Original Article

Oral Rehydration Therapy- Knowledge, Attitude and Practice (KAP) Survey of Pakistani Mothers

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Abstract

Background: To evaluate the knowledge, attitude and practices (KAP) of mothers of under 5 year old children.

Methods: This cross-sectional descriptive study was undertaken to assess the KAP of mothers of children under 5 years of age regarding oral rehydration therapy. Data was collected from 100 mothers using convenience sampling, through an interview according to a structured questionnaire. Scores of knowledge regarding ORT, questions to reflect attitude and practices were also included and the information analysed on SPSS 16.0. By determining percentages and means with Standard deviations, independent samples t test was used to compare mean scores of knowledge.

Results: Of the 100 mothers interviewed, 93% had heard of ORS, with 75% mothers with adequate knowledge about ORS, its preparation and administration. The attitude of mothers regarding its usefulness was positive and 96.8% mothers agreed that it didn’t have any side effect upon their child. Majority (74.4%) of the mothers gave their child ORS when he/she suffered from diarrhoea.

Conclusion: Mothers of children under 5 years of age, in general, were found to be equipped with enough knowledge and positive attitude towards the utility of oral rehydration treatment in the prevention of dehydration caused by diarrhoea.

Key Words: Oral Rehydration Salt, Oral Rehydration Therapy, Diarrhoea

Introduction

Diarrheal disease is the second leading cause of death in children under five years old and kills around 760,000 children each year. Loss of water and salts resulting from diarrhoea can result in severe dehydration which results in severe morbidity and mortality. In Pakistan there are about 24 million children under the age of 5 years and on average each child gets 3-4 episodes of diarrhoea per year in children upto 4 years of age; to account for a total of approximately 120 million episodes per year.

Although the total number of deaths globally from diarrheal diseases remains high, the overall mortality rate has steadily declined over the last few decades. This decline especially in developing countries is largely due to the use of early and appropriate oral rehydration therapy (ORT) with oral rehydration solution (ORS) being its main component as well as improved nutrition and water sanitation measures. ORT has prevented more than 50 million child deaths in the last 25 years. Despite its significance in prevention and treatment of diarrhea in children under five, the use of ORT still remains low. It remains, that only 44% of children with diarrhea symptoms receive this recommended treatment. It is estimated that in the 1990s, more than 1 million deaths related to diarrhea may have been prevented each year, largely attributable to the promotion and use of oral rehydration therapies.

ORS is the non-propriety name for a balanced glucose-electrolyte mixture, approved, recommended and distributed by WHO and UNICEF as a drug for the treatment of clinical dehydration throughout the world. The use of ORS largely depends on the level of knowledge and attitude of mothers. Misconceptions are prevalent that prevent the use of ORS during diarrhea. Many mothers believed that one needs a prescription from a doctor in order to buy ORS or ORS has a bad taste or no fluids to be given during diarrhea.

ORS is a mixture of clean water, salt and sugar and is taken orally to replace the water and electrolytes lost in the faeces. In the WHO Integrated Management of Childhood Illnesses (IMCI) tables, the treatment plan A of diarrhoea is based on ORT. Studies in the regional countries show a major gap in actual and desired KAP of mothers regarding ORT. V. Datta et al highlight the improper preparation of ORS, despite good general awareness regarding diarrhoea and management. Furthermore significant improvement has been found in the KAP of mothers after intervention. Although studies have been conducted in the Karachi, but the scribe wasn’t able to find a research conducted in Rawalpindi, Islamabad. Most of the studies have
concluded an unsatisfactory knowledge about ORT KAP in diarrhoea management.

**Subjects and Methods**

After receiving approval from the Institutional Research Forum and the concerned departments, a cross sectional descriptive study was undertaken in Holy Family Hospital, Rawalpindi from May 2014 to August 2014 by interviewing mothers accompanying children of age less than 5 years. All mothers of children under 5 years admitted in paediatrics ward were included in the study, while all other mothers were excluded therein. The data was collected from a 100 mothers though cluster sampling. Data was entered and analysed on SPSS v16. For each correct answer one point was awarded. The highest attainable score for knowledge was 14 and the lowest score was 0. After scoring mothers who attained scores less than 5 were categorised as poor knowledge, those with score from 5 to 10 were said to have good knowledge and those with scores higher than 10 were said to have excellent knowledge. For continuous variables like age, scores of knowledge etc., means with standard deviation were calculated. For categorical variables like status of knowledge, questions with categorical responses regarding attitude and practices, frequencies and percentages were calculated. To determine the statistically significant difference of mean scores of knowledge based on educational status of mothers, independent samples t-test was applied at 5% level of significance (P-value <0.05 was considered statistically significant). Pearson’s correlation test at 5% level of significance was applied to determine any existing correlation between scores of knowledge and scores of practices of the same mothers individually.

**Results**

A total of 100 mothers were interviewed about their knowledge attitudes and practices regarding oral rehydration treatment for diarrhea for their under 5 year old children. When inquired if they knew about ORS 93% affirmed positively while 7 mothers said they had not heard of ORS before (Table 1). Out of the 100 mothers interviewed, 38% had not received any formal education while 62% of them were formally educated. Tap water was used by 49% of the mothers for drinking, 19% used water from wells, while only 25% mothers boiled water and 7% used mineral water. Majority (73.1%) of the mothers were informed by a doctor while 26.9% found out about it on their own by electronic/print media or from a friend/relative. The substitutes of ORS like nimkol and pedalite or sweetened salt water were known only to 37 (39.8%) mothers. Mean scores of knowledge of the entire sample was found to be 8.23±3.22 out of 14.0, while practice score was 7.46±3.47 out of 11.0.

**Table 1- Oral Rehydration Therapy - Knowledge of mothers**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Yes No(%)</th>
<th>To some extent No(%)</th>
<th>No(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge about use of ORS</td>
<td>76(81.7%)</td>
<td>17(18.3%)</td>
<td>0</td>
</tr>
<tr>
<td>Consider it enough for treating dehydration</td>
<td>70(75.3%)</td>
<td>22(23.7%)</td>
<td>7(1.1%)</td>
</tr>
<tr>
<td>Had knowledge of ORS composition</td>
<td>20(21.5%)</td>
<td>17(18.3%)</td>
<td>66(60.2%)</td>
</tr>
<tr>
<td>Awareness of consequences if ORS is not given timely</td>
<td>70(75.3%)</td>
<td>22(23.7%)</td>
<td>7(1.1%)</td>
</tr>
<tr>
<td>Consider it enough as treatment for diarrhoea</td>
<td>69(74%)</td>
<td>18(19.4%)</td>
<td>6(6.5%)</td>
</tr>
<tr>
<td>Knowledge of danger signs of when to bring the child to the doctor despite giving ORS</td>
<td>5(5.4%)</td>
<td>47(51.1%)</td>
<td>40(43.5%)</td>
</tr>
<tr>
<td>Knowledge of proper method of administration</td>
<td>64(67.4%) (Frequent sips)</td>
<td>25(26.3%) (Full glass)</td>
<td>6(6.3%) (Doesn't give at all)</td>
</tr>
<tr>
<td>Knowledge of when to administer</td>
<td>35(37.6%) (After every loose stool)</td>
<td>55 (59.1%) (Frequently)</td>
<td>3(3.2%)</td>
</tr>
</tbody>
</table>

Majority 85(92.4%) of the mothers who knew about ORS agreed that ORS is useful and 96.8% said that it didn’t have any side effects upon their child. Upon enquiry 82.6% mothers continue breastfeeding while giving ORS while 16% mothers thought breastfeeding should be stopped. For the treatment of diarrhea, 42.4% of the mothers used other home remedies and drugs without doctors’ prescription. The percentage of others in preparation of ORS is lower than the knowledge, owing to the fact that a considerable population of mothers who knew about ORS never actually made it for their young ones. (Table 2)

**Table 2: Oral Rehydration Treatment - Practice of mothers**

<table>
<thead>
<tr>
<th>Practice</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always use ORS</td>
<td>68</td>
</tr>
<tr>
<td>Sometimes use ORS</td>
<td>14</td>
</tr>
<tr>
<td>Never use ORS</td>
<td>18</td>
</tr>
</tbody>
</table>
The comparison of scores of both knowledge as well as practices was done based on formal education status of the mothers. The mean scores of knowledge of mothers who had received any formal education was 9.23±3.25. There scores were comparatively lesser for those without any formal education 6.6±3.25. The independent sample t-test proved a highly statistically significant difference in the above mentioned score with p-value of 0.00.

Table 3: Oral Rehydration Therapy - Knowledge Vs Practices Of Mothers

<table>
<thead>
<tr>
<th>Knowledge</th>
<th>Poor practices</th>
<th>Good practices</th>
<th>Excellent practices</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor Knowledge</td>
<td>9(75%)</td>
<td>1(8.3%)</td>
<td>2(16.7%)</td>
<td>12(100%)</td>
</tr>
<tr>
<td>Good Knowledge</td>
<td>4(7.7%)</td>
<td>18(34.6%)</td>
<td>30(57.7%)</td>
<td>52(100%)</td>
</tr>
<tr>
<td>Excellent Knowledge</td>
<td>2(5.6%)</td>
<td>2(5.6%)</td>
<td>32(88.9%)</td>
<td>36(100%)</td>
</tr>
<tr>
<td>Total</td>
<td>15(15%)</td>
<td>21(21%)</td>
<td>64(64%)</td>
<td>100(100%)</td>
</tr>
</tbody>
</table>

Figure 1: Responses of knowledge Vs practices of mothers in preparation of ORS

The mean scores of practices were 5.8±3.96 for those without any formal education and 8.29±3.25 for those educated. A p-value of 0.013 displayed a statistically significant difference in practices of mothers based on their status of formal education.

The association of the knowledge status was compared with the practices status of the mothers and statistically significant difference was observed with a p value of 0.00 (Figure 1). A Pearson correlation coefficient of 0.75, with a p-value of 0.00 showed a highly statistically significant, strongly positive correlation between mean scores of knowledge and practices of same mothers. This showed that those with increasing scores of knowledge in mothers also increased their scores of practices. (Table 3, Figure 2)

Figure 2: Scatter plot displaying positive linear correlation between scores of knowledge and practices of the mothers.

Discussion

Despite the fact that availability of ORS can substantially reduce the mortality and morbidity resulting from diarrhoea, poor knowledge pertaining to diarrhoea and its management has posed the third world countries with diarrhea associated deaths and ill health among children. In a study done in Lahore, ORS was used by only 49.67% of the mothers out of which 29% used it by their own knowledge (through newspaper, television or doctors). 42.82% of mothers knew how to make ORS. Breastfeeding was continued by 74.62% of mothers. In a study done in Rawalpindi, 60% mothers were found to have adequate knowledge regarding the method of ORS preparation. 95.94% mothers knew the advantage of using ORS in diarrheal diseases while 4.06% mothers were completely unaware of the implication of using ORS. Most of the respondents (37.19%) came to know about ORS on contact with doctors.

In rural Somalia, 94.5% mothers knew advantage of using ORS in diarrheal diseases while 5.5% mothers were completely unaware of the implication of using ORS. In one of study conducted in Pakistan, 42% of mothers were not administrating ORS accurately. Such a high frequency of wrong administration of ORS was mainly due to lack of education among respondents as 78% of them were found to be illiterate. Our study shows a positive correlation between the knowledge and practices of mothers, thus highlighting the importance of formal education as well as awareness.
programmes in order to enable mothers to prevent the complications of dehydration and decrease mortality amongst children. This is of utmost importance in order to improve the general health status of our children.

**Conclusion**

1. Positive attitude was seen among mothers regarding the use of ORS in the prevention of dehydration. Yet certain lapses are seen in the knowledge and practices of mothers regarding its administration.
2. Mothers must be encouraged to start ORS without waiting for a visit to the doctor. Such simple measure to improve the practices of mothers would considerably reduce the burden of morbidity and mortality amongst children under 5 years of age.

**References**