

## Health Problems of Under-five Children in a Rural Area of Mymensingh District, Bangladesh

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### Abstract

A cross-sectional, descriptive study was conducted to determine health problems of under-five children in a selected rural area of Mymensingh District in Bangladesh. This study was done on the background that the document about community prevalence of health problems of under-five children is scarce though it has public health importance. This was a community-based cross-sectional descriptive study conducted among 144 children belonging from birth to 5 years residing in Churkhai village of Bhavokhali union, Mymensingh Sadar Upazila in between November and December of 2019, as a part of Residential Field Site Training of 3rd year students of Community Based Medical College, Bangladesh (CBMC,B). A purposive sampling technique was adopted. A pre-designed, pre-tested questionnaire has been used to collect required information by face-to-face interviewing mothers of under-five children. The data were entered and analyzed by SPSS version 20.0. Respondent mothers ranged from 16 years to 45 years, mean age 25.47±5.332 years. Majority of mothers were literate (75.69%), housewife (91.67%), belonged to middle class (69.44%). Out of total 144 children ranging from birth to 59 months, mean age 29.83±19.54 months, male: female ratio was 97.26:100. Majority of children (50.69%) were healthy. Nutritional status was assessed by history taking (history of birth weight) weight, height measurement and clinical examination. Prevalence of low birth weight was 15.28%. Prevalence of under-nutrition was 16.67% and over-nutrition was 1.39%. On clinical examination, prevalence of anemia was found 4.17%. The leading health problem was nutritional 22.22%, followed by respiratory illness 12.50%, diarrhoea 7.64%, skin disease 4.17%, dental caries 0.69%, conjunctivitis 0.69%, acute suppurative otitis media 0.69%, accidental injury 0.69%. Most of the family had safe water supply (98.61%), sanitary latrines (85.42%), semi-pucca house (50%) and suffer air pollution 69.44%. The nutritional profile was quite similar, but disease situation was better than the results of other studies in Bangladesh and in other developing countries.

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### Introduction

Under-five children include children from birth up to the age of 59 months. This group includes neonates, infants, toddlers, and children up to the age of 59 months. Health problems vary between developed and developing countries. The main health problems encountered in a developing country are: low birth weight, malnutrition, infections and parasites, accidents and poisons, behavioral problems. The leading childhood diseases in India are diarrhea, respiratory infections, measles, pertussis, polio, neonatal tetanus, tuberculosis and diphtheria. Among parasitic diseases malaria, intestinal parasites, such as ascariasis, hookworm, giardiasis and

amoebiasis etc. are common. The prevention and treatment of children's illnesses may interrupt the transmission of infection in the community.<sup>1-5</sup> Bangladesh has similar problems.<sup>6</sup> Bangladesh has surface area of 147,570 square kilometer with estimated population 164.6 million.<sup>7</sup> 63% of population resides in rural areas.<sup>8</sup>

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Health of under-five children deserves special attention because they constitute significant portion (10.46%) of total population of Bangladesh along with high mortality (31 per 1,000 live births).<sup>8</sup> Development in this stage influences growth and development of adolescent and adult, but children between 1 to 4 years are hard to reach; prevention of their health problems can achieve better prevention of diseases in adulthood.<sup>9,10</sup> Bangladesh has observed impressive progress in its health and nutrition programme causing reduction of under-five mortality, morbidity, and steady decline of malnutrition. Still pneumonia, diarrhea, measles, malaria, malnutrition, injuries, and poor care seeking behavior contribute to the high levels of child mortality and morbidity.

## Methods

This was a cross-sectional, descriptive study was conducted in a selected rural area of Mymensingh District (Churkhai village of Bhavokhali union, Mymensingh Sadar Upazila) in Bangladesh. The sample constituted 144 under-five children. A pre-designed, pre-tested questionnaire has been used to collect required information by face-to-face interviewing mothers of under-five children. Nutritional status was assessed by history taking (history of birth weight) weight, height measurement and clinical examination. Clinical diagnosis was made based on history provided by the mother and clinical examination. The data were entered and analyzed by SPSS version 20.0. The study was approved by the Department of Community Medicine, Community Based Medical College, Bangladesh (CBMC,B).

## Results

144 mothers who had under-five children participated in the study. Out of total 144 children ranging from birth to 59 months age, mean age  $29.83 \pm 19.54$  months, male:female ratio was 97.26:100. Table I shows age and sex distribution of under-five children. Respondent mothers ranged from 16 years to 45 years, mean age  $25.47 \pm 5.332$  years. Majority of mothers were literate 75.69 percent, housewife 91.67 percent, belonged to middle class 69.44 percent.

Table-II shows socio-demographic profile of respondent mothers. Most of the family had safe water supply (141/144) 97.92 percent, sanitary latrine (124/144) 86.11 percent, semi-pucca house (72/144) 50 percent and source of air pollution (100/144) 69.44 percent. Principal modes of air pollution were burning open fire (40/144) 27.78 percent, cow-dung stick used as fuel (40/144) 27.78 percent and smoking by parents (20/144) 13.89 percent. Majority of children (73/144) 50.69 percent were healthy. Prevalence of low birth weight was (22/144) 15.28 percent, Majority of children had normal weight (118/144) 81.94 percent, (24/144) 16.67 percent was underweight and (2/144) 1.39 percent overweight. Majority of children (119/144) 82.64 percent were normal in height for age, (24/144) 16.67 percent stunted and (1/144) 0.69 percent tall. On clinical examination, prevalence of anemia was (6/144) 4.17 percent. The leading health problem was nutritional (32/144) 22.22 percent, followed by respiratory illness (18/144) 12.50 percent, diarrhea (11/144) 7.64 percent, skin disease (6/144) 4.17 percent; single cases of dental caries, conjunctivitis, acute suppurative otitis media and accidental injury. Table-III shows morbidity profile of under-five children. Clinical

diagnosis was made based on presenting symptoms of children within last 2 months as described by their mothers and clinical examination if currently ill. The symptoms were fever, cold, cough, difficult breathing, wheeze, body ache, joint pain, loose motion, abdominal pain, loss of appetite, skin itching, skin rashes, watering from eyes, discharge from ear and toothache. Prevalence of health problems in under-five children was 49.31 percent. Prevalence was influenced by age of mother (30 years and above: 55.56 percent, literacy: illiterate mother 54.29 percent, occupation: housewife 51.52 percent, socioeconomic condition of family: poor 70 percent and environmental condition (air pollution 55 percent). Care of mother was assessed by asking 4 questions regarding childcare and scored according to correct answer. Most of the mothers (122/144) 84.72 percent exhibited excellent care, (20/144) 13.89 percent had good care and (2/144) 1.39 percent had bad care.

**Table-I.** Age and sex distribution of under-five children

| Age group               | Male                   | Female                 | Total                  |
|-------------------------|------------------------|------------------------|------------------------|
|                         | Frequency (Percentage) | Frequency (Percentage) | Frequency (Percentage) |
| From birth to 11 months | 13 (9.03)              | 22 (15.28)             | 35 (24.31)             |
| 12 months to 23 months  | 15 (10.42)             | 9 (6.25)               | 24 (16.67)             |
| 24 months to 35 months  | 8 (5.56)               | 9 (6.25)               | 17 (11.81)             |
| 36 months to 47 months  | 15 (10.42)             | 11 (7.64)              | 26 (18.06)             |
| 48 months to 59 months  | 20 (13.89)             | 22 (15.28)             | 42 (29.17)             |
| <b>Total</b>            | <b>71 (49.31)</b>      | <b>73 (50.69)</b>      | <b>144 (100.00)</b>    |

**Table-II.** Socio-demographic profile of respondent mothers

| Status                         | Frequency  | Percentage    |
|--------------------------------|------------|---------------|
| <b>Age group</b>               |            |               |
| Less than 18 yrs               | 1          | 0.69          |
| 18 yrs to 29 yrs               | 107        | 74.31         |
| 30 yrs and above               | 36         | 25.00         |
| <b>Total</b>                   | <b>144</b> | <b>100.00</b> |
| <b>Literacy</b>                |            |               |
| Illiterate                     | 35         | 24.31         |
| Literate                       | 109        | 75.69         |
| <b>Total</b>                   | <b>144</b> | <b>100.00</b> |
| <b>Occupation</b>              |            |               |
| Housewife                      | 132        | 91.67         |
| Service holder                 | 8          | 5.56          |
| Business                       | 4          | 2.78          |
| <b>Total</b>                   | <b>144</b> | <b>100.00</b> |
| <b>Socioeconomic condition</b> |            |               |
| Poor                           | 40         | 27.78         |
| Middle class                   | 100        | 69.44         |
| Rich                           | 4          | 2.78          |
| <b>Environmental condition</b> |            |               |
| Safe water supply              | 142        | 98.61         |
| Sanitary latrine               | 124        | 86.11         |
| <b>Housing</b>                 |            |               |
| Kutcha                         | 56         | 38.89         |
| Pucca                          | 16         | 11.11         |
| Semipucca                      | 72         | 50.00         |

**Table-III.** Distribution of children by morbidity profile

| Status                          | Frequency  | Percentage    |
|---------------------------------|------------|---------------|
| Under-nutrition                 | 24         | 16.67         |
| Over nutrition                  | 2          | 1.39          |
| Anemia                          | 6          | 4.17          |
| ARI (cold, cough, no pneumonia) | 16         | 11.11         |
| Asthma                          | 2          | 1.39          |
| Diarrhea                        | 11         | 7.64          |
| Dental caries                   | 1          | 0.69          |
| Skin disease                    | 6          | 4.17          |
| Conjunctivitis                  | 1          | 0.69          |
| Acute suppurative otitis media  | 1          | 0.69          |
| Accidents and injuries          | 1          | 0.69          |
| No problem                      | 73         | 50.69         |
| <b>Total</b>                    | <b>144</b> | <b>100.00</b> |

**Table-IV.** Factors influencing health problems of under-five children

| Health problems     | Frequency | Sample population | Percentage |
|---------------------|-----------|-------------------|------------|
| Sample population   | 71        | 144               | 49.31      |
| <b>Mother's age</b> |           |                   |            |
| Less than 18 yrs    | 0         | 1                 | 0.00       |
| 18 yrs to 29 yrs    | 51        | 107               | 47.66      |
| 30 yrs and above    | 20        | 36                | 55.56      |
| Illiterate mothers  | 19        | 35                | 54.29      |
| Literate mothers    | 52        | 109               | 47.71      |
| Housewife           | 68        | 132               | 51.52      |
| Service holder      | 3         | 8                 | 37.00      |
| Business            | 0         | 4                 | 0.00       |
| Poor                | 28        | 40                | 70.00      |
| Middle class        | 43        | 100               | 43.00      |
| Rich                | 0         | 4                 | 0.00       |
| Safe water supply   | 70        | 142               | 49.30      |
| No safe water       | 1         | 2                 | 50.00      |
| Sanitary latrine    | 61        | 124               | 49.19      |
| No sanitary latrine | 10        | 20                | 50.00      |
| Air pollution       | 55        | 100               | 55.00      |
| No air pollution    | 16        | 44                | 36.36      |

## Discussion

In this study, age of children ranged from birth to 59 months age, mean age  $29.83 \pm 19.544$  months, age group 48 to 59 months was predominant; male: female ratio 97.26: 100. Respondent mothers ranged from 16 yrs to 45 yrs, mean age  $25.47 \pm 5.332$  yrs. Majority of mothers were literate 75.69 percent, housewife 91.67 percent, belonged to middle class 69.44 percent. In Bangladesh, 73.3% of women are literate.<sup>11</sup> In a Bangladeshi study, most of the children (64.9%) were in the age group of 25 to 59 months with a mean  $31.1 \pm 16.2$  months. Male: Female ratio was 73.73: 100. Respondent

mothers ranged from 18 to 38 years, mean age  $26.2 \pm 4.9$  years. More than half were in the age group between 18 to 25 years. Majority (80.5 percent) were literate, low income (less than 10,000 taka per month) 48.78 percent.<sup>12</sup>

In this study majority of children (50.69 percent) were healthy. Nutritional status was assessed by history taking (history of birth weight) weight, height measurement and clinical examination. Prevalence of low birth weight was (22/144) 15.28 percent. Majority of children were normal in weight for age and height for age (81.94 and 82.64 percent) respectively. Prevalence of underweight, overweight, stunting and tall stature was 16.67, 1.39, 16.67 and 0.69 percent respectively. Prevalence of under-nutrition was 16.67 percent and over-nutrition was 1.39 percent. On clinical examination, prevalence of anemia was 4.17 percent. The leading health problem was nutritional (32/144) 22.22 percent, followed by respiratory illness (18/144) 12.50 percent, diarrhea (11/144) 7.64 percent, skin disease (6/144) 4.17 percent, dental caries (1/144) 0.69 percent, conjunctivitis (1/144) 0.69 percent, acute suppurative otitis media (1/144) 0.69 percent, accidental injury (1/144) 0.69 percent which is similar to national data and better than several studies conducted in Bangladesh. As per national data only 45 percent had reported birth weight, among reported birth weight prevalence of low birth weight was 16.3 percent. Prevalence of under-5 stunting, wasting, underweight and overweight was 31, 8, 22 and 2 percent respectively. Most prevalent symptoms in under 5 children were fever, diarrhoea and ARI (33, 5 and 3 percent respectively in the 2 weeks preceding BDHS survey.<sup>11</sup> In a Bangladeshi study, majority of children were normal in weight for age and height for age (70.8 and 66.5

percent) respectively. Prevalence of underweight and stunting was 29.2 and 33.5 percent respectively. Diarrhea (45 percent) was most prevalent, followed by respiratory tract infection 32 percent, pneumonia 18 percent, febrile disease 6 percent, tonsillitis 5 percent, scabies 2 percent, otitis media 1.3 percent and protein energy malnutrition 0.9 percent. [Morbidity more than cent per cent because of multiple response.<sup>12</sup> In an Indian study, prevalence of diarrhea was 5.5 percent, a higher prevalence 46 percent who had accompanying malnutrition.<sup>13</sup> In another study done in India reported morbidity was 20.6 percent and majority of children suffered from diarrhea.<sup>14</sup> In another Indian study Protein Energy Malnutrition (PEM) prevalence was 56.23 percent, reported morbidity was 30.3 percent, upper respiratory tract infection 21.6 percent and diarrhea 18.2 percent were most common.<sup>15</sup>

In this study most of the family had safe water supply (142/144) 98.61 percent, sanitary latrine (123/144) 85.42 percent, semi-pucca house (72/144) 50 percent and source of air pollution (100/144) 69.44 percent. Burning open fire, cow-dung stick used as fuel and smoking by parents were offenders. Findings are similar to national scenario. In Bangladesh prevalence of safe water supply was found: urban 99.3, rural 97.9, national 98.3 percent and improved sanitation: urban 74.4, rural 62.1 and national 65.5 percent.<sup>11</sup>

In this study, prevalence of health problems in under-five children was 49.31 percent. Prevalence was influenced by age of mother (30 yrs and above: 55.56 percent, literacy: illiterate mother 54.29 percent, occupation: housewife 51.52 percent, socioeconomic condition of family: poor 70 percent and environmental condition (air

pollution 55 percent). In an Indian study 59.8 percent of children were malnourished. Parents' higher education, exclusive breast feeding for 6 months, proper weaning, immunization and higher socioeconomic status had beneficial effect on nutritional status of children. Also environmental conditions, birth order and total number of children in family had effect on nutritional status of children. These factors also influenced diarrheal diseases.<sup>16</sup>

## Conclusion

Nutritional profile was similar to other studies conducted in Bangladesh and our neighboring country India. Disease profile was better. Further improvement needs child health care, nutrition education to mothers, growth monitoring, exclusive breast feeding, complementary feeding, standard case management of ARI and diarrhoea. It is essential to break down the vicious cycle of malnutrition-infection-malnutrition.

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