



## Original Article

# Knowledge and Practice of Oral Rehydration Solution in Diarrhoea of the Mothers Attending ORT Corner of Rajshahi Medical College Hospital

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### Abstract

This cross sectional type of descriptive study was carried out among the mothers, who attended ORT corner of Rajshahi Medical College Hospital for the treatment of diarrhoea of their children to assess their knowledge and practice of oral rehydration solution in diarrhoea. The sample size was 385, which was selected purposively. Data were collected from the respondents by face to face interview according to a partially structured questionnaire. Data were analysed by using SPSS software programme and interpretations were done using appropriate statistical tests like Chi Square Test. Ethical issues were considered throughout the study. Majority (62.5%) of the mothers were in the age group of 21 – 30 years and most (71%) of them were housewives. Most (95.12%) of the mothers knew the preparation of ORS correctly but only 42.82% of them used ORS properly during diarrhoea of their children. The relationship of correct knowledge on ORS preparation was direct with literacy level and monthly family income of the mothers, which were significant ( $p < 0.05$ ). Knowledge on ORS preparation was found significantly more among house wives in comparison to other professions ( $p < 0.05$ ) but there was no significant relationship between knowledge on ORS preparation and age group of the mothers ( $p > 0.05$ ). Correctly use of ORS during diarrhoea of the children was found significantly associated with family income ( $p < 0.05$ ) but was not found associated with age and literacy level of the mothers ( $p > 0.05$  each). This study provided some important information regarding knowledge and practice on ORS use of the mothers in Rajshahi region.

**Key Words:** Knowledge, Practice, ORS, Diarrhoea, Mothers

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### Introduction

Diarrhoeal disorders, preventable infectious diseases, are still prevalent in many developing and under developed countries of the world. The high incidence of child mortality from diarrhoea in the early 1980s (4.6 million child deaths per year) led to the concerted efforts by the World Health Organization for reducing these death through its

control of Diarrhoeal diseases program. The annual death toll by 2007 dropped to 1.5 million annually.<sup>1</sup> In Bangladesh, while there has been an appreciable drop in under-five death rates in the past 15 years, the rate has slowed considerably, and still remains high. Seventy three percent of deaths that occur in children under the age of five are caused by pneumonia, diarrhoea, malaria,

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neonatal pneumonia, preterm delivery or asphyxia at birth<sup>2</sup>. In Bangladesh alone diarrhoea and dysentery kill some 27000 children; and estimates from various studies suggest that about 2-4 episodes of diarrhoea per child per year occur in the under-five age group. Thus, diarrhoeal illness put a heavy burden on the meagre health facilities and resources of a poor country like Bangladesh.<sup>3-5</sup>

Diarrhoea leads to the loss of fluids and electrolytes, resulting in mild to severe dehydration and, in some cases, death. Death in diarrhoea can be prevented by replacing lost fluid and electrolytes.<sup>4,6</sup> The oral rehydration solution replaces the lost water, but it also provides ions and minerals that help the absorption process and the maintenance of homeostasis within the body, minimizing the severity of the diarrhoea's effects on the sufferer. Bangladesh has been a beneficiary of the efforts of aid organizations that have been teaching households how to prepare the solution. However, the International Centre for Diarrheal Disease Research still treats 100,000 patients a year, because the ORS is not a cure for what causes diarrhoea, only a treatment for dehydration.<sup>5,7-8</sup> Thus the majority of these deaths can be prevented by the timely use of oral rehydration solution (ORS) and continued feeding, but these are practiced by less than one-third of children in South Asia and sub-Saharan Africa.<sup>9</sup> Studies suggest that people are more or less aware about the ORS but they don't practice it optimally. In a study of Chowdhury et al.<sup>10</sup> it was observed

that more than 90% of the Bangladeshi people had correct knowledge about the preparation of ORS but the rate of utilization remained less than 20% throughout the Bangladesh.<sup>11</sup> Knowledge of the mothers on prevention of diarrhoea, preparation of ORS and optimum use of ORS in diarrhoea can minimise thousands of children sufferings from diarrhoea.

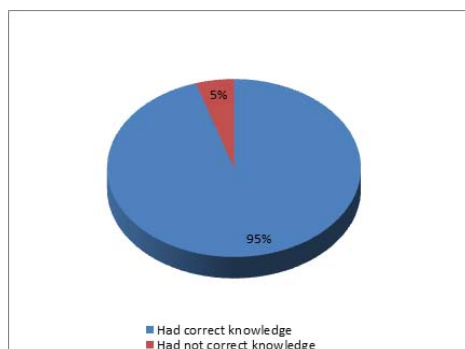
This study was carried out to assess knowledge and practice of oral rehydration solution (ORS) in diarrhoea among the mothers attending at Oral Rehydration Therapy (ORT) Corner of Rajshahi Medical College Hospital, Rajshahi, Bangladesh.

### Materials and Methods

This was a cross sectional type of descriptive study, which was carried out among the mothers attending ORT corner of Rajshahi Medical College Hospital for the treatment of diarrhoea of their children with a view to assess knowledge and practice of oral rehydration solution in diarrhoea of the responding mothers. The sample size was 385, which was selected purposively. Data were collected from the respondents by face to face interview according to a partially structured questionnaire. Data were analysed by using SPSS software programme, descriptive analysis was done by using percentage and mean and analytical interpretations were done using appropriate statistical tests like Chi Square Test. Ethical issues were considered throughout the study.

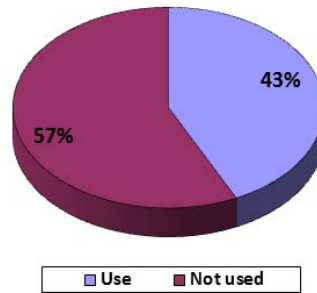
### Results

Majority (62.5%) of the respondents were in the age group of 21 to 30 years and most (71%) of them were house wives. Majority (57.7%) of the respondents had primary education, 55.9% were from middle income group and majority (65.1%) were from nuclear family.



**Figure 1: Status of mothers' knowledge regarding ORS preparation**

Of the total 390 mothers, 95.12% of the respondents had correct knowledge and the rest 4.88% of them had not correct knowledge regarding ORS preparation (Figure 1).

**Figure 2: Status of mothers regarding use of ORS during diarrhoea**

Only 42.82% of the responding mothers used ORS and 57.18% of them did not use ORS in recent diarrhoea of their children (Figure 2).

**Table 1: Relationship between age of the mothers and their knowledge regarding ORS preparation**

Age of the mothers	Status of knowledge about ORS preparation		Total No. (%)
	correct knowledge No. (%)	incorrect knowledge No. (%)	
Up to 20 years	15 (88.2)	2 (11.8)	17 (4.4)
21 – 30 years	232 (95.1)	12 (4.9)	244 (62.6)
Above 30 years	124 (96.1)	5 (3.9)	129 (33.1)
Total	371 (95.1)	19 (4.9)	390 (100.0)

$$\chi^2 = 1.99, df = 2, p > 0.05$$

Table 1 showed that as the age of the mothers increased the knowledge level regarding ORS preparation of them also increased but relationship between age of the mothers and knowledge of them regarding ORS preparation was not found significant ( $p > 0.05$ ).

**Table 2: Relationship between monthly family income and knowledge about ORS preparation of the mothers**

Monthly family income in Taka	Status of knowledge about ORS preparation		Total No. (%)
	correct knowledge No. (%)	incorrect knowledge No. (%)	
Poor $\leq$ Tk. 10000	49 (83.1)	10 (16.9)	59 (15.1)
Middle class (Tk. 10001 – 20000)	211 (96.8)	7 (3.2)	218 (55.9)
Rich (Tk. >20000)	111 (98.2)	2 (1.8)	113 (29.0)
Total	371 (95.1)	19 (4.9)	390 (100.0)

$$\chi^2 = 22.21, df = 2, p = 0.000$$

Table 2 showed that among the poor income group, 83.1% had correct knowledge, among the middle class 96.8% had correct knowledge and among the high income group 98.2% had correct knowledge. Monthly family income was found directly proportional to knowledge of the mothers regarding preparation of ORS, which was statistically highly significant ( $p < 0.001$ ).

**Table 3: Relationship between mothers' age and use of ORS by them during diarrhoea of their children**

Age of the mothers	Practice of ORS in diarrhoea		Total No. (%)
	Practiced	Not practiced	
	No. (%)	No. (%)	
≤ 20 years	10 (58.8)	7 (41.2)	17 (4.4)
21 – 30 years	101 (41.4)	143 (58.6)	244 (62.5)
Above 30 years	56 (43.4)	73 (56.6)	129 (33.1)
Total	167 (42.8)	223 (57.2)	390 (100.0)

$$\chi^2 = 1.99, df = 2, p > 0.05$$

Table 3 showed that 58.8% of the mothers whose ages were 20 years or below used ORS in diarrhoea, 41.4% of them whose ages were in the range of 21 to 30 years used ORS in diarrhoea and 43.4% of them whose ages were above 30 years used ORS in diarrhoea. There was no significant relationship between age of the mothers and practice (use) of ORS in diarrhoea of their children ( $p > 0.05$ ).

**Table 4: Relationship between mothers' educational status and use of ORS by them during diarrhoea of their children**

Mothers' Education	Practice of ORS in diarrhoea		Total No. (%)
	Practiced	Not practiced	
	No. (%)	No. (%)	
Primary or below	68 (41.2)	97 (58.8)	165 (42.3)
Secondary +	99 (44.0)	126 (56.0)	225 (57.7)
Total	167 (42.8)	223 (57.2)	390 (100.0)

$$\chi^2 = 0.30, df = 1, p > 0.05$$

Table 4 showed that 41.2% of the mothers who had primary education or below used ORS in recent diarrhoea of their children and 44.0% of them who had secondary level of education or above used ORS in recent diarrhoea of their children. The relationship between mothers' educational status and use of ORS in recent diarrhoea was not found statistically significant ( $p > 0.05$ ).

**Table no. 5: Relationship between monthly family income and use of ORS by the mothers during diarrhoea of their children**

Monthly family income in Taka	Practice of ORS in diarrhoea		Total No. (%)
	Practiced No. (%)	Not practiced No. (%)	
Poor ≤Tk. 10000	23 (39.0)	36 (61.0)	59 (15.1)
Middle class (Tk. 10001 – 20000)	83 (38.1)	135 (61.9)	218 (55.9)
Rich (Tk. >20000)	61 (54.0)	52 (46.0)	113 (29.0)
Total	167 (42.8)	223 (57.2)	390 (100.0)

$$\chi^2 = 8.11, df = 2, p < 0.05$$

Table no. 5 showed that the percentages of the mothers used ORS in recent diarrhoea of their children among the poor and middle class were 39.0% and 38.1% respectively. But it was quite high (54.0%) among the mothers of high income group. There was a significant association between economic status of the mothers and their ORS practice in diarrhoea ( $p < 0.05$ ).

## Discussion

Oral rehydration therapy (ORT) for treating dehydration in diarrhoea has been described as the most important medical advancement of this century. Through its promotion in the developing world over the last 3 decades or so, about a million lives are now being saved annually world-wide.<sup>12-15</sup> Bangladesh is the country where ORS was discovered and has been widely promoted by government and nongovernmental organizations. BRAC, a national NGO, carried the message about ORT to over 12 million households through house-to-house health education programmes and taught mothers how to prepare and use a home-made form of ORS in 1980s.<sup>16</sup> Not only Bangladesh other developing countries also have been trying to promote the ORT with a view to achieve two primary objectives, one was improving the knowledge of the people regarding the ways of ORS preparation and another was the use of it. In a study<sup>17-18</sup> in Egypt more than 77% of caretakers knew the correct process of ORS preparation and only 17.6% used it. In a community based study<sup>19</sup> it was found that 61% of care-givers had knowledge regarding the preparation ORS and 30% had actually used ORT.

Similar findings also found in Bangladesh in previous studies,<sup>6,20,21</sup> knowing preparation of ORS ranging from 70% to 90% but in spite of high level of knowledge, rates of utilization remained low from 20% to 30% throughout Bangladesh. The above facts suggest that the peoples' knowledge about the preparation of ORS remarkably improved up to satisfactory level, but its use was not improved up to satisfactory level during the last two decades. Similar findings were also found in the present study.

Reducing under-5 mortality is a major challenge for many developing countries including Bangladesh.<sup>22</sup> To meet the target, the main causes of childhood mortality must be addressed. Seventy three percent of deaths that occur in children under the age of five are caused by pneumonia, diarrhoea, malaria, neonatal pneumonia, preterm delivery or asphyxia at birth. In Bangladesh alone diarrhoea and dysentery kill some 27000 children and estimates from various studies suggest that about 2-4 episodes of diarrhoea per child per year occur in the under-five age group.<sup>2,3</sup> The majority of these deaths can be prevented by the timely use of oral rehydration solution (ORS).<sup>9</sup> The study

findings suggested that practice of ORS must be increased to achieve the target.

In a community based study in Kelantan, Malaysia, it was observed that significantly more literate women had used ORT than those not literate.<sup>21</sup> Ali et al focused on mother's use of ORS and her knowledge in a rural district in northeast of Bangladesh and found that mother's lack of knowledge was one of the common reasons for not using ORS. The findings of the Ali's study indicated that the perceived role of ORS influenced its use.<sup>22</sup> The findings of a study in India suggested that socio-demographic factors of mothers were associated with their knowledge of ORS preparation and ORS practice in recent diarrhoea of their children.<sup>23</sup>

But the present study suggested that the knowledge regarding preparation of ORS did not influence the uses of ORS among the responding mothers

### Conclusion:

The present study showed that mothers in the Rajshahi region possessed proper knowledge regarding preparation of ORS but did not use ORS optimally in diarrhoea of their children. Mothers should be taught the importance of optimal use of ORS in diarrhoea of their children and it can be achieved by implementing health education programme through ORT corners of every hospitals of Bangladesh.

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