

Original Article



Complementary Feeding Practices Among Mothers of Rural Bangladesh; A Knowledge, Attitude, and Practice Study

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Abstract

Background. In developing countries, inadequate knowledge and cultural practice on complementary feeding (CF) is one of the main reasons for malnutrition. **Objective:** This study aimed to document the knowledge, attitude, and practices pertaining to CF among the mothers of rural area in Bangladesh. **Materials and Methods:** A community-based cross-sectional study was conducted in upazila health complex, kachua, Chandpur from July to December, 2017. A total 408 mothers of the babies aged 6-24 months and children under six months were included. Data were collected from the mothers/caregivers of the children in a pretested semi-structured data collection sheet and analyzed by SPSS version 20. Appropriate statistical tests were done. Statistical significance was considered if p value was <0.05 . **Results:** Knowledge regarding recommended CF practice only 50.8% but feeding should be started at 6 months of age (52.9%), thick consistency (40.2%), adequate quantity (61.8%), and appropriate quality (62.3%) cases. Knowledge in recommended appropriate timing and consistency varied significantly with maternal education. Frequency of CF was not appropriate in many cases. Most common first complimentary food was thick dal with rice/roti, khichuri rice 166(40.7%). One hundred twenty four (30.4%) mothers did not properly clean their hands before feeding and 138(33.8%) of mother used bottle for feeding, force full feeding (56.9%) and environment during feeding playing 72.5% and roaming around 25.5%. **Conclusion:** CF knowledge and practices are far gap from ideal in our country. Awareness building in the community may change improper feeding practices need health education.

Keywords: Complementary Feeding; Infant-Feeding; Maternal Knowledge; Rural Area; Bangladesh.

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Introduction

Introduction of safe and nutritious foods at about 6 months of age in addition to breastfeeding (BF) is referred to as complementary feeding (CF).¹ Appropriate complementary feeding depends on accurate information and skilled support from the family, community and health care system. Inadequate knowledge about appropriate foods and feeding practices is often a greater determinant of malnutrition than the lack of food.² Adequate CF entails feeding children age between 6 and 23 months foods at least twice a day.^{3,4}

Globally, optimal BF could prevent 13% of death under five children with appropriate CF practice 6% of death reduction in under five mortality.⁵

CF is also influenced by cultural practices, beliefs and knowledge of parents regarding appropriate practices.⁶ In developing countries, inadequate knowledge on CF is one of the main reasons for malnutrition.⁷ However, part of the population, including health professionals, does not know of the scientific advances in this field.⁸ Recently study in Dhaka

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Medical College, Dhaka City Showed that amount consumption and consistency of complementary food are not optimal.⁹ Studies on prevalent practices and knowledge about CF are sparse in rural.¹⁰

The current study was undertaken to find out the knowledge attitude, and practices of rural area of Bangladesh.

Materials and Methods

Community based cross-sectional study design was used to determine BF and CF practices (outdoor and indoor), Upazila Health Complex, Kachua, Chandpur, Bangladesh from July, 2017 to December,2017. Four hundred eight mother-child pairs were included by non-random convenience sampling. Semi-structured data collection sheet the questionnaire were included socio-demographic characteristics, knowledge on CF, attitudes and CF practice of mothers with infant between 6-24 months. Children under six months children having major illness interfering were excluded after taking history and physical examination.

The data collected were analyzed using SPSS version 20 and presented using descriptive and inferential statistics such as Chi-square test with the level of significance set at <0.05.

Case Definitions A proper CF consists of foods that are rich in energy and in micronutrients (especially iron, zinc, calcium, vitamin A, vitamin C and foliates), free of contamination (pathogens, toxins or harmful chemicals), without much salt or spices, easy to eat and easily accepted by the infant, in an appropriate amount, easy to prepare from family foods, and at a cost that is acceptable by most families.¹¹

Appropriate complementary foods are Khichuri, Mixed family foods (Rice, pulses, vegetables, meat, egg and fish), Bread, Pitha, Fruits, Locally processed complementary foods etc. Inappropriate complementary foods are Rice gruel, Rice gruel with Sugar, Rice gruel with Milk, Suji (Wheat), Suji with Milk, Suji with Sugar, Sago, Burly, Sugar water, Animal milk, Formula, Commercial cereal, Fast foods etc.¹² Khichuri is a dish prepared by mixing rice, lentils, oil, vegetables, egg/meat/fish etc.

Fast foods are prepared and served very quickly. While any meal with low preparation time can be considered fast food, typically the term refers to food sold in a restaurant or store with preheated or precooked ingredients, and served to the customer in a packaged form for take-out/take-away e.g. Burger, Sandwich, French fries, Pizza, Hot dog, Noodles, Fried chicken, Chips, Biscuits, Soft drinks, Commercial juices etc. Timely meaning that they are introduced when the need for energy and nutrients exceeds what can be provided through exclusive and frequent breastfeeding; Adequate meaning that they provide sufficient energy, protein and micronutrients to meet a growing child's nutritional needs.¹³

Frequency of CF was defined according to recommendation of Integrated Management of Childhood Illness (IMCI) by WHO/UNICEF. Quantity of complementary foods were defined according to IYCF (Infant and Young Child Feeding) recommendation. Knowledge about CF was assessed by asking about optimum initiation time, types of recommended complementary foods, frequency and quantity.

Verbal consent was taken from the mothers/caregivers of the children after discussion about the study. Confidentiality was strictly protected.

Results

The study population comprised 408 mothers of children aged 6-24 months, where mean age were 14.17 months. Most children 359 (88%) were from Muslim families followed by Hindu 49 (12%). Religion had no significant influence on initiation, type of first CF, current main CF and frequency of CF (p>0.05). Most mothers started CF early due to the perception that their babies were not getting enough breast milk 358, (87.7%), by advice of elderly members of the family 31(7.7%) and don't know about time of initiation of CF 19 (4.6%) (Table-I) .

Table I: Distribution of respondent by age (Month), (n=204), mean age was 14.17 month.

Frequency	Frequency	Percent
<2	2	1.0
2-4	5	2.5
5-7	23	11.3
8-10	40	19.6
11-13	40	19.6
>14	94	46.1

Mean±StdDe=14.17±10.742, Minimum=2, Maximum=144

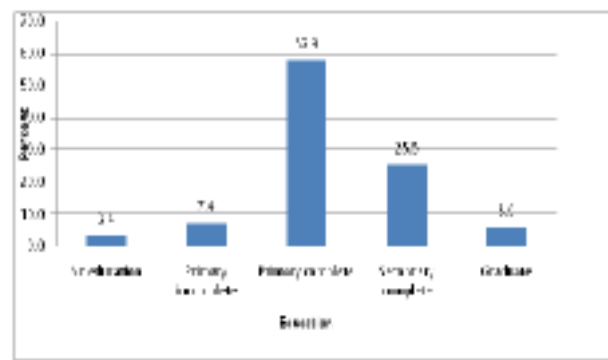


Fig 1 Distribution of educational level of mother in the study sample

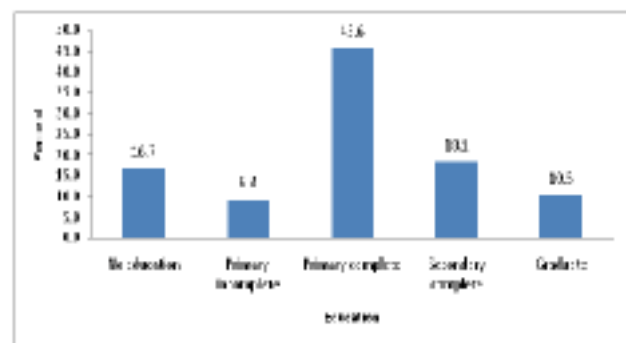


Fig 2 Distribution of educational level of father in the study sample.

Fig-1 and 2: Revels that the education level of most of the parents were upto primary completed.

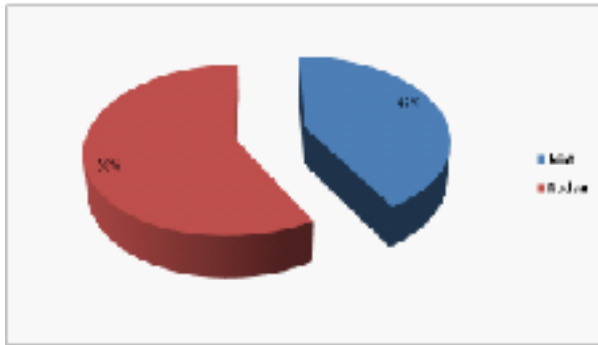


Fig 3: Distribution of family type .(Majority of parents belongs to joint family.)

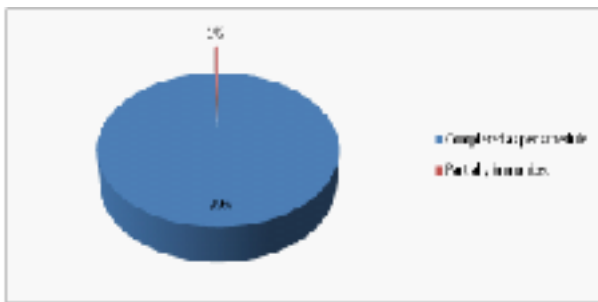


Fig 4 Immunization status.(99% children were immunized)

Table II: Type of occupation of parents in sample(Home maker was the occupation of most of the mothers (96%)whereas the majority of father was service holder (43.1%)

Mothers occupation n=408	
Homemakers	392 (96%)
Working	16 (4%)
Fathers occupation n=408	
Service	176 (43.1%)
Business	56 (13.7%)
Others	174 (42.6%)
Unemployed	20 (5%)

Table III: Age (month) of initiation of complementary feeding (n=408)

Age	Frequency	Percentage (%)
0-1 month	16	3.9
2-3 months	36	8.8
4-5 months	114	27.9
6-7 months	216	52.9
8-9 months	26	6.4
Total	408	100.0

Table IV: Analysis of the knowledge of mother /caregivers on complementary feeding (CF) (n=408)

Question response	Correct response	no (%) giving correct response
What is the recommended age to start CF?	From 6 months of age	(52.9%)
How many children were taken initial CF marketed weaning food?		(30.4%)
How many children were taken usual family diet?		(69.6%)
How many child offered commercial cereal after 6 month of age?		(9.2%)
How many children offered fast food?		(3.4%)
How many Childs and mothers hand washed with soap before meal?		(30.4%)
How many mothers used bottle for feeding?		(33.8%)
How many children given forceful feeding?		(52.9%)

Table V: Frequency of meal, consistency, quality and quantity of complementary feeding (n=408)

Question	Response-No. (%)
How many main meals per day given by after 6 months of age?	2 meal 60.8
	3 meal or more 13.4
Consistency of CF	Appropriate 51
	Thick 40.2
	Thin 8.8
Quality of CF	Appropriate for age 62.3
	Less for age 37.7
quantity of CF	Proper 61.8
	Less in quantity 38.2

Table VI: Environment during feeding practices

Environment during feeding		
Environment	Frequency	Percent
During TV viewing	4	2.0
During playing	148	72.5
Roaming around	52	25.5
Total	204	100.0

Table VII: If child refuses to eat his/her meal, what are the proper ways of persuading him/her to eat? (n=408)

Question	Type of response	No(%)
Environment during feeding	during playing and lovingly	(72.5%)
	Roaming around	(25.5%)
	Allow him to watch television	(2%)
Forceful feeding		(52.9%)

Table VIII: Type of first complimentary foods (n=384)

First complimentary foods	Number	Percentage (%)
Rice gruel with milk		42.6
Khichuri/thick dal with rice or mashed roti		42.7
Suji with milk	4	
Commercialcereal		9.2
Others		1.5

Discussion

In our study 50.8% of main caregivers had correct knowledge regarding initiation of CF. In studies in Sri Lanka and India revealed similar results 46% but higher in Sri Lanka 92%.^{14,15,16} Differences between the two studies may be due to the well-established community midwife service and high literacy rate in Sri Lanka than above countries. (Table-IV)

According to this study, initiation of CF at 6 months were reported by 52.9% of mothers. Almost similar results were found in studies done in Bangladesh and Ethiopia (34.2%) and (56.5%) respectively.^{17,18} This finding was also lower in slum area of Bangladesh and India by 23%, 17.5% and 16.6% respectively.^{14,16,19} The results of these studies are indicating that even their knowledge is better than practices, the strong cultural factors and beliefs affect their practices. (Table-III)

It was evident from current study most common reasons given for early introducing CF were did not having enough breast milk (87.7%). The finding was consistent with the another study where it is (84%) but lower than in other studies (49.2%), (30.6%) and (27.5%) respectively.^{19,17,14,20}

In this study, (6.4%) mothers had introduced CF after 6 months. A study conducted in Delhi where 77% mothers delayed CF similar in Nepal, 18.8% of them attributed this delay.^{14,20} In India, religious factor in Hindu families is responsible for late initiation.^{21,22} In Bangladesh, religious barrier is rare. (Table-III)

The current study revealed that (61.8%) of mothers were giving an adequate quantity of CF. The practice of quantity of CF Indian mothers were less in Allahabad (38.7%), urban slum area Delhi(25%) and south costal area (32 %).^{23,15,22} Study in urban slum area Dhaka showed (11%) children get adequate quantity from CF.¹⁴ This indicate that rural women are aware of quantity of CF. (Table-V)

However, when asked about the frequency of feeding, more than half (60.8%) of the mothers fed their children less than two times whereas 14.4% mothers fed three or more than three times a day. In India 39.3% child taken three or more feeds per day.¹⁹ In Pakistan, 50% of 12-23 month's old children received CF at the recommended frequency of three or four times a day.²⁴ This might be as a result of social, cultural and educational differences existed between the current study and others.

In this study, the appropriate consistency of CF was 51%. A similar finding has been reported from studies in Bangladesh, Ghana and Nepal.^{25,26,7} Most of the mother introduce thick food in rural area. (Table-V)

The present study shows that the rate of thin feeds only (8.8%) children. A study in a tertiary hospital in India (62%) were giving thin in consistency.² Urban mother used thin CF.

Behavioral studies observed that responsive feeding with psychosocial care practices has a positive effect on child growth and development.^{27,28} (Table-VI)

Bottle feeding had significant influence on initiation, type of first CF. So, once they are fed with bottle, they reduce want to suck breast or take complementary foods. The present study shows that the rate of bottle-feeding was (33.8 %). Similar result observed in another study(26%).²⁹ Bottle feeding was practiced low in many Indian studies.^{30,31,22} But mothers were using bottle high prevalence in Sikkim(46%).³² Bottle feeding is easy for baby, so it is popular in low income area. But parents had inadequate knowledge regarding hazards of bottle feeding practices.

In this study hygiene practices during food preparation such as (30.4%) of mothers washed their hands before preparing foods. Similar result in Nigerian and Indian showed that (28%) and (20.4%) of mothers washed their hands before preparing their foods.^{33,34} In one study in Dhaka urban slum area about 83% of non exclusive breast feed mothers wash hand.¹⁹ So, picture of good practice about hygiene more in urban than rural.

When joint family culture was more in our society, elderly persons of the family, especially mother-in-laws usually lack of adequate knowledge and misconceptions used to guide and influence the mothers about CF. In the present study, majority were in joint families. Similar findings were observed by an Indian study.³⁵ (Fig-3)

Rice gruel with milk as first complimentary food is not an appropriate choice. Rice is the main staple food in our country. Animal milk is considered as highly nutritious food for children in our society. In our study observed 42.6% child practiced it. Similarly, in a rural community of Malaysia but commercial cereal (Nestum) was most commonly used as the first weaning food.³⁶ However, 64% of mothers were using dal water as main weaning food in a locality of India.²² In our study Khichuri or dal with rice or roti feed about 42.6%. Similar result observed in two other studies done in a rural community in Bangladesh and in a slum of Dhaka city.^{37,38} Khichuri was the main complimentary food (49.7%) in another study in a rural area of Dhaka.³⁹ Our samples were representatives of rural, so different from other towns, villages and urban slum. (Table-VIII)

Commercial cereal feeding has been increasing day by day even in low income group in our country. This food is not recommended here, on the other hand various food items were used during CF. Current study revealed (9.2%) of mothers started with marketed weaning foods. Similar results of study in Bangladesh, showed that (15.1%) and Indian studies showed urban slum area tried marketed weaning food,^{14,17,33}

One study in Ethiopia 94.9% child of the age 6-11 years old, took commercial cereal.¹⁸ Another study by Manan WA in rural and semi-urban communities 38% of them had introduced cereals.⁴⁰ It had been found still low prevalence in rural area.

Conclusion

Nutrition education to the mothers/caregivers, family members and general peoples should be emphasized through local health care providers and all other possible opportunities should be utilized more effectively to increase awareness so that their attitude and practice are changed a lot to improve child survival.

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