

# Knowledge of Mothers Regarding Oral Rehydration Therapy

Mothers  
Regarding Oral  
Rehydration  
Therapy

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## ABSTRACT

**Objective:** To determine the knowledge of mothers regarding the oral rehydration therapy in children with acute watery diarrhea.

**Study Design:** Cross sectional study

**Place and Duration of Study:** This study was conducted at the Pediatric Department, Divisional Headquarter teaching Hospital Mirpur AJK over a period of 6 months from Dec, 2020 to May, 2021.

**Materials and Methods:** 215 mothers along with their children were included through emergency/OPD of pediatric department. Mothers were asked about the knowledge regarding rehydration of their child while having acute watery diarrhea and about oral rehydration solution. A predesigned questionnaire was used to collect the information about knowledge of mothers. Data was analyzed using SPSS v. 22.

**Results:** The mean age of mothers was  $31.20 \pm 6.63$  years. The mean age of children was  $3.86 \pm 3.71$  years. There were 17 (7.9%) mothers who were post-graduate, 42 (19.5%) were graduate, 49 (22.8%) and education up to matric or intermediate, 72 (33.5%) were middle or primary pass while 35 (16.3%) mothers were illiterate. There were 179 (83.3%) mothers who had good knowledge of oral rehydration solution while 36 (16.7%) had poor knowledge of use of oral rehydration solution.

**Conclusion:** Thus, it has been observed that there are >80% mothers who are aware of use and benefits of oral rehydration solution.

**Key Words:** Acute watery diarrhea, oral rehydration therapy, mother, knowledge, children

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## INTRODUCTION

Acute diarrhea is described as the occurrence of three or more loose stools (watery consistency) per day in a short period of time. An imbalance in the physiology of the small and large intestine processes involved in the absorption of ions, organic substrates, and therefore water is responsible for the increased water content in the stools.<sup>1</sup> Acute diarrhea mortality is decreasing globally, although it remains high. According to most estimates, diarrhea is the second leading cause of death in children under the age of five, accounting for 18% of the 10.6 million fatalities per year.

Poverty imposes a tremendous extra burden in nations where diarrhea is the most prevalent, and the long-term implications of the vicious cycle of enteric infections, diarrhea, and malnutrition are distressing.<sup>2</sup>

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The Centers for Disease Control and Prevention issued guidelines in 2003 for the treatment of acute pediatric diarrhea in outpatient and inpatient settings, including indications for referral. Oral rehydration, maintenance, and nutritional treatment for children with acute gastroenteritis.<sup>3</sup> Oral rehydration treatment is a sort of fluid replacement that is used to prevent and cure dehydration, particularly diarrheal dehydration. It entails drinking water laced with sugar and salts, particularly sodium and potassium. A nasogastric tube can also be used to administer oral rehydration treatment. Zinc supplements should be taken on a regular basis as part of treatment. The use of oral rehydration solution have reduced the chances of mortality due to diarrhea around 93%.<sup>4</sup>

Vomiting, hypo and hypernatremia, or hypokalemia are all possible side effects. If vomiting occurs, it is suggested that you take a 10-minute break before gradually resuming use.<sup>4,5</sup> The use of DIY remedies, on the other hand, has not been well researched.<sup>4</sup> Simple home treatment with oral rehydration treatment would have averted it. Mothers role is crucial in its treatment and prevention.<sup>6</sup> Diarrhea is not fatal in and of itself; but, mothers' lack of understanding, poor practice, and negative attitudes, as well as their misguided approach to its care and prevention, result in severe dehydration and, eventually, mortality.<sup>7,8</sup> In routine, the use of oral rehydration solution is less in local population.

However, mostly people know about the oral rehydration solution. But local evidence was scarce. So we conducted this study to get evidence of local population and implement the results in local setting.

## MATERIALS AND METHODS

**Study Design:** Cross - sectional study

**Study Place:** Pediatric Department; Divisional Headquarter Teaching Hospital Mirpur AJK, Pakistan.

**Study Period:** 6 months i.e. from Dec. 2020 to May 2021

**Sample Size:** Sample size of n = 215 cases was estimated by keeping the 95% confidence level, 6.5% margin of error and percentage of good knowledge i.e. 63.34%<sup>9</sup> among mothers regarding oral rehydration solution

**Sampling Technique:** Simple random sampling.

**Sample selection:**

**Inclusion Criteria:** Mothers of age 17-55 years, presenting with children with acute watery diarrhea were included.

**Exclusion Criteria:** Mothers who did not want to take part in the study, language barrier was not included.

**Data Collection Procedure:** After taking approval from hospital ethical committee, 215 mother along with their children were included through emergency of pediatric department, Divisional Headquarter Teaching Hospital Mirpur. Informed consent was taken and demographics (name, age, child age, area of residence, education, occupation) were noted. Then mothers were asked about the knowledge regarding rehydration of their child while having acute watery diarrhea. Then females were asked about knowledge of mothers regarding oral rehydration solution. Source of information was also being noted. A predesigned questionnaire was used to collect the information about knowledge of mothers. All the children with acute watery diarrhea were managed as per standard protocol.

**Data Analysis:** Data was analyzed using SPSS v. 22. Numerical variables like age of mothers, age of child, were presented as mean and standard deviation. Categorical variables like area of residence, education and occupation of mother, and good knowledge were presented as frequency and percentage. Data was stratified for age of mother, occupation, education, area of residence and source of information. Post-stratification, good knowledge was compared in stratified groups by using chi-square test. The P-value at  $\leq 0.05$  was kept as significant.

## RESULTS

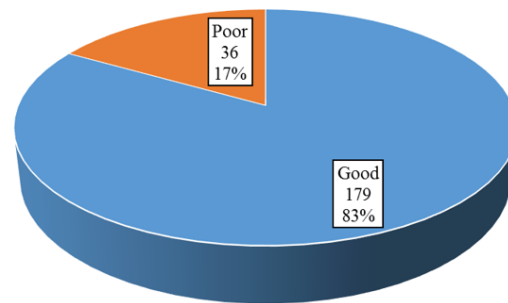
The mean age of mothers was  $31.20 \pm 6.63$  years. The mean age of children was  $3.86 \pm 3.71$  years. There were 94 (43.7%) mothers who came from rural area while 121 (56.3%) mothers belong to urban area. There were 17 (7.9%) mothers who were post-graduate, 42 (19.5%) were graduate, 49 (22.8%) ad education up to matric or

intermediate, 72 (33.5%) were middle or primary pass while 35 (16.3%) mothers were illiterate. Out of 215 mothers, 167 (77.7%) were housewives, 10 (4.7%) were labor and 38 (17.7%) were professional. About 98 (45.6%) mothers got information regarding oral rehydration solution from doctors, 76 (35.3%) got information from friends, 5 (2.3%) got information through internet, 12 (5.6%) got information through media, and 24 (11.2%) got information through nurse. The total knowledge score obtained by females was  $28.26 \pm 2.72$ . Table 1.

There were 179 (83.3%) mothers who had good knowledge of oral rehydration solution while 36 (16.7%) had poor knowledge of use of oral rehydration solution. Fig 1

**Table No.1: Demographics of patients**

n	215
Age of mother (years)	$31.20 \pm 6.63$
Age of children (years)	$3.86 \pm 3.71$
Area of residence	
Rural	94 (43.7%)
Urban	121 (56.3%)
Education of mother	
Post-Graduate	17 (7.9%)
Graduate	42 (19.5%)
Matric or Intermediate	49 (22.8%)
Middle or primary	72 (33.5%)
Illiterate	35 (16.3%)
Occupation of mother	
House wife	167 (77.7%)
Labor	10 (4.7%)
Professional	38 (17.7%)
Source of information	
Doctor	98 (45.6%)
Friends	76 (35.3%)
Internet	5 (2.3%)
Media	12 (5.6%)
Nurse	24 (11.2%)
Total score of knowledge scale	$28.26 \pm 2.72$



**Figure No.1: Knowledge of mothers about oral rehydration solution**

It has been observed that in females of any age group, then knowledge was similar ( $p > 0.05$ ). Knowledge of mothers came from rural area had same level of knowledge as mothers came from urban area. But the

knowledge of graduate and post-graduate mothers is significantly better than below matric ( $p < 0.05$ ). Table 2.

**Table No.2: Comparison of knowledge in different groups**

	Knowledge		p-value
	Good	Poor	
Age of mother			
<25 years	40	7	0.927
	85.1%	14.9%	
26-40 years	129	27	
	82.7%	17.3%	
41-55 years	10	2	
	83.3%	16.7%	
Area of residence			
Rural	77	17	0.643
	81.9%	18.1%	
Urban	102	19	
	84.3%	15.7%	
Education of mother			
Illiterate	24	11	0.003
	68.6%	31.4%	
Below matric	99	22	
	81.8%	18.2%	
Graduate or post-graduate	56	3	
	94.9%	5.1%	
Occupation of mother			
Housewife	134	33	0.073
	80.2%	19.8%	
Labour	10	0	
	100.0%	0.0%	
Professional	35	3	
	92.1%	7.9%	
Source of information			
Doctor	79	19	0.180
	80.6%	19.4%	
Friends	68	8	
	89.5%	10.5%	
Internet	5	0	
	100.0%	0.0%	
Media	8	4	
	66.7%	33.3%	
Nurse	19	5	
	79.2%	20.8%	

## DISCUSSION

Diarrhea is still a major public health problem in children under the age of five in low-resource areas, with rotavirus being the most prevalent cause.<sup>10-12</sup> In our study, there were 179 (83.3%) mothers who had good knowledge of oral rehydration solution while 36 (16.7%) had poor knowledge of use of oral rehydration solution. Sultana et al., discovered that 95.94 percent of the 320 moms had a strong understanding of oral rehydration solution. Only 86.87 percent of moms had

proper information about the availability of oral rehydration solution. The majority of moms (37.19%) learned about oral rehydration solution through doctors, followed by the media (25%) and their moms (20 percent).<sup>13</sup> Kadam et al., conducted a study, based on National Diarrheal Disease Control Program and found that 89% of mothers were aware about oral rehydration solution.<sup>14</sup>

Workie et al. conducted a research with 295 volunteers who responded 100% of the time. Around two-thirds of the 295 mothers (65.2%) had good knowledge, but more than half of the mothers (54.9%) had a negative attitude toward home-based care and prevention of diarrhea in children under the age of five. In terms of mothers' attitudes, 58 percent had poor practice when it came to home-based care and prevention of diarrhea in children under the age of five.<sup>6</sup> In another research conducted in Fenoteselam, Ethiopia, 65.9% of mothers had a good understanding of the use of oral rehydration solution in the treatment of diarrhea in children.<sup>15-17</sup>

This is mostly owing to the fact that Dire Dawa is a larger, more urbanized city with a plethora of mass media outlets.

During their child's diarrheal sickness, less than half of the participants (42.4%) utilized a homemade remedy. The results differed from those of South Africa's Heidedal community (90 percent), Taung district (83.6 percent), and Swaziland community (97 percent).<sup>18</sup> This might be because the majority of moms in the city sought medical treatment for their children while they were suffering from diarrheal disorders. Around two-thirds of the mothers [184 (62.4 percent)] were aware of the required volume of water for mixing an oral rehydration solution sachet. This is significantly lower than comparable studies conducted in Ethiopia (85.4%), Pakistan (75.5%), Nepal (70%), and India (76.7 percent). This might be rationalized by the fact that, due to a lack of knowledge, these women may not be accustomed with making oral rehydration solutions.<sup>8, 15, 19, 20</sup>

But Gupta et al., conducted a study in India and found that out of 240 mothers, who were interviewed, 86.7% mothers know about the oral rehydration solution and its benefits in diarrhea, while only 20% knew about the appropriate method of preparing the oral rehydration solution and its use in diarrhea. The most common source of information was the health care providers including doctors and nurses. Thus, the understanding on how to utilize and prepare oral rehydration solution for diarrhea management was shown to be insufficient. More steps must be done to increase this understanding and educate women on how to prepare and utilize oral rehydration solution.<sup>21</sup>

Although mothers have a reasonable understanding of diarrhea and oral rehydration solution, the study found that certain issues, such as the use of untreated water for oral rehydration solution preparation, improper

storage of oral rehydration solution, and a lack of understanding regarding the urgency of oral rehydration solution use, are concerning. As a result, educational interventions may be beneficial in changing these erroneous beliefs.<sup>22</sup> Appropriate knowledge regarding the use of oral rehydration therapy during diarrhea helps to prevent the morbidity and mortality in pediatric population due to diarrhea. Knowledge of mothers and their attitudes for the use of oral rehydration solution during diarrhea needs to be improved.<sup>23</sup>

## CONCLUSION

Thus, it has been observed that there are >80% mothers who are aware of use and benefits of oral rehydration solution. But still there is a need to spread more information about oral rehydration solution to improve the knowledge and use of oral rehydration solution and prevent complications of acute watery diarrhea and mortality in pediatric population.

### Author's Contribution:

Concept & Design of Study: Muhammad Khalil  
 Drafting: Toqeer Ahmed  
 Data Analysis: Ammara Manzoor  
 Revisiting Critically: Iftikhar Ahmed  
 Final Approval of version: Muhammad Khalil

**Conflict of Interest:** The study has no conflict of interest to declare by any author.

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