

## FEEDING PRACTICES AND ITS IMPACT ON NUTRITIONAL STATUS CHILDREN UNDER 2 YEARS IN A SELECTED RURAL COMMUNITY OF BANGLADESH

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### Abstract

**Introduction:** Malnutrition is one of the major underlying causes of morbidity and mortality in Bangladesh. Therefore exclusive breast feeding is the national feeding recommendation and induction of breast milk is especially encouraged immediately after birth. From the age of six months on words depends largely upon complementary foods to help them grow into healthy and active adults.

**Method:** A community based descriptive cross sectional study conducted with an aim to explore the impact of feeding practices on nutritional status among children from 6 months up to 2 years of age in a selected rural community of Mulaid village of Telihati union of Sreepur Upzilla under Gazipur district. The study was conducted from March 2012 to June 2012. Total sample was 227. Data collection was done by face to face interview of mother. Result: Among 227 children 42.7% were female and 57.3% were male. Mean age was 14.97 months. Majority 29.5% children were in age category of 6 – 10 months. Monthly family income was 3001 – 7000 Tk. Among 227 mothers, 55% attended primary school, 79.3% were housewives. Among 227 children 7 were never breast fed, 46.37% were exclusively breast fed, and 42.29% of children were started complementary feeding at appropriate age. Early initiation was found in 33.48% and late initiation was found in 24.23% children. Among 67 underweight children 47.8% were exclusively breast fed and 52.2% were not, 40.8% were given appropriate complementary food and 59.2% were not.

Among 69 stunted children 49.3% were exclusively breast fed and 50.7% were not, 43.1% were given appropriate complementary food and 56.9% were not. Among 70 wasted children 47.1% were exclusively breast fed and 52.9% were not, 45.7% were given appropriate complementary food and 54.3% were not. Feeding practice has impact on nutritional status. The percentage of malnourished children was also affected by mother's literacy, age, working status and family income.

**Conclusion:** Though the exclusive breast feeding practice is good among the respondents but the complementary feeding is poorly practiced by them and therefore need to be improved through better maternal education and family income.

**Key-words:** feeding practice, nutritional status, malnourished children

### Introduction

Adequate nutrition is a basic right and essential for attaining and maintaining proper health, and development of infants and children. Infant-feeding practices constitute a major component of child caring practices apart from socio-cultural, economic and demographic factors<sup>1-3</sup>. Exclusive breast feeding is the national feeding recommendation and induction of breast milk is especially encouraged immediately after birth when mother secretes colostrums. From the age of six months on words depends largely upon complementary food to help them grow into healthy and active adults<sup>4-6</sup>. World Health Organization (1994)

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reports that over half of the underweight children in the world are living in Asia and Africa, including children in India, Bangladesh, Sub-Saharan African countries. Nutritional status is a sensitive indicator of community health and nutrition<sup>7-8</sup> and malnutrition is one of the major underlying causes of morbidity and mortality in Bangladesh<sup>9</sup>. Poor quality complementary foods with low nutrient density and inappropriate feeding practices is one of the major causes of malnutrition in young children (WHO 2003)<sup>10</sup>. To achieve child survival and the prevention of malnutrition (MDG 3), the most effective preventive action are promotion of exclusive breast feeding and improved complementary feeding.<sup>11</sup> Malnutrition is responsible for 50% of deaths of children aged less than five years and about 100 million children sleep hungry at night<sup>12</sup>.

### Materials and methods

In this cross sectional study, a semi-structured questionnaire and checklist is used and data was collected by face to face interview. The total sample size was 227 and selected cluster sampling technique was followed. Our respondents were mother having children from 6 months to 2 years of age, both sexes and who were willing to take part in the interview. Before going to data collection questionnaire was pretested in the EPI corner of the pediatric outpatient department of Dhaka Medical College Hospital. Ethical clearance for the study was taken from the Ethical Review Committee of Dhaka Medical College. Informed written consent was taken from all study subjects. The age of the children was determined from the mother. Nutritional status of the children was assessed by the measurement of length and weight. Weight was measured by the bathroom scale and length was taken by non stretchable measuring tape after proper positioning of the children. Nutritional status was classified by using weight for height index. Statistical analysis was done by using SPSS windows package version 14. All the data expressed as mean and + SD.  $\chi^2$  test was used to see the level of significance. Confidence limit 95% ( $p < 0.05$ ) was taken as level of significance.

### Result:

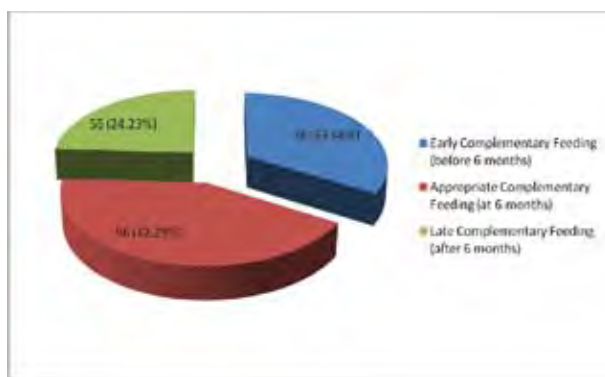
**Table-I:** Socio-demographic characteristics of study sample (n=227)

Characteristics	Frequency	Percentage%
<b>Age(in months)</b>		
6 – 10	67	29.5
11 – 15	56	24.7
16 – 20	54	23.8
21 – 25	50	22.0
<b>Mean <math>\pm</math>SD</b>	<b>(14.97 <math>\pm</math> 5.981 )months</b>	
<b>Mother's Occupation</b>		
Housewife	180	79.3
Agricultural Worker	1	0.4
Laborers	15	6.6
Business	1	0.4
Service	27	11.9
Others	3	1.3
<b>Monthly family income(tk.)</b>		
$\leq$ 3000	20	8.8
3001 - 7000	97	42.7
7001 - 11000	76	33.5
11001 - 15000	21	9.3
15001 – 19000	5	2.2
>19000	8	3.5
<b>Median</b>	7000 tk.	
<b>Family size</b>		
2-4	129	56.83
5 – 7	82	36.12
8 – 10	15	6.6
> 10	1	0.45
<b>Mean <math>\pm</math>SD</b>	4.68 $\pm$ 1.74	

<b>No of children from 6 months to 2 years in family</b>		
1 – 3	186	81.94
4 – 6	37	16.3
7 – 9	4	1.76
<b>Mean <math>\pm</math>SD</b>	2.27 $\pm$ 1.397	
<b>Education of the Mother</b>		
Illiterate	57	25.1
Primary	126	55.5
Secondary	36	15.9
HSC	2	0.9
Degree	6	2.6
<b>Total</b>	227	100

**Table-II:** Breast feeding status of study children (n=227)

<b>Distribution of children by breast feeding</b>	<b>frequency</b>	<b>Percent (%)</b>
yes	220	96.9
no	7	3.1
<b>total</b>	227	100.0
<b>Duration of breast feeding</b>		
Less than 6 months	69	31.4
Up to 6 months	102	46.4
More than 6 months	49	22.2
<b>Total</b>	220	100.0
<b>Distribution of children by exclusive breast feeding</b>		
yes	102	46.57
no	118	53.63
<b>total</b>	220	100.0



**Fig-I:** Pie chart showing distribution of children by initiation of complementary food (n= 227)

**Table-III:** Association of mother's educational status and exclusive breast feeding practice (n = 220)

Educational Status of Mothers	Exclusive Breast Fed		Total
	Yes	No	
Illiterate	20 (37.0%)	34 (63.0%)	54 (100%)
Educated	82 (49.4%)	84 (50.6%)	163 (100%)
<b>Total</b>	102 (46.4%)	118 (53.6%)	220 (100.0%)

**Degrees of freedom (DF): 1**

**X<sup>2</sup> value: 2.503**

**p value: 0.12**

Out of 227 children majority 29.5% were in age category of 6-10 months. Mean of the age was 14.97 months and SD + 5.98 months, 57.3% were male and 42.7% were female. The highest 81.94% children were 1 – 3 months. Mean number of children in a family was 2.27. The 56.83% having 2 – 4 family members and mean number members in the household was 4.68. Majority 79.3% were housewives while rests of the mothers were working mother. Among the 227 mothers 55.5% attended primary school, 25.1% illiterate, 16.8% had completed SSC and HSC examination, majority of the fathers, 41.9% attended primary school and illiterate were 23.3%, completed SSC and HSC examination were 24.2% & 8.4% respectively. Rest was (1.8%) graduate. Monthly family income ranges from 2000 – 21000 Tk. The most frequent category of family income was 3001 – 7000 Tk.

Among 227 study children 96.9% were breast fed while 3.1% had never been breast fed, among breast fed 46.4% were breast fed up to 6 months whereas 31.4% were breast fed less than 6 months and 22.2% was breast fed more than 6 months. Exclusively breast fed 46.37% while 53.63% were not. Among the 227 study children 42.29% were started complementary feeding at appropriate age. Early initiation was found in 33.48% and late initiation was found in 24.23% children. Majority, 77.31% were fed rice as source of carbohydrate. Fruits & vegetables were given in (71.3%). Major source of protein was fish (32.03%). Children 29.04% were fed hotchpotch as a mixed food. Milk & milk product was taken by 18.52%. Regarding nutritional status by weight for length 12.8% of the children were severely wasted while 18.1% were moderately wasted and rest of the study children (69.1%) possessed mild wasting to normal nutritional status. By length for age. 14.5% of the children were severely stunted, while 17.2% were moderately stunted. Of the children was mildly stunted to normal nutritional status. By weight for age. 10.6% of the children were severe underweight. 22.9% were in moderately underweight. 37.9% children were in mildly underweight. Rest of the study children possessed normal nutritional status. Regarding association among the illiterate mothers 37% exclusively breast fed their children and 63% did not, whereas among the educated mothers 49.4% practice exclusively breast feeding and 50.6% did not. Among the 57 illiterate mothers 33.3% give appropriate complementary food to their children and 66.7% did not. Whereas among the 170 educated mothers 45.3% practice appropriate complementary feeding to their children and 54.7% did not. Among 193 lower middle class respondents 42.5% practice appropriate complementary feeding and 57.5% did not, whereas among 34 middle class respondents 41.2% practice appropriate complementary feeding and 58.8% did not. Among 67 underweight children 47.8% were exclusively breast fed and 52.2% were not. Among 69 stunted children 49.3% were exclusively breast fed and 50.7% were not. Among 70 wasted children 47.1% were exclusively breast fed and 52.9% were not.

Among 76 under weight children 40.8% were given appropriate complementary food and 59.2% were not. Among 72 stunted children 43.1% were given appropriate complementary food and 56.9% were not. Among 70 wasted children, 45.7% were given appropriate complementary food and 54.3% were not.

### Discussion

As child of today is the future flag bearer of tomorrow, this vast burden of malnutrition among children is worthy to be handled with great care & highest concern. Malnutrition is the major cause of death among under five children's in Bangladesh. We have overcome this obstacle to achieve MDG 4. With this point of view this study was carried out with the objective to detect the impact of inappropriate feeding practices on the nutritional status among children up to 2 years of age. Total 227 children of 6 months to 24 months were enrolled in the study. Among them most prevalent age group was 6-10 months 29.5% and least frequent age group was 21-24 months 22%. The present study selected this age group of children because the chance of malnutrition among this age group is higher<sup>13</sup>, here male child were 57.3%, and female child were 42.7%. In our study the average number of household members was 4.68 which is inconsistent 5.5 our national report<sup>51</sup>. Majority 79.3% of the respondent were housewives while other engaged in various occupations like laborer, service holder, business, agricultural worker, 25.1% mothers were illiterate but the majority 55.5% had completed their primary education. In contrast to this 23.1% fathers were illiterate, 41.9% completed primary education. Mother's education play a vital role in increasing receptivity to nutritional requirements of their infants and improved complementary feeding practice<sup>6, 2</sup>. Study revealed that 79% families were in the income group of 2000-5000 Taka, result is different from our national data because most of our respondents were garment workers<sup>15</sup>. Regarding feeding practices 96.9% children were breast fed, only 46.4% were exclusively breast fed and the result contradict with national data shows

64% children were exclusively breast<sup>16</sup> may be due to small sample size. Study revealed that 42.29% of mothers practices complementary feeding at the appropriate age result contradict with Child and Mother Nutrition Survey of Bangladesh 2005, revealed that 71% children start complementary feeding in due time. Our result contradicted with the national report because low family income, lack of knowledge and consciousness, working mothers and illiteracy of our study population. In 24 hours food taken, traditional complementary food hotchpotch was taken by 29.04% children. In this study mean height 73.30 cm and mean weight was 8.30 kg. This study found that 33.48% children were underweight, 30.84% of children were wasted, and 31.72% children were stunted. According to Bangladesh Bureau of Statistics & UNICEF 2005 the prevalence of underweight was 35.9%, the stunted was 34.5% and the wasted children were 19.8% (by z score). The present study is in agreement with national survey report in respect to the percentage of underweight and stunted children but differs from the percentage of wasted children. The explanation of this disparity of our result is due to short duration (less than 6 months) of breast feeding 31.4% and early introduction of complementary feeding (33.4%) among the respondents. Short duration of breast feeding and early introduction of complementary feeding is the risk factor for development of wasting in children<sup>17</sup>. The present study observed that maternal education has influence exclusive breast feeding practice to their children it was low among illiterate mothers only 35.1%, in contrast the educated mother 48.2% practiced exclusive breast feeding. Practice of appropriate complementary feeding is higher in educated mother 45.3% than illiterate mothers 33.3%. Das DK and Ahmed S found strong positive association between maternal education and exclusive breast feeding as well as complementary feeding practices in their study in rural Bangladesh. In the present study, our observation was appropriate feeding practice can influence the children nutritional status.



We found that exclusively breast fed children suffered less than none exclusively breast fed children from the burden of underweight and inappropriate complementary feeding practice cause more underweighted children than appropriately fed children. Srivastava et al and Malla et al in India and Nepal, found association between underweight and low rate of exclusive breast feeding<sup>10</sup>. Brown et al and Kuntal et al in their study found similar inference like our study that inappropriate complementary feeding practice has impact on the development of underweight in children<sup>1</sup>. The present study revealed that inappropriate feeding practice has a role in the development of stunting. Among the stunted children 50.7% were not breast fed and 56.9% practiced inappropriate complementary feeding. But our result didn't find any statistically positive association. The present study found that none exclusively breast fed children had more wasting (52.9%) than exclusively breast fed children (47.1%). We also found that inappropriate complementary feeding practice is responsible for wasting in 54.3% children in contrast appropriate practice (45.7%), but there was no significant association in our result. Muchina et al and Dinesh et al were in agreement with our result that wasting was not significantly associated with infant feeding practice.

### Conclusion

Study concluded that Breast Feeding was well practiced by the mothers of Mulaid village of Sreepur Upazilla. Exclusive breast feeding practice is also satisfactory in comparison to our national report. Complementary feeding is poorly practiced by the respondent mothers. Maternal education, occupation, family incomes have some contributory role in practicing appropriate feeding of their children.

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