



A Comparative Study of the Breast Feeding Practice of Mothers between Rural Area and Urban Area in Bangladesh

Rasel Ahmed ^{a*}, Taslima Akter ^a, Sharmin Khatun ^b,
Md Salim Raza ^a, Ayesha Siddiqa ^c and Yousuf al Mamun ^d

^a Department of Applied Nutrition and Food Technology, Faculty of Biological Science, Islamic University, Kushtia, Bangladesh.

^b Khwaja Yunus Ali Nursing College, Enayetpur, Sirajganj, Bangladesh.

^c Tanzimul Ummah International Tahfiz School, Dhaka, Bangladesh.

^d Department of Biochemistry and Molecular Biology, Faculty of Biological Science, Primeasia University, Dhaka, Bangladesh.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

The exclusive breast feeding is ideal nutrition and sufficient to support optimal growth and development for approximately the first 6 months of life and the later age breastfeeding provides complete nutrition for infants and children. But it is not properly maintained in Bangladesh with limited resources, such as Sirajganj, where poverty and illiteracy are prevalent. Poor nutritional status during childhood can have long-lasting consequences in adulthood, including health, mortality, and human capital. It was a community based cross sectional comparative study which

*Corresponding author: Email: raselrk634@gmail.com;

was conducted on 500 hundred mothers and their 500 hundred children in which 250 mothers and 250 children from each of Sirajganj and Dhaka City were selected. The target respondents were selecting randomly. χ^2 test, and Pearson's correlation was performed as $P < 0.05$ level of significance. The study found that there was a higher number of female children and higher birth frequencies in Sirajganj and Dhaka City. The study assessed mothers' breast feeding practices, including knowledge of colostrums, first baby food feeding, initiation, and duration of exclusive breastfeeding. Sirajganj city mothers received more breastfeeding attention than Dhaka City mothers, with findings decreasing with child's birth order. Breast feeding privileges in Sirajganj City increase as mothers' education levels rise from low school to a bachelor's degree or higher. Breast-feeding prevalence in infants up to 12 months is influenced by factors like sex, maternal age, birth order, education, employment status, and mother's poverty income ratio. The sickness of children is also influence to stop breast-feeding. The child birth weight was found to comparatively lower in the Sirajganj city than Dhaka City.

Keywords: Mother; children; exclusive; colostrums; breastfeeding; nutrition.

1. INTRODUCTION

"Adequate nutrition during infancy and early childhood is essential to ensure the growth, health, and development of children to their full potential. The World Health Organization (WHO) and United Nations Children's Fund (UNICEF) recommend exclusive breastfeeding (EBF) for six months, i.e. 180 days and addition of complementary foods at six months of age with continued breastfeeding till at least two years" [1,2]. "Globally, optimal breastfeeding could prevent 13% of deaths of children aged less than five years while appropriate complementary feeding (CF) practices might result in an additional 6% reduction in under-five mortality, especially in developing countries as ours. Poor feeding practices, coupled with high rates of infectious diseases, are the proximate causes of malnutrition during the first two years of life. The second half of an infant's first year is especially a vulnerable time when breast milk alone is no longer sufficient to meet his/her nutritional requirements, and CF should be started" [3-6]. "The American Academy of Pediatrics recommended in 1997 that US infants be exclusively breast-fed for 6 month after birth [5].

Mother's knowledge related to feeding of babies also reflects the nutritional status of the child. Children completely depend on mothers for their nutrition. Breast-feeding and other dietary practices adapted by her reflect the nutritional status of the child. Breast-fed infant and children grow normally during the first six months of their life, and show slow grows during the transitional period of weaning because they do not get enough nutritious foods" [7-10].

"Children in rural area are most vulnerable to growth faltering during the period when

complementary foods are initiated, often coinciding with decreased breast milk consumption [11] and increased micronutrient deficiencies and diarrheal illness [12]. Inappropriate care and feeding practices are recognized as some of the underlying causes of undernutrition [13]. More specifically, lack of knowledge of optimal feeding practices and cultural beliefs contribute to deteriorating child nutritional status [14-16]. Common inappropriate complementary feeding practices include introducing foods too early or too late, limiting the diversity of foods, and providing an inadequate quantity of food [17,18,19,20].

"In urban area, an additional concern has been that the growth patterns of formula-fed infants may indicate that these infants are being overfed and that early over-feeding may be a significant risk factor in the development of overweight in children [6-9]. It is well known that both urban [10] area and rural area [19], breastfeeding provides adequate and appropriate nutrients for infant's growth and development [20], reduction in infant mortality and morbidity [21], protects infants against infections and promotes their survival" [21,22].

"Research in urban and rural area in Bangladesh, including middle-class populations in urban area, provides strong evidence that human milk feeding decreases the incidence and/or severity of a wide range of infectious diseases including bacterial meningitis [23-25]. Nutritional status is the result of complex interactions between food consumption, overall health status and care practices. At the individual level inadequate or inappropriate feeding patterns lead to malnutrition. Numerous socio-economic and cultural factors influence patterns

of feeding and nutritional status. Poor nutritional status is one of the most important health and welfare problems facing rural area. Over nutritional status is one of the most important health and welfare problems facing urban area” [15].

2. METHODOLOGY

2.1 Study Subject

The present study was conducted in selected area of Motijheel, Ramna, Dhanmondi and Lalbag in Dhaka City (Urban area). On the other hand the selected area was Ullapara, Shahjadpur, Belkuchi, Enayetpur, and Tarash in Sirajganj City (Rural area) during the period of January-December, 2023. A total 500 mothers and 500 Children’s were selected from the study area.

2.2 Study Procedure

The mothers were asked face to face interview and structured questionnaire was used in this study. There were two survey teams; each containing three (03) members, who were assigned to visit the mothers. It was also assigned that the survey team will not visit more than eight mothers per day to ensure quality of data to be collected and subsequent minimization of the possible error of the survey. At the end of day, the quality of interview and collected data were evaluated by the experts to ensure completeness and consistency. Incomplete and inconsistent data were corrected by re-visit and re-examine the relevant mothers. Informed written consent was taken from every respondent (mothers) explaining the objectives of this study and it was confirmed that the personal information will be kept confidential and any time they can withdraw their opinion if they want. In addition, a prior permission was also taken from the chief of the family for this study.

2.3 Analysis of Data

Data were analyzed using the SPSS software (version 11.5). Frequencies were calculated for descriptive analysis.

3. RESULTS AND DISCUSSION

3.1 Knowledge and Practice of Lactating Mothers on Colostrums and First Baby Food Feeding at Birth in the Study Area

In this study in Sirajganj city, 250 lactating mothers were assessed on the basis of

knowledge and practice of colostrums. Where 84.8% lactating mothers who have knowledge about colostrums but only 58% lactating mothers who were provided colostrums. On the other hand, in Dhaka City, 250 lactating mothers were studied on the basis of knowledge and practice of colostrums. Where 92% mothers who have the knowledge about colostrums but only 63.2% mothers who were provided colostrums as illustrated in the Fig. 1.

Furthermore, in this study, 500 children in which 250 children from each of Sirajganj and Dhaka City were assessed on the basis of providing first baby food at birth. In Sirajganj City, 145 (58%) children’s, 42 (16.8%) children’s, 35 (14%) children’s, and 28 (11.2%) children’s were found provided for colostrums, water, honey and other kinds of baby food respectively. On the other hand in Dhaka City, 158 (63.2%) children’s, 31 (12.4%) children, 27 (10.8%) children’s, and 34 (13.6%) children’s were found provided for colostrums, water, honey and other kinds of baby food respectively as presented in the Fig. 2.

3.2 Comparative Study of Initiation of Breast Feeding and Duration of Exclusive Breast-Feeding in the Sirajganj and Dhaka City

In this study, in Sirajganj City, 250 lactating mothers were studied on the basis of initiation of breast-feeding practice. Where 94% lactating mothers who were found to initiated breast-feeding. On the other hand, in the Dhaka City, 250 lactating mothers were studied on the basis of initiation of breast-feeding practice. Where 89% lactating mothers who were found to initiate breast-feeding in the Dhaka City as presented in the Fig. 3.

Furthermore, 500 children in which 250 children from each of Sirajganj and Dhaka City were assessed based on the duration of exclusive breast-feeding. Where only 51% children’s were found to continuing exclusive breast-feeding at 3 months of period and 27% children’s were found to continuing exclusive breast-feeding at 6 months of period in Sirajganj City. On the other hand in Dhaka City, 45% children’s were found to continuing exclusive breast-feeding at 3 months of period and 24% children’s were found to continuing exclusive breast-feeding at 6 months of period as presented in the Fig. 4.

Table 1. Socio-demographic characteristics of the study subject

Characteristics	Number & Percentage		χ^2	P value
	Sirajganj	Dhaka		
Sex of child				
Male	129 (51.6%)	115 (46%)	1.568	0.210
Female	121 (46.4%)	135 (54%)		
Children age in year				
<1 year	90 (36%)	110 (44%)	5.140	0.145
(1-2) years	105 (42%)	81 (32.4%)		
(2-3) years	40 (16%)	41 (16.4%)		
(3-5) years	15 (6%)	18 (7.2%)		
Birth order of child				
First	85 (34%)	120 (48%)	12.421	0.0007
Second	110 (44%)	100 (40%)		
Above two	55 (22%)	30 (12%)		
Mothers education				
Less than high school	60 (24%)	54 (21.6%)	0.856	0.758
High school	77 (30.8%)	85 (34%)		
College or associates degree	80 (32%)	83 (33.2%)		
Bachelors degree or higher	33 (13.2%)	28 (11.2%)		
Mothers occupation				
Unemployee	140 (56%)	51 (20%)	102.92	9.428
Govt. employee	63 (25.2%)	45 (18%)		
Private employee	47 (18.8%)	154 (61.6%)		
PIR of Mothers				
Low income	167 (66.8%)	152 (60.8%)	1.948	0.162
High income	83 (33.2%)	98 (39.2%)		

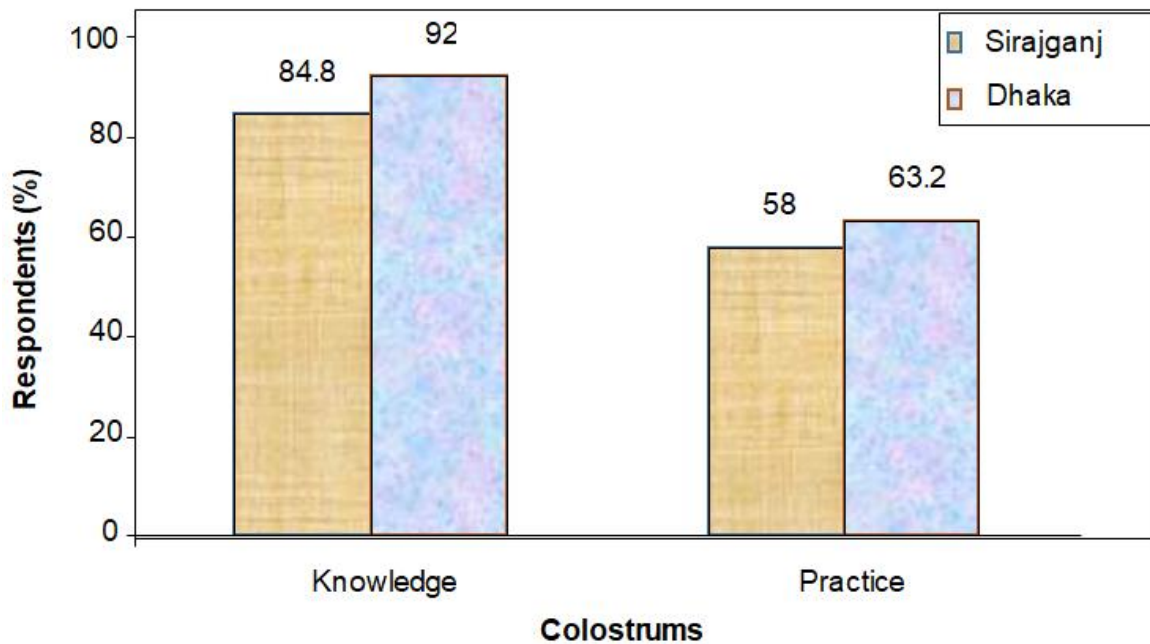


Fig. 1. Comparative study of mother's knowledge and practice regarding colostrums of newborns between Sirajganj and Dhaka City

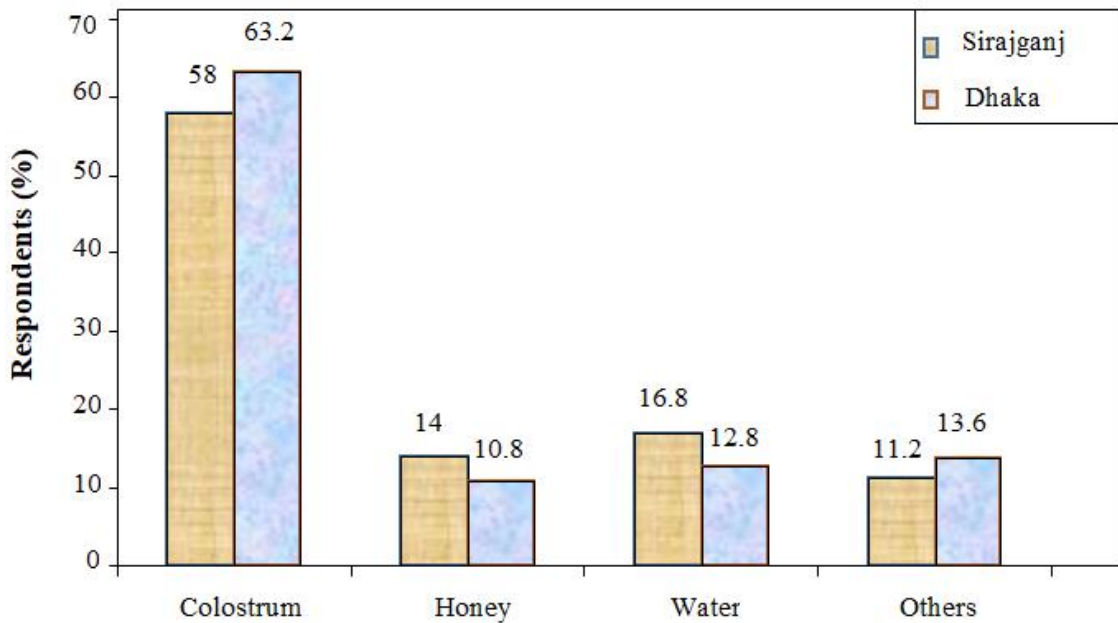


Fig. 2. Comparison of first baby food feeding at birth between Sirajganj and Dhaka City

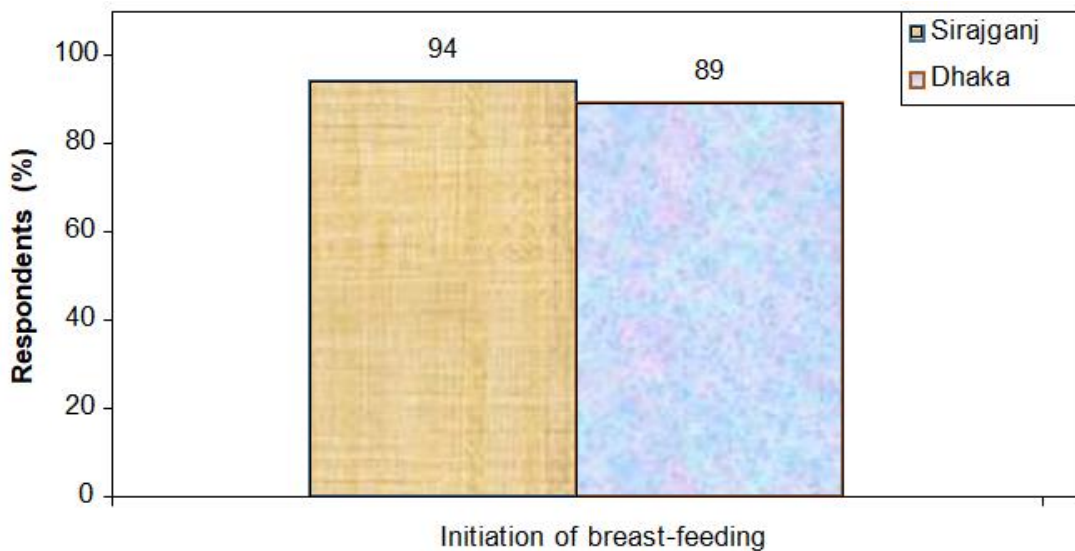


Fig. 3. Breast-feeding initiation percentage between Sirajganj and Dhaka City

3.3 Breast-Feeding Prevalence of Infants Until 6 Months Depending on Various Study Variables

There are many variables such as sex, maternal age, birth order, educational level, employment status and poverty income ratio were considered to find the breast-feeding prevalence of infants until six (06) months. 250 children from each of the study were assessed in this study.

3.4 Breast-feeding prevalence in the male and female infants until 6 months in study area

In considering sex variable, there are about 76 (58.91%) male children and 72 (59.50%) female children were found out of 250 target children who continued breast-feeding until six months in the Sirajganj City. Conversely, 59 (51.30%) male children and 71 (52.59%) female children were found out of 250 target children who continued breast-feeding until six months in the Dhaka City.

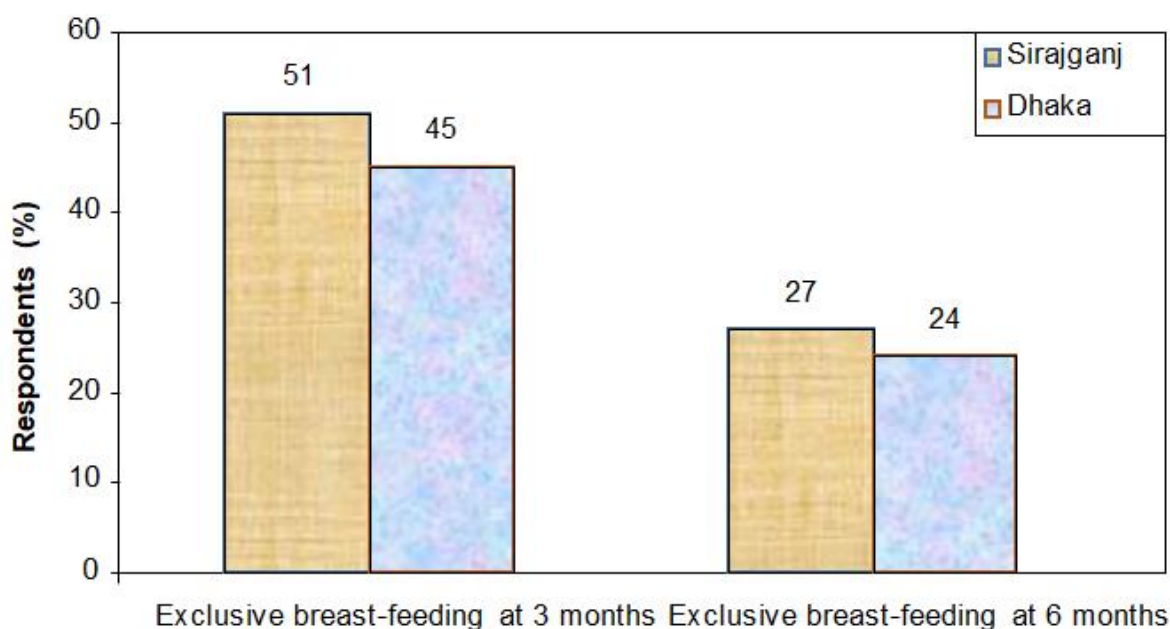


Fig. 4. Comparison of the duration of exclusive breast-feeding in Sirajganj and Dhaka City

Table 2. Prevalence of breastfeeding by selected characteristics of mothers in Sirajganj and Dhaka City

Characteristics	Breastfeeding at 6 months		Breastfeeding at 12 months	
	Sirajganj (%)	Dhaka (%)	Sirajganj (%)	Dhaka (%)
Sex of child				
Male	58.91%	51.3%	33.33%	29.56%
Female	59.50%	52.59%	35.53%	29.62%
Mothers age				
<20				
(21-25)				
(26-30)	51.72%	43.47%	29.31%	21.73%
>30	57.95%	48.93%	34.09%	27.65%
	62.12%	52.08%	37.87%	29.86%
	57.89%	58.33%	34.21%	33.33%
Birth order of child				
First	62.35%	55%	36.47%	32.5%
Second	58.18%	52.63%	34.54%	29.47%
Above two	52.72%	46.66%	30.90%	26.66%
Mothers education				
Less than high school	55%	51.85%	36.66%	35.18%
High school	57.14%	44.70%	37.66%	24.70%
College or associates degree	61.25%	46.98%	41.25%	27.71%
Bachelors degree or higher	66.66%	60.71%	42.42%	39.28%
Mothers occupation				
Unemployee	65%	43.13%	36.42%	29.41%
Govt. employee	53.96%	46.66%	31.74%	31.11%
Private employee	42.55%	35.71%	27.65%	24.67%
Mothers PIR				
Low income	57.48%	44.73%	34.73%	28.28%
High income	60.24%	55.10%	32.53%	33.67%

3.5 Breast-Feeding Ratio of Infants at 6 Months Between Sirajganj and Dhaka City Depending on Maternal Age

However, considering maternal age, there also 250 respondents were selected from each of the study area in this research. Here, 30 (51.72%) mothers were found for age less than 20 years, 51 (57.95%) mothers were found for age between (21-25) years, 41 (62.12%) mothers were found for age between (26-30) years and 22 (57.89%) mothers were found for age above 30 years out of 250 mothers who continued breast-feeding until 6 months age of their infant in the Sirajganj city. On the other hand, where 10 (43.47%) mothers were found for age less than 20 years, 23 (48.93%) mothers were found for age between (21-25) years, 75 (52.08%) mothers were found for age between (26-30) years and 21 (58.33%) mothers were found for age above 30 years out of 250 mothers who continued breast-feeding until 6 months age of their infant in the Dhaka City.

3.6 Percentage of Breast-feeding Until 6 Months of Period Depending on Birth Order of Child in the Sirajganj and Dhaka City

Additionally, in this study 250 children were selected from each of the Sirajganj and Dhaka City depending on the birth order of children. Where 53 (62.35%) children, 64 (58.18%) and 29 (52.72%) children were found for first born, second born and above born two respectively out of 250 children who continued breast-feeding until six (06) months of period in the Sirajganj City. On the other hand, where 66 (55%) children, 50 (52.63%) children and 14 (46.66%) children were found for first born, second born and above born two respectively out of 250 children who continued breast-feeding until six (06) months of period in the Dhaka City.

3.7 Percentage of Breast-Feeding Until 6 Months of Period Depending on Maternal Educational Level Between Sirajganj and Dhaka City

Furthermore, 500 lactating mothers in which 250 mothers from each of Sirajganj and Dhaka City were selected in this study based on maternal educational level. Where 33 (55%) mothers, 44 (57.14%) mothers, 49 (61.25%) mothers and 22 (66.66%) mothers were found for less than high school level education, high

school or equivalent education level, college or associates degree level and bachelors degree or higher education level respectively out of 250 mothers who continued breast-feeding until 6 months age of their infant in the Sirajganj city. On the other hand, where 28 (51.85%) mothers, 38 (44.70%) mothers, 39 (46.98%) mothers, and 17 (60.71%) mothers were found for less than high school level education, high school or equivalent education level, college or associates degree level and bachelors degree or higher education level respectively out of 250 mothers who continued breast-feeding until 6 months age of their infant in the Dhaka City.

3.8 Maternal Employment Status Effect on Breast-Feeding Until 6 Months of Period Between Sirajganj and Dhaka City

Additionally, in this study 500 lactating mothers in which 250 mothers from each of Sirajganj and Dhaka City were selected based on maternal employment status. Where 91 (65%) mothers, 34 (53.96%) mothers, and 20 (42.55%) mothers were found for unemployed (house wife), govt. employed and private employed respectively out of 250 mothers who continued breast-feeding until 6 months age of their infant in the Sirajganj city. On the other hand, where 22 (43.13%) mothers, 21 (46.66%) mothers and 55 (35.71%) mothers were found for unemployed (house wife), govt. employed and private employed respectively out of 250 mothers who continued breast-feeding until 6 months age of their infant in the Dhaka City.

3.9 Breast Feeding Practices of Mother Until 6 Months of Period Based on Poverty Income Ratio in the Sirajganj and Dhaka City

Furthermore, in this study, 250 children were classified on the basis of Poverty Income Ratio (PIR) from each of the Sirajganj and Dhaka City. Where 96 (57.48%) mothers were found in low income and 50 (60.24%) mothers were found in high income out of 250 mothers who continued breast-feeding until 6 months age of their infant in the Sirajganj city. On the other hand, where 68 (44.73%) mothers were found in low income and 54 (55.10%) mothers were found in high income out of 250 mothers who continued breast-feeding until 6 months age of their infant in the Dhaka city.

4. CONCLUSION

Breast-feeding practices of mother plays an important role in the growth, development and survival of infants. Children in Sirajganj City are most vulnerable to growth faltering during the period when complementary foods are initiated, often coinciding with decreased breast milk consumption and increased micronutrient deficiencies and diarrheal illness. Inappropriate care and feeding practices are recognized as some of the underlying causes of undernutrition. More specifically, lack of knowledge of optimal feeding practices and cultural beliefs contribute to deteriorating child nutritional status. Common inappropriate complementary feeding practices include introducing foods too early or too late, limiting the diversity of foods, and providing an inadequate quantity of food. In Dhaka city, an additional concern has been that the growth patterns of formula-fed infants may indicate that these infants are being overfed and that early over-feeding may be a significant risk factor in the development of overweight in children. Nutritional status is the result of complex interactions between food consumption, overall health status and care practices. Poor nutritional status is one of the most important health and welfare problems facing Sirajganj City. Over nutritional status is one of the most important health and welfare problems facing Dhaka City.

CONSENT

As per international standards or university standards, respondents' written consent has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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