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Infant and Child Feeding Practices in Dhaka Urban Slums

Abdullah Hel Baqui
Ngudup Paljor
Quamrun Nahar
Diana R. Silimperi



**International Centre for Diarrhoeal
Disease Research, Bangladesh**

May 1993



The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) is an autonomous, non-profit organisation for research, education, training and clinical service. It was established in December 1978 as the successor to the Cholera Research laboratory, which began in 1959 in response to the cholera pandemic in southeast Asia.

The mandate of the ICDDR,B is to undertake and promote research on diarrhoeal diseases and the related subjects of acute respiratory infections, nutrition and fertility, with the aim of preventing and controlling diarrhoeal diseases and improving health care. The ICDDR,B has also been given the mandate to disseminate knowledge in these fields of research, to provide training to people of all nationalities, and to collaborate with other institutions in its fields of research.

The Centre, as it is known, has its headquarters in Dhaka, the capital of Bangladesh, and operates a field station in Matlab thana of Chandpur District which has a large rural area under regular surveillance. A smaller rural and a large surveyed urban population also provide targets for research activities. The Centre is organised into four scientific divisions: Population Science and Extension, Clinical Sciences, Community Health, and Laboratory Science. At the head of each Division is an Associate Director; the Associate Directors are responsible to the Director who in turn answers to an international Board of Trustees consisting of eminent scientists and physicians and representatives of the Government of Bangladesh.

The Urban Health Extension Project (UHEP) is a follow-on activity of the Urban Volunteer Program (UVP). In 1981, the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) began training women volunteers in urban Dhaka in the use of ORS packets for diarrhoeal disease on the assumption that community women could play an important role in teaching others about the home treatment of diarrhoea with ORS. The United States Agency for International Development (USAID) began funding the project in 1986 with a mandate to provide primary health care services to the urban slums and conduct research on child survival related issues. UHEP continues to focus on health and family planning issues of the urban slums with an overall goal to strengthen the ability of the government and non-governmental agencies to provide effective and affordable family planning and selected maternal and child health services to the urban poor through research, technical assistance, and dissemination of its research findings.

Urban Health Extension Project

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**International Centre for Diarrhoeal Disease Research, Bangladesh
Mohakhali, Dhaka 1212, Bangladesh**

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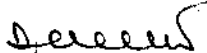
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Foreword

I am pleased to release these reports on urban health and family planning issues which are based on the activities of the Urban Health Extension Project (UHEP). UHEP is a follow-on activity of the former Urban Volunteer Program, a pilot project funded by the United States Agency for International Development (USAID).

The poor health status and the health needs of the urban poor continues to be an important emerging public health issue in the Developing World. Bangladesh is no exception. Despite the constraints of poverty and illiteracy, there are proven strategies to provide basic health and family planning services to the urban poor. In Dhaka alone, aside from the Government health care facilities, there are numerous NGOs and private sector providers giving needed services to the urban population. The Centre's own Urban Health Extension Project continues to focus on the urban poor, especially the slum populations, in providing basic family planning and health services through outreach activities (viz. health education, ORS distribution and referral services to service points).

However, enormous challenges remain in providing an optimum level of services to the urban poor. The UHEP, with the support of the USAID, will focus on health and family planning services delivery strategies in reaching the needed services to the urban poor. We certainly look forward to learning more about the health and family planning needs of the urban poor, testing sustainable strategies and applying these proven strategies in collaboration with other partners in government, NGOs and the private sector.


Demissie Habte, MD
Director

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This Working Paper is from the baseline information of the Urban Surveillance System (USS) of the Urban Health Extension Project (UHEP), ICDDR,B. The USS is a comprehensive health and demographic longitudinal surveillance of the slum populations of Dhaka. Numerous project staff are involved in the functioning and maintenance of the USS. Sincere acknowledgement is extended for the hard work and dedication of the USS staff, both the field-based staff and the data management and the project management support side of the USS.

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Dr. Sandra Laston, Anthropologist, UHEP, ICDDR,B
Dr. Charles Lerman, Resident Demographer, OPH, USAID, Dhaka
Dr. R. Bradley Sack, Associate Director, CHD, ICDDR,B
Ms. Sarah Salway, Demographer, UHEP, ICDDR,B/LSHTM, London
Dr. Mizan Siddiqi, Project Director, AKCHP, Dhaka

Urban Health Extension Project (Formerly, Urban Volunteer Program),
Community Health Division, International Centre for Diarrhoeal Disease
Research, Bangladesh (ICDDR,B)

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Summary

This report uses data from a probability sample of the urban slums of five '*thana*' of Dhaka city to describe infant and child feeding practices and to examine the differentials in the frequency of breastfeeding by non-milk and milk consumption status in infants less than six months of age. Data were collected from mothers of children less than five years of age. If a mother had more than one under-five year old child, information was collected for the youngest child. About 30% of the infants did not receive breast milk within three days of birth, meaning they did not receive colostrum. The prevalence of breastfeeding was high, but the prevalence of exclusive breastfeeding was very low. Only about 36% of the infants 0-2 months of age and 10% of the infants between 3-5 months of age were exclusively breastfed. Supplementation commonly occurred at an early age. About half of the 0-2 months old infants were receiving non-milk liquids; more than 30% of them were receiving milk supplements. Mean number of breastfeedings in study infants less than six months of age who were receiving either non-milk liquids or milk supplements was significantly lower than those who were not receiving these supplements.

Fortunately, the frequency and duration of breastfeeding is still high in Bangladesh. However, with modernization, the traditional practice of breastfeeding may quickly decline. The prevalence of exclusive breastfeeding is already low. Health planners can and should make efforts to retain the advantages of prolonged breastfeeding and promote exclusive breastfeeding up to 4-6 months of age. Health education programs should emphasize that supplementation be delayed until about six months of age when the risk of infection is outweighed by the risk of malnutrition.

Introduction

The Urban Volunteer Program (UVP), the predecessor of the Urban Health Extension Project (UHEP), of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), was conceived as an operations research and service-delivery pilot project. The primary objective of this project was to test the feasibility and impact of using women from slum communities to provide preventive health care and referral services to slum dwellers of Dhaka city. Special attention was paid to the health needs of women and children under five years of age. To improve child survival and maternal health, the project provided services in the following areas: diarrhoea, nutrition, immunization, and family planning. Infant and child-feeding practices are considered particularly important for improving child survival. Consequently, the project included a health education program on appropriate infant and child feeding practices in its nutrition curriculum.

To provide health education and referral services, the project recruited health volunteers from its catchment areas consisting of slum communities from five *thana* of Dhaka city. The majority of these volunteers were illiterate slum mothers. After recruitment, the volunteers received basic health training on diarrhoea, nutrition, immunization, and family planning of two week's duration. They also received refresher training for four days every four months. On an average, each volunteer provided outreach services to about forty households.

To collect reliable slum specific data necessary for program planning and to evaluate the effectiveness of its volunteer service delivery system, in 1990 the project developed a health and demographic surveillance system, known as the Urban Surveillance System (USS) in a sample from the slum populations of five *thana* in Dhaka city. In an effort to further develop its nutrition strategy, the project conducted a survey of prevailing infant and child feeding practices in the USS population. This report presents the findings of that survey.

Methodology

Sampling Procedure

The Urban Surveillance System (USS) is comprised of a probability sample of the slum communities of five *thana* of Dhaka city (UVP's "catchment" communities). It is based on multi-stage areal sampling; the sampling units are clusters of approximately 30 households. A sampling frame was created by mapping all the slums in the catchment communities. During mapping, information on the estimated number of households and estimated number in the population was collected for each slum. The slums were then divided into primary sampling units (PSUs). A PSU was a slum or segment of a large slum containing from 20 to 200 households. Slums of less than 20 households were excluded; those with more than 200 households were divided.

The PSUs were divided into eight strata based on some aggregate water and sanitation conditions. Information on water and sanitation was collected from a random sample of households in each PSU. The sample size required was estimated to be 168 clusters. A sample of this size would allow detection of a 2% difference in infant mortality rates with a 95% confidence limit between the intervention and non-intervention communities over a three-year period. The total first stage sample of 168 PSUs was allocated to strata approximately proportionate to the PSUs' population, subject to the provision that the number of PSUs in each stratum was a multiple of four, and did not exceed one quarter of the total

number of PSUs in the stratum. Each PSU was assigned a 'measure of size' equal to its number of clusters, this number being determined as the smallest integer that divides the PSU's total number of households into clusters of 20 to 50 households. PSUs were then selected with a probability proportional to size using the 'PPS sequential method'.¹ This method is relatively simple and has the added advantages of unbiased variance estimation² and capability of being updated.³ Each selected PSU was then divided, on the ground, by mapping team members into the number of clusters assigned prior to PSU selection. Finally, one cluster was randomly selected from each selected PSU yielding 168 clusters.

Data Collection

Household registration and a phase-I baseline survey which included information on household socioeconomic status, mothers' knowledge on immunization and immunization coverage, was carried out in the sampled clusters between January and April 1990. A phase-II baseline survey covering mothers' knowledge and practices regarding contraception, diarrhoea, nutrition, and infant and child feeding practices, was carried out between August and November 1990.

Data on the feeding component of the survey were collected from mothers of children less than five years of old. If a mother had more than one child under five years old, information was collected only for the youngest child. There were two reasons for restricting data collection to the most recent child. First, including all children under five years of age would imply having a large number of older children which would in

many instances involve long recall periods; accuracy of recall decreases as the recall period increases. Second, two or more children born to the same mother are not independent and including all of them in the analysis would violate some of the underlying assumptions of the statistical tests used.

Information was collected on breastfeeding status of children, frequency and duration of breastfeeding and, for children not breastfed, the reasons for not breastfeeding. Information was also collected on whether or not a child received plain water, sugar water, other liquids, fruits, semi-solid foods, fresh milk, powdered milk or solid foods. The answers were coded as no, received occasionally, received at least once a week and received daily.

Data Management and Analysis

Data were entered twice (entry and verification) into a microcomputer. All necessary range and consistency checks were made. Feedback was sent to the field for corrections whenever necessary.

The data were analyzed to calculate the percentage of children ever breastfed, age-specific prevalence of breastfeeding and exclusive breastfeeding, and age-specific prevalence of consumption of different types of foods and drinks. For this analysis, a child was considered to have consumed a particular type of food or drink if s/he received that food or drink at least once a week. A child was considered exclusively breastfed if s/he was receiving only breast milk and nothing else. To examine the

differentials in the frequency of breastfeeding, its bivariate relationships with age and various types of drink consumption status were determined for infants less than six months. Statistical significance was tested using Student's *t* statistic.

Although clusters of households were sampled, cluster adjustment was not made before evaluating for statistical significance. The data set was analyzed as if it was based on a simple random sample. This may have led to an overestimation of the statistical significance of differences.

Results

Age Distribution of Children Surveyed

To assess infant and child-feeding practices in Dhaka slums, information was collected on 2,059 child-mother pairs. Table 1 presents the age distribution of the infants and children surveyed.

Table 1. Age Distribution of Infants and Children Surveyed

Age in Months	Number (2,041)	Percent
0-2	107	5.2
3-5	129	6.3
6-8	162	7.9
9-11	182	8.9
12-17	254	12.4
18-23	323	15.8
24-35	394	19.3
36+	490	24.0

Note: The ages of 18 children were not known

Reasons for Not Breastfeeding

Forty two (2.0%) of the sampled children were never breastfed. Table 2 presents the reasons for failure to breastfeed. Mothers of 17 children (40.5%) who were not breastfed reported that the index child refused breastfeeding; 12 mothers (28.6%) reported that they did not have sufficient milk. Others cited maternal illness (21.4%), child illness (4.8%), or nipple/breast problems (4.8%).

Table 2. Reasons for Not Breastfeeding in Children Who Were Never Breastfed

Reasons	Number (42)	Percent
Child refused	17	40.5
Insufficient milk/ no milk	12	28.6
Mother ill/weak	9	21.4
Child ill/weak	2	4.8
Nipple/breast problem	2	4.8
Others	9	21.4

Note: Total adds to more than 100% as some mothers mentioned multiple reasons.

Breastfeeding Practices

Table 3 presents data on when breast milk was first given. Less than 10% of the infants received breast milk within one hour of birth. About half of the infants received breast milk on the first day after birth; about 10% received breast milk on the second, and another 13% received breast milk on the third day of life. About 30% of the infants did not receive breast milk within three days of birth, meaning they did not receive colostrum.

Table 3. Length of Time After Birth the Child Was First Put to Breast

Time after birth	Number (2,017)	Percent
Within 1 hour	189	9.4
<6 hours	617	30.6
6-11 hours	82	4.1
12-23 hours	55	2.7
2nd day	195	9.7
3rd day	262	13.0
After the 3rd day	609	30.2
Not known	8	0.4

Duration of Breastfeeding

Table 4 shows reported duration of breastfeeding for children whose mothers stopped breastfeeding prior to the survey (n=596). For 3.4% of the children, mothers could not recall how long breastfeeding was continued. About 9% of the mothers reported that their children received breast milk for less than six months. About 60% of the children continued to receive breast milk during their third year.

Table 4. Reported Duration of Breastfeeding for Children Whose Mothers Stopped Breastfeeding Prior to Survey

Number of months	Number (596)	Percent
0-5 months	54	9.1
6-11 months	37	6.2
12-17 months	61	10.3
18-23 months	93	15.7
24-29 months	144	24.2
30-35 months	108	18.2
36+ months	79	13.3
Unknown	20	3.4

Reasons for Discontinuation of Breastfeeding

Table 5 presents reasons for discontinuation of breastfeeding. The most commonly cited reason was weaning age (32.2%), followed by refusal of breastfeeding by children (27.1%). Other commonly stated reasons were mothers' becoming pregnant (22.1%), insufficient breast milk (19.7%) and maternal illness (10.6%).

Table 5. Mothers' Reported Reasons for Discontinuation of Breastfeeding for Children Whose Mothers Stopped Breastfeeding Prior to Survey

Reasons	Number (575)	Percent
Weaning age	185	32.2
Child refused	156	27.1
Became pregnant	127	22.1
Insufficient milk	113	19.7
Mother ill/weak	61	10.6
Child ill/weak	36	6.3
Nipple/breast problem	17	3.0
Working mother	14	2.4
Others	28	4.9

Note: Total adds to more than 100% as some mothers mentioned multiple causes.

Reasons not known for 19 children.

Prevalence of Breastfeeding

The prevalence of breastfeeding was high. More than 95% of the infants were breastfed. The prevalence of breastfeeding in children between 12-17 months was 90.9% and in children between 18-23 months was 82.4%. More than 60% of the children were breastfed during their third year of life and 22.4% of children were receiving breast milk in the fourth year of their life (Table 6 and Figure 1).

Table 6. Age-specific Prevalence of Breastfeeding

Age in Months	Number of Children Observed (2,041)	Percent of Children Breastfeeding
0-2	107	95.3
3-5	129	97.7
6-8	162	97.5
9-11	182	95.0
12-17	254	90.9
18-23	323	82.4
24-35	394	61.2
36+	490	22.4

Prevalence of Exclusive Breastfeeding

Although the prevalence of breastfeeding was high, prevalence of exclusive breastfeeding was extremely low (Table 7 and Figure 1). Only about 36% of infants between 0-2 months of age were exclusively breastfed and only 10% of the infants between 3-5 months were exclusively breastfed. As expected, infants six months or older were rarely exclusively breastfed.

Table 7. Age-specific Prevalence of Exclusive Breastfeeding

Age in Months	Number of Children Observed (2,041)	Percent of Children Exclusively Breastfeeding
0-2	107	36.4
3-5	129	10.1
6-8	162	4.3
9+	1,643	0.1

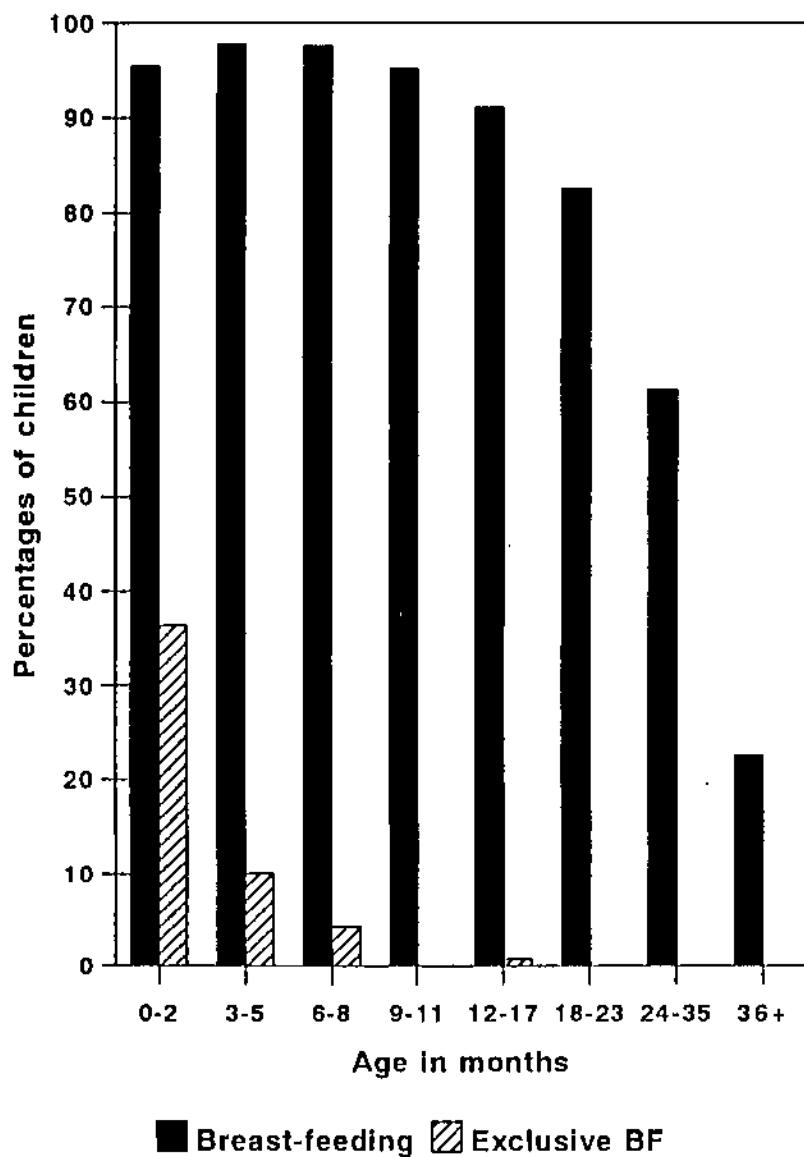


Fig. 1. Age-specific Prevalence of Breastfeeding and Exclusive Breast-feeding in Dhaka slums (n=2,041)

Supplemental Foods and Fluids

Table 8 presents the percentages of children receiving plain water, sugar water or other liquids by age. In our population about 40% of the infants 0-2 months of age and about 70% of those 3-5 months of age were receiving plain water. Almost all older children were receiving plain water. Some young infants were also receiving sugar water. The number of infants who were receiving sugar water was 18.7% in the 0-2 month old age group and 14.0% in 3-5 month old age group. About 10-12% of the children between the ages of six months and five years continued to receive sugar water. Some infants also received liquids other than plain water and sugar water. However, the prevalence of other liquid consumption was low during the first five months of life.

Table 8 and Figure 2 show the percentages of children who received non-milk liquids by age. An infant or child was considered to have received non-milk liquids if s/he was receiving one or more of the following: plain water, sugar water, or another liquid (for example, rice water, glucose water, fruit juice, etc.) at least once a week. About half of the 0-2 month old infants and about three quarters of the 3-5 month old infants were receiving non-milk liquids. After this age almost all the children were receiving non-milk liquids.

Table 8. Percent of Children Receiving* Plain Water, Sugar Water or Other Liquids by Age

Age in Months	Number of Children Observed (2,041)	Percent of Children Receiving			
		Plain Water	Sugar Water	Other Liquids	Non-milk Liquids**
0-2	107	40.2	18.7	4.7	50.5
3-5	129	70.5	14.0	5.5	74.4
6-8	162	90.1	9.3	8.0	90.7
9-11	182	97.8	12.2	6.1	97.8
12-17	254	98.4	11.4	9.1	98.8
18-23	323	99.7	13.0	16.2	99.7
24-35	394	100.0	10.7	13.4	100.0
36+	490	99.8	12.6	19.2	100.0
Overall	2,041	93.3	12.3	12.7	94.7

* Received at least once a week

** Children who were receiving one or more of the following: plain water, sugar water, and other liquids.

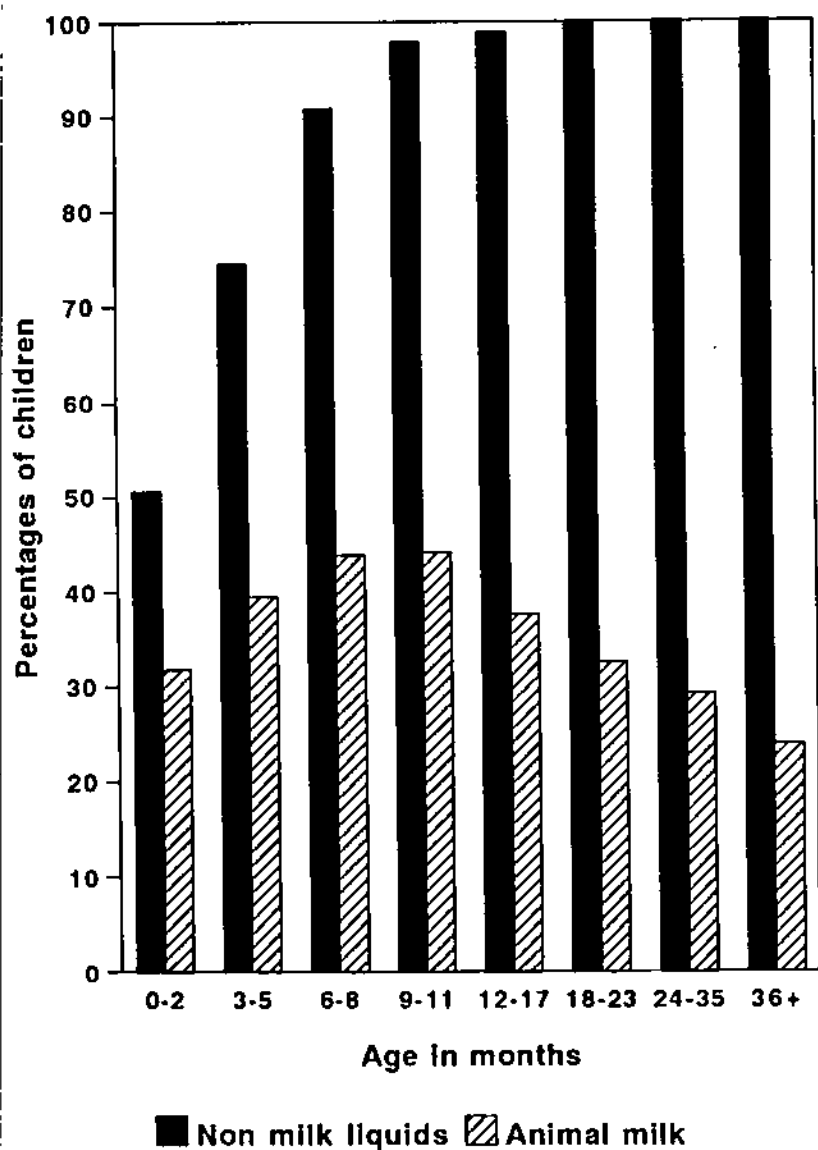


Fig. 2. Age-specific Prevalence of Consumption of Milk and Non-Milk Liquids in Dhaka slums (n=2,041)

Table 9 shows the age-specific prevalence of consumption of fresh milk and powdered milk. In our study few children consumed fresh milk. In contrast, a large number of young infants were receiving powdered milk. The prevalence of powdered milk consumption was 28% for 0-2 month old infants and about 35% for infants 3-5 months of age.

Table 9 and Figure 2 show the age-specific prevalence of milk consumption. An infant or child was classified as having received milk if s/he was receiving either fresh milk or powdered milk at least once a week. About one third of the infants 0-2 months of age and about 40% of the 3-5 month old infants were receiving milk. However, the prevalence of milk consumption did not substantially increase with age. Overall, only 32.8% of the children aged less than five years were receiving milk; this percentage varied between 24% and 44% during the first five years of life.

Table 9. Percent of Children Receiving Milk* by Age

Age in Months	Number of Children Observed (2,041)	Percent of Children Receiving		
		Fresh Milk	Powdered Milk	Either Fresh or Powdered Milk
0-2	107	4.7	28.0	31.8
3-5	129	7.0	34.9	39.8
6-8	162	6.8	37.0	43.8
9-11	182	8.8	37.4	44.0
12-17	254	9.8	29.5	37.8
18-23	323	11.2	23.8	32.5
24-35	394	10.2	20.3	29.2
36+	490	12.6	12.2	23.9
Overall	2,041	10.0	24.2	32.8

*Received at least once a week

The prevalence of fruit consumption was low in early infancy. The prevalence increased steadily with age. However, the overall prevalence of fruit consumption was 42% and only about half of the older children were receiving fruits (Table 10).

Table 10. Percent of Children Receiving Fruits* by Age

Age in Months	Number of Children Observed	Percent of Children Receiving Fruits
0-2	107	2.8
3-5	129	10.1
6-8	162	21.0
9-11	182	31.9
12-17	254	42.5
18-23	323	48.9
24-35	394	52.5
36+	490	56.9
Overall	2,041	42.1

* Received at least once a week

Table 11 shows the age-specific prevalence of semi-solid and solid food consumption. Almost one fifth (18.7%) of the 0-2 month old infants and more than half (51.9%) of the 3-5 month old infants were receiving semi-solids. The prevalence of semi-solid consumption peaked in 6-8 month old infants. Thereafter the prevalence declined. A small percentage of infants below the age of six months received solid food. As expected, this percentage steadily increased with age.

Table 11. Percent of Children Receiving* Semi-solid and Solid Foods by Age

Age in Months	Number of Children Observed	Percent of Children Receiving	
		Semi-solids	Solid Foods
0-2	107	18.7	0.9
3-5	129	51.9	7.0
6-8	162	59.9	37.0
9-11	182	47.8	76.4
12-17	254	33.9	88.2
18-23	323	25.4	97.2
24-35	394	16.8	99.8
36+	490	12.0	99.8
Overall	2,041	27.6	79.8

*Receiving at least once a week

Frequency of Breastfeeding

Table 12 presents the data on average number of breastfeedings per day in the sampled infants and children who were still breastfeeding at the time of the survey. The mean number of feedings was highest in infants 0-2 month of age. The mean number of feedings decreased with increasing age. The mean number and the median number of breastfeedings for each age category were similar suggesting that the data were more or less normally distributed. However, there was a lot of variability in the daily number of feedings. For example, in infants 0-2 months of age, the minimum and maximum number of breastfeedings per day was 3 and 37 respectively.

Table 12. Frequency of Breastfeeding During a Typical Day by Age in Dhaka Slums

Age in Months	Number of Children Observed	Number of Breastfeedings/Day					Mean ($\pm$ SD)** Number	Median (Range)+ Number
		1-6	7-9	10-13	14-17	18+		
0-2	98	6.1	27.6	22.4	22.4	21.4	13.6 $\pm$ 6.6	12 (3,37)
3-5	123	8.9	23.6	26.8	24.4	16.3	13.2 $\pm$ 6.2	12 (3,39)
6-8	146	12.3	18.5	26.0	22.6	20.6	13.0 $\pm$ 5.5	13 (4,28)
9-11	159	11.3	25.8	25.2	20.8	17.0	12.7 $\pm$ 6.4	11 (4,40)
12-17	220	20.9	27.3	30.4	13.6	7.7	10.4 $\pm$ 4.8	10 (2,32)
18-23	257	26.5	23.0	23.7	14.0	12.8	11.0 $\pm$ 6.6	10 (1,45)
24-35	233	43.4	22.8	20.2	7.3	6.4	8.5 $\pm$ 5.2	7 (1,30)
36+	105	59.0	18.1	19.0	1.0	2.9	6.6 $\pm$ 4.8	6 (1,30)

Note: * Data are percentages of children

** Mean ($\pm$ SD) number of breastfeedings during a typical day for the age category.

+ Median (range) number of breastfeedings for the age category

Table 13 shows the frequency of breastfeeding in infants less than six months of age by non-milk liquid consumption status, and Table 14 shows the frequency of breastfeeding in the same infants by their milk consumption status. These analyses were restricted to infants less than six months of age because ideally these infants should be exclusively breastfed and the purpose of the analysis was to examine whether milk or non-milk liquid supplementation affects the frequency of breastfeeding. The mean number of breastfeedings in infants who did not receive non-milk liquids was 14.5 per day and in infants who received non-milk liquids was 12.7. This difference was statistically significant ($p < 0.05$). The mean number of daily breastfeedings in infants who did not receive milk supplementation was 14.4 and in infants who received milk supplementation was 11.4. This difference was also highly statistically significant ($p < 0.001$).

Table 13. Average Number of Breastfeedings Per Day in Infants Less than 6 Months of Age by Their Non-milk Liquid Consumption Status

Received Non-milk Liquid	Number of Children Observed (238)	Mean ($\pm$ SD) Number *	Median (Range)** Number
No	92	14.5 $\pm$ 7.0	13.5(5,39)
Yes	146	12.7 $\pm$ 5.9	11 (1,38)

Note: * Mean ($\pm$ SD) number of breastfeedings during a typical day for the feeding status category. The difference was statistically significant ($p < 0.05$) by Student's *t* statistic

** Median (range) number of breastfeedings for the category

Table 14. Average Number of Breastfeedings Per Day in Infants Less than 6 Months of Age by Their Milk Consumption Status

Received Milk	Number of Children Observed (238)	Mean ($\pm$ SD)* Number	Median (Range)** Number
No	151	14.4 $\pm$ 6.9	13 (3,39)
Yes	85	11.4 $\pm$ 5.1	10 (1,30)

Note: * Mean ($\pm$ SD) number of breastfeedings during a typical day for the feeding status category. The difference was statistically significant ($p < 0.05$) by Student's *t* statistic

** Median (range) number of breastfeedings for the category

Conclusion

In our study population about 30% of the infants did not receive breast milk within three days of birth. These were the infants whose mothers abstained from offering colostrum, a practice which is not desirable. It is now well accepted that an infant should be put to the breast as soon as possible after birth. This increases the chance of successful breastfeeding⁴ and allows the infant to receive the early breast milk, or colostrum, which protects the infant against infections.⁵ It is important to investigate why such a large number of mothers did not offer colostrum to their newborn.

The prevalence of breastfeeding in our study children was high; many of the children aged three and four years were still receiving breast milk. The age-specific prevalence rates of breastfeeding that we observed were very similar to rates observed among urban poor about a decade earlier⁶ indicating that, unlike many other developing countries, the trend towards diminished breastfeeding did not appear to have occurred in Bangladesh. Although the prevalence of breastfeeding was high, prevalence of exclusive breastfeeding was extremely low. The biological advantages of breastfeeding are well known. However, it is important that exclusive breastfeeding is practiced up to about 4-6 months of age. Breast milk alone should be nutritionally adequate for most infants until this age.^{7,8}

Supplementation commonly occurred at an early age. In Bangladesh, it is traditional to give non-milk liquids, such as plain water or sugar water to very young infants. Among the infants surveyed, about half of the 0-2 month old infants and about three-quarters of the 3-5 month old infants were receiving non-milk liquids. Such feedings at this early age are not only unnecessary, they are undesirable and can be potentially harmful, as they may introduce infection to the child and may interfere with the successful establishment of breastfeeding.⁹ It would be important to investigate why mothers offer these non-milk liquids to their infants at this early age.

Thirty to forty percent of the infants less than six months of age were receiving milk supplementation. Supplementation with fresh animal milk was not common, but supplementation with commercial powdered milk began at an early age. Another supplementary food commonly given to infants less than six months of age was semi-solid cereal gruels. All these early supplements are potentially harmful for the following reasons: 1) breast milk alone should be adequate up to this age and giving supplementary food or drink decreases the infant's time at breast, limiting the supply of breast milk¹⁰ and 2) it is likely to introduce infection to the infants.⁹

Additional problems associated with milk supplementation in early infancy are: 1) it is expensive, 2) it is often over-diluted,⁹ 3) it is often given with a feeding bottle which is hard to clean, and 4) young infants are more likely to develop a milk protein allergy.^{11,12} Semi-solid cereal gruels are often calorie deficient. Therefore, supplementation should be delayed until about six months of age when the risk of infection is outweighed by the risk of undernutrition.

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For further information, contact:

Head, DJSC, ICDDR,B, GPO Box 128, Dhaka 1000, Bangladesh

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Urban Health Extension Project (UHEP)

International Centre for Diarrhoeal Disease Research, Bangladesh

GPO Box 128, Dhaka 1000, Bangladesh

Telephone: 600171 (8 lines); Cable: CHOLERA DHAKA, Telex: 675612 ICDD BJ;

Fax: 880-2-883116 and 880-2-886050