

# Knowledge, Attitude and Practices of the Mothers Regarding Oral Rehydration Solution, Feeding and Use of Drugs in Childhood Diarrhoea

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## ABSTRACT

**Aims:** To know knowledge, attitude and practices of mothers regarding use of oral rehydration solution, feeding practices and drugs during diarrhea.

**Patients and methods:** It was an observational descriptive study conducted at the paediatric medical emergency department of the Children's hospital and the institute of child health Lahore for a period of six months. Total 300 mothers fulfilling the inclusion criteria were enrolled in the study. Mothers of children with acute diarrhoea were included in this study while children with chronic diarrhoea were excluded from study. Mothers were interviewed and information collected. A predesigned proforma was filled for each case which included history like duration of diarrhoea, frequency and consistency of stools, vomiting, convulsions or oliguria, treatment given at home, mothers knowledge about ORS and drugs, maternal education, water sources, feeding, and socioeconomic history and was recorded.

**Results:** A total of 300 mothers visiting emergency department of Children Hospital Lahore were interviewed. Of 300 patients, 198 (66%) were males and 102 (34%) were females. The median age of patients was 9 months (age ranged from 10 days to 5 years), of these 78 (26%) were under the age of 6 months, 135 (45%) were between 6-12 months and 87(29%) were between 1-5 years. Regarding treatment of diarrhoea given at home prior to hospital visit, 42 (14%) patients were given oral rehydration solution alone, 48 (16%) drugs alone and 189 (63%) oral rehydration solution along with drugs. While 12 (4%) cases were taken home fluids and in 9 (3%) nothing was given. Out of 300 cases, in 78 (33.76%) patients oral rehydration solution was given by parents themselves, 117 (50.6%) by family physician and 21 (9%) on advice of family member. Drugs were used in 237 (79%) cases and in 63 (21%) cases drugs were not taken. In 9 (3.8%) patients drugs were given by parents themselves and in 228 (96.2%) cases on advice of family physician. Regarding feeding practices during diarrhoea, 192 (64%) of cases were given same diet as before illness, in 96 (32%) cases solids were stopped and in 12(4%) cases either milk was diluted or reduced in quantity .

**Conclusion:** Control of diarrhoea disease programme is successful in introducing oral rehydration solution at mass level. Mother's knowledge about use and preparation of oral rehydration solution has increased. Great emphasis is needed to educate mothers about method and quantity of oral rehydration solution. Enormous efforts are needed for promoting healthy feeding practices.

**Key words:** Oral rehydration solution, family physician, diarrhoea, Drugs.

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## INTRODUCTION

Diarrhoea is one of the leading causes of childhood mortality and morbidity in children under five years of age especially in developing countries<sup>1,2</sup>. It also acts as a major contributor of under nutrition in these children and accounting for 2 million deaths per year<sup>3-6</sup>. The World Health Organization suspects that there are >700 million episodes of diarrhea annually among the children less than 5 years of age in developing countries<sup>7</sup>. And approximately 10.8 million children in developing countries die every year before

their 5<sup>th</sup> birthday<sup>8</sup>. 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<sup>9,10</sup>. Poor socioeconomic conditions, poor personal hygiene and unsafe water supply are the factors who are responsible for high incidence of diarrhoea in our country<sup>11</sup>. The World Health Organization launched the programme in 1978 for control of diarrhoea disease, to reduce diarrhoea related mortality and morbidity<sup>12</sup>. This programme has developed clear guidelines for management of diarrhea with emphasis on oral rehydration therapy, continued feeding during diarrhea, rational use of drugs, education of parents regarding home

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management and prevention of diarrhoea. Approximately 90% cases of diarrhoea can be successfully managed with oral rehydration therapy and continued feeding without use of drugs<sup>13</sup>. Oral rehydration therapy is a well established therapy for the prevention and treatment of dehydration, clinically as effective as intravenous therapy and in most cases can be carried out at home, thus avoids hospital stay. About indications of drugs, it has been made very clear by WHO that during acute diarrhea antibiotics should be given only in dysentery and cholera, but it's a common practice by the doctors to prescribe drugs like antiemetics, antiamebic, antibiotics, probiotics, antimotility and adsorbents in acute diarrhea<sup>7</sup>. There is strong relationship between diarrhoea and under nutrition. The child's nutritional status declines and preexisting under nutrition is made worse during diarrhoeal episode. The malnutrition further causes diarrhoea and vicious cycle sets in i.e., malnutrition predisposes to diarrhea<sup>14</sup>. Important thing about diarrhea is care about children but because of low knowledge and attitude and wrong practice, child care, most of the time, is not adequate<sup>15,16</sup>. Millennium development goal no.4 is made to reduce under five mortality in developing countries by two-thirds by the year 2015 so efforts should be made to achieve this goal by monitoring important outcomes like by improving ORS coverage, utilizing qualified providers and reducing disparities in recommended childhood diarrhea management practices<sup>17</sup>. As mothers play major role in care of children with diarrhoea, so this study was designed to know mothers knowledge attitude and practices in diarrhoea with special reference to use of oral rehydration solution, feeding practices during diarrhea and use of drugs in diarrhoea.

## PATIENTS AND METHODS

It was an observational descriptive study conducted at the paediatric medical emergency department of the Children's hospital and the institute of child health Lahore for a period of six months. The criteria of inclusion was mothers of children with acute diarrhoea, while mothers of children with chronic diarrhoea were excluded from study. Total 300 mothers fulfilling the inclusion criteria were enrolled over the study period through emergency department of the Children's Hospital Lahore. Mothers were interviewed and information collected. A pre designed proforma was filled for each case by the investigator which included a detailed history highlighting their demographic data, presenting complaints like duration of diarrhoea, frequency and consistency of stools, vomiting, convulsions or oliguria, treatment

given at home, mothers knowledge about ORS and drugs, maternal education, water sources, feeding, and socioeconomic history was taken and recorded carefully. Each question in proforma regarded as variable. All the data entered in SPSS and results were analyzed in percentages and no statistical test applied.

## RESULTS

A total of 300 mothers visiting emergency department of Children Hospital Lahore were interviewed. Majority of them 159(53%) were from low socioeconomic group, their average family income was less than 3000 rupees per month. The median age of patients was 9 months (age ranged from 10 days to 5 years), of these 78 (26%) were under the age of 6 months, 135(45%) were between 6-12 months and 87(29%) were between 1-5 years (Figure 1). Of 300 patients, 198(66%) were males and 102 (34%) were females (M: F ratio s 1.94:1) (Figure 2). At the time of hospital visit, 273(91%) patients were suffering from acute diarrhoea, 27(9%) from dysentery. Regarding treatment of diarrhoea given at home prior to hospital visit, 42(14%) patients were given oral rehydration solution alone, 48(16%) drugs alone and 189(63%) oral rehydration solution along with drugs. While 12(4%) cases were taken home fluids and in 9(3%) nothing was given (Figure 3). As far as knowledge of mothers regarding use and preparation of oral rehydration solution was concerned, of 300 mothers 285 (95%) responded that they had heard of oral rehydration solution. In history when we had probed about who advised oral rehydration solution, in 78(33.76%) patients oral rehydration solution was given by parents themselves, 117(50.6%) by family physician and 21(9%) on advise of family member. While 6(2.6%) patients had used ORS after getting advice from health worker and 9(3.3%) through media information (Table-1). About preparation of oral rehydration solution, it was judged that 228(76%) mothers had correctly prepared and 72 (24%) prepared incorrectly (Table-1). Among the way of giving oral rehydration solution in 144 (62.3%) of cases oral rehydration solution was given by bottle and in 87(37.7%) cup and spoon was used (Table-1). In 150 (64.9%) cases quantity of oral rehydration solution given was adequate and in 81(35.1%) cases it was inadequate (Table-1). As far as drugs used in the management of diarrhoea prior to hospital visit concerned, out of 300 cases of diarrhoea only 27(9%) patients were suffering from dysentery but drugs were used in 237(79%) cases and in 63(21%) cases drugs were not taken (Table-2). Out of 237, in 9(3.8%) patients drugs were given by parents themselves and in

228(96.2%) cases on advise of family physician (Table-2).The drugs used were antibiotics in 210(88.6%) cases, anti-diarrhoeals in 102(43%) cases and antiemetics in 108(45.5%) cases (Figure 5). Among feeding practices (before diarrhoea), of 300 patients exclusive breast feeding was in 84 (28%) cases, 135(45.4%) cases were bottle fed and 80(26.6%) patients were breast and bottle fed. In weaning age there were 243 patients. Out of 141 patients who were in age range of four months to one year, weaning has been started in 105(74.5%) patients, whereas 36(25.5%) cases were not weaned. Between 1 to 5 years there were 102 patients, weaning has been started in 84(82.3%) cases whereas 18(17.7%) patients were not weaned. Over all 189(77.7%) patients of weaning age were weaned and 54 (22.3%) were not weaned (Table 3). Regarding feeding practices during diarrhoea, 192 (64%) of cases were given same diet as before illness, in 96 (32%) cases solids were stopped and in 12(4%) cases either milk was diluted or reduced in quantity.(Figure 4).

Table 1: Knowledge and practice about ORS among mothers (n=300)

|                             | No. | %age   |
|-----------------------------|-----|--------|
| <b>Heard of ORS:</b>        |     |        |
| Yes                         | 285 | 95     |
| No                          | 15  | 5      |
| <b>Use of ORS:</b>          |     |        |
| Yes                         | 231 | 77     |
| No                          | 69  | 23     |
| <b>Who Advised:</b>         |     |        |
| Self                        | 78  | 33.76% |
| Family Physician            | 117 | 50.6%  |
| Family Member               | 21  | 9%     |
| Health Worker               | 6   | 2.6%   |
| Mass Media                  | 9   | 3.3%   |
| <b>Preparation of ORS:</b>  |     |        |
| Correctly                   | 228 | 76%    |
| Incorrectly                 | 72  | 24%    |
| <b>How ORS Given:</b>       |     |        |
| By Cup and Spoon            | 87  | 37.7%  |
| By Bottle                   | 144 | 62.3%  |
| <b>Amount of ORS Given:</b> |     |        |
| Adequate                    | 150 | 64.9%  |
| Inadequate                  | 81  | 35.1%  |

Table 2: Drugs used in the management of diarrhoea prior to hospital visit (n=300)

|                      | No. | %age |
|----------------------|-----|------|
| <b>Use of Drugs:</b> |     |      |
| Yes                  | 237 | 79   |
| No                   | 63  | 21   |
| <b>Who Advised</b>   |     |      |
| Self                 | 9   | 3.8  |
| Family physician     | 228 | 96.2 |

Table 3: Weaning according to age (n=243)

| Age         | No . | Weaning started | Not Started |
|-------------|------|-----------------|-------------|
| 6-12 Months | 141  | 105 (74.5%)     | 36 (25.5%)  |
| >12 Months  | 102  | 84 (82.3%)      | 18 (17.7%)  |
| Total       | 243  | 189 (77.7%)     | 54(22.3%)   |

Fig 1: Age groups (n=300)

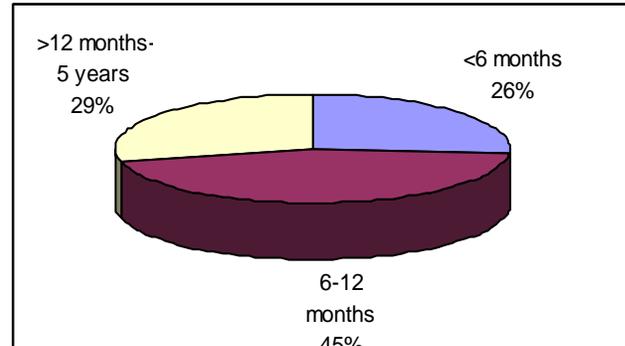


Fig 2: Sex distribution (n=300)

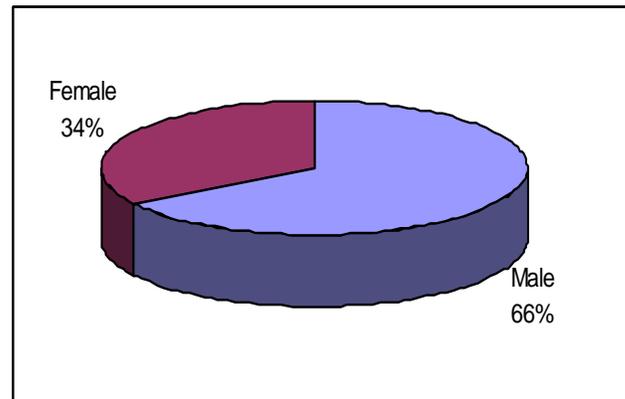


Fig.3: Treatment given at home (n=300)

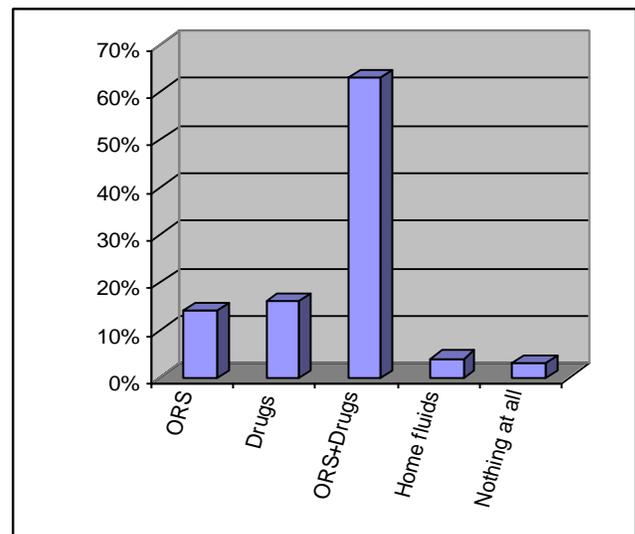


Fig. 4: Feeding practices during diarrhoea (n=300)

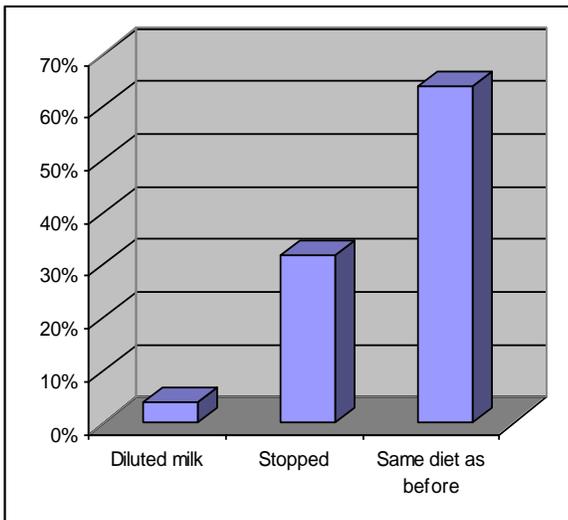
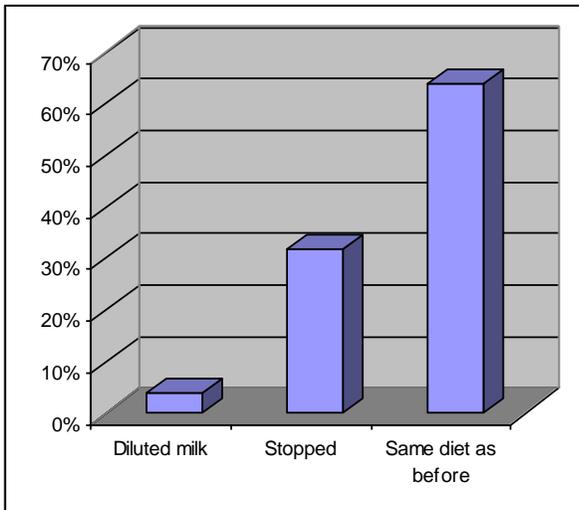
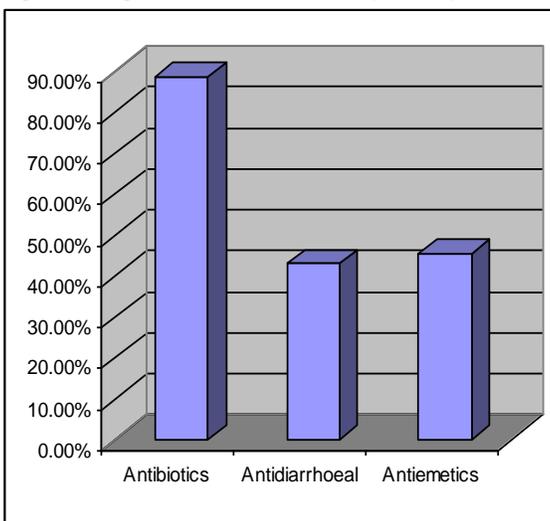


Fig. 5: Drugs used in diarrhoea (n=300)



## DISCUSSION

Diarrhoea is the second leading cause of under-five child mortality world wide. Acute watery diarrhoea is a self limiting disease lasting for 3-7 days and over 90% of cases can be successfully treated with oral rehydration therapy and continued feeding without using antidiarrhoeal drugs<sup>13</sup>. Among children, mortality and morbidity in acute infectious diarrhea have dramatically reduced due to oral rehydration therapy and early realimentation<sup>18</sup>. Numerous studies in the recent past have documented that knowledge about oral rehydration solution has increased<sup>19,20</sup>. In our study 95% mothers had heard of oral rehydration solution, while in another study 97.6% of the mother had information about ORS and also its usefulness in the management of dehydration due to diarrhea<sup>21</sup>. In a similar study by Ahmad A et al, at Rawalpindi, Islamabad, 75% of mothers<sup>19</sup> and a study done by Bhatia et al, 86.7% of mothers claimed that they had knowledge about oral rehydration solution<sup>22</sup>. The difference in percentage is the time factor for having an impact on maternal knowledge and practices about oral rehydration solution, which is being projected through mass media and health professionals. According to National survey of Pakistan, in children under 5 years of age ORS is used in 33% of the patients<sup>23</sup> and another study revealed the use of ORS in 22% of the patients<sup>24</sup>. Oral rehydration solution was given in 77% of patients in present study and in a study by Qureshi AF and Lobo MA, 71% had given oral rehydration solution during diarrhoea<sup>20</sup>. In this study, in 78 (33.76%) patients oral rehydration solution was given by parents themselves, 117 (50.6%) were given oral rehydration solution on advise of family physician, 21 (9%) on advise of family member, 6 (2.6%) on advise of health worker and 9 (3.3%) through media information. In a similar study by Qureshi AF and Lobo MA 182, 32% heard of oral rehydration solution from Aga Khan university programme workers, 21% from mass media, 28% from general practitioners and 18% from other sources (health facilities, chemists and family members<sup>20</sup> while Seyal et al reported that 27% used ORS by their own knowledge, 28% used on advice of general practitioners, 10% by pediatricians, 35% by medical officers and 27% from other sources<sup>7</sup>. As far as preparation of oral rehydration solution is concerned, in our study 228 (76%) of mothers correctly recalled the preparation of oral rehydration solution whereas in a study by Taha, 64% of mothers and study done at Lahore, 69.3% of mothers correctly prepared oral rehydration solution<sup>25,26</sup>. This increase in percentage is due to promotional effects of control of diarrhoea disease programme.

Government of Pakistan started its Control of Diarrhoea Disease programme in 1982<sup>27</sup>. The objective of this programme was to reduce diarrhoea related mortality and morbidity by appropriate case management. This includes use of oral rehydration solution, promotion of breast feeding, feeding during diarrhoea and health education of mothers. Although, the oral rehydration therapy has claimed its rightful place in the management of diarrhoea diseases, the irrational use of drugs remains unabated. Regarding the use of drugs, current study described that drugs were given in 237 (79%) of patients, either alone or in combination with oral rehydration solution and these drugs were prescribed by family physicians in 228 (96.2%) of cases. Among drugs, anti-diarrhoeals were used in 102 (43%) cases in this study which is in accordance with other studies<sup>28,29,30</sup>. In another series at Lahore, 96% of general physicians were found prescribing drugs during diarrhoea<sup>31</sup>. As far as feeding practices are concerned, in our study it was found that 216 (72%) of patients were bottle fed either alone or in addition to breast feeding. Weaning was not started in 54 (22.3%) of patients who were in the weaning age. These results are not similar or even worse than a study conducted by Khan MA et al in 1987 in which, 60% of patients were bottle fed and weaning was not started in 49.3% of cases till one year of age<sup>32</sup>. This may indicate improving weaning practices among mothers with time. In our study during diarrhoea, the same feeding was given in 192(64%) of cases and feeding was stopped or reduced in 96 (32%) of cases. In a study by Khan MA et al, same diet as before diarrhoea was given in 59.9% of cases and in 40.6% of cases either feeding was stopped or reduced in quantity<sup>32</sup>. While another study revealed that almost half of the mothers 43.9% reduced or stopped usual food or breast fed, 48.6% gave usual amount of food or breast feed and only 7.5% of them increased amount of food or breast feed to children with diarrhoea<sup>33</sup>. Similar findings have been reported by other workers<sup>34</sup>. Food intake should never be restricted during or following diarrhoea, rather the goal should be to maintain the intake of energy and other nutrients at a higher level. CDC recommends that children receiving semisolid or solid foods should continue to receive their usual diet during episodes of diarrhoea<sup>35</sup>. In fact, the American Academy of Paediatrics states that most children should continue to have a normal diet including formula or milk while they have mild diarrhoea<sup>36</sup>. Appropriate feeding is now recognized as a crucial element of ORT, especially in populations at risk for malnutrition<sup>37</sup>. The World Health Organization and the United Nations children's fund recommend the use of newly formulated oral rehydration salts, which contain lower concentrations of glucose and salt as well as

zinc supplementation for a period of 14 days in the clinical management of diarrhoea.(38,39). Control of diarrhoea disease programme has partly succeeded in improving feeding practices during diarrhoea. Control of diarrhoea disease programme needs extra efforts for promotion of healthy feeding practices, through mass media and refresher courses for practicing physicians.

## CONCLUSION

Control of diarrhoea disease programme is successful in introducing oral rehydration solution at mass level. Mother's knowledge about use and preparation of oral rehydration solution has increased. Great emphasis is needed to educate mothers about method and quantity of oral rehydration solution. Enormous efforts are needed for promoting healthy feeding practices.

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