

# Knowledge And Practice About Prevention of Diarrheal Diseases Among Mother of Under 5 Children Attending the Combined Military Hospital Dhaka

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## Abstract

Diarrhoea is a leading cause of morbidity and mortality among the under five children all over the world, especially in developing countries like Bangladesh. This can be prevented by taking preventive measures against diarrhoeal disease. This was a descriptive type of cross sectional conducted among 71 purposively selected Mothers of under 05 children at CMH, Dhaka from July 2020 to December 2020 with the aim to find out the knowledge and practice about prevention of diarrhoeal disease. The data were collected by a semi structured questionnaire through face-to-face interview. The children had a mean age 26.54 months. Among the children most 50.7% were male and 49.3% were female. Among the mothers 40.8% mothers were graduate or above, 45.1% were leaving in mature house. The mean monthly income of the respondents was Tk 31690.14. Regarding knowledge of diarrhoeal disease 15.5% had no knowledge about type of disease, 39.4% had no knowledge about incubation period, 19.7% had no knowledge about route of transmission, 7.0% had no knowledge about causes of diarrhoeas, 1.4% had no knowledge about personal hygiene, 4.2% had no knowledge about exclusive breast feeding, and 9.9% had no knowledge about weaning. Regarding practice for prevention of diarrhoeal disease 5.6% were no practicing regular mouth care of child, 7.0% were not practicing regular nail care, 5.6% were not practicing nail care of child, 1.4% were not using ORS for child during diarrhoea, 5.6% did not maintain food hygiene, 2.8% were not washing hand before taking food and serving food, 100% were washing hand after defecation, 4.2% were not covering food, 1.4% were not continuing breast feeding during diarrhoea of child, 69.0% were not giving artificial feeding during diarrhoea, 14.1% were not drinking boiled water, 8.5% were not cleaning floor regularly, 36.6% were not cleaning toys regularly. Among the respondents 29.6% were suffering from UTI, followed by 16.9% thyroid problem, 11.3% HTN, 9.9% bronchial asthma, 7.0% DM.

In this study a substantial percentage of mothers of under 05 children had less knowledge and practice about prevention of diarrhoeal disease. Steps should be taking for filling of the gap of knowledge and practices about prevention of diarrheal disease among the under 05 children by their mothers. A study on larger sample size may be under taking for more accurate description of this problem among our population

**Keywords:** Diarrhoea, Under-Five Children, Knowledge, Preventive Practices, Bangladesh

### 1.1 Preamble

Diarrhoea is the second most common cause of morbidity and mortality among under five children all over the world. Diarrhoea poses a serious health threat to child and wellbeing. Especially in developing countries like Bangladesh, India in each year due to lack of knowledge and practice about diarrheal disease management. Under five children constitute an important population group in terms of vulnerability to health condition that could adversely affect their health and well-being. Diarrheal disease has been reported to be one of the most common cause of deaths.<sup>1</sup>

Diarrhoeal disease is a leading cause of child mortality and morbidity in the world, and mostly results from contaminated food and water sources. Worldwide, 780 million individuals lack access to improved drinking-water and 2.5 billion lack improved sanitation. Diarrhoea due to infection is widespread throughout developing countries.<sup>2</sup>

Diarrhoeal disease is a leading cause of child mortality and morbidity in the world, and mostly results from contaminated food and water sources. Worldwide, 780 million individuals lack access to improved drinking-water and 2.5 billion lack improved sanitation. Diarrhoea due to infection is widespread throughout developing countries.<sup>2</sup>

Diarrhoea is defined as the passage of three or more loose or liquid stools per day (or more frequent passage than is normal for the individual).

Diarrhoea is usually a symptom of an infection in the intestinal tract which can be caused by a variety of bacterial, viral and parasitic organisms. It can be acute or chronic and may also contain blood as in dysentery.

Diarrhoea causes much harm to child health and wellbeing. It is one of the most common causes of mortality and morbidity among under five children around the world. Especially in developing countries like Bangladesh in each year due to lack of knowledge and practice about diarrheal disease management. Diarrheal disease has been reported to be one of the most common causes of deaths among under five children.

Most people die from diarrhoea actually die from severe dehydration and fluid loss. Children who are malnourished have impaired immunity as well as most risk of life-threatening diarrhoea. Infection is spread through contaminated food or from person to person as a result of poor hygiene.

Most of diarrhoeal episodes are self-limited however the mortality is primarily due to dehydration. To fight against dehydration the World Health Organization (WHO) has, since the 1970s, recommended oral rehydration therapy (ORT). ORT during bouts of diarrhoea consists of using either a solution prepared from sachets of oral rehydration solution (ORS) or a solution at home with water, sugar and salt, known as salt sugar solution. These are simple, effective and inexpensive treatment which have contributed to a significant decline in mortality among children less than five years of age.

Diarrhoeal disease was the cause of every 10th child death in 2017-more than half a million of the 5.4 million children that died in 2017 died from diarrhoeal disease. Diarrhoeal disease is second leading cause in children under five (05) years old. Each year diarrhoea kills around 525000 children under five. Globally, there are nearly 1.7 billion cases of childhood diarrhoeal disease every year. Diarrhoea is a leading cause of malnutrition in children under five (05) years.<sup>3</sup>

In low-income countries, children under five years old experience on average three episodes of diarrhoea every year. Each episode deprives the child of the nutrition necessary for growth. As a result, diarrhoea is a major cause of malnutrition, and malnourished children are more likely to fall ill from diarrhoea.<sup>2</sup>

Diarrhoeal disease may have a negative impact on physical fitness and mental development. “Early

childhood malnutrition resulting from any cause reduces physical fitness and work productivity in adults", and diarrhoea is a primary cause of childhood malnutrition. Further, evidence suggests that diarrhoeal disease has significant impacts on mental development and health; it has been shown that, even when controlling for helminth infection and early breastfeeding, children who had experience severe diarrhoea had significantly lower scores on a series of tests of intelligence.

In Bangladesh, diarrhoeal diseases occur as an annual event mainly during hot dry season and after flood. An outbreak of diarrhoea took place in April-May 2009, when thousands of people were being treated for diarrhoea across Bangladesh. According to BBC News, it was an 'epidemic' state of diarrhoea.

Interventions to prevent diarrhoea, enquiry safe drinking water, use of improved sanitation and hand washing with soap can reduce disease risk. Diarrhoea should be treated with oral rehydration solution (ORS), a solution of clean water, sugar and salt.<sup>2</sup>

## CHAPTER ONE

### INTRODUCTION

- 1.1. Preamble
- 1.2. Background Information
- 1.3. Justification of the Study
- 1.4. Research Question
- 1.5. Research Objectives
- 1.6. Variable
- 1.7. Conceptual Framework
- 1.8. Operational Definitions
- 1.9. Limitation of the Study

#### 1.2. Background Information:

Diarrhoeal disease is a leading cause of child mortality and morbidity in the world, and mostly results from contaminated food and water sources. Worldwide, 780 million individuals lack access to improved drinking-water and 2.5 billion lack improved sanitation. Diarrhoea due to infection is widespread throughout developing countries.

In low-income countries, children under five years old experience on average three episodes of diarrhoea every year. Each episode deprives the child of the nutrition necessary for growth. As a result, diarrhoea is a major cause of malnutrition, and malnourished children are more likely to fall ill from diarrhoea.<sup>2</sup>

Diarrhoea is defined as the passage of loose, liquid or watery stools. These liquid stools are usually passed more than three times per day (or more frequent passage than is normal for the individual).<sup>2</sup>

**1.2.1 Incubation Period:** The incubation period usually from a few hours to 5 days after exposure for bacterial diarrhoea and 1 to 3 days for viral diarrhoea.<sup>5</sup>

#### 1.2.2 Types of Diarrhoea:

1. **On the basis of duration:**
  - a. Acute diarrhoea (<2 weeks)
  - b. Chronic diarrhoea (>2 weeks)
2. **Clinical classification:**
  - a. Acute watery diarrhoea (lasting for hours or days)
  - b. Invasive diarrhoea (characterized by visible blood in the stool)

c. Persistent diarrhoea (>2 weeks or longer)

### 3. Pathological classification:

- a. Osmotic diarrhoea
- b. Secretory diarrhoea
- c. Inflammatory diarrhoea
- d. Abnormal motility

### 4. According to causative agents:

- a. Infective diarrhoea
- b. Non-Infective diarrhoea.<sup>6</sup>

#### 1.2.2 Causes of Diarrhoea: 1. Infection:

##### a. Virus:-Rotavirus

Enteric adeno virus

##### b. Bacteria:-E. coli

Vibrio cholera

Salmonella

##### c. Protozoa:-Cryptosporidium

#### Malnutrition

**Source:** Water contamination by sewage, septic tanks and latrines.

**Other causes:** It also cause by –

- Person to person
- Poor personal hygiene
- Unhygienic food
- Food and sea food from polluted water.<sup>2</sup>

#### 1.2.4 Mode of Transmission:

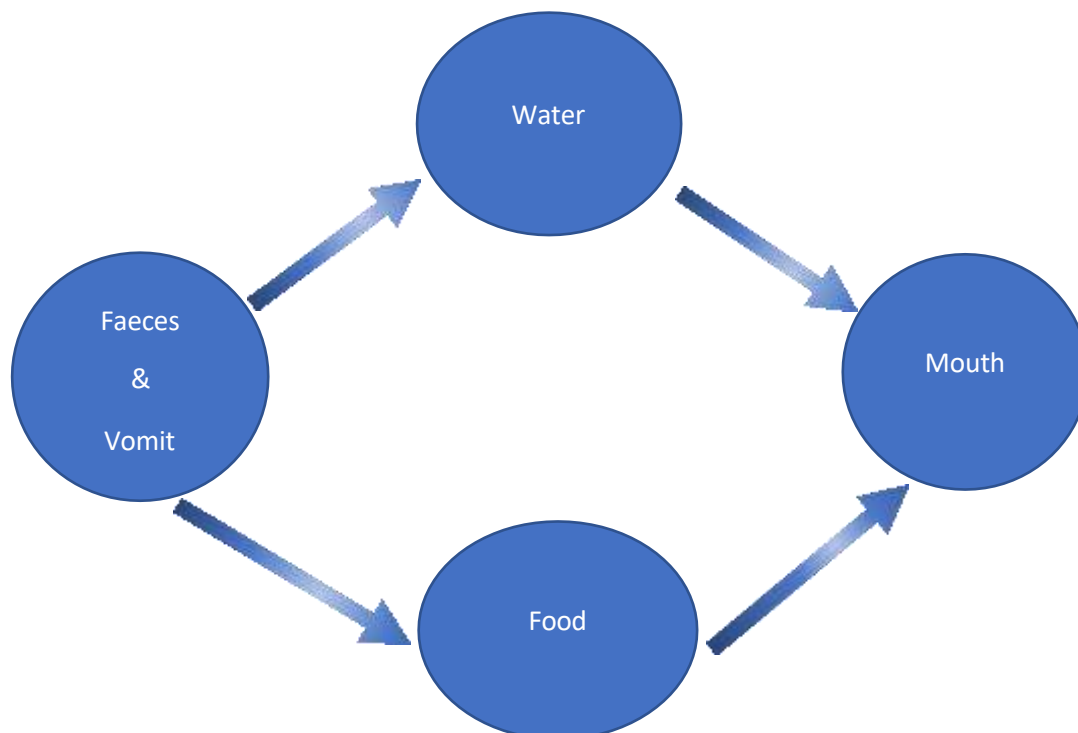
All three types of diarrhoeal diseases so far are transmitted directly or indirectly by face-oral routes. Direct transmission occurs through contact between hands contaminated with faces and the person's mouth, indirect modes of transmission are through ingestion of contaminated food or water, contact with infected soil, utensils etc. Are transmitted by flies that have crawled faces.

Flies are a major source of indirect transmission of diarrhoeal diseases.

The main modes of transmission for cholera, viral diarrhoeal diseases are summarized in the table and figure below:

Main modes of transmission for bacterial and viral diarrheal diseases:

Diarrhoeal Diseases	Main modes of transmission
Cholera	Contaminated water and food.
Shigellosis (Bacillary dysentery)	Person to person contact, e.g: while caring for a sick person or via contaminated water or food.
Viral diarrhoeal diseases	Contaminated water or food, particularly while feeding infants with milk or other nutritious fluids in a contaminated bottle.



The main modes of transmission for most diarrhoeal diseases are by ingestion of contaminated food and water.<sup>7</sup>

Clinical features:

Symptoms vary with severity, specific cause and type of onset.

1. **Low grade fever to 100°F (37.8°C)**
2. **Anorexia**
3. **Vomiting (can precede diarrhoea by several days) mild and intermittent to severe**
4. **Stools – appearance of diarrhoea from a few hours to 3 days.**
  - Loose and fluid consistency
  - Greenish or yellow-green, although can be any color
  - May contain mucus, pus, or blood
  - Frequency varies from 3 to 20 per day
  - Expelled with force; may be preceded by pain
5. **Behavioral changes**
  - Irritability and restlessness
  - Weakness
  - Extreme prostration
  - Stupor and convulsions
  - Flaccidity
6. **Physical changes.**
  - Little to extreme loss of subcutaneous fat
  - Up to 50% total body weight loss
  - Poor skin turgor; capillary refill longer than 2 seconds
  - Dry mucous membranes and dry, cracked lips
  - Pallor

- Sunken fontanelles and eyes
  - Petechiae may be seen with bacterial infections
  - Excoriated buttocks and perineum
7. **Vital sign and urine output changes [Signal imminent cardiovascular collapse]**
- Low BP
  - High pulse rate
  - respirations rapid and hyper-panic
  - Decreased or absent urine output.<sup>8</sup>

## Clinical assessment of diarrhoea:

Every child brought to a health facility because of diarrhea should be carefully assessed and evaluate before his or her treatment is planned.

The clinical assessment consists of taking a brief history and examining the child. Its objectives are:

- To detect dehydration, if present and determine its degree of severity.
- To diagnose dysentery, if present.
- To evaluate feeding practice and determine the child's nutritional status, especially to detect severe malnutrition.
- To determine any concurrent illness.
- To determine the child's immunization history, especially as regards immunization for measles.<sup>4</sup>

## Assessment of dehydration:

Trait	Mild	Moderate	Severe
Condition	Well, alert	Restless, irritable	Comatose or unconscious, floppy
Eyes	Normal	Sunken	Very sunken and dry
Tears	Present	Absent	Absent
Mouth and Tongue	Moist	Dry	Very dry
Thirst	normally, not thirsty	Thirsty, drinks eagerly	Refuses or unable to drink
Skin pinch	Goes back quickly	Goes back slowly	Goes back very slowly
Weight loss	5-10%	5-10%	>10%
Estimated fluid deficit	0-50 ml/kg body weight	50-100 ml/ kg body weight	>100 ml/ kg body weight

**Table No:1 4**

## 1.2.6. Investigation:

**Diet record:** 03 days 2. Stools

Physical examination for-  
consistency  
volume

blood (its presence suggests infection with shigella)

Microscopic examination for-  
blood

leukocytes (faecal leukocytes in acute diarrhoea strongly suggest invasive microorganism such as Shigella, E. histolytica, E. coli, etc.)

Stool culture

Blood: complete blood count, serum electrolytes

Specific tests for mal-absorption

**A. Carbohydrate mal-absorption:**

- Stool PH and reducing substance
- Stool electrolytes, bicarbonate and osmolality
- Lactose breath hydrogen test
- Xylose absorption test
- Small bowel biopsy for pathology and enzyme analysis

**B. Fat mal-absorption:**

- PT/PTT
- Carotene /25-hydroxy vit D
- 72 hours fecal fat estimation
- Fecal smear for fat<sup>4,9</sup>

**Management of diarrhoea:**

In many cases of diarrhoea, replacing lost fluid and salts is the only treatment needed. This is usually by mouth oral rehydration therapy in severe cases, intravenously.<sup>10</sup> Diet restrictions such as the BRAT diet are no longer recommended.<sup>11</sup> To the contrary, WHO recommended that children with diarrhoea continue to eat as sufficient nutrients are usually still absorbed to support continued growth and weight gain, and that continuing to eat also speeds up recovery of normal intestinal functioning.<sup>12</sup> CDC recommends that children and adults with cholera also continue to eat.<sup>13</sup>

**Management of dehydration**

**Fluids:**

Oral Rehydration Solution (ORS) can be used to prevent dehydration. Standard home solutions such as salted rice water, salted yogurt drinks, vegetables and chicken soups with salt can be given. Home solutions such as water in which cereal has been cooked, unsalted soup, green coconut water, weak tea and unsweetened fresh fruit juices can have from half a teaspoon to full teaspoon of salt (from one- and a half to three grams) added per liter. Clean plain water can also be one of several fluids given.<sup>12</sup>

**Oral rehydration therapy:**

With introduction of oral rehydration by WHO it is now firmly established that oral rehydration treatment can be safely and successfully used in treating acute diarrhoeas due to all aetiologies, in all age groups and in all countries. The aim of oral fluid therapy is to prevent dehydration and reduced mortality. It has been the experience of workers at Kolkata that as many as 90-95 percent of all cases of cholera and acute diarrhoea can be treated by oral fluids alone. Oral fluid therapy is based on the observation that glucose given orally enhances the intestinal absorption of salt and water deficit.



## Composition of ORS

Elements		Composition(gm/500ml)
Sodium Chloride	BP	1.30 gm
Potassium Chloride	BP	0.75 gm
Trisodium Citrate, Dihydrate	BP	1.45 gm
Glucose, Anhydrous	BP	6.74 gm

## Recommended Formulation:

Because of the improved effectiveness of reduced osmolality ORS solution, WHO and UNICEF are recommending that countries manufacture and use the following formulation in place of the previously recommended ORS solution.<sup>14</sup>

## Eating:

WHO recommends a child with diarrhoea continue to be fed. Continue feeding speeds the recovery of normal intestinal function. In contrast, children whose food is restricted have diarrhoea of longer duration and recover intestinal function more slowly. A child should also continue to be breastfed. In young children who are not breast-fed and live in the developed world, a lactose free diet may be useful to speed recovery.<sup>15</sup>

## Medications:

While antibiotics are beneficial in certain types of acute diarrhoea, there usually not used except in specific situation. There are concerns that antibiotics may increase the risk of hemolytic uremic syndrome in people infected with E. coli. In resource poor countries, treatment with antibiotic may be beneficial. However, some bacteria are developing antibiotic resistance particularly Shigella. Antibiotics can also cause diarrhoea and antibiotic associated diarrhoea is the most common adverse effect of treatment with general antibiotics.<sup>16</sup>

## Alternative therapies:

Zinc supplementation may benefit children over 6 months old with diarrhoea in areas with high rates of malnourishment of zinc deficiency. The supports the WHO guideline for zinc, but not in the very young.<sup>17</sup>

## Prevention and control of diarrhoea:

A number of interventions have been proposed for preventing diarrhoea in young children, most of which involved measures related to infant feeding practices, personal hygiene, cleanliness of food, provision of safe water, safe disposal of faeces and immunization.<sup>4</sup>

## Nutrition:

Dietary deficiencies in developing countries can be combated by promoting better eating practices. Zinc supplementation proved successful showing a significant decrease in the incidents of diarrhoeal disease compared to a control group. The majority of literature suggests that Vit A supplementation is advantageous in reducing diarrhoea incidents. Development of a supplementation strategy should take into consideration the fact that Vit A supplementation was less effective in reducing diarrhoea incidence when compared to Vit A and Zinc supplementation and that latter strategy was estimated to be significantly more cost effective.<sup>18</sup>

## Breast-feeding:

Breast-fed babies have fewer and less severe episodes of diarrhoea, and a lower risk of dying from



diarrhoea then babies who are not breast-fed. For example, during the first 05 month of life, the risk of having severe diarrhoea that requires hospital admission can be 30 times greater for infants who are not breast-fed then for those who are exclusively breast-fed.

**Improved weaning practices:**

During weaning, supplementary foods other than milk are introduced in order to meet the child's increased nutritional demands after about 06 month of age. Complete weaning should not ordinarily take place before one year of age. Weaning diet should insure.

**Use of plenty of water for hygiene and use of safe clean water for drinking:**

A plenty full supply of water helps to encourage hygienic practices, such as hand-washing, cleaning of eating utensils and cleaning of latrines. Clean, safe water is essential for drinking and for prepared food.

**Hand-washing**

All members of a family should wash their hands well-

- After cleaning a child who has defecated, or after disposing of a child's stool.
- After defecation;
- Before preparing food;
- Before eating; and
- Before feeding a child.

**Use of sanitary latrines:**

Every family should have and use a clean well-maintained water-seal latrine.

If their no latrine or pit, families should defecate as hygienically as possible, away from the path and at least 10 meters away from any home or source of water.

**Safe disposal of the stool of young children****Immunization:**

Immunization against the pathogens that cause diarrhoea disease is a viable prevention strategy; however, it does require targeting certain pathogens for vaccination. In the case of rotavirus, which was responsible for around 6% of diarrhoeal episodes and 20% of diarrhoeal disease deaths in the children in developing countries, of a Rota virus vaccine in trials in 1985 yielded a slight (2-3) % decrease in total diarrhoeal disease incidence, while reducing overall mortality by 6-10%. Similarly, a cholera vaccine showed a strong reduction in mortality and morbidity, through the overall impact of vaccination was minimal as cholera is not one of the major causative pathogens of diarrhoeal disease. Since this time, more effective vaccine has been developed that have the potential to save many thousands of lives in developing nations, while reducing overall cost of treatment the cost of society.

**Measles immunization** – because of the strong relationship between measles and serious diarrhoea and the effectiveness of measles vaccine, immunization against measles is very cost-effective measure for reducing the morbidity and mortality associated with diarrhoea. Measles vaccine given at the recommended age can prevent up to 25% of diarrhoea-associated deaths in children under 05 years of age.

**Rotavirus vaccine-** Is the world's first vaccine against virus. Rota virus is leading cause of childhood diarrhoea in Bangladesh.<sup>4</sup>

**Others-** Probiotics decrease the risk of diarrhoea in those taking antibiotics.<sup>19</sup>

### 1.3. Justification of the study:

Diarrhoea is defined as the passage of three or more loose or Diarrhoea liquid stools per day (or more frequent passage than is normal for the individual).

According to statistics from the World Health Organization (WHO) in 2003, diarrhoea killed more than 560 per million in Bangladesh. By 2013 this had been reduced to 145, and last year to three: a 95% reduction. A wander around the ICDDR hospital in Dhaka explains some of this success. Over 45,000 under five children die every year in Bangladesh from diarrhoea caused by contaminated water, says a report of World Health Organization (WHO).

Globally, diarrhoeal diseases remain one of the principal causes of morbidity and mortality in children. In the globe, under five children experience on an average 3.2 episodes of diarrhoea every year and consequently 1.87 million children will die from dehydration associated with diarrhoeal disease. Diarrhoea is a leading killer of children, accounting for approximately 8% of all deaths among children under age 5 worldwide in 2017. This translates to 1300 young children dying each day, or about 480,000 children a year, despite the availability of a simple treatment solution.

Military people are the part and parcel of the general population and influence of the prevailing environment naturally affects them because they are also drawn from the society. So, we should not consider them isolating from the society.

As such prevalence of any illness or disease at public health importance is not uncommon in the cantonment population. But we should also remember that a large number of Armed personnel and their families reside outside the cantonment area and villages because of scarcity of family accommodation. So, most of the children affected by communicable disease like diarrhoea, cholera, typhoid fever and acute respiratory infection etc., among of them Diarrhoea is most common. Under above circumstance diarrhoea is very important health problem in army population.

This study was under taken to find out the awareness regarding prevention of diarrhoeal disease among mothers of under 05 children attending at CMH Dhaka. This will help to reduce the mortality and morbidity rate by appropriate measure.

Such as maintaining food hygiene, hand washing, proper sanitation and safe drinking water etc. to prevent diarrhoea and improve the health condition of child.

### 1.4. Research Question:

What is the status of knowledge and practice about prevention of diarrhoeal disease among mothers of under-five (05) children attending at Combined Military Hospital (CMH), Dhaka?

### 1.5. Research objectives:

#### 1.5.1. General objectives:

To assess the knowledge and practice about prevention of diarrhoeal disease among mothers of under 05 children attending at Combined Military Hospital Dhaka?

#### 1.5.2. Specific objectives:

- To assess the status of knowledge about prevention of diarrhoeal disease among respondents.
- Evaluate the status of practice about prevention of diarrheal disease among respondent.
- To find out the status of co-morbidity among under five (05) children.
- To determine the relationship between maternal knowledge and their preventive practices.
- To identify the socio-demographic characteristics among respondents.

**1.6. Key variables:****a) Dependent Variable**

Preventing Diarrhoeal Disease

**b) Independent Variables****1. Variable related to knowledge about prevention of diarrhoeal disease:**

- Definition
- Incubation period
- Routes of transmission
- Causes
- Sign and symptoms
- Management
- Preventive measure
- Hand washing
- Personal hygiene
- Food hygiene
- Cooking strategies
- Exclusive breastfeeding
- Weaning
- Sanitation

**2. Variables related to practice about prevention of diarrhoeal disease:**

- Care of mouth
- Care of nail
- Bowel habit
- Using ORS
- Food hygiene
- Hand washing
- Cleaning of floor
- Cleaning of toys
- Covering food
- Breast feeding
- Artificial feeding
- Boil water
- Using sanitary latrine

**3. Variables related to co- morbidity status :**

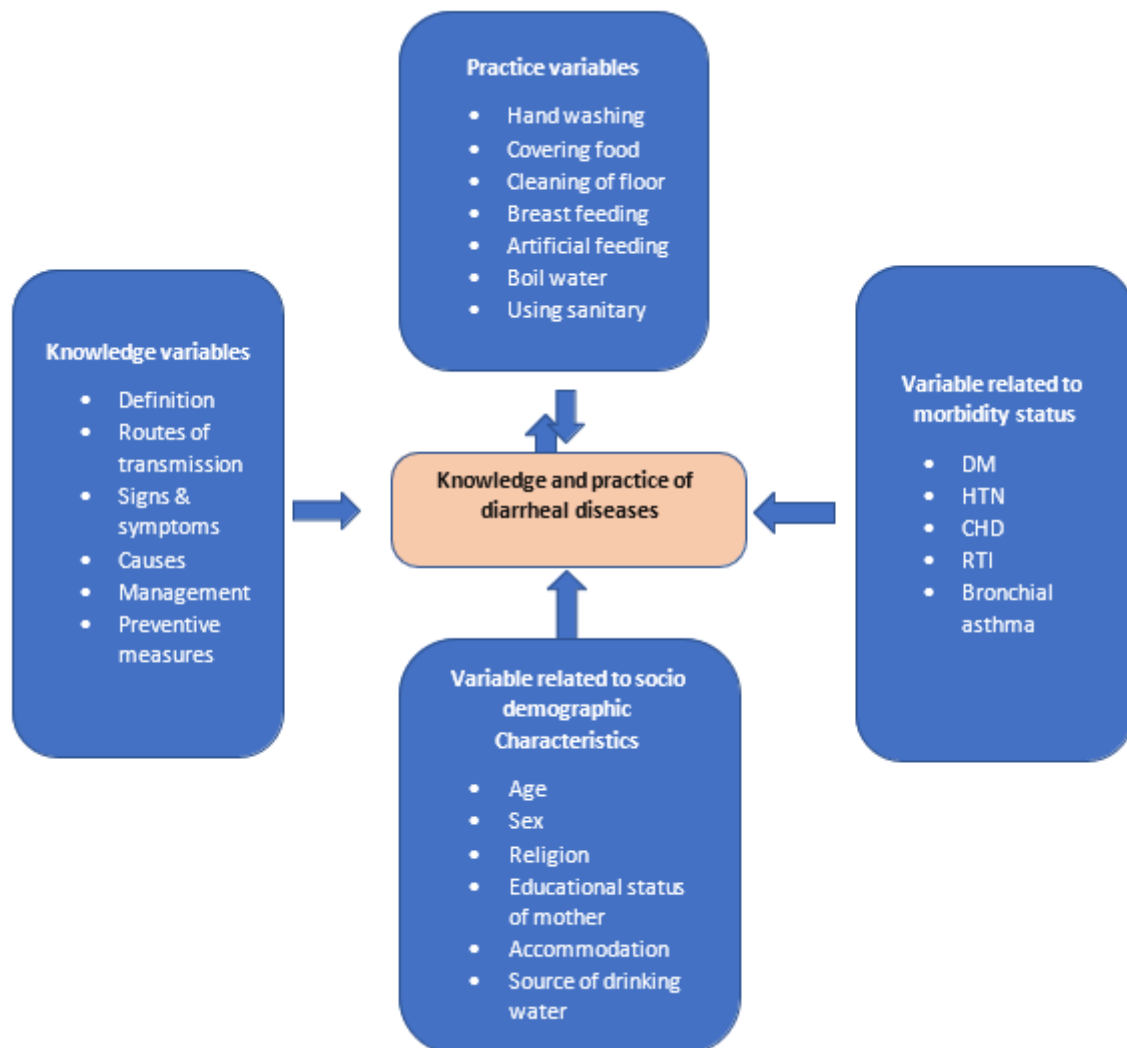
- DM
- Renal disease
- RTI
- HTN
- CHD
- Bronchial Asthma
- Cancer
- Anaemia
- Thyroid Problem

#### 4. Variables related to socio- demographic characteristics among respondents:

- Age
- Sex
- Religion
- Educational status of mother
- Occupational status of mother
- Accommodation
- Sources of drinking water
- Sanitation
- Family size
- Monthly family income

#### 1.7 Conceptual framework:

The conceptual framework of awareness regarding prevention of diarrhoeal disease among mothers of under 05 children is shown the diagrammatically for the better understanding of concept of present study



**Fig1: Conceptual framework of knowledge & practice about prevention of diseases among mother of under-five (05) children.**

## 1.8. Operational definition of selected variables:

Variable	Operational definition
<b>1.Knowledge</b>	Understanding, awareness, consciousness, information and skill of a particular fact or situation, which is acquired by a person Through experience or education. In this study, knowledge is seen by asking question to respondent whether they have any knowledge or not on related to prevention of diarrhoeal disease
<b>2. Practice</b>	Following activities perform by the mother was accepted as practices for prevention of diarrhoea e.g. hand washing, breast Feeding, covering foods, using sanitary latrine etc.
<b>3.Diarrhoea</b>	The frequent passage of loose or liquid stools 3-4 times a day.
<b>4.Children</b>	Children mean the boys or girls who belong to age group from birth up to 12 years.
<b>Incubation Period</b>	The period between exposure to an infection and the appearance of the first symptoms.
<b>6. Personal hygiene</b>	Personal hygiene is the health care of own self for which a person himself is responsible.
<b>7. Mouth care</b>	Mouth care means care of mouth of children to maintain oral hygiene.
<b>8. Hand washing</b>	It is the act of cleaning one's hands for the purpose of removing soil, dirt, and micro-organism.
<b>9. Sanitation</b>	The process of keeping place free from dirt, infection, disease, etc. by removing waste.
<b>10. Safe water</b>	Safe water is one that cannot harm the consumer, even when ingested over prolonged period.
<b>11. ORS (Oral Rehydration Salt)</b>	The administration of fluid by mouth to prevent or correct the dehydration that is a consequence of diarrhea. It is a mixture of clean water, salt and sugar.
<b>12. Breast feeding</b>	It is the feeding of the breast milk by the mother for the child.
<b>Artificial feeding</b>	It is the feeding of the child by mother other than breast milk e.g. lactogen, bio-mil, chips, juice etc.
<b>14.Food hygiene</b>	Protecting food from spoilage and harmful bacteria.
<b>15. Boiling water</b>	Water after roiling boil for at least 10 minutes.

<b>16. Nail care</b>	Care of nail.
<b>17. Cleaning floor</b>	Cleaning floor daily by Dettol mixed water or normal water.
<b>18. Diseases:</b> <b>Diabetes Mellitus</b> <b>Hypertension</b> <b>Bronchial Asthma</b> <b>Thyroid problem</b> <b>Urinary Tract</b> <b>Infection</b>	Disease diagnosed by physician or on drugs.
<b>educational status</b>	It is a educational status hold by the respondents as follows: 1= Illiterate: Who can't read and write 2=Primary: (i-v) 3= Secondary: (vi-x) 4=SSC or equivalent: Who passed or secondary school certificate. 5= HSC or equivalent: Who passed or higher secondary school certificate. 6=Degree and above: Who achieve bachelor degree or more.
<b>20. Family income</b>	Total income of family member in a month.
<b>21. Family size</b>	Total number of persons in a family.
<b>22. Occupation</b>	The activity performed by the mother as housewives, service holder, business, and students.
<b>23. Accommodation</b>	It is the residence where the respondents were living as: 1. Pacca =The accommodation in which the floor is made by brick but the roof is made by hood. 2. Semi mature = The accommodation in which the floor is made by brick but the wall is not made by brick.

## 1.9.Limitation of the study:

The study was a part of the course and the curriculum of BSc in Nursing course and was conducted by novice but the investigation was carried out carefully to avoid any bias as far as possible. The study was conducted simultaneously with other activities of the course. Even then there were some limitations which

are stated as under:

- The study carried out in a small scale among the patient admitted in CMH, Dhaka.
  - As the study area was limited in Dhaka Cantonment, so the results will not represent the whole population residing in different cantonment.
  - The size of the sample is limited.
  - The duration of the study period was short.
  - Certain information was recorded according to the statement of the respondent e.g. Age, monthly income, education, etc. so some of the information may be misleading.
  - Most of the respondents lead a simple life style and their socio- economic condition is almost similar with variation in their educational level.
  - Some respondents did not co- operate during data collection.
  - The study does not reflect the actual pattern of status of practice by diarrhoeal disease.
- The study was conducted among special group practice regarding prevention of diarrhoeal disease among mother under 05 children of the population which may not have external validity.

## 2. LITERATURE REVIEW

### 2.1 Overview of child health situation for diarrhoeal disease in Bangladesh:

There are over 60 million children in Bangladesh. That's more than the entire population of the United Kingdom. Diarrhoeal diseases are major contributors to the morbidity and mortality among infants and young children in the developing world. The World Health Organization estimates that there are approximately 1.3 billion episodes and 3 million deaths annually in children under five years ago since the establishment of the Global Programme for the control of Diarrhoeal Diseases in 1980, 126 countries World Wide have created national programmed for the control of diarrhoeal disease whose activities have emphasized the promotion of oral dehydration therapy.<sup>20</sup>

Each year there are estimated 1 billion episodes of diarrhoea with approximately 500,000 deaths in children under five (05) years of age. Who estimates that children in low-and middle- income countries each have approximately 3 episodes of diarrhoea a year. Although improvements have made in our efforts to stop diarrhoea deaths. We still have far too many episodes: since 1990, the number of diarrhoea deaths has decreased by 65%, but the number of new diarrhoea episodes has decreased by only 24% the burden is disproportionally concentrated in low – and middle- income countries with over half of the diarrhoeal deaths occurring in Sub-Saharan Africa- a low- resources setting where progress is slowest. Bangladesh has achieved remarkable progress in reducing under 05 mortality rate and infant mortality rate in the last two decades. The under 05 mortality decreased significantly from 133 to 94 per 1000 live births between 1989 and 1999(BDHS,2007). The most common diseases among children under 05 were common cold or URI 19%, influenza 40%, diarrhoea 13%, acute cough/bronchitis 10% and fever 9%. A total of 5% of the children also suffer from immunize- able diseases like measles, whooping cough, tuberculosis, polio myelitis and tetanus (BBS, 1999). <sup>21</sup>

Reduction in five mortality rates from 2000 to 2003 compared to the earlier period, was not satisfactory. In these years the major cause of deaths among the children under five were possible serious infections 31%, ARI 21%, birth asphyxia 12%, diarrhoea 7% and prematurity/LBW 7% (BDHS, 2004). <sup>14</sup>



## 2.2. Diarrhoeal Disease:

Diarrhoea is the passage of three or more loose or liquid stool per day. Diarrhoea is usually symptom of an infection in the intestinal tract, which can be caused by a variety of bacterial, viral and parasitic organisms. Diarrhoea is the major common water borne disease among children. Contaminated drinking water and poor sanitation facilities are considered to be among the major causes of diarrhoea children in Bangladesh. In this country diarrhoeal disease play a significant role in the causes of death among children less than five years of age with an average of three to five diarrhoeal attacks every year, which is higher than the global average and the children of an remain malnourished and vulnerable to diarrhoea related deaths around 125,000 children under five die each year from diarrhoea, that is, 342 children per day (IPRSP, 2002). Another recent study (Pramanik) estimates that over three million children die every year from diarrhoea and dehydration and over half experience more than 15 attacks of serious diarrhoea before the age of five due to lack of sanitation. Each year in Bangladesh, 110,000 under five children die in diarrhoeal diseases and 791 children among 1000 living child suffers from diarrhoeal attack at least three to five times.

Diarrhoea is usually attributed to ingestion of water or foods that are contaminated fecal coli from or other pathogens, or fecal- oral contamination and drinking water is only one mode of transmission. Unsafe water supply, inadequate and unhygienic behavior cause 88% of diarrhoea attacks (WHO, 2004).<sup>22</sup>

## 2.3. National Study:

Diarrhoeal disease constitutes one of the major causes of morbidity and mortality, particularly among children and infants nearly 26% of total death among under five children are due to diarrhoeal diseases along, and on an average, each child suffers 3.5 times a year. Seasonal and cyclical pattern of the disease frequently turns into epidemic situation (Especially after flood, cyclone, etc.). Weakness in disease surveillance, monitoring, epidemic preparedness and irrational use of drugs are the major hurdles for proper management of diarrhoeal disease in the country. The Programme is being implemented as a component of PHC under the supervision of the medical officer in-charge of CDD at the upazila health complex. At the national level, a director, assisted by others supporting staff, is responsible for planning, monitoring and review of the programmed.

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**A study was conducted by Sarkar AR, Sultana M, Alom R, (2016).** On prevalence and Health Care-seeking Behavior for Childhood Diarrhoeal Disease in Bangladesh the overall diarrhoeal prevalence among children < 05 years old was found to be 5.71 %. Some factors found to significantly influence the health care seeking pattern were age and sex of the children, nutritional score, age and education of mothers, wealth index, and excess to electronic media. The health care service could be improved through working in partnership with public facilities, private health care practitioners, and community-based organizations. So that all strata of the population get equitable access in cases of childhood diarrhoea.<sup>24</sup>

**A cross-sectional study was conducted by Chowdhury F, Khan IA, Patel S et al (2015).** On Diarrhoeal illness and Healthcare Seeking Behavior among on population at high risk for diarrhoea in Dhaka Bangladesh. The prevalence was conducted by age group and sex. A generalized estimating equation with logit link function was used to predict diarrhoeal disease risk and seeking care from a professional health care provider of 316, 766 individuals. 10% were young children <05 years. The

prevalence of diarrhoea was significantly higher. An increased risk for diarrhoea was observed in young children, males and those staying rented houses, lower family members in the house, using non sanitary toilets, living in the area for times, living in a community with less educated persons, living in a community with less use of safe water sources for drinking or living close to the hospital. About 80% of those with diarrhoea sought care initially from a non- professional health care provider choice of the professional health care provider was driven by age of the patient, educational status of the household head and hygienic practices by the household. The study reaffirms that young children are at greater risk for diarrhoea, like other developing countries. Most people in this impoverished setting of Dhaka are less likely to seek care formal professional health care provider, which could be attributed to a higher member of diarrhoeal deaths among young children in Bangladesh.<sup>25</sup>

**A cross-sectional study conducted by Khatun A. SK. Shahidur Rahman, Rahman H. (2013).** On prevalence of diarrheal disease and nutritional status among children under 5- years of age in Kushtia, Bangladesh; the study was carried out to determine the nutritional status of under 05 children. Amongst all the subject the prevalence of wasting and stunting was 51% and 49% respectively. Age group 0-12 months shows the highest prevalence wasting, underweight and shunting. The prevalence of diarrhoea was found 44.5%. The maximum prevalence (48.86%) and frequency of diarrhoea was present in 12-24 months of age. Factors that influence malnutrition and frequency of diarrhoea limited access to sanitation facilities, unhygienic water drinking and handling mother's education, misconception about food, infectious disease and weaning practice.<sup>26</sup>

**Dynamics of Risk Determinant Regarding Diarrhea Affected Slum children in urban Dhaka a Dysfunctional Health Care System Was conducted By Choyon Kumar Saha M. SS (2012).** This study attempts to focus on the socio-cultural risk determinants of health behavior which is closely associated with the severity of persistent diarrheal disease monger than 05 children. It is a dominant cause of childhood mortality and frequent faltering of infant growth of under privileged slums children in Bangladesh. A community based cross sectional survey was conducted on 109 mother- children's pairs of 0-59-month-old children Agargaon slum of Mirpur zone in Metropolitan Dhaka from July to August 2008. An explanatory model of Health Care system (HCS) was applied to explore the nature of health care practices during diarrheal episodes which incorporates conventional folk tradition (Fakir,kobiraj,Hujur), popular ( lay and nonprofessional such as family, community etc.) and professionalized traditions ( modern scientific medicine) among slum women and justify the functionality of three components of HCS in relation to the risk factors associated with diarrheal treatment of respondents children. The findings of the study indicates that various socio-cultural factors unhygienic conditions (garbage, offensive smell, unclean utensils ineffective hand washing flies and mosquitoes etc.) eating stale and stationary food (biscuits, cake and bread) from vendors and roadsides, limited breastfeeding practices, unsafe drinking water and gender discrimination in providing treatment are frequently noticed in slum areas which drive under five children to high risk of persistent diarrhoea. In a recent study shows that 9% of neonatal, infant and child deaths resulting from the prevalence of diarrhea were found in Kamangar char slum areas in Dhaka City (Manushi, 2009). It was reported that 29 diarrheal patients (children, male and female) admitted per hour in the ICDDR hospital at Mohakhali (Staff Correspondent, 2008).<sup>27</sup>

**A cohort study was conducted by Miharshahi S et al (2008)** on association between infant feeding

pattern and diarrhoeal disease. This study was shown that in a cohort of infants in rural Bangladesh followed up from 0-6 months of age, infants who were exclusively breast feed for 06 months had a significantly lower 7 days prevalence of diarrhoea (OR for lack of EBF=2.50 (95% CI 1.10,5.69). P 0.03] than infant who were not exclusively breast feed. This effect was significant and reminded even after controlling for several potential confounders. However, when the association between patterns of infant feeding (exclusive, predominant and partial breast feeding and illness was investigated in more detail, exclusive breast feeding was not significantly more protective predominant breastfeeding for preventing diarrhoeal illness although it was significantly more protective than partial breast feeding. Partially breast feed infant had other sources of nutrition than breast milk with infant formula, other liquid, milks and solid food part of their regular diet. These findings suggest that prominent breast feeding may be sufficient to reduce rates of morbidity significantly in this rural of Bangladesh. However, the number of predominantly breast food infant was small (n=27) and further studies with large numbers would be needed to be certain there are no difference in these to infectious disease outcomes between exclusively and predominantly breast feed infants. In a recent study with data from India, Peru Ghana a similar effect was show on hospitalizations for diarrhoeal disease.

There was no significant difference in the risks of hospitalization between infant who were exclusively breast feed compared with infant who were predominantly breast feed [ adjusted ratio =0.67 (95% CI 0.23, 2.01)]. However, non-breast feed infant had a high risk of all cause hospitalization when compared with infants who had been predominantly [adjusted rate ratio 3.39 (95% CI 1.74, 6.61); p<0.01] and also had a higher diarrhoea specific hospitalization. A similar effect was seen on mortality with no significant difference in the risk of death between children who were exclusive breast feed and those who were predominantly breast feed.<sup>28</sup>

**A study was conducted by Charles P Larson, Saha UR, Islam R, Roy N in an article childhood diarrhoea management practices in Bangladesh; Private sectors dominance and continued inequities in care of International Journal of epidemiology, Volume 35, Issue 6, December 2006, pages 1430-1439, <https://doi.org/10.1093/ije/dyl167> published on 22 September 2006** we have seen a total of 7308 children with a prevalent diarrhoeal illness episodes within 560 clusters were identified and enrolled in the survey. In 61% of the cases help was sought from a health care provider, with over 90% practicing in the private sectors. Caretaker practice disparities favoring males and higher income households were identified. Significant trends (p<0.001) favoring higher income households were found for having sought help from any provider or a licensed doctor and for treating dear child with oral rehydration solution or an antibiotic. Female children in urban households were less likely to be seen by a licensed allopath, adj OR 0.73 (95% CI 0.57, 0.94. Among rural household's gender disparities were limited to female being less likely to receive an antibiotic, adj OR 0.74 (95% ci 0.65-0.94%).

**The American Journal of Tropical Medicine and Hygiene in an article on diarrhoeal epidemics in three more serious floods in Dhaka -1988, 1998 and 2004,** wrote that vibrio cholera was the most commonly identified cause of diarrhoea followed by Rota virus. In the 1988 flood in Bangladesh, diarrhoeal disease was responsible for 35% of all flood related illness and 27% of 154% food related deaths in a population more than 45,000 patterns in rural Bangladesh.<sup>29</sup>

**A study was conducted by Huq S, Khan A.I., Malek M.A, et al.** On clinical features, complications and outcome of critically ill hospitalized children with diarrhoea in urban Bangladesh. In this

prospective study, all children aged less than 5 years, directly admitted to the special care unit (SCU) of Dhaka hospital of ICDDR, B from January 1999 through June 2003 recorded and analyzed. Over 7,000 critically ill patients were admitted to SCU during the study period and 708 of them (from neonates to 80 years old) were enrolled into the study, of aged 12- 35 months and the remaining 5% were aged 36-59 months with equal sex distribution. Neonates more often attended with shorter duration (<3 days) of diarrhoea (70% VS 52%,  $P=0.02$ ) and less vomiting (68% VS 82%,  $P=0.04$ ) than 1-11 months old infants. Some and severe dehydration were present in 495% and 24% of the patients respectively. Although standing was equally distributed severe underweight and wasting were more frequently observed (41% VS 26%,  $p=0.02\%$ , and 8% VS 3%,  $p=0.01$  respectively) among 6-11 months old infants compare to those aged 0-5 months.<sup>30</sup>

**Ahmed N. M.A et.al (2002)** carried out a study on healthcare use patterns for diarrhoeal/ dysentery among infants and children in rural Bangladesh to assess care- seeking behavior during episodes of diarrhoea/dysentery. Data on diarrhoea/dysentery were collected from mothers of 441 children (<5 years of age) by trained female interviewers using one week recall period during April 2000- December 2002 under a surveillance system administered by the health systems and infectious disease division of ICDDR, B, at Abhoynagar / Keshobpur Upazilla of Jessore district. Of the 441 children (<5 years of age), 345% were infants, 31% were aged 1-2 years and 35% aged more than 2 years. Most (82%) children had at least one diarrhoeal or dysentery episodes and a quarter of them had at least 1 episode during this period. The use of oral rehydration solution (ORS) was higher during diarrhoeal than dysentery episodes and in the remaining cases, either self-care was given, or an unqualified practitioner was consulted. The majority (53.6%) occurred among infants. No significant associations were found among care seeking and education of parents, immunization status, parity of mother and genders.<sup>31</sup>

**A study was carried out by Quaiyum M.A. , Ashraf A, Ahmed N, et al.** on mortality of children, aged less than 5 years, in rural area of Bangladesh. Data obtained from verbal autopsy of 1,238 reported deaths in children of <5 years old through the health and demographic surveillance system administered by the health systems and infectious disease division of ICDDR, B in Abhoynagar and Keshobpur sub-districts of Jessore district during 1983-2002 were analyzed. Most (54%) deaths were in neonates, 29% were post-neonate, infants and 17% were aged 1-4 years. The major causes of neonatal deaths were pre maturity (29%), maternal-pregnancy complications (15%), infections (11%), acute respiratory infections (10%), and birth asphyxia (9%). More than half of neonatal deaths occurred within 3days of birth. Among post-neonatal infants, 41% of deaths were associated with pneumonia, followed by diarrhoea (19%) and malnutrition related causes (14%). The major causes of death among 1-4 years old children were drowning (23%), followed by diarrhoea, pneumonia and malnutrition .3% of old deaths were from EPI vaccine preventable diseases. Only 45% of deaths had medical consultation prior to death, of which 23% were from qualified practitioners. No significant difference was observed in relation to cause, age and socio-economic status by gender.<sup>32</sup>

**A study was conducted by Bonita F. Stanton, JD Clemens** in an article socio economic variables and rates of diarrhoeal disease in urban Bangladesh transactions of the royal society of Tropical Medicine and Hygiene, volume 81, Issue 2, March- April 1987, pages 278-282,90241-0 we have seen socio demographic factors including low maternal education, low economic status, inferior quality of housing, diminished access to water and sanitation facilities, and crowding in the household are associated with

increased diarrhoea in the rural setting of many developing countries. To assess the relationship of these variables with diarrhoea rates in children in an urban setting we monitor the episodes of diarrhoea of children <6 years of age from 1921 families living in 51 clusters throughout Dhaka city, Bangladesh, for 3.5 months. Comparing incidence density ratios, we found that, of the factors listed above, only low family income and living in a one-room house were statistically associated with increased diarrhoea and that none of these variables was associated with a meaningfully increased risk of diarrhoea we conclude that the risk factors for increased episodes of diarrhoea in the urban setting appear to be different from those of the rural.

## 2.4 International Study

**A cross-sectional study was conducted by Giazaw Z, Woldu W, et al (05 May 2017)** on the child feeding practices and diarrhoeal disease among children less than two years of age Northeast Ethiopia. A total of 367 children less than two years of age including using multistage cluster sampling technique. The prevalence of diarrhoea among children less than two years of age during the two-week period was 31.3%. A diarrhoea occurrence was associated with children aged between 06-11 months. (A or 6.21, 95% CI, 2.27%), delay to initiate early breast feeding for children less than six months of age are not currently exclusively breast feed, delay to initiate early breast feeding for children aged 06- 24 months. No breast feeding at the time of survey, children age 06-24 months who did not exclusively breast feed in the six months consuming uncooked foods, (95%) not eating cooked foods immediately after cooking 95%, hand washing with only water 95% and rotavirus vaccination 95%.<sup>33</sup>

**An observational study was conducted by Padhy S, S ethi R, Behera N (2017)** On mothers' knowledge, Attitude and Practice Regarding Prevention and Management of Diarrhoea in Children Southern Odisha; data collected from mothers by questionnaire method. Diarrhoea is more common in less than 2 years of age with males are affected more cases are seen from rural areas. Diarrhoeal disease is more common in the lower educated group and low socio -economic status families with prevalence of over crowding. 47% mothers had knowledge about diarrhoea, 52% about the etiology and 58% about risk factors of diarrhoea. Regarding role of breast feeding in diarrhoea 48% mothers had good knowledge and regarding adverse effects of bottom feeding 56% mother were aware. In this study only 34% of, mothers were aware of assessment of danger signs and dehydration and 27% about on sanitary latrine and safe drinking water uses in prevention and treatment of diarrhoea. Regarding prevention of ORS only 19% mothers had good knowledge 65% mothers had average knowledge.<sup>34</sup>

**A study was conducted by Budhathoki S, Bhattachan M, Kumar A ( 5 January 2016)** on Eco-social and behavioral determinants of Diarrhoea in under five children in Nepal, Children of age group 06-28 months are at high risk, as supplementary diets are introduced to the children from the age of six months. Male children had better access to health care services. Malnourished children also have a higher chance of developing persistent Diarrhoea. Provision of the safe water and sanitation and control of Diarrhoea. Male gender with higher income positively influences the treatment seeking behavioral. Mother's education and hand washing practice have direct influence in child health. Hand washing practices with soap which are protective are influenced by the cultural beliefs, involvement of community health volunteers increases the success to the health system, thereby reducing the diarrhoeal burden in the community.<sup>35</sup>

**An analytical cross-sectional study was conducted by Gupta A. Sarkar G et al. (2015) in west Bengal.**



On risk correlates of Diarrhoea in children under five years, the prevalence of and feeding practices nutritional and immunization among 152 children under five years (69 males and 83 females). Overall prevalence of Diarrhoea was 22.36%. 21.73% males and 22.89% females were affected with Diarrhoea. There were 57.69% Diarrhoea cases in children of 07-12 months group followed by 25.71% in those of 13-24 months age group, with increasing age, the prevalence of Diarrhoea gradually decreased. Diarrhoea was noted to be 20.33% in exclusively breast feed children, the frequency of diarrhoea was 26.08%, the prevalence of Diarrhoea was 21.83% in completely immunized children. Risk of Diarrhoea was 19.80% in normal participants and 27.45% in undernourished children.<sup>36</sup>

**A cross- sectional study was carried out from June to August 2015 by Kumar. K Rokkapparavor, S.R. Nigudgi, et al.** On knowledge and practice of mothers of under-five age children's regarding management of diarrhoea in India. A total of 204 mothers were covered nearly two third (62.74%) mother were literate and majority of them were in the age group 21-25 years. More than half of participants lacked adequate knowledge regarding danger signs speed & prevention. Poor dietary practices were prevalent among 50.49% mother practiced bottle feeding, among them only 26.82% practiced hygiene measures. Majority of mothers (55.88%) disposed child's feces in open air. Only 43.62% mothers demonstrated proper technique of hand washing, 86.27% participants knew about ORS among them more than half had adequate knowledge regarding preparation and administration. Only 26.96% mothers deformed their child regularly.<sup>37</sup>

**A study was conducted by Diouf k, Tabatabati P, et all (2014)** on diarrhoeal prevalence in children under five year of age in rural Burundi; An assessment of social and behavioral factors at the household level. A cross a sectional study was conducted among 551 rural household in north western Burundi a total of children are controlled. The overall diarrhoeal prevalence was 32.6% forty six percent (n=255) of households collected drinking water from improved water sources and only 3% (n= 17) had assess to improve sanitation. We found a lower prevalence of diarrhoea in children whose primary caretakers received hygiene education (17.9%) boiled water prior to its utilization (19.4%). No gender differences were detected regarding diarrhoea prevalence or the care takers decision to treat.<sup>38</sup>

**A cross-sectional study was conducted but khan A, Danish SH, Asfaq A (2014)** in Sindh Pakistan on knowledge, Attitude and Practices of Mothers regarding Diarrhoeal risk factors and Management in under 05 children the sample size from each Union council was n=150 cluster sampling technique was utilized for selection of households in both of union council. Personal interviews were conducted from mothers by trained data collectors or pretested questionnaire. 46% in Badin, and 44% in Dadu in under five children attack of acute diarrhoea in the last three months. Regarding the sign of dehydration, 36% mothers identified that absence of tears as a principal sign of dehydration in Badin. When 41% in Dadu identified lethargy is the chief sign. Contaminated water and stale food were identified as a cause of diarrhoea by most participant in both districts. 48% in Badin and 41% in Dadu identified hand washing the most important method for prevention against diarrhoea. When management of Diarrhoea was taken into account for majority 50% mother it was through ORS.<sup>39</sup>

**A study was carried out by Kalakheti B, Jain KC et al (2013) in Nepal.** On the risk factors of diarrhoea in children under five years in urban slums Nepal; parents of all children under five years from the urban slums of Nepal were interviewed using a standardized pretested questionnaire and proforma. Prenatal variables, environmental factors, and presence of diarrhoea in those children in past three

months were collected by trained enumerators and the data were analyzed with statistical software SPSS-10. A total of 450 under five years children were enrolled in the study. There were 216(48%) male and 234(52%) female children with F: M ratio of 1.08:1. Occurrence of diarrhoea was lower if the children were breast – feed for more than six months. Well- nourished, used fountain water for drinking, or used boiled or threaded water similarity, diarrhoea prevalence was lower if farther had a regular job, daily income in the family was more than one US dollar, there was a toilet in the house, practice of hand washing was followed before feeding or preparing food, or there was no child suffering from diarrhoea in the neighborhood.<sup>40</sup>

**A descriptive study cross sectional was conducted by Muntaz Y, Zafar M, and Muntaz Z et al (2011) at pediatrics ward and OPD civil hospital Karachi .** On knowledge Attitude and Practice of mothers about diarrhoea in Children under 05 years. Non- random convenient sampling was adopted to sample 200 subjects by interviewing mothers taking their consents. Mothers have to sample 200 subjects by interviewing mothers after were included. Mothers' knowledge regarding the cause of diarrhoea; contaminated water (17%), eating mud (14%), teething (10%) about sign of dehydration, 40% mothers gave unspecific sign and 26% responded with sunken eye as the only sign while 35% answered to sign (thirst and dry hair/ skin). Mothers who knew how to prepare ORS were 80% regarding Prevention of diarrhoea, 15.5% mothers knew to cover food and 14.5% to boil water. Regarding health care seeking practice 52.5% mothers took the child to the doctor after two days, 30% mother did self-medication.<sup>41</sup>

**A cross-sectional study was carried out by Muktar A, Ibrahim M and Ravi et al (2011).** On A survey of mother's knowledge about children diarrhea and its management in Morang, Nepal. Mothers had some basic knowledge about the Prevention of diarrhea, and fluid / foods which can or cannot be given during bouts of diarrhea. Knowledge about sign of dehydration was poor. None of the mothers were able to mention all the steps for corrects and complete preparation of oral dehydration salt (ORS) and salt- sugar-water solution (SSW). Only 8.5% of the mothers stated that the purpose of giving ORS solution diarrhea is to prevent the child from getting dehydration. <sup>42</sup>

**A Cross sectional study was conducted by Sudipta Basa ( May 2007) prevalence of diarrhoea among under 05 children and Health Seeking Behavior of their mothers in an urban slum of Delhi.** Considering frequency of three episodes of diarrhoea/ child/ year and taking accepted margin of error as 20%, sample size of 695 was calculated. Data analysis was done by simple statistical tools like percentage. Prevalence of diarrhoea in last 02 weeks was about 14.8%. Prevalence of diarrhoea among under 05, females 18.4% was highest compared to 12.2% male. 65% mother knew about use of ORS in diarrhoea through private doctors. 60.2% cases were given Oral Rehydration Solution during diarrhoea. 31% mothers knew about ORS but did not know the correct method of preparation and it'<sup>43</sup>

**Saxena S and Diwedi R conducted a cross-sectional study at the medical college hospital Bhopal, from October 2001 to October 2002.** The study included 300 children aged less than 05 years presenting with acute diarrhoea and their mothers. A predesigned questionnaire was used for collecting data. Data were programmed and analyzed and results were compared with those of a similar study done a decade ago under the same setting. Over the decade, knowledge of ORS increase from 9% to 58% and to 100% among higher educated mothers. The practice of starvation reduced from 33.7% to 3.6% and hand washing with soap increase from 18% to 80%. Less significant changes requiring extra focus seen



in knowledge of cause of diarrhoea were considered as teething. Correct knowledge of reconstruction of ORS increased from 26% to 49%. Only 7.3% used it in proper amount. 45% opined that both fluids and food should be given in diarrhoea. All mothers were unaware of giving extra feeds in convalescence. Food restriction during diarrhoea prevailed over the decade, unaffected by increased in literacy.<sup>43</sup>

**A Study was carried out by S.C. Tiwari and Kakkar R, Department of community Medicine, GANDHI Medical College, Bhopal, India** on reduction Protein Energy Malnutrition by Slashing episodes of diarrhoea among children aged 0 to 5 years. The study was carried out among 160 families having children 0 to 5 years. In total, 380 children aged less than 5 years were selected, and data regarding the incidence of diarrhoea and prevalence of protein energy malnutrition were gathered through their parents. Interventions were applied, and results were correlated. The number of diarrhoeal cases was reduced by 62% due to adoption of health methods, such as Exclusive Breast Feeding (56%) increased use of oral rehydration solution (71.15%), and adoption of purification methods (82.5%). The study observed improvement in all grades of malnutrition towards normal.<sup>44</sup>

**A study was conducted by Chowdhury P.Basu S, and Dzeyie KA, Gulla S, khade S, Patel A, Phukan D, Tanzin dikid, Kumar A** in an article knowledge, Attitude and practice of mothers regarding diarrhoeal illnesses in children under five years of age: A cross-sectional study in an urban slum of Delhi, India we have seen Diarrhoea is one of the lead killers of children worldw ide. This study was done with an aim to determine knowledge, attitude and practice regarding diarrhoeal illnesses, it's prevention and management in mothers of under five children. A descriptive cross-sectional study; 125 mothers were randomly selected from an urban slum of Delhi and were interviewed using a structured questionnaire, 96% mothers defined diarrhea appropriately. More common perceived causes of diarrhea were contaminated food and drinking water (80%). Through 83% mothers believe that clean drinking water prevents diarrhea yet water treatment practiced by only 36%. Most mothers believed in (90%) and practice (80%) hand washing with soap post defecation on prevents diarrhea. While 31% had knowledge on importance of use latrine, fewer (19%) accepted safe disposal of stools was very important and 58% reported practicing it. Less than a third of the mothers recognized critical sign of dehydration. 79% mothers recognized importance of increased fluid requirement and 70% practiced it for management of diarrhea. Though 765 mothers use ORS. Though only 22% were aware of the role of breastfeeding in prevention of diarrhoea, a positive attitude towards 74% and health care practice 90% of exclusive breastfeeding was observed. Thus, we conclude that though the community knowledge, attitude and practices on diarrhoeal illnesses and its prevention is marginally satisfactory, the poor knowledge signs of dehydration and relevance of ORS a primary management component is a matter of concern for child survival. 125 mothers were interviewed in total. Socio- demo graphing profiling suggested that mothers mean (+- SD) age was 27 (+- 3.6

) Years, ranging from 22-40 years. The mean (+-SD) of their children in question was 2.6 (+-1.1) years. On an average, these mothers had 1.2 (=0.4) children of less than five years of age. 91% respondents followed Hinduism as religion. Majority of these families (80%) had their total monthly family income in the range INR 5,000-15,000/month. 15% respondents were illiterate, 14% had primary education, 23% had higher primary education, 30% had secondary education, 12% had higher secondary education and there were 6% graduate mothers. In our sample, all mothers were non- working and looked after their children and domestic work. All the investigated houses had access to tap water supply and sanitary

latrines.

**A study was conducted by Mokomance M, Kasvosve I, Emilia de Melo, Jeffrey M, Pernica and David M. Goldfarb** in an article the global problem of childhood diarrhoeal disease; emerging strategies in prevention and management we have seen acute diarrhoeal diseases remain a leading cause of global morbidity and mortality particularly among young children in resource- limited countries. Recent large studies utilizing case control design, prospective sampling and more sensitive and broad diagnostic techniques have shed light on particularly pathogens of importance and highlighted the previously under recognized impact on these infection on post- acute illness mortality and growth. Vaccination, particularly against Rota virus, has emerged as a key effective means of preventing significant morbidity and mortality from childhood diarrhoeal disease. Other candidate vaccines against diarrhoeal pathogens, such as enterotoxigenic *Escherichia coli* and *shigella* spp., also hold significant promise in further ameliorating the burden of enteric infection of children. Large studies are also currently underway evaluating novel and potential easy to implement water, sanitation and hygiene (WASH) preventive strategies. Given the ongoing global burden of this illness, the paucity of new advances in case management over the last severe decades remains a challenge. The increasing recognition of post-acute illness mortality and growth impairment has highlighted the need for interventions that go beyond management of dehydration and electrolyte disturbance. The few trials of novel promising interventions such as Probiotics have mainly been conducted in high income settings. Trials of antimicrobials have also been primarily conducted in high income settings or in travelers from high income settings. Bloody diarrhea has been shown to be a poor marker of potentially treatable bacterial enteritis, and rising antimicrobial resistance has also made empiric antimicrobial therapy more challenging in many settings. Novel effective and sustainable interventions and diagnostic strategies are clearly needed to help improve case management. Diarrhoeal disease and other enteric infections remain an unmet challenge in global child health. Most promising recent developments have been focused around preventive measures, in particularly vaccination. Further advances in prevention and case management including and human potential

## CHAPTER THREE

### METHODS AND MATERIALS

#### 3.1 Study design

#### 3.2 Study Place

#### 3.3 Study period

#### 3.4 Study Population

#### 3.5 Sample Size

#### 3.6 Sampling Technique

#### 3.7 Selection Criteria

- Inclusion criteria
- Exclusion criteria

#### 3.8 Research Instruments

#### 3.9 Pretesting

#### 3.10 Research approach

### 3.11 Data collection procedure

### 3.12 Data processing and analysis

### 3.13 Ethical consideration

## Method and Materials

### 3.1. Study Design:

This was a descriptive type of cross-sectional study.

### 3.2. Study place:

The study was conducted in child ward and OPD at CMH Dhaka. The study was carried out in CMH Dhaka which is a tertiary level hospital in Bangladesh Armed Forces and at national level as well. The hospital is well equipped with sophisticated diagnostic and therapeutic facilities and provides the emergency, outpatient and in patient services. It possesses a high quality of professional expertise. Patients are referred here from different regions of the country for specialized treatment and proper and better care. It is the largest military hospital in Bangladesh with bed strength of 1100. This hospital provides health care services to the Armed Forces personnel, their families, many other civil population including foreigners and patients rescued from accident and disaster.

### 3.3. Study Period:

The duration of the study was six months from July 2020 to December 2020. The planning and designing were done in the month of July and August 2020. Data collection instruments have been developed, pre tested and finalized in the month of September and October 2020. Data was collected during the period of 12<sup>th</sup> October to 26<sup>th</sup> October 2020. Data processing and analysis was done from November 2020. The report writing and printing was done December 2020. Finally, submission was done in the month of December 2020. The details of work schedule are appended as annexure C.

### 3.4. Study Population:

All the mother attending with them under 05 children attending at both OPD and indoor of child ward CMH Dhaka.

### 3.5. Selection criteria:

Following inclusion criteria were adopted to select the study population:

#### Inclusion criteria

- a. Patients provided informed consent.
- Mother attending in child ward at CMH.
- Mother willing to practice in the study.

Following exclusion criteria were adopted to select the study population:

#### b. Exclusion criteria

- Mother non-co- operative.
- Those did not give consent.
- Emergency patient and psychiatric patient.

### 3.6. Sampling technique:

The sample was selected through purposive sampling'

### 3.7. Sample size:

Total 107 sample was selected in the study.

### 3.8. Research instrument:

A prepared semi structured questionnaire was used as research instrument. After preliminary observation and review of literature a questionnaire was developed. The questionnaire was pre- tested on 10 mothers of under five children at Kurmitola General Hospital, Dhaka with similar background who were not included in the sample size.

### 3.9. Research approach:

After getting approval of the research from protocol committee of AFMI the researcher approached to CMH Dhaka and the purpose of the research was explained to commandant CMH, Dhaka who gave the permission to carry out study there.

### 3.10. Pre- testing:

The questionnaires were pre- tested on 12 mothers of under five children Kurmitola General Hospital, Dhaka Cantonment, Dhaka tertiary which is also hospital. Probable problems of the respondents as well as the researcher were sought out. The questionnaires were reviewed and it was finalized after necessary modification.

### 3.11. Data collection procedure:

Then after getting the permission from commandant CMH Dhaka, the researcher approached to the respondents as per inclusion criteria; explained the purpose of the study and with the consent of the respondent by face-to-face interview with the pre-tested questionnaire as per schedule was taken and responses were recorded. Almost 1 hour was needed to complete the interview of on respondent. On an average 10 respondents interviewed every day during office hour from 9 am to 2 pm. Each day 10 patients were selected from different wards according to the inclusion criteria. Then every second case was taken for interview. This procedure was continued till the last day of data collection.

### 3.12. Data processing and analysis:

At the end of each interview the data were checked to see whether it was filled completely and constantly and was corrected accordingly. Then the data were compiled in computer with the help of SPSS software program version 20 by the researcher herself.

### 3.13. Ethical consideration:

The study needed to collect some personal information from the respondents. So, before collection of data, an explanation was made to the respondent about the purpose of the study. Therefore, informed consent was taken from the respondents. Due to importance was given on physical, social, cultural and other ethical aspects of the respondents.

## 4. Result

### Information related to socio-demographic characteristics of the respondents.

**Table-4.1.1: Distribution of respondents by age (n=71)**

Age (Year)	Frequency	Percent	Test Statistics
20-24	9	12.7	Mean $\pm$ SD  =29.69 $\pm$ 5.421  years
25-29	23	32.4	
30-34	21	29.6	
35-39	18	25.4	

Total	71	100.0	
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Table-4.1.1 shows that most of the 23(32.4%) of the respondents were within 25-29 years of age and least 9(12.7%) of respondents were within 20-24 years. The mean ages of respondents were 29.69 years with Standard Deviation=5.421 years.

**Table-4.1.2: Distribution of child by age (n=71)**

Child age in months	Frequency	Percent	Test statistics
1-10	16	22.5	Mean $\pm$ SD =26.54 $\pm$ 17.997
11-20	19	26.8	
21-30	9	12.7	
31-40	9	12.7	
41-50	9	12.7	
51-60	9	12.7	
Total	71	100.0	

Table 4.1.2. shows that most 19(26.8%) of the child were within 11-20 months of age. The mean ages of child were 26.54 months with SD $\pm$ 17.997 months. 28

**Table-4.1.3: Distribution of the child by sex.**

Sex of the Child	Frequency	Percent
Male Female Total	36	50.7
	35	49.3
	71	100.0

Table 4.1.3 reveals that maximum 36(50.7%) were male child and 35(49.3%) were female child

**Table-4.1.4: Distribution of the respondents by religion.**

Religion	Frequency	Percent
Islam Hindu Total	70	98.6
	1	1.4
	71	100.0

Table 4.1.4 reveals that most of the respondents 70 (98.6%) were Muslim and 1(1.4%) were Hindu.

**Table-4.1.5: Distribution of the respondents by educational status.**

Educational Status	Frequency	Percent
Illiterate Primary (i-v)	0	0
Secondary (vi-x) SSC	0	0
HSC		
Graduate or above Total	3	4.2
	22	31.0
	17	23.9
	29	40.8
	71	100.0

Table 4.1.5 depicts that out of 71 respondents, maximum (40.8%) completed Graduate and minimum (4.2%) completed secondary

**Table-4.1.6: Distribution of the respondents by occupational status.**

Occupational Status	Frequency	Percent
Housewife Service Holder	63	88.7
Business Student	6	8.5
Total	1	1.4
	1	1.4
	71	100.0

Table 4.1.6 shows that out of 71 respondents maximum 63(88.7%) were housewives, followed by 6(8.5%) service holders, business and student was 1(1.4%).

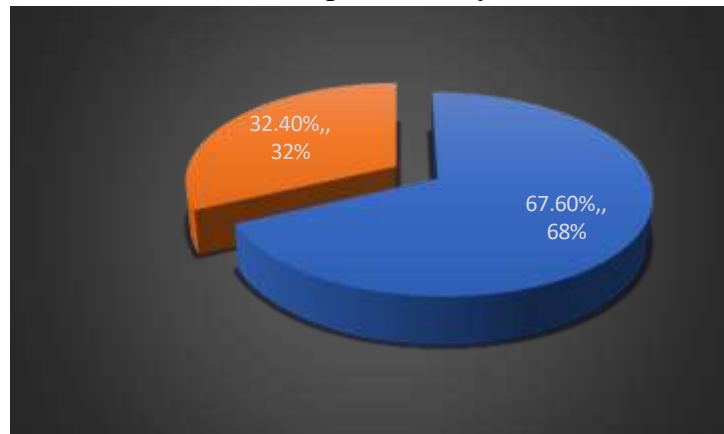
**Table-4.1.7: Distribution of the respondents by accommodation.**

Accommodation	Frequency	Percent
Mature Semi-furnished	32	45.1
Raw Flat	10	14.1
Total	3	4.2

	26	36.6
	71	100.0

Table 4.1.7 reveals that out of 71 respondents maximum 32(45.1%) were living in Mature, 26 (36.6%) were living in flat, 10 (14.1%) were living in Semi-furnished and 3(4.2%) were living in Raw house.

**Figure-1: Distribution of the respondents by sources of drinking water.**



Deep Tube Well

Tap Water

Figure-1 reveals that out of 71 respondents 48(67.6%) were using tap water & 23(32.4%) were using deep tube well water

**Table-4.1.8: Distribution of the respondents by types of Latrine used.**

Types of Latrines	Frequency	Percent
Sanitary Latrine	51	71.8
Others	20	28.2
Total	71	100.0

Table-4.1.8 shows that out of 71 respondents 51(71.8%) used sanitary latrine & 20 (28.2%) used others.

**Table-4.1.9: Distribution of the respondents by family members (n=71)**

Family Members	Frequency	Percent	Test Statistics
3-6	58	81.7	Median 4.0
7-10	13	18.3	
Total	71	100.0	

Table 4.1.9 reveals the distribution of respondents by number of family members. Median number of family members were 4.00. Maximum number of family members 58(81.7%) were in between 3-6 & 13(18.3%) were in between 7-10.

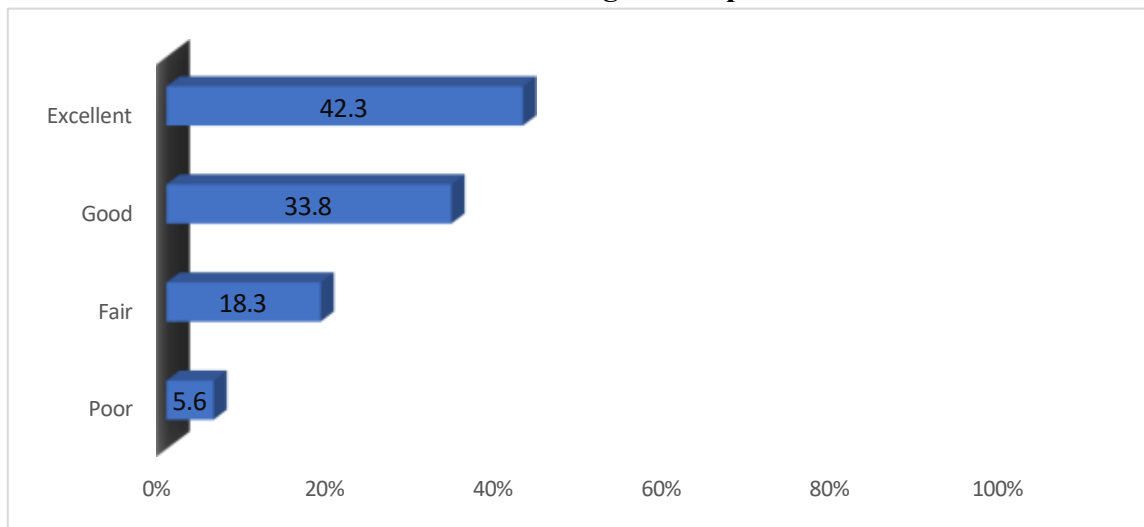
**Table - 4.1.10: Distribution of the respondents by monthly family income.**



Monthly Income (TK)	Frequency	Percent	Test Statistics
10000-29000	27	38.0	Mean & $\pm$ SD 31690 $\pm$ 11624.594 (TK)
30000-49000	34	47.9	
50000-69000	10	14.1	
Total	71	100.0	

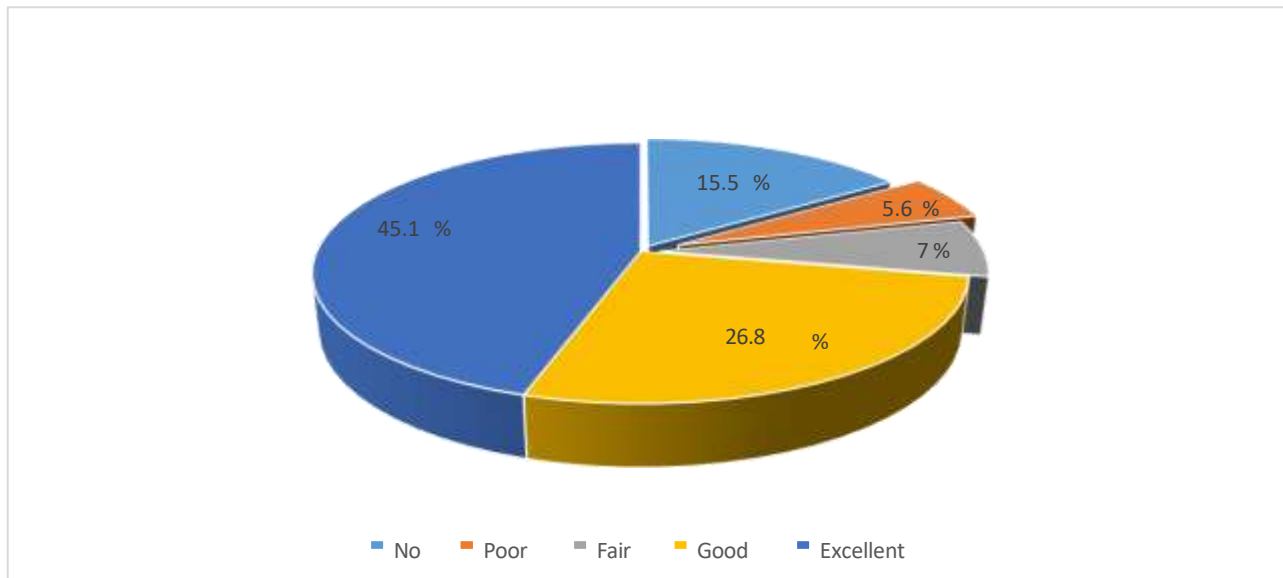
Table-4.1.10 depicts that out of 71 respondents, mean monthly family income of the respondents was 31690.14 taka and the # SD11624.594 taka. The maximum was 69000 taka and minimum was 10000 takas.

#### 4.1 : Information related to level of knowledge about prevention of diarrheal disease.



**Figure-2: Distribution of the level of knowledge of the respondents by definition of diarrhea.**

Figure-2 shows that out of 71 respondents 30(42.30%) have excellent, 24(33.8%) have good, 13(18.3%) have fair, 4(5.6%) have poor knowledge about definition of diarrhea.



**Figure-3: Distribution of the level of knowledge of the respondents by type of disease.**

Figure-3 reveals that out of 71 respondents 32(45.1%) have excellent, 19(26.8%) have good, 5(7.0%) have fair, 4(5.6%) have poor & 11(15.5%) have no knowledge about type of diarrheal disease.

**Table-4.2.1: Distribution of the level of knowledge of the respondents by incubation period of diarrheal disease**

Level of Knowledge	Frequency	Percent
No	28	39.4
Poor	21	29.6
Fair	15	21.1
Good	7	9.9
Total	71	100.0

Table-4.2.1 depicts that out of 71 respondents 7(9.9%) have good, 15(21.1%) have fair, 21(29.6%) have poor & 28(39.4%) have no knowledge about incubation period of diarrhea

**Table-4.2.2: Distribution of the level of knowledge of the respondents by route of transmission of diarrheal disease.**

Level of Knowledge	Frequency	Percent
No	14	19.7
Poor	11	15.5
Fair	21	29.6
Good	18	25.4
Excellent	7	9.9
Total		

	71	100.0
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Table-4.2.2 shows that out of 71 respondents 7(9.9%) have excellent, 18(25.4%) have good, 21(29.6%) have fair, 11(Shows that out of 71 respondents 30(42.3%) have excellent, 24 (33%) have good, 13(18.3%) have fair & 15.5%) have poor & 14(19.7%) have no knowledge about route of transmission of diarrheal disease.

**Table-4.2.3: Distribution of the level of knowledge of the respondents by causes of diarrhea.**

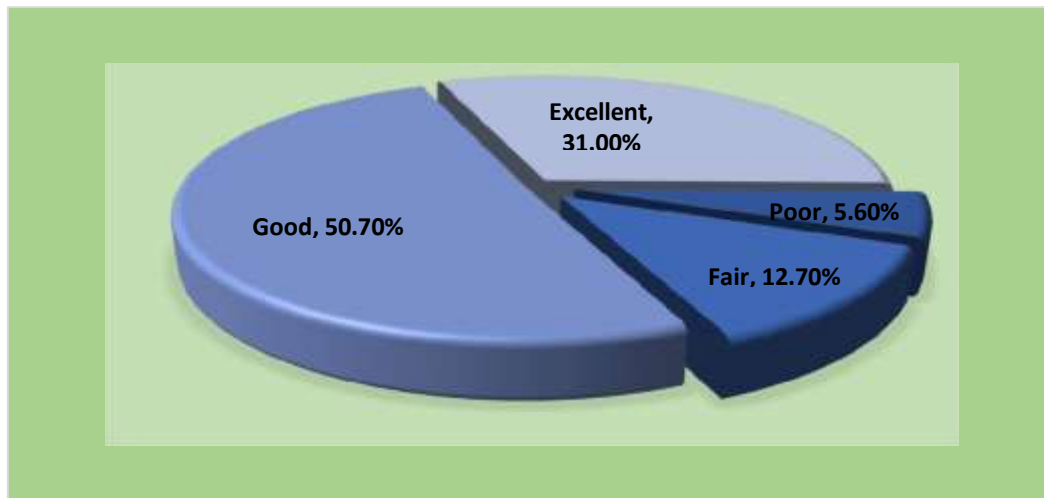
Level of Knowledge	Frequency	Percent
No Poor Fair Good	5	7.0
Excellent Total	7	9.9
	17	23.9
	36	50.7
	6	8.5
	71	100.0

Table-4.2.3 reveals that out of 71 respondents 6(8.5%) have excellent, 36(50.7%) have good, 17(23.9%) have fair, 7(9.9%) have poor & 5(7.0%) have no knowledge about causes of diarrhea.

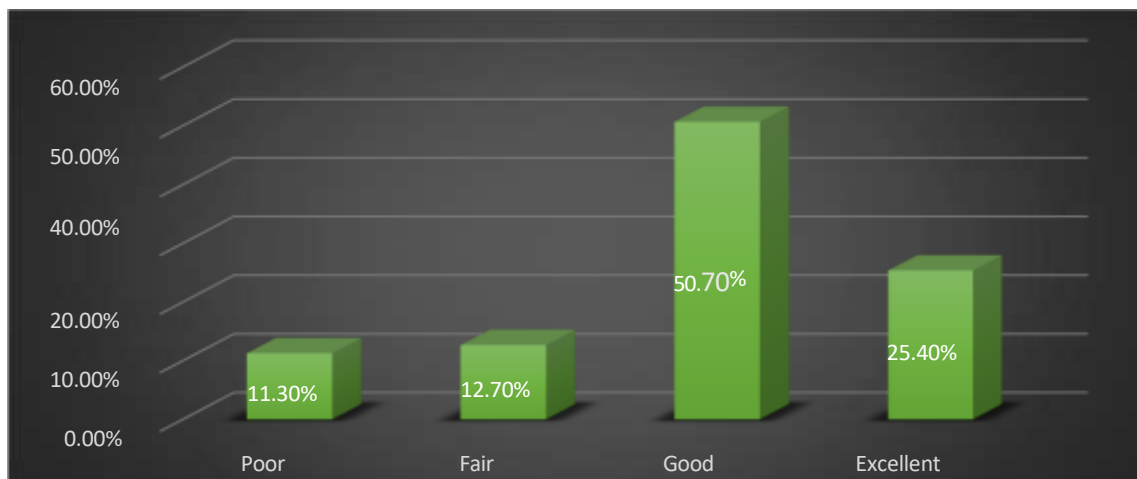
**Table-4.2.4 Distribution of the level of knowledge of the respondents by sign & symptoms of diarrhea.**

Level of Knowledge	Frequency	Percent
Poor Fair Good Excellent	7	9.9
Total	15	21.1
	35	49.3
	14	19.7
	71	100.0

Table-4.2.4 depicts that out of 71 respondents 14(19.7%) have excellent, 35(49.3%) have good, 15(21.1%) have fair & 7(9.9%) have poor knowledge about sign & symptoms of diarrhea.

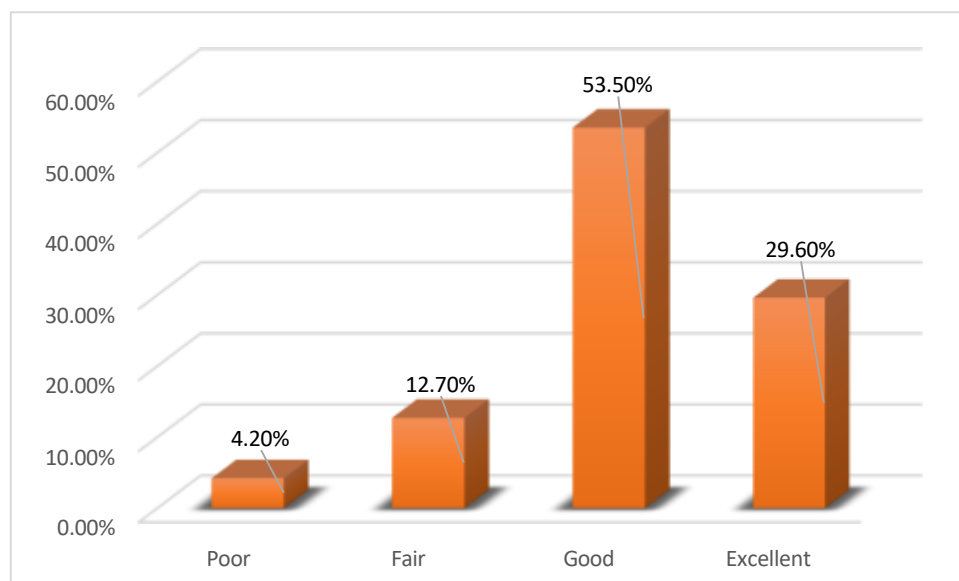


**Figure-4: Distribution of the level of knowledge of the respondents by management of diarrhea.**  
Figure-4 depicts that out of 71 respondents 22(31.0%) have excellent, 36(50.7%) have good, 9(12.7%) have fair & 4(5.6%) have poor knowledge about the management of diarrhea.



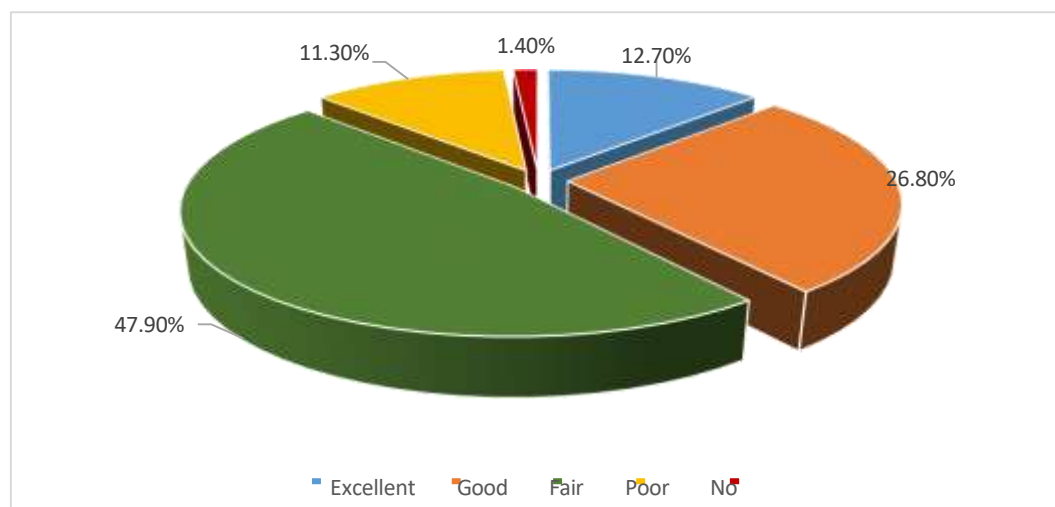
**Figure 5: Distribution of the level of knowledge of the respondents by preventive measures of diarrhea.**

Table-5 shows that out of 71 respondents 18(25.4%) have excellent, 36(50.7%) have good, 9(12.7%) have fair and 8(11.3%) have poor knowledge about the preventive measures of diarrhea.



**Figure-6: Distribution of the level of knowledge of the respondents by hand washing.**

Figure-6 reveals that out of 71 respondents 21(29.6%) have excellent, 38 (53.5%) have good, 9(12.7%) have fair and 3(4.2%) have poor knowledge about hand washing.



**Figure-7: Distribution of the level of knowledge of the respondents by Personal hygiene.**

Figure-7 shows that out of 71 respondents 9(12.7%) have excellent, 19(26.8%) have good, 34(47.9%) have fair, 8(11.3%) have poor and 1(1.4%) have no knowledge about maintenance of personal hygiene.

**Table-4.2.5: Distribution of the level of knowledge of the respondents by maintenance of food hygiene.**

Level of Knowledge	Frequency	Percent
No Poor Fair Good	3	4.2
Excellent Total	3	4.2

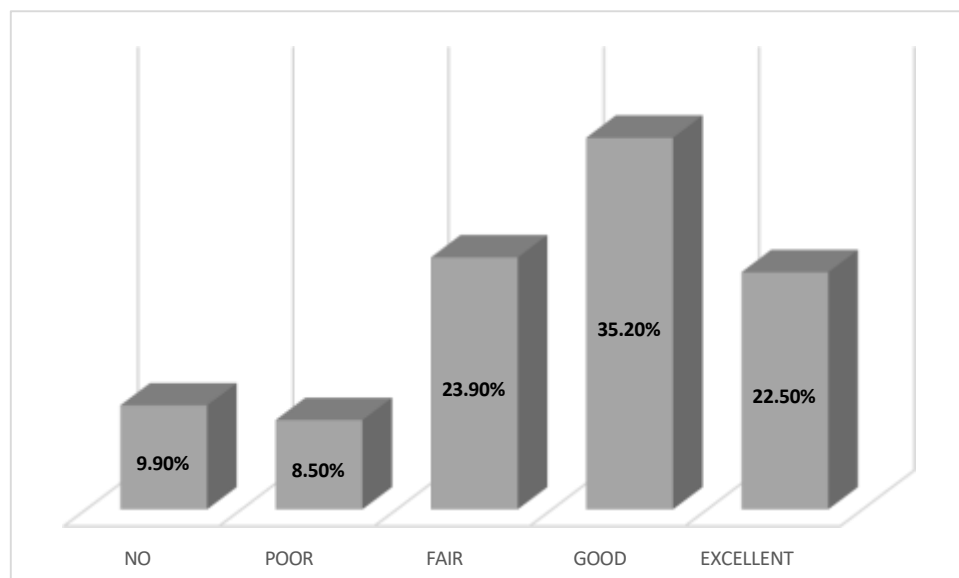
	15	21.1
	34	47.9
	16	22.5
	71	100.0

Table-4.2.5 reveals that out of 71 respondents 16(22.5%) have excellent, 34(47.9%) have good, 15(21.1%) have fair and 3(4.2%) have no knowledge about maintenance of food hygiene.

**Table-4.2.6: Distribution of the level of knowledge of the respondents by practicing of exclusive breast feeding.**

Level of Knowledge	Frequency	Percent
No	3	4.2
Poor	5	7.0
Fair	12	16.9
Good	30	42.3
Excellent	21	29.6
Total	71	100.0

Table-4.2.6 shows that out of 71 respondents 21(29.6%) have excellent, 30(42.3%) have good, 12(16.9%) have fair, 5(7.0%) have poor and 3(4.2%) have no knowledge about practicing of exclusive breast feeding.



**Figure 8: Distribution of the level of knowledge of the respondents by practicing of weaning.**

Figure-8 reveals that out of 71 respondents 16(22.5%) have excellent, 25(32.2%) have good, 17(23.9%) have fair, 6(8.5%) have poor and 7(9.9%) have no knowledge about practicing of weaning.

**Table-4.2.9: Distribution of the level of knowledge of the respondents by maintenance of sanitation.**

Level of Knowledge	Frequency	Percent
Poor Fair Good Excellent	9	12.7
Total	24	33.8
	27	38.0
	11	15.5
	71	100.0

Table-4.2.9 shows that out of 71 respondents 11(15.5%) have excellent, 27(38.0%) have good, 24(33.8%) have fair, 9(12.7%) have poor knowledge about maintenance of sanitation.

## 4.2 : Information related to practice for prevention of diarrheal disease.

### 4.2.1 : Distribution of respondents by regular mouth care of child.

Care of Mouth	Frequency	Percent
Yes No Total	67	94.4
	4	5.6
	71	100.0

Table-4.3.1 reveals that out of 71 respondents 67(94.4%) were used to take regular mouth care of child and 4(5.6%) did not.

**Table-4.3.2: Distribution of respondents by regular care of nail.**

Nail care of respondents	Frequency	Percent
Yes No Total	66	93.0
	5	7.0
	71	100.0

Table-4.3.2 shows that maximum respondents 66(93.0%) were taking care of nail & 5(7.0%) were not taking care of nail.

**Table-4.3.3: Distribution of respondents by nail care of child.**

Nail care of child	Frequency	Percent
Yes No Total	67	94.4
	4	5.6
	71	100.0

Table-4.3.3 reveals that out of 71 respondents 67(94.4%) were taking care of nail of child & 4(5.6%) were not taking nail care of child.



**Table-4.3.4: Distribution of respondents by regular bowel habit.**

Regular bowel habit	Frequency	Percent
Yes No Total	60	84.5
	11	15.5
	71	100.0

Table-4.3.4 depicts that 60(84.5%) had regular bowel habit & 11(15.5%) had not.

**Table-4.3.5: Distribution of respondents by using ORS or child during diarrhea.**

Use of ORS	Frequency	Percent
Yes No Total	70	98.6
	1	1.4
	71	100.0

Table-4.3.5 shows that out of 71 respondents 70(98.6%) were used to give ORS to children & 1(1.4%) did not during diarrhea.

**Table-4.3.6: Distribution of respondents by maintenance of food hygiene.**

Food hygiene	Frequency	Percent
Yes No Total	67	94.4
	4	5.6
	71	100.0

Table-4.3.6 reveals that maximum 67(94.4%) respondents used to maintain food hygiene and 4(5.6%) did not maintained.

**4.3.7: Distribution of respondents by washing hand before taking food.**

Hand washing before taking food	Frequency	Percent
Yes No Total	69	97.2
	2	2.8
	71	100.0

Table-4.3.7 depicts that out of 71 respondents 69(97.2%) used to wash hand before taking food & 2(2.8%) did not.

**Table-4.3.8: Distribution of respondents by washing hand before serving food.**

Hand washing before serving food	Frequency	Percent
Yes No Total	69	97.2
	2	2.8

	71	100.0
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Table-4.3.8 shows that out of 69(97.2%) were used wash hand before serving food & 2(2.8%) did not.

**Table-4.3.9: Distribution of respondents by washing hand after defecation.**

Hand washing after defecation	Frequency	Percent
Yes	71	100.0
No	00	00

Table-4.3.9 reveals that every respondent used to wash hand after defecation.

**Table-4.3.10: Distribution of respondents by practice of covering foods.**

Practice of covering food	Frequency	Percent
Yes No Total	68	95.8
	3	4.2
	71	100.0

Table-4.3.10 shows that maximum 68(95.8%) practiced of covering food & 3 (4.2%) did not.

**4.3.11: Distribution of respondents by Continuous Breast feeding practice during diarrheal disease**

Breast feeding During Diarrhea	Frequency	Percent
Yes No Total	70	98.6
	1	1.4
	71	100.0

Table-4.3.11 depicts that out of 71 respondents 70(98.6%) used to continue breast feeding practice during diarrheal disease & 1(1.4%) did not.

**Table-4.3.12: Distribution of respondents by providing artificial feeding of child during diarrhea.**

Practice of artificial feeding	Frequency	Percent
Yes No Total	22	31.0
	49	69.0
	71	100.0

Table-4.3.12 reveals that out of 71 respondents 22(31.0%) used to provide artificial feeding of child during diarrhea & 49(69.0%) did not used.

### 4.3.13: Distribution of respondents by drinking of boil water.

Drink Boil Water	Frequency	Percent
Yes	61	85.9
No	10	14.1
Total	71	100.0

Table-4.3.13 shows that maximum 61(85.9%) respondents used to drink boil water & minimum 10(14.1%) did not.

### Table-4.3.14: Distribution of respondents by cleaning floor.

Cleaning Floor	Frequency	Percent
Yes	65	91.5
No	6	8.5
Total	71	100.0

Table-4.3.14 reveals that out of 71 respondents 65(91.5%) were cleaning floor & 6(8.5%) were not cleaning floor.

### 4.3.15: Distribution of respondents by cleaning toys.

Cleaning Toys	Frequency	Percent
Yes	45	63.4
No	26	36.6
Total	71	100.0

Table-4.3.15 depicts that out of 71 respondents 45(63.4%) were cleaning toys & 26(36.6%) were not cleaning toys.

## 4.3 : Information related to co-morbidity status of respondents.

### Table-4.4.1: Distribution of the respondents by co-morbidity status.

Co-morbidity	Frequency	Percent
Diabetes Mellitus	5	7.0
Hypertension	8	11.3
Coronary Heart disease	1	1.4

Bronchial Asthma	7	9.9
Renal Disease	2	2.8
Cancer	0	0
Thyroid Problem	12	16.9
Urinary Tract Infection	21	29.6

Table-4.4.1 shows that among the respondents 21(29.6%) were suffering from UTI, 12(16.9%) were suffering from Thyroid problem, 8(11.3%) were suffering from Hypertension, 7(9.9%) were suffering from Bronchial Asthma & 5(7.0%) were suffering from Diabetes Mellitus.

## 5. Discussion

This was a descriptive type of cross-sectional study. The study was conducted among 71 mothers of under 05 children attending at child OPD and child ward in CMH Dhaka with an objective to assess the level of knowledge and status of practice about prevention of diarrheal disease. The data were collected through face-to-face interview using a semi structured questionnaire. After completion of data collection all data were analyzed and processed using the appropriate statistical procedures (SPSS version 22.0) and the findings of the study is discussed as follows:

In the present study the mean age of the child was 26.54 months which is not similar to the study finding of Akhter F where the mean age was 21.92 months. The causes of the dissimilarity may be due to sample size and sample technique.

It was evident from the study that 50.7 were male child. This finding is not similar to the study finding conducted by Kibria G among the under 05 children of armed forces personnel of Dhaka Cantonment where male children were 60%. The causes of this differences may be due to sample size variation.<sup>50</sup>

It was evident from the study that 98.6% respondent were Muslims and 1.4% were Hindu. It does not correspondent with Bangladesh demographic profile 2016, where it was shown that the religion of people in Bangladesh was 86% of Muslim, 12% Hindu, Buddhists 1% & Christian 0.5% and other 0.5%.

In the present study it was found 40.8% mothers were graduate or above level and 31.0% were SSC passed. According to the study conducted by Akter F et al it was found that 41.3% mothers were HSC or equivalent, 18.2% graduate or above. These differences in the level of maternal education might be high due to difference in socio-economic status level, sample size and method and materials.<sup>50</sup>

The present study showed that 88.7% were housewives, 8.5% were service holder. This study is not similar to the study conducted by P. Zannat where 4.6% of mothers are engaged in service and 95.4% were housewives. The cause of difference may be due to improvement of socio-economic condition of our population.<sup>51</sup>

It was evident from the present study that maximum 45.1% were living in paca, 36.6% were living in flat. This finding of the study is different from the study findings conducted by Nazmul M C (2012) on pattern of upper respiratory tract infection among the school children attending at combined military hospital Dhaka cantonment where he found 81.7% lived in paca house, 15% lived in semi-paca and 3.3% lived in kasha house.<sup>52s</sup>

In this study 67.60% respondents drunk tape water and 32.40% drunk tube-well water which is differ from other study conducted by Kalakheti B, Pantee K, Jain K in where 48% drunk tape water and 32.2% drunk tube-well water. It may be due to the improvement of socio-economic status of our population.<sup>42</sup>

In the present study it was found that 71.8% of the study population used sanitary latrine in their house. According to BBS report (2010), 51.03% population in our country are using sanitary latrine. The high percentage of using sanitary latrine may be due to most of the father of children resided in paca government quarters where they had sanitary latrine, at the same time it may be due to increase health awareness among the father of study population about importance of using sanitary latrine.<sup>53</sup>

In this present study it is found that most respondents (47.9%) had family income between Tk 30000-49000 and the mean monthly family income was Tk 31690.14 with an standard deviation Taka  $\pm 11624.594$  which is dissimilar to the study conducted by P Zannat Utsul (2016) where the most respondents 54.6% had family income between 21000-30000 Taka. The cause of difference may be due to increase salary scale of the husbands as well as overall socio-economic improvement.<sup>51</sup>

It was found from the study that 5.6% mothers had poor knowledge and 42.3% mothers had excellent knowledge about definition of diarrhea. This study finding is not similar to the study finding conducted by Mumtaz Y, Zafar M, Mumtaz Z where 72% of the mothers knew the correct definition of diarrhea. This dissimilarity maybe due to variation in sample size.<sup>43</sup>

The present study revealed that 19.7% mothers had no knowledge and 80.4% mothers had knowledge about route of transmission of diarrheal disease. This study is dissimilar to the study conducted by Merga N, Alemayehu T where the knowledge of mothers about route of transmission of diarrhea was found 37.5%. The dissimilarity may be due to our study population are more or less disciplined.<sup>54</sup>

The present study showed that 7.0% mothers had no knowledge and 93.0% mothers had knowledge about causes of diarrhea. The study is near about similar to the study conducted by Workie H M, Sharifabdilahi A S, Addis E M where they found that 85.5% of the mothers had knowledge regarding diarrheal disease.<sup>55</sup>

It was evident from the present study that 9.9% mothers had poor and 90.1% mothers had knowledge regarding sign & symptoms of diarrhea. This study varies from the study conducted by Workie HM, Sharifabdilahi AS, Addis EM where 51.2% of the mothers had knowledge about sign & symptoms of diarrhea. This dissimilarity may be due to improvement of educational status.<sup>55</sup>

It was showed that 5.6% mothers had poor and 94.4% mothers had knowledge about management of diarrhea. This study is dissimilar to the study conducted by Workie HM, Sharifabdilahi AS, Addis EM where only less than half of the respondents 42.4% knew how to manage diarrhea in children at home. This dissimilarity may be due to improvement of socio-economic condition of our study population.<sup>55</sup>

The Present study showed that 11.3% mothers had poor and 88.7% mothers had knowledge about preventive measure of diarrhea. This study is near about similar to the study conducted by Chaudhary P, Basu S, Dzeyie KA et al. where 83% mothers had knowledge about prevention of diarrhea.<sup>48</sup>

The present study revealed that 4.2% mothers had poor and 95.8% mothers had good knowledge about hand washing. This study is dissimilar to the study conducted by Andualem Z, Dagne H, Dagnaw B where 66.05% mothers had knowledge about hand washing. This difference may be due to increased awareness among our study population.<sup>56</sup>

It was evident from the present study that 1.4% mothers had no and 98.6% mothers had knowledge about maintenance of personal hygiene. This study is not similar to the study conducted by Mumtaz Y, Zafar M, Mumtaz Z where 62% mothers had knowledge about maintenance of personal hygiene. This variation may be due to improved socio-economic status.<sup>43</sup>

The present study showed that 4.2% mothers had no and 95.8% mothers had knowledge about exclusive breast feeding. This study is differed from the study conducted by Oche MO, Umar AS, Ahmed H where

31% mothers had adequate knowledge about exclusive breastfeeding. This difference may be due to increased awareness among mothers regarding exclusive breast feeding.

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It was evident from the present study that 9.9% mothers had no and 90.1% mothers had knowledge about weaning. This study is dissimilar from the study conducted by Pant I, Chothia K where 43.63% mothers had knowledge about practicing of weaning. This dissimilarity may be due to increased awareness among mothers regarding weaning.<sup>58</sup>

It is showed that 12.7% mothers had poor and 87.3% mothers had knowledge about maintenance of sanitation. This study is not similar to the study conducted by Chaudhary P, Basu S, Dzeyie KA et al. 31% mothers had knowledge about maintenance of sanitation. This dissimilarity may be due to improve socio-economic condition of our study population.<sup>48</sup>

In this present study it was revealed that 94.4% mothers were practicing of mouth care. This is less similar to the study conducted by Akter F et al where they found that 78.5% mothers take oral care of their child. This dissimilarity may be due to sample size variation.<sup>50</sup>

It was evident from the study that maximum 93.0% mothers were taking regular nail care. It is dissimilar from the study conducted by Hossain A K S where 27.4% mothers were taking nail care. It may be due to variation of time.<sup>59</sup>

The present study revealed that maximum 94.4% mothers were taking nail care of child. It is dissimilar from the study conducted by Hossain A K S where 26.8% mothers were taking nail care of child. It may be due to health education and motivational work regarding prevention of diarrheal diseases among armed forces community.<sup>59</sup>

It was evident from the present study that 98.6% mother were giving ORS to their child during diarrhoea which is more or less similar to the study findings conducted by Akter F et al where this percentage was 78.5%.<sup>50</sup>

The present study showed that 97.2% respondents were hand washing before meal. This study finding differ from the study conducted by Malaker J where they found that 55.0% were hand washing before meal. This difference may be due to that the respondents are from army family and health education and motivational work are presenoal among our study population.<sup>60</sup>

The present study revealed that 100% respondents used to wash hand after defecation. This study is similar to the study conducted by Malakar J where they found that 100% respondents were washing hands after defecation.<sup>60</sup>

The present study showed that 4.2% mothers did not covered food and 95.8% covered food. This study is not similar to the study conducted by Mumtaz Y, Zafar M, Mumtaz Z where 50.5% mothers practiced of covering food. This dissimilarity may be due to improvement of health education.<sup>43</sup>

The present study showed that 98.6% mothers were continuing breast feeding practice during diarrheal disease which is dissimilar from the study conducted by Basa S where 43.6% mothers continued breast feeding during diarrhea. It may be due to increase awareness of the mothers regarding breast feeding.<sup>45</sup>

The present study showed that 31.0% mothers were providing artificial feeding during diarrhea and 69.0% did not. This study is not similar with the study conducted by Mumtaz Y, Zafar M, Mumtaz Z where 71.5% mothers were providing artificial feeding during diarrhea. This difference may be due to variation of sample size.<sup>43</sup>



The study revealed that 85.9% mothers were giving drinking boil water which is different from the study conducted by Mumtaz Y where they found that only 25% mothers were giving boil water for drinks. The high percentage may be due to variation of sample and improved socio-economic status.<sup>43</sup>

## 6. Conclusion

The study was performed to assess the knowledge and practice about prevention of diarrheal disease among mothers of under 05 children attending at CMH, Dhaka cantonment.

Diarrhoea is defined as the passage of three or more loose or liquid stools per day. Diarrhoea is the most common cause of morbidity and mortality among under 05 children all over the world. According to the latest global burden of disease study, about 2.39 billion of diarrheal cases occurred globally and approximately 0.53 million of under five children died every year. Mostly results from contaminated food and water sources. Worldwide, 780 million individuals lack access to improved drinking water and 2.5 billion lack improved sanitation. Diarrhoea due to infection is widespread throughout developing countries.

This was a descriptive cross-sectional study conducted among 71 purposively selected mothers of under 05 children from 01 July 2020 to December 2020 with the aim to find out knowledge and practice about prevention of diarrheal disease. The data were collected through face-to-face interview using a semi structure questionnaire. Among the respondents 32.4% were between 25-29 years of age. The child had a mean age 26.54 months. Among the respondents 40.8% were graduate or above and 31.0% were SSC passed, 88.7% were housewives, and 36.6% were living in flat. Among them 67.60% were using tape water for drinking, 71.8% were using sanitary latrine. The mean monthly family incomes were 31690.14 Taka. Among the 71 respondents 42.30% have excellent knowledge about definition of diarrhoea, but 39.4% have no knowledge about incubation period of diarrhoea, and 29.6% have fair knowledge about route of transmission of diarrheal disease. Among them 50.7% have good knowledge about causes of diarrhoea, 49.3% have good knowledge about sign & symptoms of diarrhoea and 50.7% have good knowledge about management and preventive measures of diarrhoea. Among the respondents most of them have good knowledge about hand washing, sanitation and maintenance of personal hygiene and food hygiene. 42.3% and 35.2% respondents have good knowledge about exclusive breastfeeding and weaning. Among 71 respondents 94.4% were used to take regular mouth care of child, 93.0% mothers were taking regular care of their nail and 94.4% were taking regular care of their child's nail, 84.5% had regular bowel habit, 98.6% were used to give ORS to children during diarrhoea, 5.6% were not used to maintain food hygiene. Among 71 respondents 2.8% were not practicing hand washing before taking and serving food but 100% were practicing hand washing after defecation. 95.8% were practicing of covering food. 1.4% & 69.0% respondents were not practicing breastfeeding and artificial feeding during diarrhoea. Among all respondents 85.9% were using boiled water for making drinks for their children but 8.5%, 36.6% were not cleaning floor and toys of their child.

Armed forces personnel and their families are the part and parcel of the general population, in spite of relatively better accommodation, basic sanitation and economic structure, the influence of the prevailing surrounding is natural because there are also drawn from the society.

The finding of this study may not reflect the overall picture of the country but it has definitely some valuable information which can serve as baseline data for in depth study in broader perspective in future. Steps should be taken to improve the knowledge and practice for prevention and control of diarrheal disease among the study population. A study on large sample may be undertaken for more acquire

description of the problem.

### 6.1 Recommendation

On the basis of findings and discussion of the study, the following recommendations are put forward for the mothers of children attending at CMH, Dhaka cantonment as well as for the concerned particularly policy makers, hospital administration, public health specialist, public health workers and the future researchers to prevent diarrheal diseases among under five children:

- a) Health education should be arranged on knowledge about type of diarrheal disease, incubation period, routes of transmission and causes diarrheal disease, exclusive breast feeding & weaning.
- b) Mass awareness programmed should be taken about practicing regular nail care of the child, maintaining food hygiene, covering food, cleaning floor regularly.
- c) Steps should be taken to make awareness of the mother to prevent diarrheal disease through breast feeding practice, drinking boil water.
- d) Adequate health education should be given to the mother about providing artificial feeding to their child for prevention of malnutrition.
- e) In depth studies may be conducted to find out the actual scenario of the problem relating to knowledge and practice for prevention of diarrheal disease among child population.

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