

Age of Introduction of Complementary Feeding for under-Two Years Children in a Rural Area of Bangladesh

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ABSTRACT

Introduction: Proper human growth and development builds social capital, the foundation of which is laid in childhood through exclusive effective breastfeeding for the first six months, and thereafter complementary feeding. This study explored the time of introduction of complementary feeding in a rural setting of Bangladesh to contribute to policy guidelines. **Methods:** This cross-sectional descriptive epidemiological study was conducted among under-two years children in a rural area of Jashore district. Considering available resources, purposive sampling technique picked up peer-reviewed sample size of 234 under-two years children, whose mothers were interviewed on their child's complementary feeding practices. The information generated from analyzed data was interpreted through ethic approach. All ethical issues including avoiding plagiarism were taken care of. **Results:** Findings on mothers of under-two years children show that 143 (61.1%) had completed 6-10 years of schooling, 220 (94.0%) were involved in household chores, and majority 94 (40.2%) had monthly family income of Taka 5,000-10,000. Among the under-two years children, 71 (30.3%) were in modal age 19-24 months with mean of 13.4 months; and 108 (46.2%) were female and 126 (53.8 %) were male. Among under-six months children, 11 (22.9%) were initiated with complementary feeding. Among 6-24 months children, complementary feeding for almost all (94.7%) was introduced at 6-9 months age, where the mean age was 7.7 months. **Conclusion:** About one-fourth of the under six months children were being fed complementary food, while 162 (94.7%) of 6-24 months children were getting complementary food by 6-9 months age. Child-feeding practices appear as a complex of biological, psychosocial and economical phenomena. Further studies may be undertaken among those who initiate early and/or late complimentary feeding to identify causal constellation of factors in child-feeding practices in rural Bangladesh.

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INTRODUCTION

The World Health Organization (WHO) currently recommends exclusive breastfeeding for the children during first 6 months of life, followed by introduction of adequate and balanced complementary food.¹ The complementary feeding period accompanies a critical window of vulnerability, when energy-yielding food and micronutrient deficiencies can occur, because children have higher demands relative to increased requirements.² The Government of Bangladesh is implementing policy to sensitize its population to adopt timely complementary feeding for children.³

Bangladesh is a developing country in South Asia, where the population living in rural areas is more than in urban areas. The health care practices of rural people are different from those of urban people in some aspects. Also, within rural population there is variation among communities.⁴ This variation in practices is reflected in child-feeding practices too in terms of breastfeeding and complementary feeding.⁵ A rural area in Jashore district of Bangladesh was selected as the study area to explore the complementary feeding practices for under-two years children.

Adequate nutrition during infancy is essential to ensure the growth, health, and development of children to their full potential.⁶ Too early or too late introduction of complementary feeding may lead to nutritional deficiencies of essential minerals and vitamins.⁷ The intention of this survey was to explore the age of introduction of complementary food among under-two years children of a selected rural area of Bangladesh. This study was expected to give baseline data on breastfeeding practices in a selected area, so that the concerned can take measures accordingly. The findings of this survey may not be generalized for all children of Bangladesh, as only a selected population was studied. The type and

amount of complementary food, and reasons for early or late introduction of complementary food were kept out of purview of this study. More extensive issues could be brought under the study, but resource constraints limited its purview.

METHODS

This cross-sectional descriptive epidemiological study was executed in a rural setting of Chowgacha sub-district of Jashore district in Bangladesh during 2016. Under-two years children were the study population, and their mothers were the data source. Considering available resources, purposive sampling technique picked up peer-reviewed sample size of 234 under-two years children, whose mothers were interviewed on their child's complementary feeding practices. Face-to-face interview was the method of data collection using interviewer administered structured questionnaire. The data collection instrument was pretested before its finalization. At the end of each day of data collection, the data were sieved through for appropriateness and cohesiveness. Data were entered in computer for compilation for descriptive statistical analysis. The information generated from analysis was interpreted through ethical approach. Ethical issues as informed verbal consent; maintenance of anonymity and confidentiality; avoidance of deception; avoidance of physical, chemical, biological and psycho-social intervention; and avoidance of plagiarism were taken care of.

RESULTS

Majority 160 (68.4%) of the mothers of children were in the age group 20-30 years as depicted in Table I. The mean age of mothers was 24.2 years with a standard deviation of 1.8. About 9 (3.8%) mothers were illiterate. The modal group of years of completed schooling was 6-10 years which accounted for 143 (61.1%) of the mothers, is shown in Table II.

Table I: Age distribution of mothers of <2 years child (n-234)

Age group (in years)	Number	%	Mean (in years)	Standard deviation
<20	47	20.1		
20-30	160	68.4	24.2	1.8
30-40	25	10.7		
>40	2	0.9		
Total	234	100.00		

Table II: Educational status of mothers of <2 years child (n-234)

Educational status (completed years of schooling)	Number	%
0 (Illiterate)	9	3.8
<1	0	0.0
1-5	43	18.4
6-10	143	61.1
11-12	22	9.4
13-16	14	6.0
16+	3	1.3
Total	234	100.0

The highest 220 (94.0%) of the mothers' occupation was household chores as shown in Table III. The modal family income of the mothers was in the class interval of Tk. 5,000-10,000, which accounted for 94 (40.2%) of mothers. The mean monthly family income of mothers was Taka 11,773.50 as shown in Table IV. Table V shows that the modal age of under-two years children was 19-24 months, which accounted for 71 (30.3%). The mean age of children was 13.4 months, with a standard deviation of 0.9. Sex distribution of under-two years children In Figure-1 shows that 108 (46.2%) were female, while the rest 126 (53.8%) were male. Among the under 6 months child, 54 (22.9%) were initiated with complementary feeding, while 180 (77.1%) were not initiated, as shown in Figure 2. On attempts to find the age at which complementary feeding was introduced among less than 6 months child, it was seen that about 1-2 (10-20%) were initiated at any one month, as shown in Figure 3.

Delving into exclusive breastfeeding history in the first 6 months of life among 6-24 months children, Figure 4 reveals that 25 (13.4%) were exclusively breastfed, while the rest were not.

Table III: Occupation of mothers of <2 years child (n-234)

Occupation	Number	%
Household chore	220	94.0
Service-holder	5	2.1
Student	9	3.8
Total	234	100.00

Table IV: Monthly family income of mothers of <2 years child (n-234)

Income (Taka)	Number	%	Mean (Taka)
<5,000	37	15.8	
5,000-10,000	94	40.2	
10,001-15,000	47	20.1	
15,001-20,000	16	6.8	11773.5
20,001-25,000	18	7.7	
25,001-30,000	6	2.6	
30,001-35,000	16	6.8	
Total	234	100.0	

Table V: Age distribution of < 2 years child (n-234)

Age (in months)	Number	%	Mean (in months)	SD
0-6	48	20.5		
7-12	53	22.6		
13-18	62	26.5	13.4	0.9
19-24	71	30.3		
Total	234	100.0		

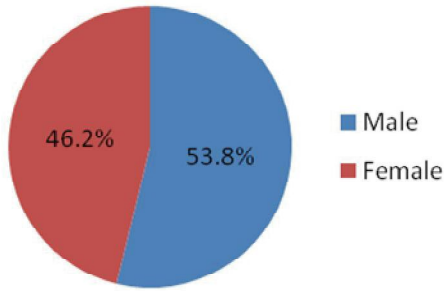


Figure 1: Pie chart showing sex distribution of <2 years child (n-234)

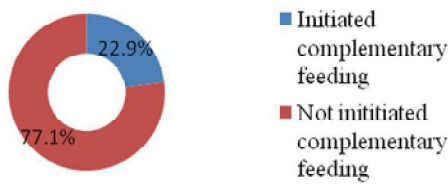


Figure 2: Doughnut showing initiation of complementary feeding of < 6months child (n-48)

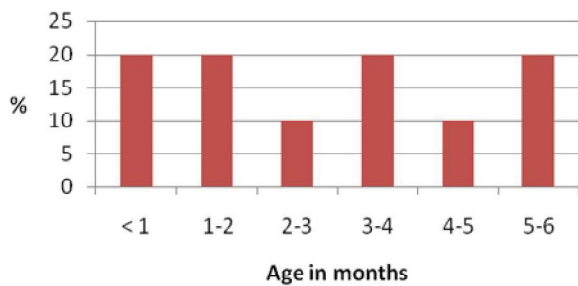


Figure 3: Bar chart showing age of introduction of complementary feeding of <6 months child (n-10)

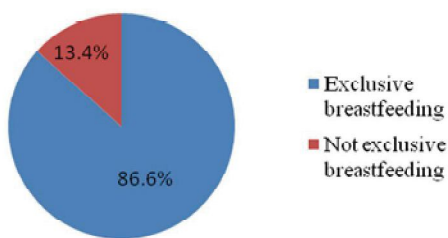


Figure 4: Pie chart showing history of exclusive breast feeding in first 6 months among 6-24 months child (n-186)

History of initiation of complementary feeding among 6-24 months child shows that 171 (91.9%) had initiated complementary feeding during the period, while the rest had delayed beyond this time period. This is shown in Figure 5. On attempts to find the age at which complementary feeding was introduced among 6-24 months child, it was seen that majority 162 (94.7%) initiated at 6-9 months age, as shown in Figure-6. The mean age of introducing complementary feeding among 6-24 months child was 7.7 months.

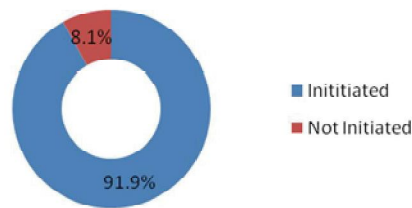


Figure 5: Doughnut showing initiation of complementary feeding among 6-24 months child (n-186)

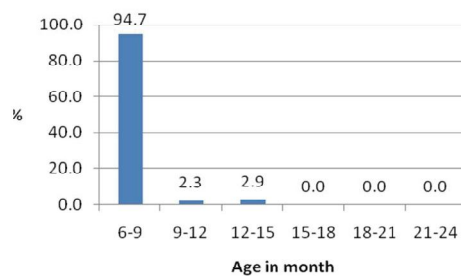


Figure 6: Bar chart showing age of introduction of complementary feeding among 6-24 months child (n-171)

DISCUSSION

The study in rural setting of Jashore shows that majority 160 (68.4%) of the mothers of under-two years children were in the age group 20-30 years. The mean age of mothers was 24.2 years. According to a report, the highest number of females were in the age group 25-54 years in Bangladesh.⁸ Majority of mothers of the study group include females within and past their

reproductive years. In Bangladesh, it appears that there is a norm of universality of marriage, where the legal age of marriage for females is 18 years, though some cases occur before the legal age.⁹ The highest age group and mean age of mothers indicate that after marriage, within next few years, the females prefer to give birth to children. About 9 (3.8%) mothers were illiterate. The modal group of years of completed schooling is 6-10, which accounts for 143 (61.1%) of the mothers. A study in the rural area of Bangladesh shows that about 60.0% mothers have completed 6-10 years of schooling,¹⁰ which corroborates the findings of this study. This probably points to gradually increasing trend in female education. It has been found that child survival is proportional to mothers' educational status.¹¹ In this study, the highest 220 (94.0%) of the mothers' occupation was household chores. Women's participation in labour market has shown a rising trend over the past years.¹² Besides the female wage earning labour, household chores is also considered as work with invisible wages. The modal family income of the mothers was in the class interval of Taka. 5,000-10,000, which accounted for 94 (40.2%) of mothers. The mean monthly family income of mothers was Taka 11,773.50. National data shows that the average monthly income of a family is Taka 11,480.00,¹³ which approximates the findings of this study. This probably implies that the area under survey is economically almost a nationally representative area.

The modal age of under-two years children was 19-24 months, which accounted for 71 (30.3%), and the mean age was 13.4 months. The mean age is not within the modal age group which may be due to the cumulative number in the other age groups of under-two years children. There were 108 (46.2%) female and 126 (53.8%) male among the under-two years children. The variation from the national figures of male: female ratio is probably due to chance and/or the

non-probability sampling technique used for picking up the study population. Complementary feeding was initiated in about 11 (22.9%) of under-six months children, while 37 (77.1%) did not receive complementary feeding. This is encouraging as majority appear to continue breastfeeding, probably exclusively, up to 6 months. This situation can be further improved through encouraging health literacy and health communication by field level health workforce. On attempts to find the age at which complementary feeding was introduced among under-six months children, it was seen that about 1-2 (10-20%) were initiated at any one month. This early initiation of complementary feeding is probably influenced by multifaceted social, economical, psychological, and biological factors, which calls for further probing.

Delving into exclusive breastfeeding history in the first six months of life among 6-24 months children, 25 (13.4%) were exclusively breastfed, while the rest were not. According to WHO, a child should be exclusively breastfed in the first six months of life.¹⁴ The findings of this study indicates that exclusive breastfeeding is not practiced routinely. The reasons behind such practice may be further delved into, and thereafter sensitization and awareness raising campaign may be undertaken. History of initiation of complementary feeding among 6-24 months children showed that 171 (91.9%) had initiated complementary feeding during the period, while the rest had delayed beyond this time period. On attempts to find the age at which complementary feeding was introduced among 6-24 months child, it was seen that almost all (94.7%) initiated at 6-9 months age. The mean age of introducing complementary feeding among 6-24 months children was 7.7 months. According to WHO, complementary food should be introduced in the child's diet soon after 6 months of age.¹⁵ This study finding corroborates

the WHO requirements in that the child is on complementary food after 6 months, where some may have initiated complementary food before completion of 6 months, while the rest initiated soon after 6 months. Reasons for initiation of complementary food before 6 months of the child need to be further investigated, and corrective social measures taken accordingly through health education

RECOMMENDATIONS

Child-feeding practices are the outcome of complex phenomena of biological, psychosocial and economical factors. The recommendations arrived at from this study are: (a) studies among those who initiate early complimentary feeding before 6 months or delay much after 6 months may be undertaken to understand the multifaceted factors that influence child-feeding practices; and (b) field level health workforce may be further trained to communicate with the mothers and/or primary care-givers of under-two years children on the standard appropriate feeding practice according to the age of the child.

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Conflict of Interest: There is no conflict of interest.

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