



## Original Article

# Socio-demographic Pictures of Under-Five Malnourished Children in a Tertiary Care Hospital

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### Abstract

This study was a cross-sectional descriptive type of study, conducted at Pediatrics department of Rajshahi Medical College Hospital from July 2014 to June 2016. A total 382 children were enrolled by purposive sampling among which 219 (57.3%) male, 163 (42.7%) female. The aim of this study was identify demographic as well as social status of malnourished children in tertiary care hospital. In this study the prevalence of underweight 42% (moderate & severe), wasting 34% (moderate & severe), and stunting 24% (moderate & severe) were found. Considering various Socio-demographic characteristics - maternal factors, paternal factors, socioeconomic status, and residential status had significant association with nutritional status of the children. Beside these various risk factors- birth weight, exclusive breast feeding, colostrum feeding, timing of weaning practices, type of complementary feeding and associated morbidities also had significant association with nutritional status of the children. The degree of malnutrition was found to more prevalent in the early age of children. Among the studied children more than half (60.5%) lived in rural area and rest of them lived in urban area (36.6%), semi urban area (2.9%) respectively. Children more than half (53%) were from lower class family. Rest of them was middle class (40.6%) and upper class (6.3%) family. Education level of the majority (59.4%) mother were primary to SSC, (22.5%) were below primary and (18.1%) were HSC and above. Education level of the majority ie.40.6% father were below primary, 39.8% were primary to SSC and 19.6% were HSC and above.

**Key Words:** Socio-demographic pictures, Under-five malnourished children

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### Introduction

Malnutrition, as the main cause of morbidity and mortality in infants and children under five years of age, accounts for at least half of all childhood death worldwide. In general, the nutritional status of preschool children, as the most vulnerable age group, can be used as an indicator of health and

nutrition of community. It is also alarming that 10.5 million children of age under-five years die worldwide every year and 98% of these deaths reported to occur in developing countries.<sup>1</sup> The nutritional status of the people of Bangladesh is considered to be worse among Asian countries, and Bangladesh ranks 57th in relation to children

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aged less than 5 years, and the prevalence of childhood malnutrition in Bangladesh is one of the highest in the world.<sup>2</sup>

Several determinants contribute to childhood malnutrition including intra-uterine growth retardation, low birth weight, inadequate exclusive breast feeding, unsuitable complementary feeding, maternal and paternal literacy, low nutritional knowledge, insufficient energy and micronutrient intake, birth spacing, birth rank, socio-economic background, food availability, housing, health services, vaccination, infectious disease, etc.<sup>3,4</sup> Safe drinking water and sanitation facilities, race, rural residence, child's age, sex, maternal age at childbirth, have also been associated with child nutritional status. This study intends to identify the social and demographic picture among children aged 1-5 years of the studied children.

### Materials and Methods

A descriptive type of cross sectional study was conducted in the Pediatric Inpatient & Outpatient Department of Rajshahi Medical College Hospital, to identify demographic as well as social status of malnourished children and assessment of nutritional status by anthropometry of under-5 children. Study was conducted in Department of Pediatrics of Rajshahi Medical College Hospital (both indoor & outdoor), Rajshahi from July 2014 to June 2016. All children both male and female aged 6 months to 5 years attended in the Department of Pediatrics of Rajshahi Medical College Hospital, Rajshahi were included in this study. Total number of patients was 382 & purposive sampling technique was used.

The following patients were included in this study: 1. Age of children between 6 months to 5 years. 2. Both male and female children. 3. Children attending at both inpatient and outpatient department of RMCH. 4. Children whose parents/legal guardian will provide informed consent.

The following patients were excluded this study: 1. Severely ill children (such as children suffering from heart failure, acute severe bronchial asthma, meningoencephalitis). 2. Children suffering from

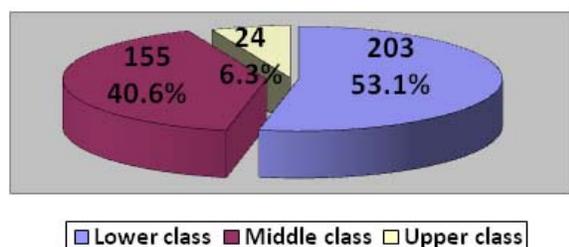
any chronic disease or endocrine, metabolic, genetic, autoimmune disease.

Data were collected using questionnaire checklist height scale (infantometer, stadiometer), weight scale (infantometer, stadiometer), weight machine (bathroom scale) and measuring tape. The checked data were analyzed using SPSS version 16 to observe means, distributions and significance.

### Results

Age distribution of studied children (in months) The average age: mean $\pm$ SD were 30.82 $\pm$ 12.82 months; median age 30 months; minimum age 8 months; maximum age 59 months. Studied children sex distribution: 57.3% was male and 42.7% were female. M:F ratio was 1.34:1. Study shows that, the percentage of underweight was in male (39.8%), female (46%) and wasting was in male (32.8%), female (35.6%) which was more in female than male. Birth weight showing that among the studied children (55.8%) had normal birth weight and (44.2%) had low birth weight and the percentage of malnutrition (underweight, wasting, stunting) were more (61%), (44.4%), (59.7%), among the low birth weight child than that of normal birth weight child (27.7%), (25.8%), (36.2%), respectively. So there was significant relationship between the birth weight and malnutrition (all P-value < 0.05). The average mother age mean $\pm$ SD were 24.52 $\pm$ 5.958 years; Median age 23 years; Minimum age 15 years ; Maximum age 40 years. It is seen that stunting is more (30.3%) and (36.4%) among the child in < 20 years and >35 years age of mother than (20.2%) among the child in 20-35 years age of mother. So there was significant relationship between the extreme age of the mother and stunting (P-value= 0.018).

Most of the mothers were housewives (93.5%) and rest were service holder (4.7%), business (4.7%), others (1.3%). Majority (27.5%) of the fathers were day laborer; 25.9% were farmer and 23.8% were businessman, 19.9% were service holders and others (2.9%)



**Figure 1: Frequency distribution of socioeconomic status of the family.**

Residential status among the studied children more than half (60.5%) lived in rural area and rest of them lived in urban area (36.6%), semi urban area (2.9%) respectively. Immunization of the child showed that 369 children completed their immunization course (96.6%) as per EPI schedule and about 10 (2.6%) were incompletely immunized, 3 (0.8%) not immunized. More than two thirds of the children (79.6%) had history of exclusive breast feeding up to 6 months of age. But (20.4%) had no history of exclusive breast feeding. The percentage of underweight (59%), wasting (39.7%), stunting (41%) were more among the not exclusive breastfeed child than that of exclusive breastfeed child (38.1%), (32.6%), (19.7%), respectively. So there was significant inverse relationship between the exclusive breast feeding to underweight and stunting ( $P$ -value < 0.05). Majority of the children (89.5%) had history of colostrum feeding and the percentage of malnutrition (underweight, wasting, stunting) were more (57.4%), (46.6%), (32.3%) and the percentage of malnutrition (underweight, wasting, stunting) were more (80%), (50%), (57.5%), among the child who had no history of colostrum feeding than that of who had history of colostrum feeding (38%), (31.6%), (20.2%), respectively. So there was significant relationship between the colostrum feeding and malnutrition (all  $P$ -value < 0.05). More than half (69.4%) had history of timely weaning practices that is from 6 months of age. In 69 (18.1%) cases there was early abrupt weaning that is before 6 completed months and rest of the cases 48 (12.6%) weaning was late.

## Discussion:

The study was conducted on 382 children of 6 months to 59 months age, attending the pediatric department (both indoor and outdoor) of RMCH to assess their nutritional status and socio-demographic characteristics of parents were taken. In this study, more than two thirds of the children (79.6%) had history of exclusive breast feeding up to 6 months of age. According to World Children Status 2015, exclusive breastfeeding rate in Bangladesh is 64%. According to BDHS 2011 and 2014 exclusive breastfeeding rate in Bangladesh is 64% and 55%. The 2013 Utilization of Essential Service Delivery Survey and the 2012-13 Multiple Indicator Cluster Survey reported lower exclusive breastfeeding rates of 60% and 56% respectively.<sup>5,6</sup> In this study majority of the children (89.5%) had history of colostrum feeding. Among the studied children more than half (69.4%) had history of timely weaning practices that is from 6 completed months of age. In (18.1%) cases there was early abrupt weaning that is before 6 completed months and rest of the cases (12.6%) weaning was late. In this study most of the mother (65.7%), starts their child's weaning with inappropriate complementary feeding (suji, rice powder, cow's milk etc.). In this study the prevalence of underweight 42% (moderate & severe), wasting 34% (moderate & severe), and stunting 24% (moderate & severe) were found.

In this study showed that mother's age at birth, play vital role on nutrition status.<sup>7-9</sup> A Cross-sectional study on 3,957 children in the city of São Leopoldo, Southern Brazil showed that wasting and stunting was associated with mother's age < 20 years.<sup>10</sup> Education factor BDHS 2014 showed that, children of mothers with no education are much more likely to be stunted (40%) than children whose mothers have completed secondary and higher education (29%). BDHS 2014 showed that Rural children are more likely to be stunted than urban children (38% compared with 31%). A study in Bangladesh showed that rural children suffer more for under nutrition problem than that of urban area.<sup>8,11</sup> Another study done in Vietnam also showed high prevalence of under-nutrition in rural areas.<sup>12</sup>

A cross sectional, descriptive study was done among 186 under-five Nepalese children of Barbote village, Ilam showed that lower birth weight is directly related to malnutrition of the children as compared to term and children of normal weight.<sup>13</sup> Across-sectional survey was conducted on 800 children in Jhangara Town, located in District Dadu, Sindh in Pakistan showed that the child who had low birth weight was (37.6%) i.e 1.6 times more likely to be underweight as compared to those who were of normal birth weight (29.1%) ( $p=0.01$ ).<sup>14</sup> This result is consistent with the findings of other studies which have shown that low birth weight (<2500 g) is a risk factor for malnutrition.<sup>15</sup> WHO Working Group, 1986 The significant relationship between prolonged breast feeding and malnutrition has been discussed in some studies.<sup>16,17</sup> Study in India that improper complementary feeding was significant risk factors of underweight children which is consistent with our study among the child who took other inappropriate complementary feeding (*suji*, rice gruel, cow's milk) than that of who took appropriate complementary feeding (*Khichuri*) (13.8%), (10%), (8.4%), respectively.

### Conclusion:

In our study, significant number of under-five children was malnourished. Considering various socio-demographic characteristics like maternal factors, paternal factors, socioeconomic status, and residential status had significant association with nutritional status of the children. So, there is a need to plan strategies and preventive public policies based on these specific risk factors to alleviate early malnutrition.

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