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KNOWLEDGE, ATTITUDE AND PRACTICE TOWARDS ORAL REHYDRATION SALT IN AYSAITA TOWN, AFAR REGIONAL STATE, NORTHEASTERN ETHIOPIA

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ABSTRACT: Introduction: Oral rehydration therapy is a life-saving intervention to save the lives of children. However, millions of children die every year due to failure to replace body fluid effectively. Therefore, this study was aimed to assess knowledge, attitude, and practice (KAP) of caretakers towards ORS on the management of diarrhea among under-five children in Aysaita town, Afar Regional State, Ethiopia. **Methods:** A community based cross-sectional study was conducted in May 2016. Data were collected using a pretested structured questionnaire. The data were cleaned, coded, and entered into EpiData version 3.02 and exported to SPSS version 20 statistical package for analysis. Then descriptive statistics were used to describe the study variables. **Results:** One hundred seventy-two (72.9%) of the study, children had diarrhea at least once in their lifetime. Two hundred twelve (89.8%) of the caretakers had defined diarrhoea as passing of three or more watery stool. Furthermore, 164 (69.5%) of the care takers knew at least one danger sign of dehydration. Of 172 study children who had diarrhoea at least once in their life time, 157(91.3%) had taken ORS solution. **Conclusion:** Although the findings of this study showed good attitude, knowledge, and practice regarding oral rehydration salt in Aysaita district, health institutions in the district should strengthen their effort to provide health education and information regarding oral rehydration salt.

Keywords: KAP, ORS, Aysaita town, Afar, North-eastern Ethiopia

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INTRODUCTION: Diarrhoea is defined as three or more loose /watery stool per day¹. It can last several days and leaves the body without water and salt. Diarrhea kills around 760,000 children every year and is the second leading cause of mortality among under-five children².

Oral rehydration therapy is the cornerstone of fluid replacement. Oral rehydration solution (ORS) is a glucose-based salt solution used in oral rehydration therapy³. ORS is a liquid preparation developed by WHO which is more physiological, easy to administer, cost-effective and needs no sterilization. It is used to prevent dehydration and preserve good nutritional status by maintaining fluid and food intake^{4,5}.

Management of diarrhea should begin at home since effective early interventions can reduce complications such as dehydration and poor nutrition. Early home management with ORS will

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result in fewer office or emergency room visits, hospitalizations, and deaths. This type of management is best realized through the support and education of mothers by health care personnel at centers that use oral therapy ⁶. The recent Ethiopian Demographic and Health Survey showed that 12.7% prevalence of diarrhea in Afar Regional State. About 40% of children with diarrhea sought advice or treatment from the health facility, and 32.8% of mothers use fluid from ORS packet in this region ⁷.

Knowledge, attitude, and practice of caretakers towards ORS are important determinants to the diarrheal intervention program. Therefore, this study was aimed to assess knowledge, attitude, and practice of caretakers towards ORS on the management of diarrhea in under five children in Aysaita town of Afar Regional State. The findings of this study will be vital for health service providers, policy makers, and program managers to design intervention strategies for diarrheal management in the study area.

METHODS:

Study Design and Participants: Administrative Zone one is one of the five Zones of Afar Region. Based on the 2007 Census, this Zone has a total population of 410,790 of whom 186,134 are women. Nearly twenty percent (20.18%) of population are urban inhabitants, and 43.47% are pastoralists. Pastoral and agro-pastoral system of livestock production is the dominant livelihood source in Aysaita district. A Community based cross-sectional study was conducted in May 2016 at Aysaita town. Aysaita town is the largest town in the Zone which is 655 km far away from Addis Ababa and 65 km from Samara. It has two kebeles. It has a total population of 19,810. From the total population, 2,654 of them are estimated to be under five children.

A sample size of 242 was calculated using a single population proportion formula;

$$n = (z \alpha/2)^2 p (1-p) / d^2$$

Where: n= required sample size, $z \alpha/2$ = critical value for normal distribution at 95% confidence level which equals to 1.96 (Z value at alpha 0.05). P= prevalence of diarrhea, d= an absolute precision.

Assumptions: 4.5% margin of error, 95% confidence level, 12.7% prevalence of diarrhea in the Afar region of Ethiopia ⁷, and 10% for non-response.

Sampling Technique and Procedure: From the two kebeles in the town, one was selected by lottery. From the selected kebele, the sampling interval was determined by dividing the total number of under-five children in the selected kebele by the sample size. Then a systematic sampling technique was used to select the target households.

At the time of the survey, from each household unit, one eligible caretaker who had a biological child aged less than five years were selected. If there were more than one mother with children aged less than five years in one household unit, one mother with the youngest child was selected. From mothers who had two children aged less than five years, the youngest child was selected as the reference.

Data Collection Process and Statistical Analysis:

Data was collected using a pre-tested, structured, an interviewer-administered questionnaire. The questionnaire was prepared first in English, then translated into Amharic and back to English to check for consistency. The Amharic version of the questionnaire was used to collect the data. The data were collected by five Public Health students. The data collectors were trained for one day on the study instrument, consent form, how to interview, and data collection procedure. Then the questionnaire was pretested on one kebele, which was not included in the study. Then the pre-test amendments on the questionnaire were made accordingly.

The data were checked for completeness and consistencies. Data were cleaned, coded, and entered into EpiData version 3.02. Then data were exported to SPSS version 20 statistical package for analysis. Finally, descriptive statistics were performed.

Ethical consideration: The study was approved by the Public Health department ethical research committee in Samara University. An official letter was written from Public Health department to Aysaita town administration office.

Then permission and support letter was written to the selected Kebele. The participants enrolled in the study were informed about the study objectives, expected outcomes, benefits, the risks associated with it, and the right to withdraw from the study at any time they want. Assigned written consent was taken from the participants before the interview. Confidentiality of responses was maintained throughout the study.

RESULTS: Socio-demographic characteristics of the study participant's Two hundred thirty-six caretakers were included in the study with a response rate of 97.5%. Of these, 150(63.6%) were in the age group of 25-34 years. Two hundred

twenty-nine (97%) of the caretakers were females. Only 21(8.9%) females were the head of their households **Table 1**. Two hundred twenty-three (94.5%) of the caretakers were mothers of the index children **Table 2**.

Knowledge of the Caretakers about Diarrhea and Dehydration: One hundred seventy-two (72.9%) of the study children had diarrhea at least once in their lifetime. Two hundred twelve (89.8%) of the caretakers had defined diarrhea as the passing of three or more watery stool per day. Furthermore, 164 (69.5%) of the caretakers knew at least one danger sign of dehydration **Table 3**.

TABLE 1: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE CARETAKERS IN AYSAITA TOWN, 2016

| Variables | Frequency | Percentage |
|------------------------|-------------------------|------------|
| Age | | |
| 15-24 | 69 | 29.2 |
| 25-34 | 150 | 63.6 |
| >35 | 17 | 7.2 |
| Mean(\pm SD) | 27.26(\pm 5.3) years | |
| Sex | | |
| Male | 7 | 3 |
| Female | 229 | 97 |
| Ethnicity | | |
| Amhara | 126 | 53.4 |
| Afar | 94 | 39.8 |
| Tigray | 4 | 1.7 |
| Others* | 12 | 5.1 |
| Religion | | |
| Muslim | 193 | 81.8 |
| Orthodox | 43 | 18.2 |
| Educational status | | |
| Non formal education | 126 | 53.4 |
| Formal education | 110 | 46.6 |
| Occupation | | |
| Government employee | 27 | 11.4 |
| Private employee | 11 | 4.7 |
| Housewife | 189 | 80.1 |
| Other | 9 | 3.8 |
| Marital status | | |
| Single | 3 | 1.3 |
| Married | 221 | 93.6 |
| Divorced | 8 | 3.4 |
| Widowed | 4 | 1.7 |
| Parity(n=229) | | |
| 1 | 84 | 36.7 |
| 2 | 63 | 27.5 |
| \geq 3 | 82 | 35.8 |
| Average monthly income | | |
| <1000 | 78 | 33.1 |
| \geq 1000 | 158 | 66.9 |
| Head of the household | | |
| Husband | 215 | 91.1 |
| Wife | 21 | 8.9 |

*Oromo, Guraghe

TABLE 2: SOCIO-DEMOGRAPHIC CHARACTERISTICS OF UNDER FIVE CHILDREN IN AYSAITA TOWN, 2016

| Variable | Frequency (n=236) | Percentage |
|---|----------------------|------------|
| Relationship of caretakers to the index child | | |
| Mother | 223 | 94.5 |
| Grandmother | 7 | 3.0 |
| Sister | 6 | 2.5 |
| Number of under-five children | | |
| 1 | 198 | 83.9 |
| ≥2 | 38 | 16.1 |
| Age of the index child | | |
| 0-11 | 49 | 20.8 |
| 12-23 | 46 | 19.5 |
| 24-35 | 56 | 23.7 |
| 36-47 | 39 | 16.5 |
| 48-59 | 46 | 19.5 |
| Mean(±SD) | 26.22(±15.03) months | |
| Sex of the index child | | |
| Male | 124 | 52.5 |
| Female | 112 | 47.5 |

TABLE 3: KNOWLEDGE OF CARETAKERS ABOUT DIARRHEA AND DEHYDRATION IN AYSAITA TOWN, 2016

| Variable | Frequency (n=236) | Percentage |
|---|-------------------|------------|
| What is diarrhea?* | | |
| Frequent (≥3) passing of watery stool/day | 212 | 89.8 |
| Greenish stool | 38 | 16.1 |
| Mucus in stool | 13 | 5.5 |
| Frequent passing of non-watery stool | 7 | 3 |
| Blood in stool | 6 | 2.5 |
| What are the causes of diarrhea?* | | |
| Poor hygiene | 191 | 80.9 |
| Food poisoning | 126 | 53.4 |
| Contaminated water | 85 | 36.0 |
| Teething | 47 | 19.9 |
| Know danger sign of dehydration | | |
| Yes | 164 | 69.5 |
| No | 72 | 30.5 |
| Danger signs of dehydration* | | |
| Lethargic | 135 | 82.3 |
| Sunken eyeball | 124 | 75.6 |
| Unable to drink | 36 | 22.0 |
| Eager to drink | 22 | 13.4 |

*Multiple answers

Knowledge of Caretakers about Oral Rehydration Salt (ORS): All of the caretakers heard about Oral Rehydration Salt (ORS). Of these majority of the caretakers (78%) heard about ORS from health professionals **Table 4**. One hundred thirty-nine (58.9%) caretakers defined ORS as a solution used to treat dehydration and 97 (41.1%) as a solution used to decrease diarrheal episodes. Most of the respondents (96.6%) knew how to prepare ORS solution: 1 sachet of ORS per one

liter of water. Also, most of the caretakers (82.6%) were aware of ORS preservation for 24 h **Fig. 1**.

TABLE 4: SOURCE OF INFORMATION OF THE CARETAKERS ABOUT ORS IN AYSAITA TOWN, 2016

| Source of information* | Frequency (n=236) | Percentage |
|--------------------------|-------------------|------------|
| Health professionals | 184 | 78.0 |
| Media | 43 | 18.2 |
| Friends | 38 | 16.1 |
| Health extension workers | 3 | 1.3 |

*Multiple answers

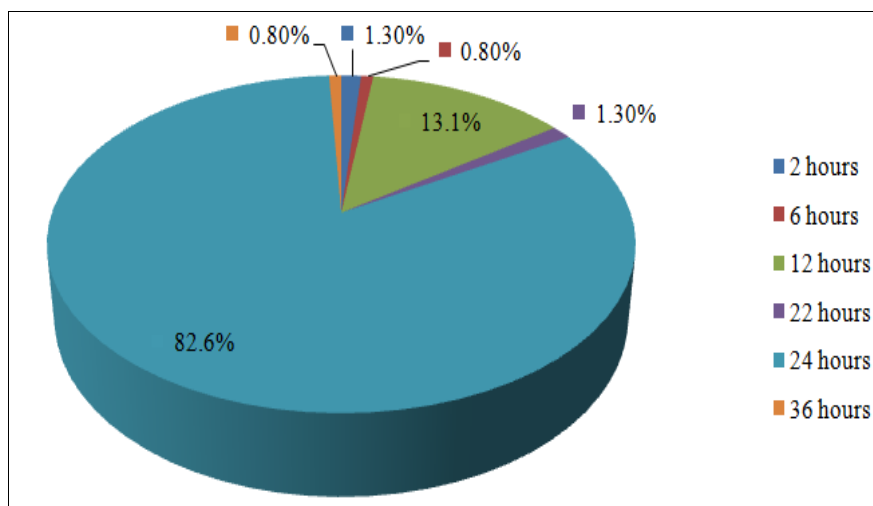


FIG. 1: ORS SOLUTION PRESERVATION TIME (N=236) IN AYSAITA TOWN, 2016

The Attitude of the Caretakers towards Oral Rehydration Salt (ORS): This study showed that 181 (76.7%) of the study participants thought that ORS is useful to treat diarrhea, and 147 (62.3%) believe that homemade fluids can be used to treat diarrhea. One hundred eighty-four (78%) of the study caretakers believe that additional foods should be given when the child had diarrhea. Moreover, two hundred seven (87.7%) of the respondents believe that not feeding a child during diarrhea will aggravate the disease.

The Practice of Caretakers to Manage Diarrhea: Of 172 study children who had diarrhea at least once in their lifetime, 157(91.3%) had taken ORS solution. Of 157 caretakers, 143 (91.1%) use drinking water to prepare ORS solution, and 14 (8.9%) use previously boiled and cooled water **Table 5.**

TABLE 5: TYPE OF WATER USED TO PREPARE ORS SOLUTION AND FOODS GIVEN WHEN THE INDEX CHILDHOOD DIARRHEA, AYSAITA TOWN, 2016

| Variables | Frequency | Percentage |
|---|-----------|------------|
| Foods gave during diarrhea (n=172)* | | |
| ORS | 157 | 91.3 |
| Rice water | 56 | 32.6 |
| Salt solution | 35 | 20.3 |
| Fruit Juice | 31 | 18.0 |
| Sugar solution | 22 | 12.8 |
| Water used to prepare ORS solution (n=157)* | | |
| Drinking water | 143 | 91.1 |
| Boiled and cooled water | 14 | 8.9 |
| Bottled water | 13 | 8.3 |

DISCUSSION: Oral Rehydration Therapy is the cornerstone of fluid replacement. One of the

components of the WHO diarrhea control Programme is proper knowledge and use of oral rehydration solution ⁸. In Aysaita town, 164 (69.5%) of the study caretakers knew about danger signs of dehydration and nearly 97% of the caretakers knew about correct preparation of ORS solution. Moreover, these present study showed that about 99.0% of the caretakers knew that freshly prepared ORS was fit for consumption within 24 hours only. This is higher compared to findings from Nigeria ⁹.

The present study revealed that most of the caretakers (89.8%) had defined diarrhea as the passing of watery/loose stool three or more times. This is higher than the findings at Assela town ⁹. Medical consultations were also found to be widespread in Aysaita town. Such treatment-seeking behavior might be explained by the availability of both public and private health facilities in this urban area.

About 91% of the study children in Aysaita town had got ORS when they had diarrhea. This was similar to a study done in rural Gujarat where oral rehydration was given for 90.6% of the diarrhea episodes ¹⁰. However, the finding in Aysaita town was higher compared to the findings from Assela town, where 58.2% of the mothers gave ORS while their child had diarrhea ⁹.

CONCLUSION: The findings in this study showed that the majority of the caretakers had a positive attitude, knowledge, and practice regarding Oral rehydration salt (ORS). However, certain lapses are seen in the attitude and knowledge of

mothers regarding ORS. Therefore, health institutions in Aysaita district should strengthen their effort to provide health education and information regarding Oral Rehydration Salt.

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CONFLICT OF INTEREST: Nil

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