

# Knowledge and attitude of mothers regarding oral rehydration solution in Sulaimani

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## Abstract

**Background:** Diarrheal disease still one of the important problems among children in our governorate (Sulaymani) and ORS is an effective treatment for where they get mild to moderate dehydrations.

**Objective:** To assess the knowledge and attitudes of mothers regarding ORS.

**Patients and methods:** From July 1<sup>st</sup> 2012 to march 31<sup>st</sup> 2013, total of 200 mothers enrolled in this study. We collected information regarding their children's age, sex, residence, maternal education, water supply. Their knowledge and attitude evaluated on their awareness about ORS, using, source of education, procedure of preparation and giving it to their children. Those information collected by direct interview of those mothers.

**Results:** 99.5% of mothers were aware about ORS. Only 0.5% (1 mother) was not aware of it. There was significant correlation between both educational level of the mothers and water supply, and persons who gave advice to them on using ORS and drug use. But no significant correlation between mothers knowledge and source of information about ORS.

**Conclusion:** ORS is a very effective treatment for diarrhea in children. Mothers knowledge and attitude to be improved about it.

**Key words:** Mother's knowledge, Diarrhea, ORS.

## INTRODUCTION

Diarrheal disorders in childhood account for a large proportion of childhood deaths, with an estimated 1.8 million deaths per year globally. The World Health Organization reports that there are more than 700 million episodes of diarrhea annually in children below 5 years of age in developing countries. While global mortality may be declining, the overall incidence of diarrhea remains unchanged at about 3.2 episodes per child per year. <sup>(1)</sup>

Dehydration resulting from diarrhea is a significant cause of death for young children in developing countries. Oral Rehydration Solution (ORS) is useful to replace fluid and electrolyte loss. Although ORS is

effective in preventing and treating dehydration, its use in home treatment is not wide spread due to reluctance among mothers to use ORS in cases of acute diarrhea. <sup>(2)</sup> Timely management of the children with ORS has substantially declined the mortality and morbidity from acute infectious diarrhea. <sup>(3)</sup>

An evaluation of global trends in diarrhea management from 1986 to 2003 showed minimal progress in ORS use and a decrease in the proportion of children with diarrhea given continued feeding<sup>(4)</sup>. A 2007 analysis of the two most recent Demographic and Health Surveys conducted in 34 countries found decline in ORS use for children below 3 years of age with diarrhea in 68% of those countries. Moreover, the proportion of children who had fluids withheld during diarrhea increase in 91%

of the countries included in the analysis.<sup>(5)</sup>It is commonly observed that most of the mothers neither can mix commercially available ORS properly nor are able to realize the significance of giving more fluids during acute diarrhea to their children.<sup>(6)</sup>

The aim of this study was to assess the knowledge and attitude of mothers towards the use of oral rehydration solution in the treatment of acute diarrhea in children in Sulaimani.

## PATIENTS AND METHODS

This cross sectional survey was conducted at the Sulaimani Pediatric Teaching Hospital during the period July 1<sup>st</sup> 2012 to March 31<sup>st</sup> 2013. Total of 200 mothers of children with diarrhea were enrolled in the study, they were interviewed and information collected that included a detailed history highlighting their demographic data, presenting complaints, use of ORS, treatment given at home, mothers knowledge about ORS and drugs used for diarrhea, maternal education, water sources, feeding, and socioeconomic status.

Regarding knowledge and attitude about ORS a score was plotted from the following information: awareness about ORS, used ORS or not, equipment used for giving ORS, preparation of ORS, and assessing the adequacy of ORS used. When the response was correct the score of 2 was given and when response was incorrect a score of 0 was given. Total score of 10 would reflect good knowledge and a score of zero reflects very poor knowledge. Using ORS for diarrhea, equipments used for mothers' attitude regarding ORS

For statistical analysis SPSS (Statistical Package for the Social Sciences) version 17 was applied. Correlation between knowledge score and variables was done using chi-square test, P value less than or equal to 0.05 was regarded as significant.

## RESULT

Table 1 shows the demographic characteristics of the group included in the study with the median age of children being 2 years, minimum was 0.3 years (4 months) and maximum was 8 years. The highest number of cases was in the age group 1 to 5 year. The male to female ratio was almost 1:1. More than half of mothers (105 mothers constituting 52.5%) had low educational level, and only 37 mothers had high level of education making 18.5% of the total, the rest did not have any educational background. There were different sources of water as in 103(51.5%) cases was from well, and in 63 (31.5%) was piped, and in 34 (17%) was water tankers.

**Table 1: Characteristics of the sample**

| Variable           | No. | %    |
|--------------------|-----|------|
| Age in years       |     |      |
| < 1                | 25  | 12.5 |
| 1-5                | 160 | 80   |
| > 5                | 15  | 7.5  |
| Gender             |     |      |
| Male               | 101 | 50.5 |
| Female             | 99  | 49.5 |
| Residence          |     |      |
| Inside city        | 172 | 86   |
| Outside city       | 28  | 14   |
| Maternal Education |     |      |
| Illiterate         | 58  | 29   |
| Low                | 105 | 52.5 |
| High               | 37  | 18.5 |
| Water supply       |     |      |
| Well               | 103 | 51.5 |
| Piped              | 63  | 31.5 |
| Tanker             | 34  | 17   |
| Total              | 200 | 100  |

Table 2 shows data regarding knowledge and attitude of the mothers. The vast majority 199 mothers (99.5%) were aware about ORS and only 1 (0.5%) was not aware about ORS, 183 (91.5%) of the mothers used ORS and 17 (8.5%) did not use ORS. Among mothers who used ORS 7 (3.5%) used it depending on their own decision, and 42 (21%) advice was given by another family member, while 85 (42.5%) advice given by a physician, and 49 (24.5%) advice made by: paramedical staff. Among mothers who used ORS, in 139 (69.5%) it was given by cup and spoon, in 44 (22%) it was given by bottle. The amount of ORS given was adequate by 109 mothers (54.5%) and 74 (37%) was inadequate, while 107 mothers (53.5%) prepared ORS correctly and 76 mothers (38%) preparation of ORS were not correct. Of all mothers 172 (86%) had used drugs and of 28 (14%) had not used drugs. Among those who used drugs 21 (10.5%) was self decision and 151 (75.5%) prescription was made by family physician.

When correlation done between knowledge score and demographic characteristics of the sample, there was significant correlation with educational level of mother and the source of water supply ( $p=0.0001$ ). In making correlation between knowledge score and mothers source of information about ORS, P value was not significant (0.226). But correlation between knowledge score and the person giving advice to the mothers on using ORS, P value was (0.0001) significant with the physician having the greatest influence, so also correlation done between knowledge score and the person who advised mothers on drug use P value was (0.0001) significant.

**Table 2: Mothers' knowledge and attitude regarding Oral Rehydration Solution**

| Variable                                  | Number | %    |
|-------------------------------------------|--------|------|
| Aware of ORS                              |        |      |
| Yes                                       | 199    | 99.5 |
| No                                        | 1      | 0.5  |
| Total                                     | 200    | 100  |
| Used ORS                                  |        |      |
| Yes                                       | 183    | 91.5 |
| No                                        | 17     | 8.5  |
| Total                                     | 200    | 100  |
| Advised to use ORS by                     |        |      |
| Self                                      | 7      | 3.9  |
| Family member                             | 42     | 22.9 |
| Physician                                 | 85     | 46.5 |
| Health worker                             | 49     | 26.7 |
| Total                                     | 183    | 100  |
| Give ORS via                              |        |      |
| Cup and spoon                             | 139    | 76   |
| Bottle                                    | 44     | 24   |
| Total                                     | 183    | 100  |
| Used adequate amount of ORS               |        |      |
| Adequate                                  | 109    | 59.5 |
| Inadequate                                | 74     | 40.5 |
| Total                                     | 183    | 100  |
| Preparation of ORS                        |        |      |
| Correct                                   | 107    | 58.5 |
| Incorrect                                 | 76     | 41.5 |
| Total                                     | 183    | 100  |
| Used Antidiarrheal Drugs                  |        |      |
| Yes                                       | 172    | 86   |
| No                                        | 28     | 14   |
| Total                                     | 200    | 100  |
| Decision for using antidiarrheal drugs by |        |      |
| Self                                      | 21     | 12.2 |
| Physician                                 | 151    | 87.8 |
| Total                                     | 172    | 100  |

## DISCUSSION

Among children, mortality and morbidity in acute infectious diarrhea have dramatically reduced due to oral rehydration therapy and early realimentation<sup>(7)</sup>. Numerous studies have documented that knowledge about oral rehydration solution has increased.<sup>(8)</sup> Despite the fact that availability of ORS can substantially reduce the mortality and morbidity resulting from diarrhea, poor knowledge pertaining to diarrhea and its management has posed the third world countries with diarrhea associated deaths and ill health among children<sup>(9)</sup>

In this study 99.5% mothers were aware of oral rehydration solution, this finding is similar to that of Jha N et al study<sup>(10)</sup>, 97.6% of mothers had information about ORS and also its usefulness in the management of dehydration due to diarrhea.

About half of the mothers in our study 105 (52.5%) had low level of education, 58(29%) of them were illiterate and 37(18.5%) had high educational level while in Attaya P et al study<sup>(11)</sup>, 52% of mothers had elementary school or lower and 62% were housewives.

In present study 85(42.5%) patients were given oral rehydration solution on advice of family physician, 42 (21%) on advice of family member, 49 (24.5%) on advice of health worker and 7 (3.5%) on their own knowledge while Seyal et al study<sup>(12)</sup> reported that 27% used ORS by their own knowledge, 28% used on advice of general practitioners, 10% by pediatricians, 3% by medical officers and 27% from other sources could be due to improvement of health services in our region.

As far as preparation of oral rehydration solution is concerned, in our study 107 (53.5%) of mothers correctly recalled the preparation of oral rehydration solution whereas in a study by Taha AZ<sup>(15)</sup> was 64%,

In our study 172(86%) used drugs in diarrhea and 28(14%) did not use drugs, and of them 151(75.5%) were advised by family physician while in This high percentage is probably due to success of our physicians in applying ORS program in our society.

In conclusion; although most of the mothers had satisfactory knowledge about ORS and used it when needed, their attitude regarding oral rehydration solution was inadequate.

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Table 3. Correlation of variables with knowledge and attitude scores

| Variable             |                   | Average score |           |           |           |           |           | P value |
|----------------------|-------------------|---------------|-----------|-----------|-----------|-----------|-----------|---------|
|                      |                   | 0             | 2         | 4         | 6         | 8         | 10        |         |
| Age                  | Less than 1year   | 0(0%)         | 6(3%)     | 1(0.5%)   | 3(1.5%)   | 6(3%)     | 9(4.5%)   | 0.462   |
|                      | 1-5 year          | 1(0.5%)       | 20(10%)   | 23(11.5%) | 35(17.5%) | 14(7%)    | 67(33.5%) |         |
|                      | More than 5 year  | 0(0%)         | 1(0.5%)   | 2(1%)     | 0(0%)     | 3(1.5%)   | 9(4.5%)   |         |
|                      | Total             | 1(0.5%)       | 27(13.5%) | 26(13%)   | 38(19%)   | 23(11.5%) | 85(42.5%) |         |
| Gender               | Male              | 0(0%)         | 12(6%)    | 8(4%)     | 26(13%)   | 14(7%)    | 41(20.5%) | 0.42    |
|                      | Female            | 1(0.5%)       | 15(7.5%)  | 18(9%)    | 12(6%)    | 9(4.5%)   | 44(22%)   |         |
|                      | Total             | 1(0.5%)       | 27(13.5%) | 26(13%)   | 38(19%)   | 23(11.5%) | 85(42.5%) |         |
| Mothers education    | Illiterate        | 1(0.5%)       | 14(7%)    | 12(6%)    | 16(8%)    | 7(3.5%)   | 8(4%)     | 0.0001  |
|                      | Low               | 0(0%)         | 12(6%)    | 13(6.5%)  | 22(11%)   | 14(7%)    | 44(22%)   |         |
|                      | High              | 0(0%)         | 1(0.5%)   | 1(0.5%)   | 0(0%)     | 2(1%)     | 33(16.5%) |         |
|                      | Total             | 1(0.5%)       | 27(13.5%) | 26(13%)   | 38(19%)   | 23(11.5%) | 85(42.5%) |         |
| Residence            | Inside Sulaimani  | 0(0%)         | 23(11.5%) | 19(9.5%)  | 31(15.5%) | 20(10%)   | 79(39.5%) | 0.17    |
|                      | Outside Sulaimani | 1(0.5%)       | 4(2%)     | 7(3.5%)   | 7(3.5%)   | 3(1.5%)   | 6(3%)     |         |
|                      | Total             | 1(0.5%)       | 27(13.5%) | 26(13%)   | 38(19%)   | 23(11.5%) | 85(42.5%) |         |
| Source of water      | Well              | 0(0%)         | 10(5%)    | 5(2.5%)   | 11(5.5%)  | 11(5.5%)  | 66(33%)   | 0.0001  |
|                      | Piped             | 1(0.5%)       | 10(5%)    | 16(8%)    | 20(10%)   | 5(2.5%)   | 11(5.5%)  |         |
|                      | Tank              | 0(0%)         | 7(3.5%)   | 5(2.5%)   | 7(3.5%)   | 7(3.5%)   | 8(4%)     |         |
|                      | Total             | 1(0.5%)       | 27(13.5%) | 26(13%)   | 38(19%)   | 23(11.5%) | 85(42.5%) |         |
| Heard about O.R.S.   | Yes               | 1(0.5%)       | 26(13%)   | 26(13%)   | 38(19%)   | 23(11.5%) | 85(42.5%) | 0.266   |
|                      | No                | 0(0%)         | 1(0.5%)   | 0(0%)     | 0(0%)     | 0(0%)     | 0(0%)     |         |
|                      | Total             | 1(0.5%)       | 27(13.5%) | 26(13%)   | 38(19%)   | 23(11.5%) | 85(42.5%) |         |
| Who advise on O.R.S. | Self              | 0(0%)         | 1(0.5%)   | 2(1%)     | 1(0.5%)   | 0(0%)     | 3(1.5%)   | 0.0001  |
|                      | Family            | 0(0%)         | 6(3%)     | 12(6%)    | 17(8.5%)  | 3(1.5%)   | 4(2%)     |         |
|                      | Physician         | 0(0%)         | 1(0.5%)   | 1(0.5%)   | 5(2.5%)   | 13(6.5%)  | 65(32.5%) |         |
|                      | Health worker     | 0(0%)         | 3(1.5%)   | 11(5.5%)  | 15(7.5%)  | 7(3.5%)   | 13(6.5%)  |         |
|                      | Total             | 0(0%)         | 11(5.5%)  | 26(13%)   | 38(19%)   | 23(11.5%) | 85(42.5%) |         |
| Who advise on drug   | Self              | 0(0%)         | 0(0%)     | 8(4%)     | 9(4.5%)   | 2(1%)     | 2(1%)     | 0.0001  |
|                      | Physician         | 0(0%)         | 16(8%)    | 12(6%)    | 27(13.5%) | 13(6.5%)  | 83(41.5%) |         |
|                      | Total             | 0(0%)         | 16(8%)    | 20(10%)   | 36(18%)   | 15(7.5%)  | 85(42.5%) |         |