

A Community-Based Survey on Knowledge and Practices of ORS Usage among Mothers in a Rural Village in Maharashtra

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ABSTRACT

Background: Most of the cases of diarrhoea recover with rehydration only and do not require antibiotic therapy. Oral Rehydration Solution (ORS), introduced by WHO, is the single most important measure in the management of acute diarrhoea due to all aetiologies and in all age groups across the globe. To determine the Knowledge and Practices of ORS usage among mothers of children less than 6 years of age.

Methods: A cross-sectional study was conducted among all mothers of children <6 years of age registered at Anganwadi centres of a village which is a rural field practice area for a government medical college (n=300). A pretested questionnaire was used. House-to-house visits were conducted to gather information through face-to-face interviews after getting informed consent.

Results: Most of the mothers (60.9%) were educated up to 8th standard. More than half of them (58.2%) had heard about ORS. Among all study subjects only 11.9% knew that ORS should be given to children suffering from diarrhoea, whereas few were practicing it. Among those who had heard about ORS, a very high majority (87.2%) knew about its role in treating diarrhoea, and only 2.6% knew about its shelf life. Out of those who have heard about ORS, 38.5% were collecting it from Anganwadis, whereas >25% were purchasing it themselves.

Conclusion: Poor knowledge and practices regarding ORS use is a matter of concern. IEC activities and behavioural change communication are strongly advocated regarding ORS use.

Key-words: Anganwadi, Antibiotic, Diarrhoea, ORS (Oral Rehydration Solution), rehydration, Mortality, Morbidity

INTRODUCTION

Diarrhoea is the leading cause of mortality and morbidity among children of five years of age, mostly seen in developing countries, thus acting as a major contributor to undernutrition ^[1]. This research study was conducted in 2015 revealed that globally around 1.3 million deaths

were attributed to diarrhoea and was the fourth leading cause of death among under-five children ^[2].

Most children who die of diarrhoea, die from severe dehydration and fluid loss. The Oral Rehydration Solution (ORS) is a fact for the prevention and treatment of dehydration, thus leading to a decrease in morbidity and mortality of children. It is as effective as intravenous fluids and since it can be administered at home it decreases the length of hospital stay as well ^[1] The ORS promotes the re-absorption of sodium and water which in turn leads to a decrease in the episodes of vomiting and severity of diarrhoea, volume loss and duration of illness.

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The ORS, home-available fluids (HAFs), and feeding during diarrhoea including breastfeeding are the typical treatments that are given to the children ^[3,4]. The awareness of mothers about maintaining good health during diarrheal illness, the concept of diarrhoea and its preventive strategies and the services provided by the mothers to their children form the barometer by which we can assess the family's progress for the welfare of the community and country at large.

Finally, it has also been documented that knowledge and practice among the rural community regarding ORS preparation, administration and frequency in which it should be given is very poor even though managing diarrhoea at home is quite common in rural areas ^[5-7]. Thus, this study was conducted to determine the Knowledge and Practices of ORS usage among mothers of children <6 years of age.

MATERIALS AND METHODS

Study site and population- A cross-sectional study was conducted among all mothers of children <6 years of age registered at Anganwadi centres of a village which is the rural field practice area for a government medical college.

Sampling technique- The purposive sampling of the mothers of under-five children who give their voluntary written consent for the study.

Sample size calculation- There were a total of 73 under-six years old children enrolled in the Anganwadi centre of rural field practice area. They were individually contacted and mothers of six children couldn't be contacted. Hence, the total sample size was 67.

Exclusion criteria- Mothers of more than six years of children residing in the study area and willing to participate in the study were excluded from this study.

Inclusion criteria- Mothers of under-six children residing in the study area and willing to participate in the study were included in this study.

Brief Methodology- The data was collected by conducting house-to-house visits after line listing of the houses which included children less than 5 years of age. Houses were visited from one direction on each lane/street, considering the house numbers. The houses visited were marked on the doors to avoid duplication of

data collected from an individual house. In the case of a locked house, it was ensured that the house was visited later to cover the missed child. All the mothers of children were explained in detail about the purpose and methodology of the study. Informed consent was obtained. A pre-tested, pre-validated Interview Schedule (Questionnaire) was used to record information. A structured interview schedule (Questionnaire) was developed based on previous research studies under the guidance of the experts in the field to record the information.

Statistical Analysis- The data was analysed using appropriate tests. Univariate analysis was carried out by calculating frequencies and percentages for categorical data and mean and standard deviation for continuous data. Bivariate analysis is carried out by Chi-Square test to find the association between two variables.

Ethical approval- Approval for this study was obtained from the relevant ethical committee, ensuring that all research procedures adhered to ethical standards and guidelines for protecting participants' rights and confidentiality.

RESULTS

The total number of participants in the study was 67. However, the total number of children enrolled in that Anganwadi was 73. Hence, the response rate was 91.78%. Out of 67, the total number of males and females was 38 (56.7%) and 29 (43.3%) respectively. Most of the children were from 13-24 months (31.5%). The mean age of the children was 2.60 ± 1.43 years and that of mothers was 24.75 ± 3.40 years (Range: 18–36 years). A total of 27 (40.5%) mothers were of 20–24 years and 26 (39.6%) were of 25–29 years. More than half (52.3%) of mothers were housewives or were unskilled workers (37.8%). A total of 26 (38.7%) of the families were from the upper lower and next in place was the lower class (23, 35.1%). More than half (54.1%) of the families were living in semi-pucca, 27% kutcha while only 18.9% were living in pucca houses. The maximum number (97.3%) of children were from Hindu families and the rest (2.7%) were followers of Islam. Most of the children (69.4%) were living in houses where overcrowding was present.

A total of 19(27.92%) children were exclusively breastfed

for 6 months and the rest, i.e. 48 (72%) children were breastfed for either <6 months or >6 months' duration. Most of the mothers (85%) did know the role of ORS while 9% of mothers did not know its role even though the study participants were from the rural health field practice area (Table 1).

Table 1: Distribution of study participants based on their knowledge regarding the role of ORS in childhood diarrhoea

| Role of ORS | Frequency | Percentage (%) |
|-------------|-----------|----------------|
| Don't know | 4 | 6 |
| No | 6 | 9 |
| Yes | 57 | 85 |
| Total | 67 | 100 |

A total of 34.2% of mothers were obtaining ORS from the Anganwadi. One-third (35.8%) of the households were obtaining from RHTC itself while a quarter (27%) of the households were purchasing ORS from their own. Thus, almost 70% of the households were collecting ORS packets from the government facility. This reveals their trust in the services provided by the government sector in that area. A total of 60% of the participants had attained education till secondary level. Only 6% were graduate and above. A total of 15% of the participants were illiterate. Almost half of the participants (41.8%) did not hear about ORS despite belonging to the area attached to the rural health training centre. A total of 97.4% had poor knowledge of the amount of ORS to be substituted after each episode of Diarrhoea or vomiting. It was surprising to note that only one participant had the correct knowledge about ORS replenishment after fluid loss. Only two participants had correct knowledge regarding the shelf life of ORS while 27% gave wrong response and almost 70% did not know about the correct shelf life (Table 2).

Table 2: Distribution of study participants based on where the ORS obtained, education status, where heard about ORS, ORS to be substituted after diarrhoea, and shelf life of ORS

| | Frequency | Percentage (%) |
|-------------------|-----------|----------------|
| Collection source | | |
| Anganwadi | 23 | 34.2 |

| | | |
|-----------------------------------|----|------|
| Others | 2 | 3 |
| Own purchase | 18 | 27 |
| RHTC | 24 | 35.8 |
| Education status | | |
| Graduate and above | 4 | 6.0 |
| High school | 9 | 13.4 |
| Illiterate | 10 | 14.9 |
| Intermediate | 3 | 4.5 |
| Primary | 21 | 31.3 |
| Secondary | 20 | 29.9 |
| Heard about ORS | | |
| No | 28 | 41.8 |
| Yes | 39 | 58.2 |
| Quantity of ORS to be substituted | | |
| Any quantity | 38 | 97.4 |
| Equivalent amount | 1 | 2.6 |
| Shelf life | | |
| >one day | 18 | 27 |
| Don't know | 47 | 70 |
| One day | 2 | 3 |

The majority (45%) of the participants had obtained information regarding ORS from Doctors followed by Anganwadi workers (42%). More than one-fifth of the mothers did not give anything to their child during diarrhoea. Equal no of mothers gave rice water to their children during diarrhoea. However, only one participant (1.5%) gave ORS to their child during diarrhoea. This shows poor practice of ORS usage among the mothers. Just over one-tenth (11.9%) of the participants responded that ORS can be given to the child during diarrhoea, almost 15% of the participants did not know about which fluids to be given during diarrhoea, 16.4% of participants responded that medicines are to be given during diarrhoeal episodes. This shows their poor knowledge and practice of ORS usage among the study participants (Table 3).

Table 3: Distribution of study participants based on the ORS source information; items given to the child during diarrhoea

| | Frequency | Percentage (%) |
|---|-----------|----------------|
| Source of information regarding ORS | | |
| Anganwadi Worker | 28 | 42 |
| Doctor | 30 | 45 |
| Radio | 2 | 3 |
| TV | 7 | 10 |
| Items given to the child during diarrhoea | | |
| Coconut water | 2 | 3.0 |
| Dal water | 12 | 17.9 |
| Don't know | 1 | 1.5 |
| Medicines | 8 | 11.9 |
| Nothing | 14 | 20.9 |
| ORS | 1 | 1.5 |
| Others | 5 | 7.5 |
| Rice water | 14 | 20.9 |
| Salt sugar | 10 | 14.9 |

DISCUSSION

This study revealed that 15% of the mothers did not know the role of ORS in the management of diarrhoea. A similar result was obtained by Aragaw *et al.* ^[8] in a study on 32 sub-Saharan countries where one in five women did not know the role of ORS ^[9]. Among the Indian studies, a study conducted in rural Telangana found that 38% did not know about ORS ^[10] and in a study conducted at Puducherry it was seen that 25% of the mothers did not hear about ORS ^[11].

Many studies conducted in different parts of the world suggested that the evaluation of the knowledge and usage of ORS along with Zinc in public sector facilities have increased significantly owing to repeated training and refresher training in Uganda it has increased from 1% in 2011 to 30% in 2016 ^[12,13] and coming to Indian context in the selected districts in Bihar, it was observed that there was a significant scale-up of public sector use of Zinc and ORS in treating diarrhoea ^[14].

Thus, the effect of proper information, education and communication can be seen in our study where 70% of

the study participants preferred to collect ORS from the government facility thereby changing their attitude in seeking medical care. Our study concluded that the use of ORS was poor among the study participants. This can be attributed to the fact that almost half (45%) of the mothers in our study group were educated till the primary level including 15% of illiteracy. Previous studies do conclude that the level of education of the caregiver/mother is a definite factor associated with the use of ORS ^[15]. In this study, more than half (58%) of the participants have heard about ORS.

The awareness varied depending on the place of study in Vasind ^[16], India they found awareness regarding ORS to be 89% and it also stated that many of the mothers followed the wrong method in preparing ORS; in Garhwal (Uttaranchal) it was mere 18.67% and only 17.78% were aware of correct technique of preparing ORS ^[17]. Overall, in the current study as well, mothers had poor knowledge regarding the technique of preparing ORS.

In this current study, almost 99% of the participants did not know the shelf life of the ORS which shows poor knowledge of ORS among the mothers/caregivers. This was at par with many studies that were being conducted among mothers in various other similar settings. ^[1,5,9,10,15]

In this study, it was seen that the mothers had very poor attitudes and practice of giving home available fluids (HAFs) which can be easily seen by the fact that 21% of the mothers gave nothing to their child during diarrhoeal episodes and only one participant suggested that ORS is to be given. Similar poor attitudes and practices were seen among the mothers of Eastern Ethiopia ^[18], Saudi mothers ^[19], mere 12% among the mothers of slums of Delhi, India ^[13,20].

CONCLUSIONS

There was poor knowledge and practice regarding the use of ORS among the mothers of under-five children. The level of mothers' education was also a key factor for poor knowledge and practice.

The IEC/BCC activities must be formulated for the community as well as the healthcare workers working in that area to disseminate correct information about ORS, correct and appropriate techniques of preparation, administration, storage and appropriate time to discard.

CONTRIBUTION OF AUTHORS**Research concept-** Amit Agarwal, Vishakha Parmar**Research design-** Amit Agarwal, Vishakha Parmar**Supervision-** Mahendra Khatri, Ashish Kumar Goyal, Rakhi Luthra**Materials-** Amit Agarwal, Vishakha Parmar**Data collection-** Ashish Kumar Goyal, Rakhi Luthra**Data analysis and Interpretation-** Vishakha Parmar**Literature search-** Ashish Kumar Goyal, Rakhi Luthra**Writing article-** Mahendra Khatri, Ashish Kumar Goyal**Critical review-** Mahendra Khatri, Ashish Kumar Goyal, Rakhi Luthra**Article editing-** Ashish Kumar Goyal, Rakhi Luthra**Final approval-** Mahendra Khatri, Ashish Kumar Goyal, Rakhi Luthra**REFERENCES**

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