslims and 2.6% were Christian. Out of 380 mothers 256 mothers (67.4%) belonged to nuclear families and 124 mothers (32.6%) were from joint families. Majority of mothers (32.8%) had completed middle school education. While 9% mothers were illiterate, 11.6% of mothers either completed high school education or more. Majority of mothers (70.3%) were house wives. While 12.6% of mothers were service holder in government or private setup and 5% of mothers were engaged as unskilled labour. 32% of the mothers were primipara while 21% mothers had more than 3 children.

Socioeconomic status of the mothers (BG Prasad Classification): Majority of the mothers 215 (56.5%) belonged to lower socioeconomic classes (Class 4 and 5). 65 mothers (17.2%) belonged to either upper or upper middle socioeconomic class (Class 1 and 2). Rest 26.3% mothers belonged to lower middle class (Class 3). 11

Out of 380 mothers all were registered in a health facility either government or private health facility for Ante Natal Care (ANC), among them 223 (58.7%) mothers had 4 or more than that ANC Checkup during pregnancy, 135 mothers (35.5%) had only 2 to 3 numbers of ANC checkup during pregnancy, while 22 mothers (5.8%) had only single checkup during pregnancy. Breast feeding advices received by 358 mothers (94.2%) during their ANC visits.

Table 1: Socio demographic characteristics of the mothers.

Variable	Number (N=380)	Percentage	
Age of the mother			
<19 years	45	11.8	
20-29 years	265	70	
>30 years	70	18.2	
Parity of the mother			
Primi	123	32.2	
1 to 3	178	46.8	
>3	79	21	
Educational status			
Illiterate	34	9	
Up to primary school	65	17.1	
Up to middle school	125	32.8	
Up to Class 10	112	29.5	
Matriculate or more	44	11.6	
Religion			
Hindu	312	82.1	
Muslim	58	15.3	
Christian	10	2.6	
Type of family			
Nuclear	256	67.4	
Joint	124	32.6	
Occupation			
House wife	267	70.3	
Government or	48	12.6	
private service	70	12.0	
Daily wage labourer	19	5	
Business	46	12.1	

Place of delivery: out of 380 mothers 302 mothers (79.5%) delivered in a government health facility, 58 mothers (15.2%) delivered in a private health facility and rest 20 mothers (5.3%) delivered in home. Out of 380 mothers 296 mothers (78%) delivered through normal vaginal delivery while rest delivered through caesarean section operation.

Table 2 showed that majority of mothers (70.5%) initiated breastfeeding within one hour of birth followed by 16.3% mothers, who initiated breastfeeding within 1 to 6 hours while 7.2% mothers started breast feeding after 6 hours from birth and 6% of mothers initiated after 24 hours. Baby separation was stated as the commonest reason (45%) for delayed initiation of breastfeeding followed by mother's illness (27.3%). For 24.7% mothers, breast milk was not secreted and 3% of mothers were ignorant about timely initiation. Out of 380 mothers surveyed 267 (70.3%) gave exclusive breastfeeding to their infants for at least six months of age whereas 113 (29.7%) did not practice exclusive breastfeeding.

Table 2: Distribution of mothers according to time of initiation of breast feeding.

Time of initiation of breast feeding	Number of mothers	Percentage
Within the first hour	268	70.5
1 to 6 hours	62	16.3
More than 6 hours	27	7.2
After 24 hours	23	6

On analysis of socio demographic factors influencing BF practices in infants (table 3) it was seen that percentage of exclusive breast feeding for first six months was more among the mothers who delivered in a hospital (70%) than those who delivered in home (65%).

The difference was not found to be statistically significant. While it was found that exclusive breast feeding was more among the mothers who had more than 4 ANC checkups (74%) during pregnancy and it was found to be statistically significant. On analysis of religion of mothers and exclusive breast feeding Muslim mothers had lower percentage (67.2%) of exclusive breast feeding than Hindu (70.5%) and Christian mothers (80%). But it was not found to be statistically significant.

It was found that more primi mothers (78.8%) practices exclusive breast feeding for six months than the multi para mothers (46.8%) and it was found to be statistically significant.

Exclusive breast feeding was also found to be more among the mothers who were more educated (79.5%) and it was found to be statistically significant. Again on analysis of age and exclusive breast feeding it was seen than more mothers (77.3%) in the age group of 20 to 29 years practices exclusive breast feeding for six or more months than teenage or older mothers. Percentage of exclusive breast feeding for six or more months was found to be more among the mothers (77.7%) in the lower socioeconomic categories and a statistically significant association was found between socioeconomic status and duration of exclusive breast feeding.

Table 4 showed that majority of mothers (49.2%) introduced complementary feeding after completion of six months, 26.6% mothers introduced complementary feeding between six months and one year; while 10 % mothers introduced after one year.

A good number of mothers 14.2% introduced complementary food before six months. Out of 54 mothers 37 (68.5%) cited insufficient breast milk as the

reason for introduction of complementary feeding earlier than six months followed by 17 (31.5%) of mothers who cited the reason as child's demand. Amongst those mothers (139 numbers) who introduced complementary feeding later than six months, 70 (50.3%) mothers were ignorant about the actual time of initiation, 41 (29.5%) mothers thought that the child could not digest solid food, while 28 (20.2%) mothers initiated late as advised by elders.

Table 3: Distribution of mothers according to socio demographic factors influencing exclusive breast feeding up to 6 months of age.

Variable	Exclusive breast feeding (267)	Non-exclusive breast feeding (113)	Chi Square test	P value
Place of delivery				
Hospital	252 (70%)	108 (30%)	X2 = 0.050	0.82
Home Delivery	13 (65%)	7 (35%)	Df= 1	Not sig
ANC				
4 or more ANC check up	165 (74%)	58 (26%)	11.67	0.0006
<4 ANC check ups	89 (56.7%)	68 (43.3%)	Df=1	Significant
Religion				
Hindu	220 (70.5%)	92 (29.5%)	- V2 0.052	0.81 Not sig
Muslim	39 (67.2%)	19 (32.8%)	X2= 0.052 Df=1	
Christian	8 (80%)	2 (20%)	D1-1	
Parity				
Primi	97 (78.8%)	26 (21.2%)	26.70	0.001 Significant
1 to 3	133 (74.7%)	45 (25.3%)	26.79 Df= 2	
>3	37 (46.8%)	42 (53.2%)	D1– 2	
Education				
Illiterate	23 (67.6%)	11(32.4%)		0.01 Significant
Up to Primary School	42 (64.6%)	23 (35.4%)	11.15	
Up to Middle School	78 (62.4%)	47 (37.6%)	Df=3	
Up to Class 10 or more	124 (79.5%)	32 (20.5%)		
Age of the mother				
<19 years	23 (51.1%)	22 (48.9%)	21.27	0.001 Significant
20-29 years	205 (77.3%)	60 (22.7%)	21.37 Df= 2	
>30 years	39 (55.7%)	31(44.3%)	DI- Z	
Socioeconomic status				
Upper class &Upper middle (Class 1 & 2)	49 (75.4)	16 (24.6%)	35.51	0.001 Significant
Middle class (Class 3)	45 (45%)	55 (55%)	Df= 2	
Lower class (Class 4 & 5)	167 (77.7%)	48 (22.3%)		

Table 4: Distribution of infants according to timing of initiation of Complementary feeding.

Age of introduction of complementary food	Number	Percentage
Before six months	54	14.2
Six completed months	187	49.2
After six months to one year	101	26.6
After one year	38	10
Total	380	100.00

DISCUSSION

In the study it was analyzed that the feeding practices of 380 infants in a rural area of Kamrup district of Assam state and obtained some interesting information. We found that 70.5% of mothers in our study initiated breast feeding within 1 hour of birth of the baby. But the Annual Health Survey 2012-13 found that 75.9% mothers in rural areas of Assam started breast feeding within 1 hour of birth. Though our study finding was above the national average of 40.5% as found by District level Household survey Round 3 (DLHS 3). Various Studies done in rural areas of India reported high percentage of mothers initiating breast feeding within 1st hour of birth like our study findings. Halfs But another study conducted in rural areas by Mahmood SE et al found that only 22% mothers initiated breast feeding within 1 hour.

In our study baby separation was found to be the commonest reason (45.05%) for delayed initiation of breastfeeding among the mothers. Wagh S et al observed that most common cause of delay in initiation in breast feeding were caesarean section and delivery complication. ¹⁷

Percentage of women practicing exclusive breast feeding for first six months was found to be 70.3% in this study. In AHS 2012-13 the percentage of women practicing exclusive breast feeding for six months was found to be 40% in Assam, according to DLHS 3 and NFHS 3 the percentage was 46% in the national level. ^{12,13,18} Medhi GK et al in their study among the tea garden workers in Assam also found that 69% mothers EBF their infants till six months of age. ¹⁹ Another study in Delhi showed that exclusive breast feeding was done by 57.0% mothers for children under 6 months of age. ²⁰ While Joseph N et al in their study found that 41.7% mothers exclusively breastfed (EBF) their infants for 6 months. ²¹

On bivariate analysis of certain maternal and sociodemographic factors influencing EBF it was seen that exclusive breast feeding was significantly associated with 4 or more numbers of ANC visits, primipara mothers, higher educational status of mother, younger age and lower socioeconomic status of the mothers. Yadavannavar MC et al in their study also observed similar results.²² Bharati SR in a study conducted in South India identified the factors that significantly influence the duration of breast-feeding was income, education and employment.²³ Swetha R et al also observed in their study that employment was significantly associated with duration of EBF.²⁴

The study observed that majority of mothers (49.2%) introduced complementary feeding at the correct time while 36.6% mothers introduced complementary feeding lately and 14.2% introduced complementary food before six months.

According to the National Guidelines on Infants and Young Child Feeding (2006) complementing solid/semisolid food with breast milk after child attains age of six months is very essential as after the age of 6 months, breast milk is no longer sufficient to meet the nutritional requirements of the infant.⁶ Similar to our study observations Basnet S et al found that 50% of the mothers started complementary feeds at 6 months of age.²⁵ In a study by Rao S et al 77.5% mothers were found to have started complementary feeding at the recommended time.²⁶ But a study by Kavitha S et al found that 62% of infants were weaned prematurely.²⁷

In the study it came to light that among the mothers who started complementary feeding prematurely, mother's perception of insufficient breast milk was the most important cause. Whereas mother's ignorance was found to be the most common cause for late introduction of complementary feeds.

Similar results were obtained by Taneja DK et al and Mahmood SE et al in studies conducted in rural settings. Medhi GK et al also observed late introduction of complementary feeding among the infants in Assam. 16,19,28 Ulak M et al also reported that 79% infants were introduced to complementary food before six months of age and the main reason was assumed insufficient breast milk production. 29 Holambe VM et al observed in their study that late introduction of complementary food was associated with maternal age, education and parity. 30

Limitations of our study: due to limited time and resource the study could not analyse thoroughly all the factors associated with breast feeding and complementary feeding. Restriction of the study within a small geographic area with limited sample size was another drawback of our study. No intervention was tried in our study again due to lack of manpower and resources.

CONCLUSION

The present study done in a rural Block of Assam was able to throw some light on important aspects of newborn and infant feeding practices prevalent in rural areas of Assam.

Major findings of the study includes high percentage of mothers initiating breast feeding within 1 hour of birth of the child and exclusive breast feeding for six or more months, EBF practices were more among mothers who had 4 or more numbers of ANC visits, primipara mothers, higher educational status of mother, mothers of younger age and lower socioeconomic status, 49.2% mothers introduced complementary feeding at the correct time.

At the conclusion we can say that most of the infant feeding practices were found to be satisfactory in our study as the indicators were well above the national averages, yet awareness generation activities highlighting the positive aspects of not giving pre lacteal feeding, practising exclusive breastfeeding, and timely introduction of complementary food should be intensified.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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