

## Original Research Article

# Prevalence and factors affecting early initiation of breastfeeding in rural areas of Dibrugarh district, Assam

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### ABSTRACT

**Background:** Early or timely initiation of breastfeeding, specifically within 1 hour of birth has benefits for survival and beyond and it is recommended by the World Health Organization. Breastfeeding initiation after the first hour of birth doubles the risk of neonatal mortality. The present study has been conducted to estimate the prevalence and determine the factors affecting early initiation of breastfeeding in rural areas of Dibrugarh, district, Assam.

**Methods:** Community based cross sectional study from May 2017 to April 2018 among mothers having children in the age group 0 to 23 months in the rural areas of Dibrugarh district. The sample size calculated for the study was 360 children.

**Results:** The results were analyzed for 334 children. Prevalence of early initiation of breastfeeding was found to be 54.8%. On multivariate regression analysis the occupation and education of mothers, number of antenatal checkup visits, type of delivery and religion were found to be independently associated with early initiation of breastfeeding.

**Conclusions:** This study reveals that the early initiation of breast feeding is lower in rural areas of Dibrugarh district. The findings clearly highlight the importance of imparting health education to family members and mothers right from antenatal period on infant and child feeding practices.

**Keywords:** Early initiation of breast feeding, Infant and young child feeding practices, Antenatal check up

### INTRODUCTION

World Health Organization (WHO) recommends early or timely initiation of breastfeeding, specifically within 1 hour of birth due its survival benefits for the newborn.<sup>1</sup> Initiation within 1 hour is seen to have reduced neonatal mortality by 19.1-22% whereas delay doubles the risk of neonatal mortality.<sup>2,3</sup> Early initiation protects the newborn from sepsis, pneumonia, diarrhoea and hypothermia, and mothers from risk of postpartum haemorrhage.<sup>4,5</sup> It also facilitates sustained breastfeeding.<sup>4</sup>

Despite its extraordinary benefits to mother and child only 43 percent of the world's newborns are put to the

breast within one hour of birth with only 44.6% of Indian mothers practicing it.<sup>6,7</sup>

Among the indicators developed by WHO and UNICEF, 'proportion of children born in the last 24 months who were put to the breast within one hour of birth' an indicator for early initiation of breastfeeding, is included as a core indicator for assessing IYCF practices.<sup>8</sup>

The present study is an attempt to estimate the prevalence of early initiation of breastfeeding in rural areas of Dibrugarh, district Assam and to determine the factors affecting early initiation of breastfeeding in rural areas of Dibrugarh, district Assam.

## METHODS

The community based cross sectional study was conducted from May 2017 to April 2018 in the rural areas of Dibrugarh district in Assam, India, having a population of nearly 1.3 million with almost equal proportion of male and female population.<sup>9</sup> All children in the age group of 0-23 months were included in the study. Children with congenital malformations like cleft lip, cleft palate and children who were very sick were excluded from the study. A multistage sampling was done to identify the villages and a sample size of 360 children was taken.

The sample size (n) was calculated by using the formula,  $n = \frac{z^2 pq}{d^2}$ ,  $p=65\%$  (as per NFHS-4 data on early initiation of breast feeding in Assam)  $d =$  relative error of 8% and non response rate of 10%.<sup>10</sup> A sample size of 356 was obtained. For equal distribution among 30 clusters, this was rounded off to 360.

**Sampling design:** Multi stage random sampling was done (Figure 1).

**Stage 1:** 6 blocks in Dibrugarh district, out of which 2 blocks (Lahowal and Borboruah) were randomly selected.

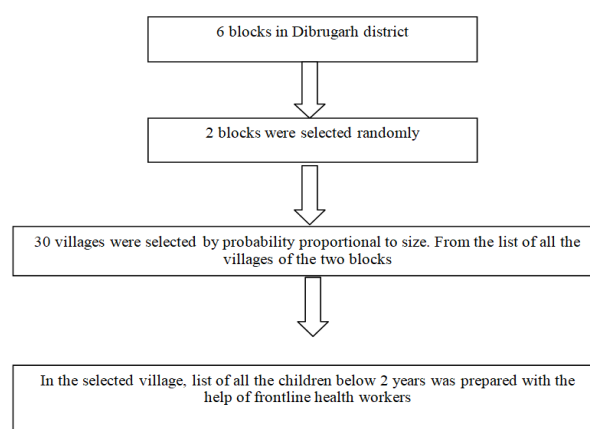
**Stage 2:** 30 villages were selected by probability proportional to size (PPS) from the list of all villages of the two blocks.

**Stage 3:** In the selected village, list of all the children below 2 years was prepared with the help of frontline health workers.

Ethical clearance was obtained from the Institutional Ethics Committee (H) of Assam Medical College and Hospital, Dibrugarh before initiation of the study. The mothers of the children of age 0 to 23 months were briefed regarding the purpose of the study and their consent for voluntary participation was obtained. The variables included were the socio-demographic profile of the study participants, family characteristics, parental characteristics, sex of the child, antenatal care and delivery related factors associated with early initiation of breastfeeding along with associated factors. Early

initiation of breastfeeding was defined as putting the newborn to the breast within one hour of birth.

Data was collected by interview method using a pre-designed and pre-tested semi-structured proforma. The data was entered and analyzed using SPSS version 21. Qualitative variables were summarized as frequency, proportions and association was observed by Bivariate analysis and multivariable logistic regression. Unadjusted Odds Ratios and Adjusted Odds Ratios (UOR, AOR) were computed for each explanatory variable to determine the strength of association and to control the confounders. The  $p \leq 0.2$  was taken as a cut-off point to select eligible variables for the multiple logistic regression analysis. Appropriate test of significance was done wherever necessary and  $p < 0.05$  was considered statistically significant.



**Figure 1: Sampling design.**

## RESULTS

Mothers of only 334 children gave their consent for participation in the study. Majority of study participants were Hindus (94.3%), OBC (58.1%), belonged to joint family (66.5%) and cultivators (62.3%). Majority of mothers were educated up to secondary level and or above (68.5%), had 4 or more numbers of antenatal visits to health care centres (91.3%), had hospital delivery (83.5%) by normal vaginal mode (75.7%) (Table 1). The prevalence of early initiation of breastfeeding was found to be 54.8%.

**Table 1: Socio-demographic profile of the study participants.**

Socio-demographic variables	Frequency	Percentage (%)
Sex	Male	173
	Female	161
Religion	Hinduism	315
	Islam	16
	Christian	3
Caste	Scheduled Caste (SC)	16
	Scheduled Tribe CST)	38
	Other Backward Class (OBC)	194
	General	86

Continued.

Socio-demographic variables		Frequency	Percentage (%)
Type of family	Nuclear	112	33.5
	Joint	222	66.5
Occupation of father	Homemaker	--	--
	Cultivator, agricultural labourer, tea garden labourer, others	208	62.3
	Government employee and business	126	37.7
Occupation of mother	Homemaker	279	83.5
	Cultivator, agricultural labourer, tea garden labourer, others	35	10.5
	Government employee and business	20	6.0
Education of father	None or below primary	56	16.8
	Primary completed	49	14.7
	Secondary and above	229	68.5
Education of mother	None or below primary	71	21.3
	Primary completed	34	10.2
	Secondary and above	229	68.5
Socio-economic status as per modified B G Prasad Classification November 2017	Upper	50	14.9
	Upper middle	38	11.4
	Middle	71	21.3
	Lower middle	148	44.3
	Lower	27	8.1
ANC visits	< 4 visits	29	8.7
	≥ 4 visits	305	91.3
Place of delivery	Home delivery	17	5.1
	Government hospital	279	83.5
	Private hospital	38	11.4
Type of delivery	Normal delivery	253	75.7
	Caesarean section	81	24.3

**Table 2: Family characteristics associated with early initiation of breastfeeding (n=334).**

Variables		Early initiation of breastfeeding				U-OR	95% CI		P value
		Yes		No			LL	UL	
		N	%	N	%				
Religion	Hinduism	179	56.8	136	43.2	Ref	--	--	--
	Others	4	21.05	15	78.95	0.20	0.06	0.62	0.005
Caste	SC	12	75	4	25	2.48	0.74	8.33	0.139
	ST	17	44.7	21	65.3	0.67	0.31	1.44	0.309
	OBC	107	55.1	87	44.9	1.02	0.61	1.69	0.937
	General	47	54.6	39	45.4	Ref	--	--	--
Type of family	Nuclear	69	61.6	43	38.4	1.52	0.96	2.42	0.076
	Joint	114	51.3	108	48.7	Ref	--	--	--
Socioeconomic status	I	28	56	22	44	1.01	0.39	2.61	0.970
	II	16	42.1	22	57.9	0.58	0.21	1.57	0.286
	III	36	64.7	35	35.3	0.82	0.33	2.00	0.667
	IV	88	59.4	60	40.6	1.17	0.51	2.68	0.704
	V	15	55.5	12	44.5	Ref	--	--	--

Religion, occupation and education of the mothers, number of visits for antenatal check up and type of delivery were significantly associated with early initiation of breastfeeding. Early initiation of breast feeding was significantly more in Hindus (p=0.005) (Table 2), in mothers having occupation of cultivation ((p=0.002), and with higher education level (Table 3). Early initiation of the breast feeding was significantly more in mothers who

had 4 or more visits to the health care centres ((p=0.003) (Table 4).

On multivariate regression analysis the occupation and education of mothers, number of antenatal check up visits, type of delivery and religion were found to be independently associated with early initiation of breastfeeding (Table 5).

**Table 3: Parental characteristics associated with early initiation of breastfeeding (n=334).**

Variables	Early initiation of breastfeeding				U-OR	95% CI		P value	
	Yes		No			LL	UL		
	N	%	N	%					
Age of mothers in years	<20	8	61.5	5	38.5	1.4	0.45	4.40	0.559
	20 to 30	148	53.2	130	46.8	Ref	--	--	--
	>31	27	62.8	16	37.2	1.48	0.76	2.87	0.243
Occupation of fathers	Agricultural labourer, tea garden worker	112	53.8	96	46.2	Ref	--	--	--
	Government employee and businessman	71	56.3	55	43.7	1.11	0.71	1.73	0.656
Education of father	None or below primary	28	50	28	50	0.76	0.42	1.36	0.361
	Primary	25	51.02	24	48.98	0.79	0.42	1.47	0.463
	Secondary or above	130	56.7	99	43.3	Ref	--	--	--
Occupation of mothers	Homemaker	149	53.4	130	46.6	Ref	--	--	--
	Cultivator, agricultural labourer, tea garden worker	29	82.8	6	17.2	4.22	1.70	10.48	0.002
	Government employee, business	5	25	15	75	0.29	0.10	0.82	0.020
Education of mothers	None or below primary	35	49.2	36	50.8	0.68	0.40	1.16	0.153
	Primary	13	38.2	21	61.8	0.43	0.21	0.90	0.026
	Secondary or above	135	58.9	94	41.1	Ref	--	--	--

**Table 4: Child's sex, Antenatal care and delivery related factors associated with early initiation of breastfeeding (n=334).**

Variables	Early initiation of breastfeeding				U-OR	95% CI		P value	
	Yes		No			LL	UL		
	N	%	N	%					
Sex of the child	Male	94	54.3	79	45.7	Ref	--	--	--
	Female	89	55.3	72	44.7	1.04	0.67	1.60	0.863
ANC visits	<4	8	27.6	21	72.4	0.28	0.12	0.66	<b>0.003</b>
	≥4	175	57.3	130	42.7	Ref	--	--	--
Place of delivery	Home	10	58.8	7	41.2	1.42	0.44	4.54	0.545
	Govt. hospital	154	55.2	125	44.8	1.23	0.62	2.42	0.547
	Private hospital	19	50	19	50	Ref	--	--	--
Type of delivery	Normal	155	61.2	98	38.8	Ref	--	--	--
	Caesarean section	28	30.2	53	69.8	0.33	0.19	0.56	<b>&lt;0.0001</b>

**Table 5: Factors associated with early initiation of breastfeeding - logistic regression analysis.**

Variables	Adjusted odds ratio	95% CI		P value	
		LL	UL		
Caste	SC	2.92	0.83	10.19	0.092
	ST	0.82	0.36	1.85	0.635
	OBC	1.48	0.77	2.84	0.230
	General	Ref	--	--	--
Type of family	Nuclear	1.68	0.98	2.885	0.056
	Joint	Ref	--	--	--
Occupation of mother	Government service, business	0.30	0.10	0.92	0.035
	Agricultural labourer, tea garden worker etc	5.11	1.83	14.24	0.002
	Homemaker	Ref	--	--	--
Education of mother	None or below primary	0.46	0.23	0.90	0.023
	Primary completed	0.23	0.09	0.56	0.001
	Secondary completed or above	Ref	--	--	--

Continued.

Variables		Adjusted odds ratio	95% CI		P value
			LL	UL	
Number of ANC visits	<4	0.19	0.07	0.50	0.001
	≥4	Ref	--	--	--
Type of delivery	Caesarean section	0.28	0.15	0.53	0.000
	Normal	Ref	--	--	--
Religion	Other religions	0.15	0.04	0.54	0.004
	Hindu	Ref	--	--	--

## DISCUSSION

### Prevalence

In this study, 54.8% of the mothers breastfed their children within one hour of birth which is slightly higher than the global prevalence of 42% (UNICEF 2018) and also the national prevalence i.e. 44.6% as per rapid survey on children (RSOC) 2013-14 but was much lower in comparison to the prevalence in Assam RSOC 2013-14 (72.9%) and NFHS- 4 (65% ) respectively.<sup>6,7,10,11</sup> In Ethiopia, Setegn et al observed that the prevalence of early initiation of breast feeding was lower among rural population that was due to lack of awareness, delay in intervention of health care worker and low educational level.<sup>12</sup> The present study was carried out among the rural population of the district which may be one of the reasons for lower prevalence of early initiation.

Radwan et al found that initiation of breastfeeding was influenced by mother's age and education.<sup>13</sup> However in our study we did not find any significant association between mother's age and early initiation of breastfeeding

### Education

In the present study the initiation of breast feeding within one hour of birth was found to be significantly higher among mothers with secondary level of education in comparison to education of primary level or below. This was also observed by Setegn et al, Subedi et al, and Patel et al.<sup>12,14,15</sup> Setegn et al in their study in eastern Ethiopia found that the mothers who were counselled/advised on breastfeeding on postnatal visit were about 52% more likely to initiate breastfeeding within the first hour of delivery.<sup>12</sup> In the present study probable reason for more numbers of educated women initiating breast feeding in comparison to the mother with lower level of education or illiterate may be due to awareness about the benefits of early initiation.

### Mode of delivery

Hassan et al, Shukla et al, Albokhary et al, and Yilmaz et al observed that initiation of breast feeding was delayed in newborn delivered by caesarean section.<sup>16-19</sup> Albokhary et al, observed that delay seen in initiation of breast feeding among women who have given birth by

caesarean section was due to tiredness (90.0%) and pain (86.7%) whereas Awi et al.<sup>19,20</sup> found it to be due to routine labour ward practices such as cleaning of the newborn and weight/length measurement and appointment of breastfeeding-trained delivery assistant during caesarean section had decreased the delay. In the present study there was significant delay in initiation of breast feeding among women who gave birth by caesarean section. The delay was probably due to pain and tiredness associated with the operation or due to routine practices.

### Antenatal check up

In this study it was found that early initiation of breastfeeding was significantly higher among mothers who had 4 or more antenatal clinic visits. This was also observed by Patel et al and Mathew et al, who found that timely first suckling was higher in women who had more antenatal clinic visit.<sup>15,21</sup>

## CONCLUSION

The prevalence of early initiation of breastfeeding in the study area was 54.8%, which is lower compared to the state level. Among the different factors studied; occupation and education of mothers, number of antenatal checkup visits, type of delivery and religion were the determinant factors for higher chance of timely initiation of breastfeeding.

### Limitation of the study

Data was collected by interview method, which was entirely based on the memory of the participant.

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*Ethical approval: The study was approved by the Institutional Ethics Committee of Assam Medical College and Hospital, Dibrugarh*

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