



## Original Research Article

## A study on comparison of feeding practices among rural and urban children and its effect on their nutritional status in western UP

Shaili Vyas<sup>1</sup>, Sushmita Sonkar<sup>2</sup>, Sadhna Singh<sup>3,\*</sup>, Abhay Srivastava<sup>1</sup>, Parul Sharma<sup>4</sup>, Kajal Srivastava<sup>5</sup>

<sup>1</sup>Dept. of Community Medicine, Himalayan Institute of Medical Sciences, Dehradun, Uttarakhand, India

<sup>2</sup>Dept. of Community Medicine, Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly, Uttar Pradesh, India

<sup>3</sup>Dept. of Community Medicine, Teerthanker Mahaveer University, Moradabad, Uttar Pradesh, India

<sup>4</sup>Dept. of Community Medicine, GMERS Medical College, Patan, Gujarat, India

<sup>5</sup>Dept. of Community Medicine, Dr. D. Y. Patil Medical College, Pune, Maharashtra, India



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## ABSTRACT

**Background:** Appropriate feeding practices are of primary importance for the survival, growth, development, and nutrition of infants and children. The most important factor that affects growth of various organs of child is the nutrition. Breastfeeding is the primary source to provide nutrition in all newborns.

**Objective:** The objective of the study is to compare the breastfeeding practices of children in Rural and Urban setting and to find out the relation between breastfeeding Practices and Nutritional status of children.

**Materials and Methods:** A community based study was conducted in the field practice areas of a tertiary care hospital. Multistage Random sampling technique was used for the selection of study subjects. A total of 117 under five children were studied equally from rural and urban area. A predesigned Pretested Performa was used to assess the Breast feeding practices. Stunting and underweight were used to proxy the child nutrition status. Data was evaluated on SPSS version 17. Chi-square test was used to compare the feeding practices & to find out their association with nutritional status in the two areas.

**Results:** Breastfeeding practices of Urban children was found to be better than Rural children. Under nutrition was found in children who initiated breastfeeding after 3days, took prelacteal feeds, discarded colostrum, & who were not on Exclusive breastfeeding in both the areas.

**Conclusion:** Breastfeeding practices were though poor in both areas but most of the parameters were still better in urban areas. Breast feeding practices was found to be significant predictor for under nutrition.

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### 1. Introduction

Breastfeeding is the fundamental right of each and every child. Early initiation of breastfeeding within one hour and exclusive breastfeeding for first 6 months are key interventions to achieve Millennium Development Goals (MDG) 1 and 4, related to child malnutrition and mortality respectively.<sup>1</sup> In India effective implementation of these interventions is yet to be achieved. Numerous benefits of breastfeeding have been known since ages, but despite of it the prevalence has remained low.<sup>2</sup> According to the recent

estimates by National Family Health Survey (NFHS-4) only 42% children were breastfed within 1 hour of birth and only 55% were exclusively breastfed.<sup>3</sup> Breastfeeding is the natural complete optimum food during the initial 6 months of life and has to be continued till 2 years of age as breast milk contains factors required for brain growth and development.<sup>4</sup>

Human nutrition is influenced by cultural beliefs and norms which have been identified as the determinants of breast feeding practice.<sup>5,6</sup> There is a need for those involved in promoting breastfeeding to understand these socio cultural and environmental circumstances around breastfeeding.<sup>7</sup> India is one of the first countries to take the

\* Corresponding author.

E-mail address: [dr.sadhna.s@gmail.com](mailto:dr.sadhna.s@gmail.com) (S. Singh).

lead in harmonizing the global recommendations on infant and young child feeding in its policies. Evidence based studies have stressed the importance of human milk and concluded that infant feeding should be considered as basic health issue rather than lifestyle choice.<sup>8</sup> Breastfeeding though is a natural act; it is a behavior that needs to be learned. Mothers and other caregivers need active assistance for optimum breastfeeding practices.<sup>9</sup>

Appropriate breastfeeding practices depend on accurate information and support from the family, community, and healthcare system. Inadequate knowledge about feeding practices is an equally important determinant of malnutrition, as is the lack of adequate and hygienic food.<sup>10</sup> However, in spite of all the efforts deployed as information, education, or training campaigns, the prevalence of proper feeding practices remains low. The beneficial effects of breastfeeding depend on breastfeeding initiation, its duration, and the age at which the breast-fed child is weaned. The prevalence of breastfeeding differs from one country to another and from one society to another, this is due to different cultural and religious beliefs.

It is clear that Breastfeeding practices are the major determinants of nutritional status of infants and young children which, in turn, can be affected by various other factors. Hence, the present study was designed as an observational study to understand and compare the breastfeeding practices between urban & rural community & to know its effect on the nutritional status of infants and toddlers.

## 2. Materials and Methods

We carried out a community based cross sectional study for 2 months in the field practice areas of a tertiary care centre. The urban health training center (U.H.T.C) has 9 registered peri-urban localities and the rural health training center (R.H.T.C.) has 24 registered villages. The estimated sample size was calculated according to the formula

$$n = 4 p q / d^2$$

n = Sample size

$$= 4 \times 42.5 \times 57.5 / 7^2$$

p = Prevalence of underweight

$$= 199 \text{ children (42.5\%)}$$

d = Absolute precision

$$= 7\%$$

$$q = 100 - p$$

Considering a nonresponse rate of 10% the sample size calculated was 219. Thus a total of 234 households were covered in both the areas, of which 117 under-five children each were studied from rural as well as urban area. Multistage Random sampling technique was used for the selection of study subjects. The households were visited personally. Mothers'/Guardians were informed about the objectives of the study and their consent was taken regarding the same. Mothers were interviewed using a predesigned,

pretested questionnaire regarding breast feeding practices. If the mothers were not present at the time of visit, they were revisited for a maximum of three times. Despite three visits if they were unavailable then next house was taken. Premature Infants, Infants with Low birth weight (< 2.5 kg), born out of multiple gestations pregnancy, those with significant congenital malformations and chronic illness were excluded from the study. Information was collected using structured, pretested Performa by interviewing the mothers or any responsible member of the family in case of non availability of mother. For assessing breastfeeding practices, we followed the recommended feeding assessment questions as mentioned in integrated management of neonatal and childhood illness (IMNCI) feeding assessment chart. Each child was subjected to anthropometric measurements. Data was gathered by a combination of a structured questionnaire and the collection of anthropometric data through measurements of height and weight. The anthropometric measurement by New WHO standards (WHO, 2006) was used for the determination of nutritional status of preschool children. Two standard indices of physical growth that describe the nutrition status of children, namely stunting and underweight was used to proxy the outcome variable of interest, child nutrition status. Data was analyzed on SPSS version 17. Chi-square test was employed to compare the nutritional status between groups.  $P < 0.05$  was considered as significant at 95% confidence level.

## 3. Results

Table 1 shows that 81.20% children were given Prolactal feeds of which majority were from rural area (90%). A higher no of children were given colostrum (77%) of which maximum were urban area & the association was also statistically significant. Almost 50% of children were initiated breastfeeding after 3 days, of which a higher no were from rural area. Only 18% mothers practiced exclusive breastfeeding practices of which maximum were from urban area. Majority of mothers continued breastfeeding till 1-2 yrs (44%)

Table 2 shows that nonreceipt of colostrum was found to be significantly associated with underwt (60.9% & 54.5%) & stunting (75.6% & 63.6%), though much higher in the rural areas. The difference was found to be highly significant. It was further observed majority of the underwt & stunted children initiated breastfeeding after 3 days. children who were breastfed on demand were found to be the least undernourished i.e. underwt (38.5%) & stunted (46.1%). Duration of breastfeeding was significantly associated with both underwt & stunting in both the areas i.e. underwt (50% & 30.4%) & stunting (69.2% & 56.5%) was found to be less in children who were breastfed for 2 years. Exclusive breastfeeding till 6 months in the rural area was just 7.20% & in the urban area 29.1%. It was seen

**Table 1:** Distribution of breast feeding practices of children

Variable	Distribution of children		Total	Chi square Pvalue
	Rural	Urban		
<b>Prelacteal feed given</b>				
Yes	107(91.45)	83(70.94)	190(81.20)	P=14.807
No	10(8.55)	34(29.06)	44(18.80)	X <sup>2</sup> =0.0001
Total	117	117	234	
<b>Colostrum</b>				
Given	76(64.96)	106(90.60)	182(77.78)	P=20.794
Not Given	41(35.04)	11(9.40)	52(22.22)	X <sup>2</sup> =0.0001
Total	117	117	234	
<b>Initiation of Breastfeeding</b>				
Within 24hr	14(12.27)	31(28.44)	45(20.55)	P=20.9
1-3day	24(21.82)	40(36.70)	64(29.22)	X <sup>2</sup> =0.000
>3days	72(65.45)	38(34.86)	110(50.23)	
Total	110	109	219	
<b>Frequency of Breastfeeding</b>				
On Demand	13(11.82)	0	13(5.94)	P=16
Regular Intervals	2(1.82)	0	2(0.91)	X <sup>2</sup> =0.000
Both	95(86.36)	109	204(93.15)	
Total	110	109	219	
<b>Exclusive Breastfeeding</b>				
Yes	8(7.27)	32(29.36)	40(18.26)	P=16.439
No	102(92.73)	77(70.64)	179(81.74)	X <sup>2</sup> =0.0001
Total	110	109	219	
<b>Total Duration of Breastfeeding</b>				
<6months	6(6.12)	22(24.44)	28(14.89)	P=14.8
6-12 months	13(13.26)	14(15.56)	27(14.36)	X <sup>2</sup> =0.002
12-24mnths	53(54.08)	31(34.44)	84(44.68)	
>24months	26(26.53)	23(25.56)	49(26.06)	
Total	98	90	188	

that children who were given exclusive breastfeeding for the first six months were less underwt (37.5% & 40.6%) & stunted (62.5% & 59.4%). The difference was also found to be statistically significant.

#### 4. Discussion

Purpose and benefits of breast feeding has been stressed all over the world by various health organizations and community-based programs and approaches. The present study attempts to compare the breastfeeding practices of under five years children, in the rural & urban area & to explore its association with their nutritional status

In the present study Prelacteal feed was given to 91.5% study participant in rural as compared to 71% in urban area which when compared to study done by Goutam S et al,<sup>10</sup> nearly 50% of rural mothers and 18.4% urban mothers fed their child with prelacteal feed. An almost equal percentage of prelacteal feeding practice among rural (57.11%) and urban (54.25%) study participants was found in a study done by Ashwini et al.<sup>11</sup> Another study by Vyas S in Uttarakhand found that Prelacteal feeds were given to 61.80% of babies.<sup>12</sup> Our study also revealed an association between Prelacteal feeds & undernutrition. Similarly, according to Netri D et al,<sup>13</sup> & Islam S<sup>14</sup> at

Assam feeding of prelacteals was a significant risk factors for wasting & underweight among the under 5 children.

According to our study majority of the urban children were fed colostrum (90.60%) as compared to rural ones (64.96%) and the association was also found to be significant. Our findings are quite close to a study in Uttarakhand by Vyas S et al where Colostrum was fed to 87% of the babies.<sup>12</sup> Also children who were not fed colostrum were found to be underwt & stunted in both the areas. The association was also significant. Similar findings were quoted by Netri D et al<sup>13</sup> & Islam et al<sup>14</sup> & Syed S<sup>15</sup> where deprivation from colostrum was found to be a significant risk factors for wasting and stunting

In the present study, in majority of the children, initiation of breastfeeding was delayed by almost 3days in the rural area than in the urban area. Similarly breastfeeding was initiated after 3days in a study done at Uttarakhand by Vyas S et al, majority of the mothers initiated Breastfeeding after 24 hrs.<sup>12</sup> Further it was seen that underwt & stunting both had a significant association with it in both the areas. Corroborative findings were noted by Gandhi et al,<sup>16</sup> Syed S et al<sup>15</sup> & Islam et al.<sup>14</sup> Delay in initiation of breastfeeding as per the mothers were mainly due to cultural reasons where as per culture baby's maternal aunt or bua is suppose

**Table 2:** Nutritional status of children according to breast feeding practices

Variables	Area							
	Rural		Urban		Rural		Urban	
	T	Underwt	T	Underwt	T	Stunted	T	Stunted
<b>Prelacteal feed</b>								
Given	107	68(63.6)	83	42(50.6)	107	86(80.4)	83	49(59.0)
Not Given	10	6(60.0)	34	12(35.3)	10	8(80.0)	34	20(58.8)
<b>Colostrum</b>								
Given	76	39(51.3)	106	47(44.3)	76	52(68.4)	106	58(54.7)
Not Given	41	25(60.9)	11	6(54.5)	41	31(75.6)	11	7(63.6)
Chi Square Test	$\chi^2: 11.46$ df=1, p<0.005				$\chi^2: 13.50$ df=1, p<0.005			
<b>Initiation of BF</b>								
<24hr	14	8(57.1)	31	10(32.3)	14	9(64.3)	31	16(51.6)
1-3day	24	16(66.7)	40	21(52.5)	24	18(75.0)	40	21(52.5)
>3days	72	50(69.4)	38	22(57.9)	72	60(83.3)	38	29(76.3)
Chi Square Test	$\chi^2: 8.55$ df=2, p<0.05				$\chi^2: 8.48$ df=2, p<0.05			
<b>Frequency of BF</b>								
On Demand	13	5(38.5)	-	-	13	6(46.1)	-	-
Regular Intervals	2	1(50.0)	-	-	2	2(100.0)	-	-
Both	95	46(48.4)	109	49(45.0)	95	75(78.9)	109	66(60.6)
Chi Square Test	$\chi^2: 6.01$ df=2, p<0.05				$\chi^2: 6.72$ df=2, p<0.05			
<b>Total Duration of BF</b>								
<6months	6	4(66.7)	22	11(50.0)	6	5(83.3)	22	16(72.7)
6-12 months	13	8(61.5)	14	6(42.8)	13	10(76.9)	14	9(64.3)
12-24mnths	53	31(58.5)	31	12(38.7)	53	39(73.6)	31	19(61.3)
>24months	26	13(50.0)	23	7(30.4)	26	18(69.2)	23	13(56.5)
Chi Square Test	$\chi^2: 9.89$ df=3 p<0.05				$\chi^2: 11.93$ df=3, p<0.01			
<b>Exclusive BF</b>								
Yes	8	3(37.5)	32	13(40.6)	8	5(62.5)	32	19(59.4)
No	102	63(61.8)	77	36(46.8)	102	82(80.4)	77	47(61.0)
Chi Square Test	$\chi^2: 9.59$ df=1 p<0.01				$\chi^2: 13.97$ df=1, p<0.005			

to give him honey as prelacteal feeds after which the mother is allowed to feed him/her. delay in shifting the mothers from labour room, babies were in neonatal ICU, Caesarean section and family restriction

In our study both majority of mothers use to practice both i.e.(Demand & interval feeding) in both the areas & its association with both underwt & stunting was found to be significant. In another study by Vyas S et al in Uttarakhand demand feeding was on the higher side as compared to interval feeding.<sup>12</sup> Contrast findings were given at Goa by Cacodkar J majority of mothers (58%) practiced “on schedule” breast feeding whereas (42%) practiced “on demand” feeding.<sup>17</sup>

In our study breastfeeding was given till 1-2 years in majority of children in both the areas(44%) but in rural areas majority were continuing it for longer duration as compared to urban set up whereas in urban area more mothers discontinued their feeds after 6 months as compared to their rural counterparts. Our findings are comparable to Cacodkar J at Goa,<sup>17</sup> where 36.09% of the mothers continued breastfeeding for a period of 12 to 24 months & Hegde J at Karnataka where higher no of mothers (90.9%) continued to breastfeed the infant even after 1 year of age.<sup>18</sup> But the figures were quite high as compared to our study. It was also found that underwt& stunting was higher in those children where breastfeeding was given for less than six months. The association was also found to be significant. Our findings

were well supported by Patel DV at Gujarat<sup>2</sup> where total duration of breastfeeding more than 1 year were associated with lower rates of severe malnutrition whereas at contrast findings were given by Mohan S where the relation between duration of breast-feeding with malnutrition in children upto 24 months was not found to be statistically significant.<sup>19</sup>

In our study Exclusive BF was practiced only by 18% of mothers which was more in the urban community (29%) as compared to rural ones (7%). According to another study by Vyas S in Uttarakhand EBF was practiced by only 5% of the mothers till six months of age.<sup>20</sup> Our figures are quite low as compared to a study by Hegde J at Karnataka,<sup>18</sup> & Rathore V<sup>21</sup> where 58% & 52.8% babies were given EBF for 6 months and still far short of the 11th plan target of 90%, all-India average of 46.4% and that of Uttarakhand (31.2%) too. Our study revealed a significant relationship between exclusive breastfeeding till six months and a lower prevalence of underweight and stunting in children. In our study the association between Exclusive Breastfeeding & underwt & stunting was also found to be significant. Corroborative findings were observed by Netri D et al<sup>13</sup> Islam S et al<sup>14</sup> & Rathore V et al<sup>21</sup> where the risk of stunting, wasting & underwt was higher in children who were not exclusively breastfed for six months. Several studies have documented that partial breastfeeding is associated with increased risk of child morbidity and mortality. Studies have also shown that about 25% infants in the age group of 0–6 months, who are not breastfed exclusively, remain at risk for infectious diseases and undernutrition

## 5. Conclusions

We conclude our study with the conclusion that breast high prevalence of malnutrition in our study may be related to Poor breastfeeding factors which were found to have a significant association with late initiation of breastfeeding, discarding colostrum, non Exclusive Breastfeeding, giving prelacteal feeds.

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None.

## 7. Conflict of Interest

None.

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## Author biography

**Shaili Vyas** Associate Professor

**Sushmita Sonkar** Ex-Student

**Sadhna Singh** Professor

**Abhay Srivastava** Assistant Professor

**Parul Sharma** Associate Professor

**Kajal Srivastava** Associate Professor

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