

The Impacts of Food Habit and Sanitation on Child (under 5) in Relation to their Diarrhoeal Disease

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Abstract

A cross sectional study was carried out to find out the impacts of food habit, sanitation and socio-economic condition in relation to child's diarrhoeal disease. The study was conducted in two rural areas i.e. Hatibati village under Batiaghata upazilla and Hulhulia village under Kalaroa upazilla of Bangladesh through 82 households and 105 children under 5. In this study it was found that 63 percent of children at Hatibati village and 62 percent of children at Hulhulia village have suffered from diarrhoea at least one time in a year. In this study it was found that 52 percent of child's parents were educated. Fifty percent of child's mother were not aware about sanitation and child health, 67 percent of child's father have income below Tk. 3000 per month. About 11 percent of children never drank breast milk in their life and 76 percent of children did not wash hand before taking food. Only 30 percent of children used sanitary latrine for defecation. Forty percent of child's father had no radio/ TV and 29 percent of child's father had no latrine for their defecation. The present study suggests that the Government and other NGOs should take initiatives to educate and make aware rural people about sanitation and child health, provide earning sources to them and improve their socio-economic conditions for mitigating child's diarrhoeal disease.

Key words: Food habit, Water, Sanitation, Awareness, Socio-economic conditions and Diarrhoea.

Introduction

Bangladesh is a low-lying country in southern Asia at the head of the Bay of Bengal. It became independent from Pakistan in 1971 and it is one of the poorest countries in the world. It's real GDP per capita is \$ 444 (in 2004). Bangladesh is one of the world's most densely populated countries and one of the least developed nations. Its

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economy is overwhelmingly agricultural, with the cultivation of rice being the single most important activity in the economy. Bangladesh is a country in which water and sanitation associated diseases are the major causes of mortality and morbidity of child (Hoque *et al.*, 1995; D'Souza, 1985).

Since the year 1970 Bangladesh has an extensive programme for tubewell water supply; and during the International Drinking Water Supply and Sanitation Decade (IDWSSD), 1981-1990, access to safe water, such as tubewells in rural Bangladesh increased from 37 percent to 96 percent (Hoque *et al.*, 1995).

Diarrhoea is the passage of watery stools, usually at least three times in a 24 hours period. Sanitation means sources of water for drinking, bathing and cooking, sanitary latrine pattern, it also includes our drainage system.

Insanitation and diarrhoea are positively associated. Impure water for cooking, drinking and bathing, lack of waste disposal facilities, drainage facilities etc. are the main causes of diarrhoea. Bacteria or viruses are also the causes of diarrhoea. Children who are malnourished suffer much more; in turn, diarrhoea weakens children and makes them more malnourished. Diarrhoea is also a major cause of child malnutrition. Diarrhoeal diseases are responsible for about 2.2 million child-deaths every year in Bangladesh. About 80% of the death occurs in the first two years of their life; 42,000 a week, 6,000 a day, four every minute, one every fourteen seconds (WHO/UNICEF/WSSCC, 2000).

The present study has been undertaken to find out the profile of food habit, sanitation and socio-economic conditions in relation to child's diarrhoeal disease in the study area.

Materials and Methods

The study on the impacts of food habit and sanitation on child (under 5) in relation to their diarrhoeal disease was conducted from October, 2003 to March, 2004.

Selection of the study area

For this study two rural areas were selected. One was Hulhulia village of Kalaroa upazilla under the district of Satkhira and another was Hatibati village of Batiaghata upazilla under the district of Khulna. The information was collected from households having children under 5.

Selection of the participants

The information about food habit, sanitation and socio-economic conditions of parents of the children in relation to their diarrhoeal disease were collected by interviewing method. The following participants were selected among members of a family:

- Children under the age group 0-60 months.
- Child's mother under the age group 15-39 yr.
- Child's father under the age group 25-49 yr.

Sample size

The study was carried out in two rural areas among 82 households and 105 children (under 5) under the district of Satkhira and Khulna in Bangladesh.

Data collection

A questionnaire was developed to obtain relevant information on the food habit, sanitation and socio-economic conditions of parents in relation to their child's diarrhoea. The questionnaire was pre-tested and modified on the basis of the test result before its use. It spent two months to collect information at Hatibati village under Khulna district and three months at Hulhulia village under Satkhira district.

Results

The scenario of child's diarrhoea is presented in table 1. About 63% of children are affected with diarrhoea at least one time in a year.

In figure 1 it is found that 12% of children are affected with diarrhoea in first week, 44% of children are affected in three months and 63% of children are affected in a year.

Table 2 presents that 89% of children drink breast milk and 83% of children who are affected with diarrhoea never drank breast milk in their life. Only 25% of children wash their hand with soap before taking food and 69% of children who are affected with diarrhoea do not use soap to wash hand before taking food. About 35% of children drink reserved water and 76% of children who are affected do not drink reserved water.

Table 3 shows the impacts of sanitation on child's diarrhoea. Only 45% of children drink water from a tube well that depth 160 ft above. About 90% of children who are affected with diarrhoea drink water from a tubewell that distances below 10 ft from a latrine. About 46% of children use tubewell water for bathing. Only 30% of children use latrine for defecation and 70% of children who are affected with diarrhoea use open places for defecation.

The impacts of socio-economic conditions of parents in relation to their child's diarrhoea are presented in table 4 & table 5. About 90% of child's mother uses soap for cleanliness after their child's defecation. Seventy five percent of mothers whose children are affected with diarrhoea use pond's water for working purpose. Only 46% of child's mother are aware about their child's health by enjoying media.

Fiftyseven percent of child's father have hygienic latrine. About 88% of fathers whose children are affected with diarrhoea have no sanitary latrine for defecation. About 40% of child's fathers have no radio or television. About 55% of child's fathers have tin or zinc made pot to reserve water.

In figure 2, it is found that 60% of child's father have monthly income below Tk. 2100 and 10% of child's father have monthly income above Tk. 4000. The relationship between father's monthly income and their child's diarrhoea is presented in figure 3. It shows that 85% of fathers whose children are affected with diarrhoea have monthly

income below Tk 1000 and 75% of fathers whose children are affected with diarrhoea have monthly income Tk. 1100 - 2000.

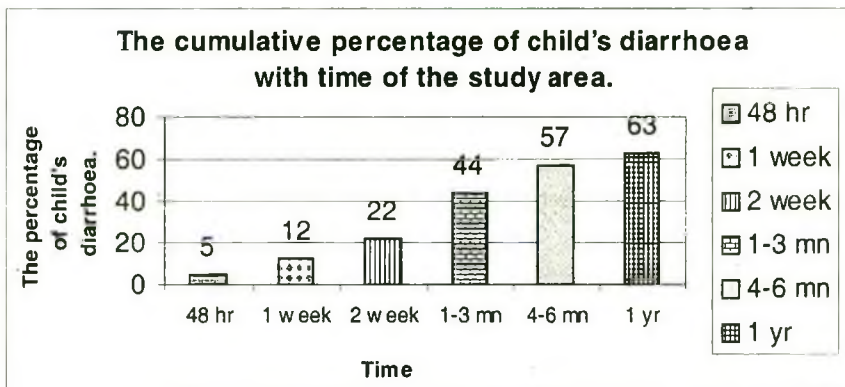


Fig 1: The cumulative percentage of child's diarrhoea in the study area.

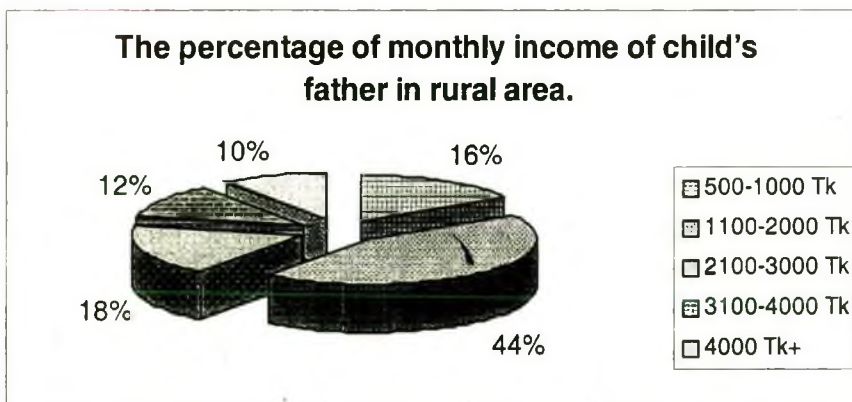


Fig 2: The percentage of father's monthly income in the study area.

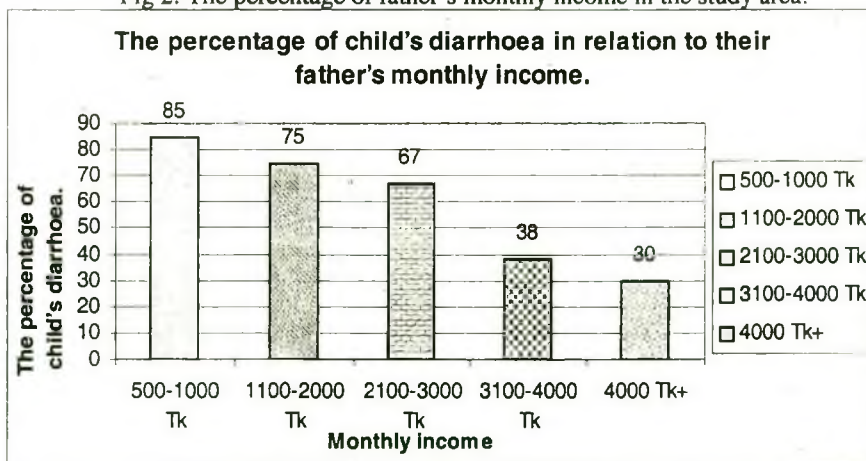


Fig 3: The percentage of child's diarrhoea in relation with father's monthly income in the study area.

Table 1: The scenario of child's diarrhoea in the study area.

| Age group (month) | No. of children | Total no. of children | No. of diarrhoea affected children | Total no. of diarrhoea affected children | Percentage |
|-------------------|-----------------|-----------------------|------------------------------------|--|------------|
| 0-12 | 16 | 105 | 10 | 66 | 63 |
| 13-24 | 10 | | 7 | | |
| 25-36 | 31 | | 25 | | |
| 37-48 | 23 | | 15 | | |
| 49-60 | 25 | | 9 | | |

Table 2: The impacts of food habit on the incidence of child's diarrhoeal disease.

| Parameter | | Children | | | | | T | T% | DT | DT% |
|-------------------------|--------------------|----------|-------|-------|-------|-------|----|----|----|-----|
| Age (month) | | 0-12 | 13-24 | 25-36 | 37-48 | 49-60 | | | | |
| Breast feeding | Present | 14 | 8 | 22 | 7 | 15 | 51 | 49 | 28 | 55 |
| | Past | - | - | 7 | 13 | 10 | 42 | 40 | 28 | 67 |
| | None | 2 | 2 | 2 | 3 | - | 12 | 11 | 10 | 83 |
| Hand wash before eating | Only water | 10 | 7 | 24 | 18 | 20 | 80 | 76 | 55 | 69 |
| | Soap | 6 | 3 | 7 | 5 | 5 | 25 | 24 | 11 | 44 |
| Drinking water | Direct | 6 | 5 | 13 | 9 | 8 | 41 | 39 | 31 | 76 |
| | Direct + Reserving | 5 | 1 | 3 | 7 | 11 | 27 | 26 | 15 | 56 |
| | Reserving | 5 | 4 | 15 | 7 | 6 | 37 | 35 | 20 | 54 |

T : The total no. of children

T% : The percentage of total no. of children.

DT : The no. of children affected with diarrhoea.

DT% : The percentage of children affected with diarrhoea.

Table 3: The impacts of sanitation on the incidence of child's diarrhoeal disease.

| Parameter | | Children | | | | | T | T% | DT | DT% |
|--------------------------------------|------------|----------|-------|-------|-------|-------|----|----|----|-----|
| Age (month) | | 0-12 | 13-24 | 25-36 | 37-48 | 49-60 | | | | |
| Depth of tube well | 80-120 ft | 2 | 1 | 6 | 2 | 4 | 15 | 14 | 10 | 67 |
| | 121-160 ft | 6 | 4 | 10 | 13 | 10 | 43 | 41 | 27 | 63 |
| | 160 ft+ | 8 | 5 | 15 | 8 | 11 | 47 | 45 | 29 | 62 |
| Distance between tube well & latrine | 0-10 ft | 1 | - | 3 | 4 | 2 | 10 | 10 | 9 | 90 |
| | 11-20ft | 2 | 2 | 6 | 3 | 3 | 16 | 15 | 15 | 94 |
| | 21-30 ft | 4 | 4 | 5 | 4 | 4 | 21 | 20 | 14 | 67 |
| | 30 ft+ | 9 | 4 | 17 | 12 | 16 | 58 | 55 | 28 | 48 |
| Sources of bathing water | River | - | - | 1 | 3 | 3 | 7 | 7 | 6 | 86 |
| | Pond | 5 | 2 | 13 | 14 | 16 | 50 | 48 | 36 | 72 |
| | Tube well | 11 | 8 | 17 | 6 | 6 | 48 | 46 | 24 | 50 |
| Defecation of child | Open place | 15 | 9 | 18 | 15 | 13 | 70 | 67 | 49 | 70 |
| | Comode | 1 | 1 | 1 | - | - | 3 | 3 | 2 | 67 |
| | Latrine | - | - | 12 | 8 | 12 | 32 | 30 | 15 | 47 |

T : The total no. of children

T% : The percentage of total no. of children.

DT : The no. of children affected with diarrhoea.

DT% : The percentage of children affected with diarrhoea.

Table 4: The impacts of socio-economic conditions of parents on the incidence of their diarrhoeal disease (information of mother).

| Parameter | Mother | | | | | MT | MT% | DT | DT% | |
|------------------------------|--------------|-------|-------|-------|-------|----|-----|----|-----|----|
| | 15-19 | 20-24 | 25-29 | 30-34 | 35-39 | | | | | |
| Age (year) | | | | | | | | | | |
| Cleanliness after defecation | Soil | 5 | 24 | 9 | 3 | 3 | 44 | 54 | 29 | 66 |
| | Ashes | 5 | 23 | 10 | 2 | 4 | 44 | 54 | 26 | 59 |
| | Soap | 11 | 36 | 17 | 6 | 4 | 74 | 90 | 36 | 49 |
| Sources of water for cooking | Pond | 2 | 9 | 8 | 3 | 2 | 24 | 29 | 18 | 75 |
| | Tube well | 9 | 30 | 12 | 3 | 4 | 58 | 71 | 34 | 59 |
| Awareness by enjoying media | Not enjoying | 3 | 20 | 13 | 3 | 5 | 44 | 54 | 33 | 75 |
| | Enjoying | 6 | 22 | 6 | 3 | 1 | 38 | 46 | 19 | 50 |

MT : The total no. of mother.

MT% : The percentage of total no. of mother.

DT : The no. of children affected with diarrhoea the family.

DT% : The percentage of children affected with diarrhoea in the family.

Table 5: The impacts of socio-economic conditions of parents on the incidence of their diarrhoeal disease (information of father).

| Parameter | Father | | | | | FT | FT% | DT | DT% | |
|--------------------------|----------------|-------|-------|-------|-----|----|-----|----|-----|----|
| | 25-29 | 30-34 | 35-39 | 40-44 | 45+ | | | | | |
| Age (year) | | | | | | | | | | |
| Sanitary latrine pattern | Hygienic1 | 6 | 4 | 1 | 1 | - | 12 | 15 | 5 | 42 |
| | Hygienic2 | 7 | 10 | 3 | - | 1 | 21 | 26 | 10 | 48 |
| | Hygienic3 | 5 | 4 | 2 | 4 | - | 15 | 18 | 9 | 60 |
| | Unhygienic | 3 | 4 | 2 | 1 | - | 10 | 12 | 7 | 70 |
| | None | 5 | 9 | 4 | 3 | 3 | 24 | 29 | 21 | 88 |
| Media | TV/ TV + Radio | 10 | 9 | 3 | 1 | 1 | 24 | 29 | 11 | 46 |
| | Radio | 10 | 8 | 4 | 3 | - | 25 | 30 | 15 | 60 |
| | None | 6 | 14 | 5 | 5 | 3 | 33 | 40 | 26 | 79 |
| Water reserving pot | Tin | 8 | 10 | 3 | 2 | - | 23 | 28 | 13 | 57 |
| | Zinc/Tin | 10 | 6 | 2 | 2 | 2 | 22 | 27 | 13 | 59 |
| | Mud/Tin | 2 | 8 | 2 | 1 | 1 | 14 | 17 | 9 | 64 |
| | Mud | 5 | 6 | 4 | 3 | 1 | 19 | 23 | 14 | 74 |
| | Plastic | 1 | 1 | 1 | 1 | - | 4 | 5 | 3 | 75 |

FT : The total no. of father.

FT% : The percentage of total no. of father.

DT : The no. of children affected with diarrhoea in the family.

DT% : The percentage of children affected with diarrhoea in the family.

Discussion

Diarrhoea is one of the deadliest diseases of childhood in the world. In Bangladesh, 90% of pre-school children suffer from some degree of malnutrition as in many other countries; diarrhoea is one of the most important causes of malnutrition child mortality. The present study includes food habit and socio-economic condition with sanitation in relation to diarrhoeal disease of our children (under 5) in rural area. It opens a new horizon before our eyes.

The study shows (in table 2) that breast feeding can reduce 28% of child's diarrhoea, washing hands with soap before taking food can reduce 25% of child's diarrhoea and drinking reserving water can reduce 22% of child's diarrhoea. In table 3 it is found that using tube well water for bathing can reduce 22% of child's diarrhoea that of using pond's water, using sanitary latrine for defecation can reduce 23% of child's diarrhoea.

Table 4 presents that awareness of mother about food and sanitation can reduce 25% of child's diarrhoea and using tube well water for cooking can reduce 16% of child's diarrhoea. Table 5 shows that using hygienic sanitary latrine can reduce 40% of child's diarrhoea, using tin/zinc made pot for reserving water can reduce 30% of child's diarrhoea and enjoying radio/television for awareness can reduce 25% of child's diarrhoea. In figure 3, it is found that to increase father's monthly income can reduce child's diarrhoea.

Approximately 4 billion cases of diarrhoea each year cause 2.2 million deaths, mostly among children under the age of five. This is equivalent to one child dying every 15 seconds. These deaths represent approximately 15% of all child deaths under the age of five in developing countries. Water, sanitation, and hygiene interventions reduce diarrhoeal disease on average by between one-quarter and one-third. Public authorities must continue to be responsible for the provision of water that is free of faecal contaminants. In the private domain hygiene promotion should focus on the elimination of human stools from the domestic environment. We should ensure safe sanitation, clean water and hygienic environment for a child and its survival.

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