

Infant and Young Child Feeding (IYCF) Practices by Rural Mothers of Bangladesh

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Abstract

Background: Infant and young child feeding (IYCF) practices play vital role for the growth & development in the early months of life. **Objective:** The purpose of the present study was to determine and to identify the patterns and influencing factors of feeding practices in infant and young children of 0-2 years old in Bangladesh. **Methodology:** A descriptive type of cross sectional study was carried out to assess the pattern of infant & young child feeding practices by the rural mothers of Bangladesh with a sample size of 450 during the months of January to December of 2015. **Result:** Out of 450 children, 51.1% are female & 48.9% are male. The proportions of infants with early initiation of breastfeeding (13.6%) and exclusive breastfeeding fewer than six months (57.3%) and infants who received complementary feeding at the age of 6–8 months (55.7%) were low. It showed that 90.4% of mothers have knowledge on exclusive breast feeding but only 57.3% of them have practiced it for 4-6 months. It further revealed that only 8.4% of mothers & 13.6 % of fathers were illiterate. The main problems revealed from the study were late initiation of breastfeeding, low rates of exclusive breastfeeding, and inappropriate complementary feeding practices. It further revealed that 69.3% of the respondents had two or less children and 30.7% had three or more children. **Conclusion:** Majority of the respondents have the knowledge on complementary feeding, knowledge on preparation of complementary feeding, knowledge on preparation of food by grains, knowledge on preparation of food by milk and milk products and knowledge on preparation of food by meat, fish, poultry, liver. [Journal of National Institute of Neurosciences Bangladesh, 2016;2(1): 19-25]

Keywords: Breastfeeding; child-feeding practices; cross-sectional studies; descriptive studies; exclusive breast feeding; infant-feeding practices; complimentary feeding

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Introduction

Infant and young child feeding (IYCF) practice comprises by breastfeeding as well as complementary feeding, it has major role in determining the nutritional

status of children. Poor feeding practices in infancy and early childhood results in malnutrition contribute to impaired cognitive and social development, poor school performance and reduce productivity in later life.

Malnutrition has been responsible, directly or indirectly for 67% of all deaths among children less than 5 years of age in India¹. Breastfeeding aspects, the dietary diversity and diet frequency aspects all together reduce the mortality and morbidity of young children from malnutrition.

Bangladesh, with about 340,000 childhood deaths per year, ranks number seven in the world along with other countries: India, Nigeria, China, Pakistan, DR Congo, Ethiopia, Afghanistan, Tanzania, and Indonesia are in the list of 10 countries with the most number of childhood deaths². In Bangladesh, infant mortality has continued a notable decline but it is still high compared to developed countries. Reducing infant mortality is both an ethical obligation and a pre-requisite to achieve the Sustainable development goals (MDG-4). The important reasons for high infant mortality rate in Bangladesh are the diarrheal diseases, respiratory infection, low birth weight, congenital anomaly and malnutrition and also related with limited use of healthcare services, availability of public health facilities, family planning services and community factors². At the community level, infant mortality might be influenced by specific cultures and customs, by geographical aspects such as climate and soil fertility and by the quantity and quality of infrastructure. Infants aged (0-5 months) who are not breastfed have 7-fold and 5-fold increased risks of death from diarrhea and pneumonia, respectively, compared with infants who are exclusively breastfed^{3,4}. At the same age, nonexclusive rather than exclusive breastfeeding results in more than 2-fold increased risks of dying from diarrhea or pneumonia⁵.

There are many wrong practices and perceptions prevailed among different socio-demographic groups. In Bangladesh, initiation of breast feeding immediately after birth proceeded by so called pre-lacteal/heating food feeds. About 98% new born are traditionally fed "heating foods" such as honey, sweeten water, or mustard oil with believe that these foods give strength and prevent colds during first few days of life and they also believed that pre-lacteal feed makes baby's voice sweet⁶. During first six months of life, breast milk should be fed alone and from then onwards it should be complemented with other sources of nutrition until at least 2 years of age⁷⁻⁸. In Bangladesh, two main reasons for stopping breastfeeding were observed which are insufficient breast milk and baby refusing the breast⁹. And other causes of poor breastfeeding rates in Bangladesh are lack of support for mothers to initiate and sustain breastfeeding and secondly the erosion made by breast milk substitutes companies. WHO

offers three recommendations for IYCF practices for children aged 6-23 months which are continued breastfeeding or feeding with appropriate calcium-richen 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 status¹⁰. The present study was therefore undertaken to determine and to identify the patterns and influencing factors of feeding practices in infant and young children of 0-2 years old in Bangladesh.

Methodology

This descriptive type of cross sectional study was conducted in 45 EPI Centers of ten upazilas of Dhaka, Gazipur, Kishoregonj, Feni and Chandpur districts. The study period was from January to December, 2015 for a period of one (01) year. Samples were collected by using purposive sampling technique to explore pattern of Infant and Young Child Feeding Practices by the rural mothers. The mothers of children (aged 0-23 months) attending at EPI centers for immunization were included in this study. Data were collected by trained volunteers regarding IYCF perceptions and practices by interviewing the mothers using pre-designed, pre-tested, semi-structured interviewer administered questionnaire in Bengali, the local language, based on local culture and customs. Only the mothers of children less than 24 (0-23) months were included in the study after obtaining verbal informed consent. The different variables considered were socio-demographic characteristics like age and sex of the child; age, literacy status, occupation and parity of the mothers; family type, per capita income (PCI) and type of perception and practice like timing of breastfeeding initiation, colostrums feeding, pre-lacteal feeds, duration of exclusive breastfeeding, bottle-feeding, complimentary feeding etc. Statistical analysis was performed by using Statistical Package for Social Science (SPSS) version 21.0 for Windows. Quantitative variables were expressed as mean and standard deviation. Categorical variables were expressed as proportions and percentage.

Results

This descriptive type of cross sectional study was carried out to assess the prevalence of Infant & Young Child Feeding Practices by the rural mothers of Bangladesh with a sample size of 450.

Table 1: Distribution of the Baby by Age (n=450)

Age of Baby	Frequency	Percentage
Less than 6 months	99	22.0
6 to 12 months	164	36.4
13 to 24 months	187	41.6
Total	450	100.0

In this study 41.6% of the baby was in 13 to 24 months followed by 36.4% in 6 to 12 months and 22.0% in less than 6 months (Table 1).

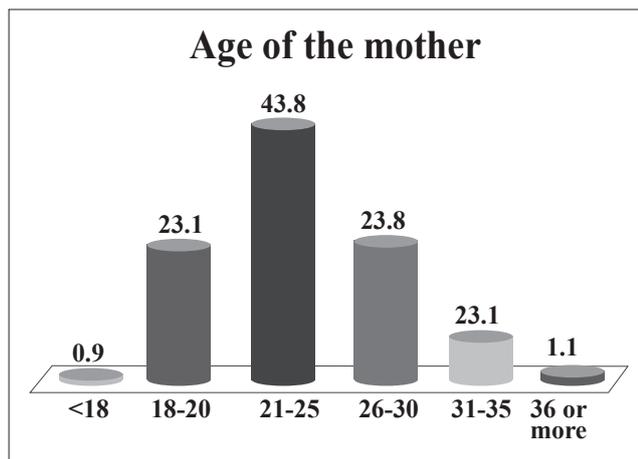


Figure I: Distribution of the mothers by age

In this present study 23.1% of mothers was in 18-20 years of age group, followed by 43.8 % was in 21 to 25 years, 23.8 % in 26-30 years, 7.3% was in 31 -35 years, respectively (Figure I).

Table 2: Distribution of the Parents by Educational Status (n=450)

Educational status	Mother	Father
Illiterate	38 (8.4%)	61(13.6%)
class v or less	84(18.7%)	122(27.1%)
Class vi -- x	211(46.9%)	190(42.2%)
SSC pass or more	117(26.0%)	77(17.1%)
Total	450	450

In this study 26% of mothers & 17.1% of fathers are SSC pass or more respectively, on the other hand, only 8.4% of mothers & 13.6 % of fathers are illiterate (Table 2).

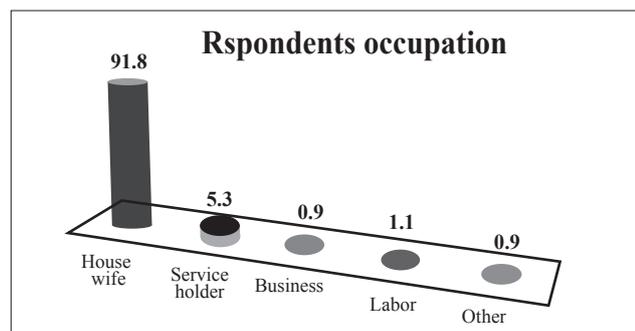


Figure II: Distribution of the Respondents by Occupation

Majority of the respondents (91.8%) was housewife and only 5.3% was service holder (Figure II).

Table 3: Distribution of the Fathers as Occupation (n=450)

Husbands Occupation	Frequency	Percentage
Farming	150	33.3
Service holder	85	18.9
Business	123	27.3
Labor	39	8.7
Other	53	11.8
Total	450	100.0

One third (33.3 %) of the respondents' husbands are farmer, 27.3% are businessman, 18.9% was service holder and only 8.7% was labor (Table 3).

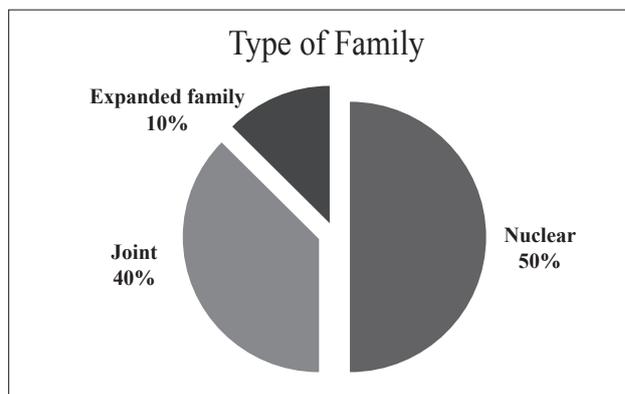


Figure III: Distribution of the Respondents by Type of Family

Half of the respondents (50.0 %) belongs to nuclear family, 40.4% in joint family and 9.6% lived in expanded family (Figure III).

Table 4: Distribution of the Respondents by Family Size (n=450)

Family size	Frequency	Percentage
3 or less members	75	16.7
4 - 6 members	269	59.8
7 -- 9 members	85	18.9
10 or more members	21	4.7
Total	450	100.0

In this study 16.7% of the respondents belonged to the family consisting of 3 or less members, & only 4.7% belonged to the family members of 10 or more (Table 4).

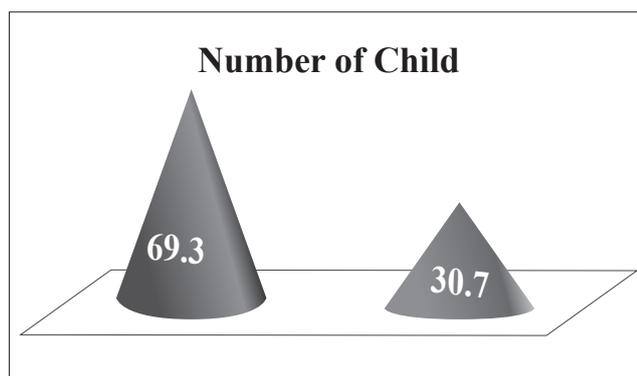


Figure IV: Distribution of the respondents by number of children

In this study 69.3% of the respondents have two or less children and 30.7% have three or more children (Figure IV).

Table 5: Distribution of the Respondents by Monthly Family Income (n=450)

Monthly income (TK)	Frequency	Percentage
< 5,000	150	33.3
5,001- 10,000	162	31.3
1 0,001- 15,000	142	14.9
15,001- > 20,000	46	10.2
Total	450	100.0

In this study 33.3% off the respondents monthly family income was BDT ≤ 5000, 31.3% was 5001-10000.14.9% was 10001-15,000 and 10.2% was 15001 to ≥ 20000 (Table 5).

Table 6: Distribution of the Children by Gender (n=450)

Gender of child	Frequency	Percentage
Boy	220	48.9
Girl	230	51.1
Total	450	100.0

In this study 51.1% of the children was girl and 48.9% was boy (Table 6).

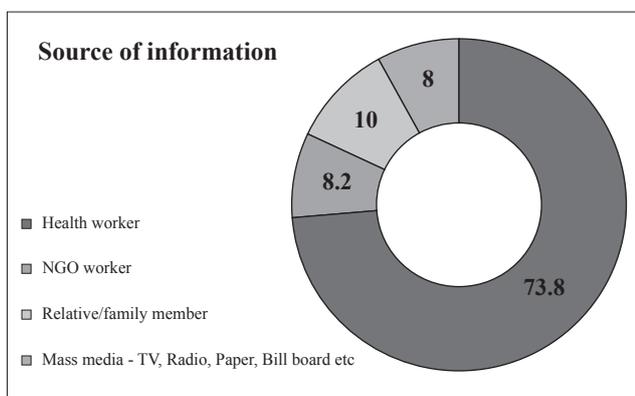


Figure VI: Distribution of the Respondents by Source of Information

In this study 73.8% of the respondents' got information from health workers followed by 10%, 8.2% and 8% from relative/family members, NGO workers and mass media respectively (Figure VI).

Table 7: Distribution of the respondents by Knowledge & Practices on colostrums (n=450)

Colostrums	Yes	No	Total
Knowledge	426(94.7%)	24(5.3%)	450(100.0%)
Practices	397(88.3%)	53(11.7%)	450(100.0%)

In this study 94.7% of the respondents have knowledge on colostrums but 88.3% of them have practiced it (Table 7).

Table 8: Distribution of the Respondents by Feeding of Pre Lacteal Meal (n=450)

Pre-lacteal meal Feeding	Frequency	Percentage
Yes	86	19.1
No	364	80.9
Total	450	100.0

Only 19.1% gave pre-lacteal meal to the baby (Table 8).

Table 9: Distribution by Initiation of Breast Milk (n=450)

Initiation of breast milk	Frequency	Percentage
Less than 1 hr	341	75.8
1 to 12 hr	96	21.3
13 to 24 hr	4	00.9
More than 24 hr	9	02.0
Total	450	100.0

It had been found that 75.8% of the respondents initiated breast milk in less than 1 hour followed by 21.3% in 1-12 hours, 2% in more than 24 hours and 0.9 % in 13-24 hours respectively (Table 9).

Table 10: Distribution of the Respondents by Knowledge on Exclusive Breast Feeding (n=450)

Knowledge on exclusive breast feeding	Frequency	Percentage
Yes	407	90.4
No	43	9.6
Total	450	100.0

Majority of the respondents (90.4%) had knowledge on exclusive breast feeding and rest of them did not have any knowledge on it (Table 10).

Table 11: Distribution of the Respondents by Duration of Exclusive Breast Feeding in Months (n=450)

Duration of exclusive breast feeding	Frequency	Percentage
Less than 1 month	39	8.7
Less than 3 month	63	14.0
Within 4 - 6 months	258	57.3
Within 7 -- 8 months	24	5.3
Up to 9 months or more	66	14.7
Total	450	100.0

It has been explored that 57.3% of the respondents fed exclusive breast feeding for 4-6 months, 14.7% for 9 months or more, 14% for less than 3 months, 8.7% for less than 1 month and 5.3% for 7-8 months (Table 11).

Table 12: Distribution of the Respondents by Feeding with Bottle (n=450)

Feeding with bottle	Frequency	Percentage
Yes	168	37.3
No	282	62.7
Total	450	100.0

More than 1/3rd (37.3%) of the respondents fed their baby cow/powder milk with bottle and rest of them did not feed (Table 12).

Table 13: Distribution of the Respondents by Starting Time of Bottle Feeding (n=450)

Starting time of bottle feeding	Frequency	Percentage
within 1 month	230	51.1
within 2 to 3 months	23	5.1
within 4 to 6 months	42	9.3
within 7 to 8 months	61	13.6
within 9 months or more time	84	18.7
Total	10	2.2

It is found that more than fifty person (51.1%) of the respondents started bottle feeding within 1 month & 18.7% in 9 months or thereafter (Table 13).

Table 14: Distribution of the Respondents by Duration of Total Breast Feeding in Months (n=450)

Duration of total breast feeding	Frequency	Percentage
Up to 3 months or less	22	4.7
Within 3 -- 6 months	93	20.6
Within 7 --12 months	62	13.6
Within 13 -- 24 months	273	61.1
Total	450	100.00

Majority of the respondents (61.1%) breast fed their baby 13-24 months & only 4.7% fed up to 3 months (Table 14).

Table 15: Distribution of the Respondents by Frequency of Breast Fed in Last 24 Hours (n=450)

Frequency of breast fed in last 24 hours	Frequency	Percentage
3 times or less	43	9.6
4 to 6 times	121	26.9
7 times or more	135	30.0
Don't know	151	33.6
Total	450	100.00

It has been found that 30% of the respondent's breast fed their baby 7 times or more in last 24 hours & only 9.6% fed 3 times or less (Table 15).

Table 16: Distribution of the Respondents by Starting Time of Complementary Feeding in Months (n=450)

Initiation of complementary feeding	Frequency	Percentage
Before 6 months	50	11.11
Within 6 to 8 months	320	71.12
Within 9 to 12 months	58	12.89
After 12 months	22	4.88
Total	450	100.00

In this study 71.12% of the respondents started complementary feeding in the months of 6-8 months, 11.11% before 6 months, 12.89% in 9-12 months and only 4.88 % started it after 12 months (Table 16).

Table 17: Knowledge of the Respondents on Complementary Feeding (n=450)

Variables	Frequency	Percentage
Complementary feeding Preparation	301	66.9
Complementary feeding	390	86.7
Knowledge on food of grains	223	49.6
Knowledge on milk & products	250	55.6
Knowledge on food of meat, fish, poultry, liver	257	57.1
Knowledge on food made of eggs	235	52.2
Knowledge on Vit. A richen food	213	47.3
Knowledge on Iron richen products	227	50.4
Knowledge on fruits, vegetables	204	45.3

It is shown that majority of the respondents (86.7%) had knowledge on complementary feeding and 13.3% did not have it. In this study 66.9% of the respondents had knowledge on preparation of complementary feeding and rest of them did not have it. Out of 450 respondents 49.6% of the respondents had knowledge on preparation of food by grains and rest of them did not have it. More than half of the respondents (55.6%) had knowledge on preparation of food by milk and milk products and rest of them did not have it. Among the all the respondents 57.1% of the respondents had knowledge on preparation of food by meat, fish, poultry, liver and rest of them did not have. In this study 52.2% of the respondents had knowledge on preparation of food from eggs and rest of them did not have it. More than half (52.6%) of the respondents had no knowledge on preparation of food by Vitamin A richen fruits and vegetables and rest of them had it. Half of the respondents had knowledge on preparation of food by Iron richen products and rest of them did not have it. It is found that 54.7% of the respondents did not have knowledge on preparation of food from fruits, vegetables, leaves and rest of 45.3% had the knowledge (Table 17).

Table 18: Distribution of the Respondents by Feeding in Last 24 Hour (n=450)

Frequency of feeding	Grain, roots and tubers	Legume, seeds, pulses and nuts	Milk & Dairy products	Flash, meat, fish	Vit-A richen fruits/vegeta	Iron richen food	Others
No fed	69(15.3%)	90(20.0%)	103(22.9%)	130(28.9%)	107(23.8%)	150(33.3%)	111(24.7%)
1-2 times	100(22.2%)	73(16.2%)	87(19.3%)	63(14.0%)	59(13.1%)	45(10.0%)	41(9.1%)
3-4 times	110(24.4%)	37(8.2%)	29(6.4%)	28(6.2%)	13(2.9%)	12(2.7%)	12(2.7%)
5-6 times	25(5.6%)	14(3.1%)	36(8.0%)	15(3.3%)	10(2.2%)	4(0.9%)	2(0.4%)
Did not know	143(32.4%)	236(52.4%)	197(43.2%)	215(47.5%)	262(57.3%)	239(52.2%)	284(62.2%)

Among the respondents 24.4%, 82%, 6.4% , 6.2% and less than 3% fed 3-4 times of grain roots and tubers, legumes, seeds, pulses and nuts, dairy products, flash and Vit. A richen fruits/vegetables, iron rich food and others respectively (Table 18).

Discussion

Early initiation of breastfeeding, exclusive breastfeeding for six months, and timely introduction of complementary feeding are the key interventions to achieve the Sustainable Development Goal 1 and 4, which address child malnutrition component of the targets and mortality respectively¹¹⁻¹². The present study revealed that 41.6% of the children belong to group of 13–24 months, 36.4% to 6 – 12 months and only 22% to less than 6 months & out of 450 children, 51.1% are female & 48.9% are male which correlates with census demography of Bangladesh. 69.3% of the mothers have only two or less children. 33.3% of respondents belonged to family income of TK less than 5000/ & only 10.2% to family income of TK more than 20,000. It further revealed that 23.1% of mothers were in 18-20 years which indicates early motherhood. It further revealed that only 8.4% of mothers & 13.6% of fathers are illiterate, 91.8% of mothers are housewife & 33.3% fathers are farmers respectively.

Initiation of breastfeeding within one hour of birth was more (75.8%) than the corresponding national (24.5%) figure of the NFHS 3 in India¹³. A study in Ghana reported that 22% of all neonatal deaths could be prevented if all women could initiate breastfeeding within one hour of delivery¹⁴. The use of pre lacteal feeding was far less (19.1%) compared to the corresponding reported by Roy et al¹⁵. The corresponding figures were 8% in rural Bangladesh¹⁶ and 71% in urban Bangladesh¹⁷.

The present study revealed that exclusive breastfeeding less than six months (57.1%) which is similar (58.6%) to the report of West Bengal of India¹⁸. The declining rate of exclusive breastfeeding with age was also

reported in the NFHS³ study in India^{13,18} and by Saha et al¹⁶ in Bangladesh and Hop et al¹⁹ in Vietnam in longitudinal studies. Several studies showed that partial breastfeeding was associated with increased risk of child morbidity and mortality^{11,20-21}. Even introduction of plain water was reported to interfere with breastfeeding²².

The proportion of bottle-feeding (37.3%) in the present study was comparable with results of a study by Wamani et al²³; however, less than the reported by Pandey et al²⁴ from rural West Bengal, India. Cousens et al²⁵ found that, when prolonged breastfeeding was accompanied with complementary solid foods, there was a reduction in clinical malnutrition. It is worthwhile to note that the percentage of complementary feeding improved a lot (93.6%) at 9 to 11 months of age. Saha et al¹⁶ and Hop et al¹⁹ have corroborated the findings.

Studies in Malawi revealed that children who were given foods according to the time schedule recommended by the WHO were found to be well-nourished compared to children who received complementary feeding early²⁶. A study in Bangladesh documented that the frequency, amount, energy-density, and diversity of food remained important issues in complementary feeding²⁷. Factors, such as characteristics of diet or child's appetite, traditional beliefs and practices are known to influence the frequency of complementary feeding^{23-24, 28-29}. As for inappropriate complementary feeding practices, late introduction, low frequency, and inadequate amount of solid or semi-solid food turned out to be the areas of main thrust. In Bangladesh, infectious diseases, such as diarrhea and acute respiratory infections, are a cause of more than two-thirds of all deaths in children aged less than one year. The importance of breastfeeding in the prevention of infectious diseases during infancy is well-documented. Breast milk provides protection against pathogens by providing antibacterial and antiviral substances that stimulate the infant's immune

system. Factors that interact with the protective effect of breastfeeding include environmental, cultural and economic characteristics. The protective effect of breastfeeding is most important in populations with high infant mortality, high illiteracy, poor sanitation facilities, poor nutritional status, and generally low economic status. The population of Bangladesh fits all of these criteria. Intervention programs should strive to improve conditions for enhancing current infant feeding recommendations, particularly in low-income conditions like Bangladesh.

Conclusion

The recommendation from the Global Strategy for Infant and Young Child Feeding Practices, developed by World Health Organization (WHO) in collaboration with United Nations Children's Fund (UNICEF), is that infants should be exclusively breastfed for the first six months of life; after six months, infants should receive nutritionally-adequate and safe complementary foods while continuing to be breastfed for up to two years of age or beyond and make awareness raising initiatives for Infant and Young Child Feeding (IYCF) Practices from GO and NGOs.

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