

## ORIGINAL ARTICLE

# Level of Knowledge among Mother's Uses of ORS Therapy in Diarrhea Under 5 Years of Children

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## ABSTRACT

**Objective:** To determine mothers' knowledge regarding ORS therapy during diarrhea among children, aged under five years.**Methodology:** This was a cross-sectional study and was conducted at the pediatric department of Bilawal Medical College for Boys LUMHS/Jamshoro. The study duration was six months, from March 2021 to August 2021. All the mothers, aged 18 to 40 years, who presented with their children under 5 years old with acute diarrhea and were willing to participate in the study were included. After taking demographic information, interviews were conducted with the mothers, and data was gathered. A self-structured questionnaire was used to assess the maternal knowledge in terms of diarrhea and its severity, the purpose of ORS, the ORS preparation method, the frequency of use, and the type of ORS. All the data was collected via a study proforma, and SPSS version 26 was used for the data analysis.**Results:** Children's mean age was 4.0±2.58 years. Most of the children 60.5% were girls and 38.3% were boys. The majority of women, 43.2%, were educated; 30.9% had a secondary education; 21% had a primary education; and only 4.9% were graduates. Majority of the individuals 75.3% belongs to poor socioeconomic status. Overall, 82.7% of mothers were aware of the severity of diarrhea, 91.4% were aware of ORS, 61.7% believed it was used to prevent water loss, 4.9% believed it prevented salt and water imbalances, and 4.9% believed it was used to prevent diarrhea, while 28.4% were unaware. 69.1% of mothers were aware of the ORS preparation method, but 56.8% had no idea how long ORS should be used for. 49.4% of mothers said ORS should be used slowly at small intervals, few said as per demand; and the remaining had no knowledge. Although regarding types of ORS, most of the mothers 71.6% had no idea.**Conclusion:** As per the study conclusion, most of the mothers had inadequate knowledge of ORS therapy during diarrhea. Numerous factors, including lower socioeconomic status, maternal illiteracy, caregiver ignorance, and the inability to offer therapy, when necessary, are linked to the severity of disease.**Keywords:** Diarrhea, ORS, Dehydration, knowledge, Mothers

## INTRODUCTION

Children under the age of 5 years have a higher risk of death and morbidity due to diarrhea than any other childhood illness, particularly in developing nations.<sup>1</sup> In addition to this, it is a significant factor in the prevalence of malnutrition.<sup>1,2</sup> Diarrhea is one of the most common diseases and has a significant negative impact on a child's development and growth.<sup>3</sup> In the world, children under the age of five are influenced by a mean of 3.2 episodes of diarrhea annually, and approximately 1.87 million of the children die due to dehydration caused by diarrhea, specifically in the Asian countries, Latin America, and the Africa.<sup>3,4</sup> Insufficient water, poor sewerage, poor hygiene practices, not breastfeeding, being less than 24 months old, and having a low level of mother education have all been reported as possible causes of diarrhea in children.<sup>5</sup>

Although the overall death rates have gradually declined over the previous few decades,<sup>6,7</sup> For this reduction, specifically in underdeveloped countries, oral rehydration therapy (ORS), which is its main component in addition to the nutritional improvement and enhancement of water sanitation, is substantially responsible.<sup>6</sup> Usually, complications from diarrhea can be avoided by using these electrolyte formulations, which can be used for both management and rehydration. Although diarrhea is not fundamentally dangerous, mothers' incorrect attitudes, unhealthy behaviors, and misguided approaches to its management and prevention lead to high levels of severe dehydration and, ultimately, mortality.<sup>3,8</sup> In developing countries, however, mothers' knowledge of prevention strategies is also limited. Rural mothers frequently treat their children's diarrhea at home, although they often lack of knowledge to do so. The improper use of oral rehydration solution is compounded by the inappropriate production of the solution, which is directly linked to a lack of previous knowledge of the mother.<sup>1,9</sup> However, the understanding and attitude of mothers regarding the utilization of ORS in the treatment of their children who have diarrheal illnesses have a significant impact on the effectiveness of this treatment. Recently, a study reported that the majority of the mothers had inadequate

knowledge and only a few had good knowledge regarding ORS therapy.<sup>1</sup> while in another recent study observed that the mothers had good attitudes, good knowledge and behavior regarding the use of oral rehydration salt were all satisfactory.<sup>10</sup> However, this study has been done to determine mothers' knowledge regarding ORS therapy during diarrhea among children aged under five years in our population.

## MATERIAL AND METHODS

This was a cross-sectional study and was conducted at the paediatric department of Bilawal Medical College for Boys LUMHS/Jamshoro. The study duration was six months, from March 2021 to August 2021. All the mothers, aged 18 to 40 years, who presented with their children under 5 years old with acute diarrhea and were willing to participate in the study were included. Mothers whose children had other diseases or who did not agree to participate in the study were excluded. A verbal informed consent was taken from each mother, and all the mothers were assured that their information and their identity would remain confidential. After taking demographic information, interviews were conducted with the mothers, and data was gathered. A self-structured questionnaire was used to assess maternal knowledge in terms of diarrhea and its severity, the purpose of ORS, the method of ORS preparation, how long ORS should be continued, and the type of ORS. All the data was collected via a study proforma, and SPSS version 26 was used for the data analysis.

## RESULTS

In this study, a total of 81 mothers were interviewed for their knowledge regarding diarrhea; their children's mean age was 4.0±2.58 years, and those who suffered from diarrhea. Most of the children 60.5% were girls and 38.3% were boys. According to the maternal education, most of the women 43.2% were educated, 30.9% had secondary level education, 21% mothers had primary level education; and only 4.9% mothers were graduates. Majority

of the individuals 75.3% belongs to poor socioeconomic status and remaining 24.7% individuals had middle socioeconomic status. Most of the children 54.3% had diarrhea from 1–2 days, 29.6% had diarrhea from 3–4 days, and 11.1% had diarrhea from 5–7 days, while 4.9% had diarrhea from more than 7 days. Table.1

On the question regarding knowledge of diarrhea and its severity, 82.7% mothers knew it and 91.4% heard about ORS. Out of all, 61.7% mothers said the purpose of the ORS use is to prevent water loss, only 4.9% mothers said it used to prevent the salt and water imbalance, 4.9% said it used to prevent the diarrhea, while 28.4% mothers had no any idea regarding it. 69.1% were aware about ORS preparation method, while most of the mother 56.8% had no idea reading for how long ORS should continue. 49.4% of mothers said ORS should be used slowly at small intervals, few said as per demand; and the remaining had no knowledge. Although regarding types of ORS, most of the mothers 71.6% had no idea. Table.2

Table 1: Descriptive analysis of demographic information n=81

Variables		Statistics	
Age (years)		4.0±2.58	
Gender	Males	31	38.3%
	Females	49	60.5%
Maternal education	Graduated	4	4.9%
	Primary	17	21.0%
	Secondary	25	30.9%
	Uneducated	35	43.2%
Father education	Graduated	4	4.9%
	Primary	12	14.8%
	Secondary	29	35.8%
	Uneducated	36	44.4%
SES	Poor	61	75.3%
	Middle	20	24.7%
Duration of diarrhea	1-2 days	44	54.3%
	3-4 days	24	29.6%
	5-7 days	09	11.1%
	>7 days	04	04.9%

Table 2: Mother's knowledge regarding ORS n=81

Questions		Frequency	%
Do you know about diarrhea and its severity?	Yes	61	82.7%
	Don't know	14	17.3%
Have you heard about ORS?	Yes	74	91.4%
	No	7	8.6%
What is the purpose of ORS?	Don't know	23	28.4%
	prevent diarrhea	4	4.9%
	To prevent the salt and water imbalance	4	4.9%
	To prevent water loss	50	61.7%
Are you aware about ORS preparation method?	Yes	56	69.1%
	No	25	30.9%
For how long ORS should continue?	Don't know	46	56.8%
	Till diarrhea continue	4	4.9%
	Till diarrhea stops	31	38.3%
How frequently do you give the ORS?	Don't know	29	35.8%
	On demand	12	14.8%
	Slowly at small intervals	40	49.4%
Which type of ORS?	All types	6	7.4%
	I don't know	58	71.6%
	Low osmolar	4	4.9%
	Standard ORS	13	16.0%

## DISCUSSION

Particularly in the poorest countries, diarrhea seems to be the second-greatest reason of childhood morbidity and mortality.<sup>11</sup> Publications regarding mothers' awareness about diarrhea, the usage of ORS, and the effect of mothers' understanding on the treatment of diarrhea have been conducted in various parts of Pakistan.<sup>11</sup> This study has been done to evaluate the mother's

knowledge regarding ORS therapy during diarrhea in children, aged under the age of five years. In this study, the majority of the mothers had insufficient knowledge reading ORS, especially since 61.7% of the mothers said the purpose of the ORS use is to prevent water loss, 4.9% said it is used to prevent salt and water imbalances, 4.9% said it is used to prevent diarrhea, and 28.4% had no idea what it was used for. 69.1% were aware of the ORS preparation method, while 56.8% had no idea how long ORS should be used for; 49.4% said ORS should be used slowly at small intervals, a few said as needed, and the remaining had no idea. Although regarding types of ORS, most of the mothers 71.6% had no idea regarding any particular ORS. Consistently Gupta RK et al<sup>12</sup> concluded that the understanding regarding the manufacture and usage of ORS for the treatment of diarrhea had been inadequate. On the other hand, Dujaili JA et al<sup>13</sup> observed that the mothers have a fair amount of information about diarrhea and ORS, but some difficulties found in the study are alarming, including the use of unclean water in ORS solution production, improper ORS solutions storage, and an absence of awareness of the importance of ORS use. Intervention in education may therefore be helpful in dispelling these incorrect assumptions.<sup>13</sup> In accordance with a national study conducted, 40% of mothers were unable to identify the symptoms of dehydration; additionally, 34% of women brought up diarrhea symptoms, including thirst, sunken eyes, reduced salivation, or dry hair, while just 25% of mothers gave their children ORS.<sup>14</sup> In the line of this study, Hanif Z et al<sup>15</sup> also conducted the study to evaluate the parent's degree of awareness, attitudes, and practice about the use of oral rehydration solutions in children who had diarrhea, they reported that 50% of the study subjects were aware regarding benefits of ORS, including its role in preventing dehydration, while finally, they concluded that the mothers exhibited a favorable attitude toward the consumption of ORS to prevent dehydration, but they lacked knowledge about diarrhea and the severity of it.<sup>15</sup>

In this study, the majority of the children (60.5%) were girls and 38.3% were boys; the majority of the parents (43.2%) were uneducated; the remaining 44.4% had formal education; and few of them were well educated; and the majority of the individuals (75.3%) are from low-income families. Consistently, an Indian study by Gupta RK et al<sup>16</sup> reported that the majority of the individuals (184 out of 240) were poor socioeconomically, and the majority of mothers had a lower level of education. Adeyinka DT et al<sup>17</sup> reported that in comparison to mothers with higher education levels, babies whose mothers without formal education seemed to have a 2.69-fold greater risk of having diarrhea, as well as Diarrhea in children is strongly correlated with the mother's education.<sup>17</sup> NC A et al<sup>18</sup> also demonstrated that the largest proportion of mothers (41.02%) are secondary school graduates. In the current survey, the majority of respondents fell into the middle and lower financial categories, as 44.65% and 33.54, accordingly.<sup>18</sup> However, Farahat TM et al<sup>19</sup> also observed the significant correlation of effective practices of diarrheal management with maternal educational level, the number of children in their family, and socioeconomic status. Approximately 90% of episodes of acute watery diarrhea could be effectively managed without the use of anti-diarrheal medications by using the therapy of oral rehydration and sustained feeding.<sup>20</sup> The social and demographic characteristics of mothers, including such their education level, work status, and ages, are linked to their knowledge regarding diarrhea and its management.<sup>20</sup> Lower educational levels or illiteracy, poor socioeconomic status, cultural influences, and geographic factors may be the leading reasons for the lack of awareness and use of ORS in the treatment of diarrhoea.<sup>15</sup>

## CONCLUSION

As per the study conclusion, most of the mothers had inadequate knowledge reading ORS therapy during diarrhea. Numerous factors, including lower socioeconomic status, maternal illiteracy, caregiver ignorance, and the inability to offer therapy, when

necessary, are linked to the severity of disease. Although maternal awareness strategies are recommended regarding oral rehydration therapy and sustained feedings to decrease the children's morbidity and mortality.

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