Feeding Practices and Care-Seeking Behaviours among Mothers of Under-Two Children with Diarrhoeal Diseases in Bangladesh

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Abstract: In Bangladesh, the prevalence of diarrhoea is the highest among children aged 6-23 months and the outbreaks are common among slum-dwellers of Dhaka city, Bangladesh. A qualitative explorative research was undertaken among slum-dwellers to explore the feeding practices and care-seeking behaviours of mothers with children with diarrhoeal diseases aged less than two years. Data were collected through in-depth interviews, focus-group discussions and observation checklist with mothers and elder family members. Breastmilk was blamed for causing diarrhoea among predominantly or exclusively breastfed children. The blameworthiness leads to withholding of breastfeeding during diarrhoeal episodes especially with recurrent and persistent diarrhoea. Teething, eating protein diet by children and eating leafy vegetables by mothers were believed to be responsible for diarrhoea among the older children. Hand-washing before preparing foods and before feeding children was virtually not practised. Usual complementary foods were not offered to the children with diarrhoea. Almost all of the children were offered oral rehydration salt solution and other fluids at home. A common healthcare-seeking behaviour of the mothers was to give medicines from local drug stores. Some mothers performed some rituals for the purification of their breastmilk. As the mother's diet was believed to be responsible for the child's diarrhoea, some foods, especially leafy-vegetables, some types of fish, and meat, were restricted to the mothers. The study concludes that perceptions of mothers regarding the causes of children's diarrhoea direct to inappropriate feeding practices and care-seeking behaviours of under-two children with diarrhoeal diseases.

Keywords: Child survival, Diarrhoea, Mother's perception, Qualitative research.

BACKGROUND

Diarrhoea is one of the major causes of morbidity and mortality among children in developing countries. Thousands of episodes of diarrhoea occur among children and adults every day. About 15% (1.5-2.5 million) of worldwide childhood deaths are attributed to diarrhoeal diseases. Diarrhoeal disease is one of the two major killer diseases in children aged less than five years (under-five children) in the developing world. Approximately 50,800 under-five children die every year due to diarrhoeal diseases in Bangladesh [1].

Diarrhoeal diseases have close biological and socioeconomic links to the problems of malnutrition, poor maternal health, high fertility, and child survival [2-4]. The association between malnutrition and diarrhoeal morbidity has been recognized for decades and is bidirectional. Diarrhoea can lead to malnutrition, and malnutrition can predispose to diarrhoea [4-6]. Malnutrition is responsible, directly or indirectly, for about one half of the 343,000 deaths that occur annually among under-five children in Bangladesh [7]. About three-fourths of these deaths often associated with inappropriate feeding practices, occur during the first year of life. Malnourished children who survive are more frequently sick and suffer from the life-long consequences of impaired physical and intellectual development [8].

The importance of first five years of life of a child for his/her growth and development is well-known. The first two years of life is the most crucial period in terms of growth, development, and survival of children. Any adverse influences, e.g. malnutrition and infection, operating on children during this period may result in severe limitations in their growth and development, some of which may be irreversible [7].

Diarrhoeal diseases are very common in Dhaka, the capital city of Bangladesh, where the environment is gradually deteriorating due to the expansion of city and the uncontrolled population density [9]. In Dhaka, every year with the inception of temperature-plummeting months, the number of diarrhoea patients, mostly children, rise in the city causing outbreaks of the disease. The outbreaks are common among slum-dwellers and poor people in Dhaka city. The slum populations face the greater burden of diseases, such as diarrhoea, respiratory illness and other infectious

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diseases, and undernutrition compared to other groups of people [10]. Diarrhoea is, thus, a common and serious health problem in the city.

Several studies have been conducted from the clinical perspective. However, only a few community-based behavioural studies have been carried out in Bangladesh. It is, therefore, important to undertake community-based qualitative research to know the perceptions of mothers about the causes of diarrhoeal diseases and to explore the feeding and caring practices during illnesses of their under-two children.

METHODS AND MATRERIALS

Study Design and Site

A community-based explorative, qualitative study was conducted during September to November 2011, among 21 mothers of children, aged 3-23 months (under-2 children), who had suffered from any form of diarrhoeal disease (at least 3 liquid stools or abnormal stools during the past 24 hours) within two weeks of data-collection in the slum of Banani, Dhaka and a poor community in North Badda, Dhaka. Children who were suffering from any systemic infection(s) or other chronic diseases and who were currently participating or have participated in another study during the last 3 weeks prior to this study were excluded.

Selection of Subjects

Mothers were selected purposively from a community based health center serving the slum and low- income population of northern part of Dhaka city, who came for seeking health care for their children with diarrhoeal diseases. Response rate was high among the mothers, everyday about 7-8 mothers were approached for participating, on average 4-5 mothers were agreed to take part in the in-depth interviews. Participants for the focus groups, who met the selection criteria, were selected by the community volunteers of the health center.

Data-Collection

In total, 21 in-depth interviews were conducted with individual mothers at their households followed by two FGDs which were conducted with mothers and their elder family members, a group size of 10-12 people at the health center. Two separate standard guidelines and methods were used for in-depth interviews and FGDs. An observation checklist was used for collecting relevant information. For FGDs, two groups of mothers with similar socio-economic and educational background were included: Group 1: Mothers of children aged 3-12 months, and Group 2: Mothers of children aged 13-23 months. These groups of mothers and their elder family members were encouraged by a moderator to share their experiences and perspectives regarding feeding practices and care seeking behaviours of children with diarrhoea. For both focus groups and individual interviews, a question guide served to remind the moderator / interviewer of topics to be covered. A rapporteur who is a community volunteer and has a fair understanding of the community people was assigned to take written notes.

The focus group discussions were tape recorded and individual interviews were recorded through written notes. Same level sitting arrangement for all participants and the moderator seated in the middle to have direct eye contact with all of them. A positive friendly atmosphere was created by the moderator which encouraged the participants to speak openly and interact spontaneously. Considerable time was allocated for each participant to speak. Special attention was given to the participant's who may feel uncomfortable in being open in a group situation and to avoid some participant's domination in the conversation.

The typed interview notes and translated tape transcripts were coded according to themes which emerged from these qualitative data. Thereafter the coded statements were sorted into new computer files by theme and respondent category. Theme by theme we then compared the statements made by the mothers and their elder family members. We found that their statements consistently converged into one coherent picture of how the children were fed and cared for during episodes of diarrhoea. A semi-structured questionnaire and checklist were used for collecting socioeconomic and other key information such as feeding practices, causes of illness, and care-seeking behaviours of mothers of under-two children relating to diarrhoeal diseases. Data were analyzed using the SPSS software (version 16). Qualitative information was analyzed manually using qualitative techniques.

RESULTS

Of the study children, 52.4% and 47.6% were male and female respectively. Their mean age (±SD) was 13.9±5.9 months. The majority (61.9%) of the mothers were housewives with no formal education. The

averages monthly family income was 110.9±0 USD. The majority of mothers (57.1%) were living in semi-brick-built houses sharing common toilets, bathrooms, and kitchens, and the median duration of living in the urban area was six years (Table **1**). The semi-structured interviews revealed that acute watery diarrhoea was the most common form of diarrhoeal disease among the under-two children (52.4%) (Figure **1**). Hand-washing practices with soap (1%) before preparing foods and feeding the children were not virtually practised by the mothers (Table **2**).

Table 1: Socioeconomic Status of the Study Subjects

Variables	Percentage
Children's age in months (Mean±SD)	13.9±5.9
Sex	
Male	52.4
Female	47.6
Mother's age in years (Mean±SD)	25±6.5
Mother's education	
No formal education	61.9
Primary	28.6
Madrasa (Religious education)	9.5
Mother's occupation	
Housewife	61.9
Garment/Factory worker	33.3
Housemaid/restaurant worker	4.8
Family members	5 (3-6)
Monthly income (USD)	110.9±30.8
Housing condition	
Brick and tin made	57.1
Mud and leaf made	19.1
Tin made	19
Mud and tin made	4.8
Duration of living in Dhaka (years)	6 (3-25)

Results are expressed as percentage and mean±SD.

Perceptions of Mothers about Causes of Diarrhoeal Disease

Perceptions of the mothers about the causes of diarrhoeal diseases among the under-two children were assessed, which revealed that a few (28.6%) predominantly or exclusively breastfed mothers of younger children perceived that breastmilk was responsible for the illness. They believed that pollution of breastmilk by bad air or by supernatural action, milk

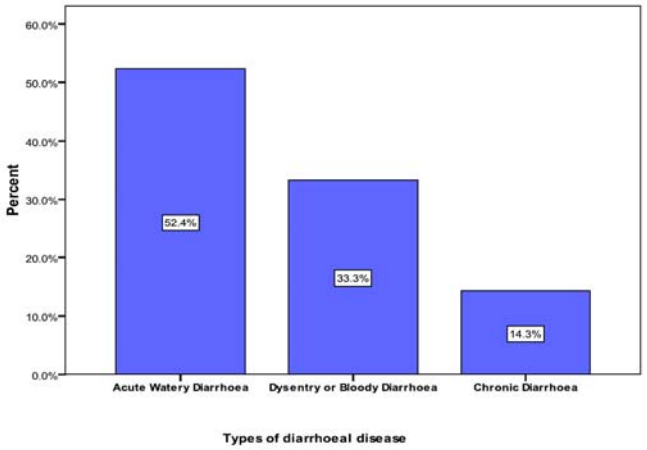

Figure 1: Types of diarrhoeal diseases among children.

Table 2: Behaviours Related to Drinking Water and Personal Hygiene Among the Study Subjects

Variables	Percentage
Source of drinking water	
Supply water	100
Others	0
Child's drinking water	
Boiled water	71.4
Supplied water	28.6
Sanitary condition	
Common toilet	61.9
Separate toilet	38.1
Child's faeces disposal	
Dispose in the common toilet	42.9
Washout in the bathroom	57.1
Hand washing practices before feeding	
With plain water	99
With soap	1

Results are expressed as percentage.

of engorged breast, or prolonged retention of breastmilk might also pollute the milk and cause diarrhoeal diseases. It was a common belief that the mother's (90.5%) diet might also account for early childhood diarrhoea. Eating of leafy-vegetables, some types of oily fish, meat, and hot and spicy foods might cause diarrhoea among them (Table **3**), this was also believed by the elders. Pollution of breastmilk by supernatural causes or by bad air was believed by the elder family members were revealed in the focus group discussion. Eating behaviours of children might also cause diarrhoeal diseases among them. The mothers believed that drinking of unsafe/polluted water,

Table 3: Mothers Perceptions about Causes of Diarrhoeal Diseases

Questions	Responses of the mothers	Percent of responses*
Causes of diarrhoeal diseases	Feeding heavy volume breastmilk	38.1
	Feeding breastmilk polluted by bad air/Supernatural effect	28.6
	Feeding of prolong retained breastmilk	42.9
	Drinking dirty supplied water	33.3
	Incorrect boiling of drinking water	33.3
	Commercial formula feeding	19.0
	Eating dirt	47.6
	Teething	71.4
	Eating egg, fish, meat or khichuri	38.1
	Eating of adulterated food	9.5
	Feeding heavy amount in a meal	23.8
	Eating leafy veg. by the mother	85.7
	Hot and spicy mother's diet	90.5

*Multiple response.

teething, and eating of filthy materials, contaminated and adulterated foods were responsible for diarrhoea among the older children. Intake of too much food or combinations of too many foods was perceived as inappropriate and was associated with having the digestion problem.

Feeding Practices During Diarrhoeal Episodes

Some (60%) exclusively and predominantly breastfeed (water along with breastmilk) mothers withhold feeding of breastmilk to their children (aged 3-12 months) during the episodes of diarrhoea as they believed that breastmilk was the cause of the illness.

The mothers, who started giving complementary food, did not offer usual complementary foods to their children during the diarrhoeal episodes, thinking that it might increase the frequencies of diarrhoeal episodes. Most of the mothers (72.7%) with older children (aged 13-23 months) stated that normal feeding was withheld during diarrhoeal episodes and the reasons were: the child refused to feed and they sometime vomited if they were forced to feed. The mothers offered only those foods which the child intended to eat. They continued breastfeeding as usual because the children preferred breastmilk (Table **4**). Majority (about 98%) of mothers did not increase the amount or frequency of feeding after their children were well. Oral rehydration salts (ORS**)** solution was sometimes given to the mothers instead of their children with diarrhoea according to their elder's decision.

Care-Seeking Behaviour for Diarrhoeal Disease

At home, all mothers (100%) gave ORS solution or rice-based salt solution to their children who had

Table 4: Feeding Practices of Under- Two Children During Diarrhoeal Episodes

Questions	Responses of the mothers	Percent of responses*
Types of feeding practices during diarrhoeal episodes	Stop breastfeeding when breastmilk is blamed	28.6
	Continue breastfeeding	66.7
	Feeding of ORS and rice ORS	100
	Stop feeding egg, fish, meat and vegetable	61.9
	Stop usual complementary feeding	47.6
	Offer khichuri (rice+ lentil) prepared with green banana	42.9
	Feed foods which are liked by the child	61.9

*Multiple response.

Table 5: Care-Seeking Behaviour During Diarrhoeal Diseases

Questions	Responses of the mothers	Percent of responses*
Care-seeking behaviour during diarrhoeal diseases	Start feeding of ORS and rice ORS at home	100
	Local pharmacy shop for consultation	76.1
	Homeopath practitioners	23.8
	Ayurvedic/ Herbal medicine shops	28.6
	NGO/ Government clinics/ hospitals	23.8
	Juice of herb (Centella asiatica) at home	38.1
	Practice some rituals for purification of breastmilk	28.6
	Local pharmacy shop for buying medicine	76.1

*Multiple response.

watery diarrhoea. The most common home-treatment was a juice made from a herb, *Centella Asiatica*, locally known as *Thankuni* leaf, given to the children who had loose stools with mucus. Majority (76.2%) of the mothers sought care for diarrhoeal diseases from the nearest drug store in the locality. They purchased medicines from the local drug-sellers because consultation fees were not required, the reason the mothers stated. For the exclusively and predominantly-breastfed children, some mothers (60%) stopped breastfeeding their children temporarily and performed some rituals to purify their breastmilk. They also restricted their own food intakes in terms of vegetables, some types of fish, meat, and some spices. Seeking care from the nearby NGO and government clinics or hospitals was also a common practice. Some mothers (23.8%) also sought healthcare from a specialized diarrhoeal hospital (Table **5**). Decision regarding seeking healthcare from hospitals was mainly taken by the elders.

Rituals for Purifying BreastMilk

Some mothers (20%) performed a seven-day ritual for the purification of their breastmilk suggested by their elders. Breastfeeding was temporarily discontinued for seven days. The mothers' meals consisted of dried food. They restricted all sorts of animal proteins, leafy-vegetables, and liquid foods. During the day-time, the mother's body was washed out by water in the junction of three roads; the mother's breasts were brushed up by seven sticks of a sweep; and the mother's movement was restricted during that period.

A three-day ritual was also performed by some mothers (40%) and their children together, which was done by a local spiritual leader. The mother and the child together were swept up by feathers of a brush for making the breastmilk sacred.

DISCUSSION

Diarrhoeal diseases are most common among people living in low socioeconomic condition. The findings of the study revealed that watery diarrhoea was common among the under-two children of low socioeconomic status compare to other forms of diarrhoea. In this community hand-washing with soap before food preparation were not practiced. Feeding children using unsafe drinking-water and sharing of toilets by many with poor sanitary condition and living in an unhygienic environment were common findings. There was a high possibility of contamination of water with faeces because of the ways faeces of children were disposed off in the common bathroom. The study found that 57% of the mothers disposed off faeces of their children by washing out into the common bathroom. A study in Nigeria has shown that risk factors for diarrhoea in children include lower socioeconomic status, poor personal and domestic hygiene [11]. Poor sanitation, lack of access to safe water, and inadequate personal hygiene are responsible for an estimated 90% of childhood diarrhoeal diseases [12].

The results of this qualitative study revealed the perceptions of the mothers about the causes of diarrhoeal diseases. Breastmilk regarded as a cause of diarrhoea, this perception may be related to their low level of education and beliefs transmitted from their elder family members, which was found in the FGD with elder family members. Blaming breastmilk as a cause of diarrhoea was also found among mothers in a study in Pakistan [13]. In our study, many mothers believed that diarrhoeal diseases are related to the food intake of children and eating too much and too many types of foods cause digestion problems and diarrhoea. It is traditionally believed that, during

teething, child will have frequent episodes of diarrhoea, and it was considered a normal phenomenon by the majority of the mothers. A study in Punjab, Pakistan, also revealed the same perceptions regarding the cause of childhood diarrhoea [13].

Feeding Practices During Diarrhoea

The study revealed that, in recurrent and persistent diarrhoea among predominantly or exclusively breastfed under-two children, breastfeeding were withdrawn temporally or, in some cases, permanently. Withholding breastfeeding was related to the mother's as well as the elder family member's beliefs regarding the cause of child's diarrhoea. This practice aggravates the child's existing malnutrition further and makes the child more vulnerable to diarrhoeal diseases. The protective effect of breastfeeding among children with diarrhoeal diseases is well-known.

Diarrhoea is a leading cause of malnutrition among under-five children. Disrupting usual food intakes of children is detrimental to their normal growth and development, which leads to malnutrition. This qualitative research found that complementary foods were not offered, most mothers cut-short usual foods to their children during diarrhoeal episodes. A similar finding was revealed in a study in two urban clinics in Dhaka city where some foods were withheld for 48.38% of children. "Some food items cause diarrhoea, others increase the frequency of loose motion, and withholding or adding some food cures it", mothers believed [14]. The results of the present study revealed that the reasons of withdrawal of some foods were: children refused usual food intake and sometime vomited if they were forced to feed. By diminishing the food intake in each diarrhoeal episode, in turn, makes their malnutrition even worse. In this study, the nutritional status of the children was not, however, assessed.

Care-Seeking Behaviour for Diarrhoeal Disease

Care-seeking behaviors of mothers are influenced by their pre-conceived beliefs regarding the causes of diarrhoeal diseases. Since mothers and elderly family members blame breastmilk, stopping breastfeeding they perform some rituals for the purification of their breastmilk. ORS solution was offered, along with other fluids, to most children in this study; the finding was similar to the BDHS 2007, which showed that the intake of ORS solution and other fluids among children with diarrhoea increased [15].

Seeking medical help for diarrhoea by consulting local drug-seller and from different non-professionals assumed to link to their socioeconomic and educational status as well as influence of the elder's of this disadvantaged population. Whether these findings are associated with mothers perceptions and care seeking behaviors in management of diarrhoeal disease could not be revealed from this qualitative research, further quantitative study in lager representative samples is required.

CONCLUSIONS

The study concludes that improper hand-washing practices, poor sanitation, poor environmental hygiene, and supply of unsafe drinking-water are common features among the mothers of low socioeconomic groups. Breastmilk is blamed for the causation of diarrhoeal diseases by the mothers who breastfeed predominantly or exclusively, on the other hand complementary diets were blamed by the mothers whose children were feed on complementary foods.

The findings of the study suggest that, behavioural change-communication strategies for mothers should be undertaken to address conceptions and misperceptions relating to diarrhoea and also to facilitate positive care-seeking practices relating to the management of diarrhoea among under-two children.

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