

## ASSESSMENT OF KNOWLEDGE ABOUT DIARRHOEA AND ITS HOME MANAGEMENT IN MOTHERS OF UNDER FIVE YEAR CHILDREN ATTENDING A TERTIARY CARE HOSPITAL

Umay Kalsoom, Tahira Amjad, Saima Bairam

Foundation University Medical College Islamabad Pakistan

### ABSTRACT

**Objective:** To assess the knowledge about diarrhoea and its management at home among mothers of under five children attending a tertiary care hospital.

**Study Design:** Descriptive study.

**Place and Duration of study:** Fauji Foundation Hospital, Rawalpindi, from Mar to Aug 2017.

**Material and Methods:** A convenient sample of 120 mothers of children admitted in hospital was taken after applying selection criteria. After ethical approval by institutional ethical review committee and consent of respondents, data was collected on a structured pretested questionnaire on variables of demographic information, knowledge about diarrhoea, home management, preparation of homemade oral rehydration solution etc. Data was analyzed by SPSS version 21. Descriptive and inferential statistics was applied. Frequencies and percentages were computed,

**Result:** Study results showed that 62 (51.7%) of mothers belonged to 20-30 years of age, only 65 (54.2%) were literate, 54 (45%) belonged to middle socioeconomic status and 76 (63%) had 4-6 family members. Respondents who perceived themselves as knowledgeable were 90 (75%) and 76 (84%) of them knew about the term "Diarrhoea" while 68(76%) considered themselves as knowledgeable regarding its home management while only 39 (58%) and 22 (32%) of them knew about correct method of preparation of oral rehydration solution (ORS) from sachet and homemade ORS respectively. Healthcare workers 60 (65%) were the major source of their information. Reliability of variables was found acceptable at 0.79 on cronbach alpha test. Statistically significant association was found between knowledge of diarrhoea and its home management, knowledge of home management and number of children as Pearson Chi-square value and Linear by Linear association  $p$ -value was  $<0.05$ .

**Conclusion:** Majority of mothers had sufficient knowledge regarding diarrhea and its management at home with oral rehydration fluids and the type of food to be given. They lacked knowledge regarding correct preparation of oral rehydration solution by ORS Sachet or preparation by using ingredients easily available at home. Awareness campaigns and education of mothers can improve their knowledge in this aspect.

**Keywords:** Diarrhoea, Knowledge, Management, Oral Rehydration.

---

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

---

### INTRODUCTION

In children under-five years of age, the second foremost cause of death is diarrhea. It is defined as "the passage of loose, liquid or watery stools more than three times a day<sup>1</sup>. In an estimation globally there were 760,000 deaths due to diarrhoea<sup>2</sup>. In the year 2012, 0.6 million deaths occurred in children of less than five years<sup>3</sup>. In Pakistan, as stated by WHO, after acute respiratory infections, diarrhoea is second main

cause of deaths in under 5 children<sup>4</sup>. Homemade oral rehydration solution or "nimkol" ie oral rehydration salt (ORS), zinc supplement, simple and soft diet, and proper consultation with health workers can improve or treat it<sup>5</sup>. Yearly incidence of diarrhea in Pakistani children is 3-4 episodes<sup>4</sup>. Deaths are attributable to dehydration in 80% of cases<sup>6</sup>. Pakistan is a developing country with majority of its population residing in rural areas where basic health facilities and low literacy rate is prevalent. Though majority of mothers are aware of the importance of ORS, but 60% of mothers do not know correct method of preparation and use of ORS or homemade

---

**Correspondence:** Dr Umay Kalsoom, Department of Community Medicine, Foundation University Medical College Islamabad Pakistan (Email: [umaykalsoomhadi@gmail.com](mailto:umaykalsoomhadi@gmail.com))

Received: 17 Jan 2018; Revised received: 11 Jun 2018; accepted: 13 Jun 2018

solution<sup>7,8</sup>. If it lasts longer than two weeks but resolves within a month, then it is a persistent diarrhea. Infection spreads through contaminated drinking water or food. Poor hygiene may lead to its spread from person to person<sup>9</sup>. A child is deprived with nutrition with each episode of diarrhoea which is necessary for his growth and development. Thereby significantly attributes towards the burden of malnutrition. Severe dehydration, fluid and electrolyte imbalance is the major cause of death in diarrhoeal disease<sup>10</sup>.

measures like use of clean water, good cooking practices, hand washing, immunization, exclusive breast feeding, use of latrines, sanitary disposal of excreta and good sanitary and hygienic practice<sup>13,14</sup>. Secondary preventive measures comprise of timely recognition of dehydration and oral rehydration by ORT along with continual feeding and even increased feeding of energy rich food in addition to breast feeding, zinc supplements and appropriate antibiotics<sup>13,15</sup>. Global promotion of appropriate use of ORT has

**Table-I: Demographic and socioeconomic characteristics of mothers (n=120).**

Variables	n (%)
<b>Age in years</b>	
20-30	62 (51.7)
31-40	56 (46.7)
41-50	2 (1.7)
<b>Literacy Level</b>	
Literate	65 (54)
Illiterate	55 (46)
<b>Socio economic status (Rupees)</b>	
Low ( $\leq$ 15 K)	41 (34)
Middle (16 k -25 k)	54 (45)
Upper (>25 K)	25 (21)
<b>Employment status</b>	
Employed	25 (21)
Housewife	95 (79)
<b>Family members</b>	
1-3	23 (19)
4-6	76 (63)
>6	21 (18)
<b>Number of children</b>	
1-3	50 (42)
4-6	60 (50)
>6	10 (8)

However, the preparation and administration method of fluids was found quite unacceptable in various studies besides the good knowledge of the caregivers<sup>11</sup>. For the management of a case of diarrhea, it is important to know the correct method of administering oral rehydration therapy (ORT), recommended home fluids or augmented fluids, and continual feeding<sup>12</sup>. Diarrhoea related morbidities and mortalities can be prevented by practicing primary preventive

significantly reduced morbidity and mortality associated with diarrhea illness. However, in developing countries these benefits are not optimal due to lack of awareness about its availability and importance in the management of diarrhoea disease<sup>17,18</sup>. The correct method to prepare one litre of ORS from sachet is to dissolve one sachet of ORS in one litre of clean cold water. If sachets are not available then a homemade oral rehydration solution can be

easily made by dissolving 6 teaspoons of sugar and half teaspoon of salt in one litre or 5 cups of 200 ml of clean drinking water<sup>18</sup>. ORS which is considered as a medical miracle of 20th century, is a cheap, simple and most effective treatment for dehydration related with diarrhea<sup>19</sup>. Initial case management of o at home can avert many morbidities and mortalities. The available statistics on the subject reflects that gaps still exist in developing countries. The study was aimed at exploring the knowledge regarding initial home management of diarrhea among the mothers belonging to this area as their crucial role cannot

are “mothers with at least one alive child below 5 years of age who were present with their hospitalized child in paediatric ward of Fauji Foundation Hospital, Rawalpindi” were included. A sample of 151 was calculated by online sample size calculator for prevalence studies (SSCPS version 1.0.01.xls) for infinite population, estimated prevalence taken as 0.89<sup>6</sup> with *p*-value <0.05 and confidence level of 95% but due to limited time relatively smaller sample was taken. A self-structured pretested questionnaire which was translated to urdu was used and the responses were entered by

**Table-II: Assessment of perceived knowledge of mothers about diarrhea and its home management (n=90).**

Variables	Yes n (%)	No n (%)
Diarrhoea is >3 loose, liquid or watery stools in 24 hours	76 (84)	14 (16)
Knew at least one cause of diarrhea (Contaminated food, contaminated water, poor hygiene etc)	75 (83)	15 (17)
Familiar with at least two danger signs of diarrhoea (increased thirst, sunken eyes, dry tongue, wrinkled skin, less urine output etc.)	61 (68)	29 (32)
Diarrhoea can be fatal	60 (67)	30 (33)
Perception of being Knowledgeable about home management of diarrhea	68 (76)	22 (24)
<b>Assessment of knowledge of mothers who perceived themselves as knowledgeable about home management of diarrhoea (n=68).</b>		
Knowledge of correct method of preparation of ORS by sachet	39 (58)	29 (42)
Knowledge of correct method of preparation of ORS by ingredients available at home.	22 (32)	46 (68)
Correct knowledge of quantity of ORS to be given in 24 hours (Liters)	45 (66)	23 (34)
Correct knowledge regarding frequency of giving ORS in 24 hours	41(61)	27 (39)
Knowledge of more than two correct food items that can be given during the episode of diarrhea (milk, banana, khitchri, yogurt etc)	54 (80)	14(20)

be ignored. For any future interventions or researches, results of this study can be used. Based on its findings, good practices at home for the pre hospital management of diarrhea can be developed.

## **MATERIAL AND METHODS**

This cross sectional study was conducted at Fauji Foundation Hospital, Rawalpindi, from Mar to Aug 2017. Institutional ethical approval and informed consent was taken. Information was collected from 124 mothers by non-random convenient sampling method. Respondents who

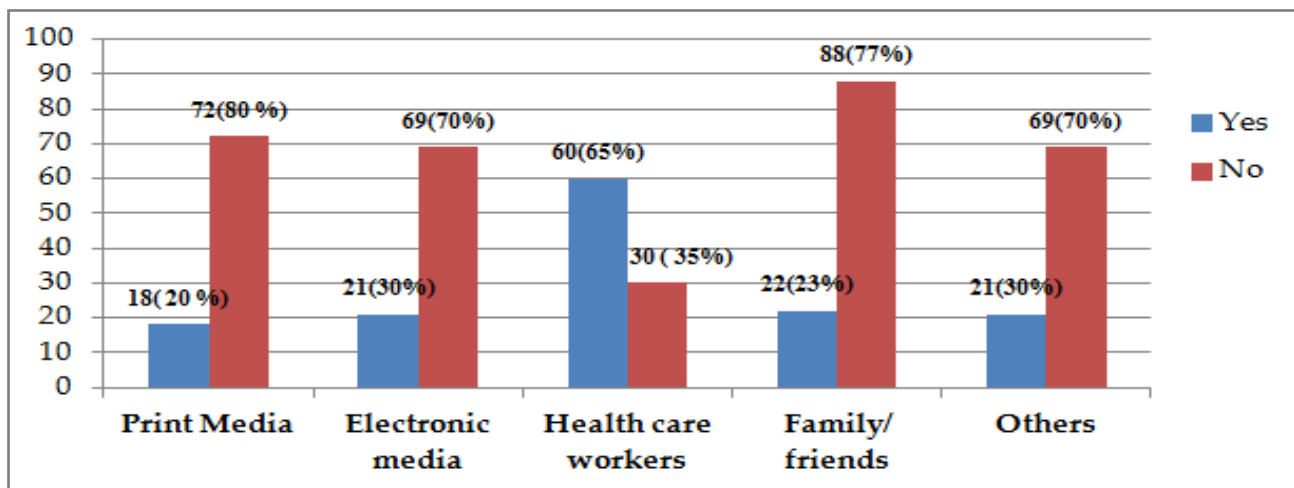
the researcher. Data was collected on variables pertaining to demographic characteristics, knowledge of respondents regarding diarrhea, its causes, danger signs of dehydration, its probable fatal outcome, management at home, correct food in take in diarrhoea, correct method of preparation of ORS with sachet, homemade oral rehydration solution etc. In this study respondents (as defined in census 2017 of Pakistan), who can read and understand simple text in any language from a newspaper or magazine, can write a simple letter and perform basic mathematical calculation were taken as

literate while others as illiterate. Respondents who considered themselves as knowledgeable were further assessed on their correct knowledge of the term "Diarrhoea" i.e. more than 3 loose, liquid or watery stools in a day, at least one correct cause (contaminated food, contaminated water, poor hygiene etc ), knowledge of at least two danger signs of dehydration (increased thirst, sunken eyes, dry tongue, wrinkled skin etc.), knew about the probable fatal outcome of diarrhoea, at least two correct food items during the episode (milk, banana, khitchri, yogurt etc), correct amount ( $\geq 1$  Litre in 24 hours) and

directional measure was applied to see their statistical association.

## RESULTS

Response rate of this study was 96.8% as 120 respondents out of 124, gave complete information. In this study 62 (51.7%) belonged to age group 20-30 years of age, 65 (54.2%) were literate, 95 (79.2%) were house wives. Respondents belonging to middle socio-economic class were 54 (45%) with 76 (63%) had 4-6 family members and 60 (50%) had 4-6 children table-I. Respondents who considered



**Figure: Sources of information regarding home management of diarrhoea among the respondents (n=90).**

\*Other sources of information: own past experience with other children, attendants of admitted children, neighbors, medical students and social workers

frequency (after every episode of loose motions or vomiting), correct preparation method of ORS by sachet or homemade as mentioned in the introduction. Data was analyzed by using SPSS version 21 software and presented in the form of text and frequency tables. Cross tabulation was knowledge regarding diarrhoea and its home management was compared, literacy level of the respondents with their knowledge regarding home management of diarrhoea; and also between number of children of the respondents and their knowledge regarding management of diarrhea at home. Pearson Chi-square test and Linear by linear association was applied. Cochran test of conditional independence and Somer's

themselves as knowledgeable were 90 (75%) and among them 76 (84%) knew about the term "Diarrhoea" table-II. Major source of their information was healthcare workers 60 (65%) (figure). Only 39 (58%) and 22 (33%) knew about the correct method of preparation of ORS by sachet and homemade ORS respectively table-II. Reliability of variables was found acceptable at 0.79 on Cronbach Alpha test. No statistically significant association was found between literacy level of the respondents with their knowledge regarding home management of diarrhoea as Pearson Chi square value of 0.004 was  $p$ -value  $> 0.05$ . Statistically significant association was found between knowledge of

diarrhoea and its home management as  $p$ -value (0.000) of Pearson Chi-square 52 at df 1 was less than 0.05 and the association also exists on applying Cochran's Mantel Haenszel test of conditional independence. Significant association was also found between number of children of the respondents and their knowledge regarding diarrhea home management as Linear by Linear association of 13.16 at df 1 with  $p$ -value less than 0.05 and significant Somer's directional measure was also found at 365 and 315 for both the variables.

## DISCUSSION

In this study, number of mothers included in the study and their main age group i.e. 20-30 years is almost similar to studies conducted at Karachi and Nigeria<sup>6-8</sup>. About half of the study group were literate as compared to the Karachi study in which only one third of the respondents were literate as most of the respondents belonged to Khyber Pakhtun Khawa and Afghanistan and had low literacy and socio economic status<sup>7,8</sup>, where as in our study majority were residents of Rawalpindi and belonged to middle socio economic class. Majority had 1-4 numbers of children which is also comparable with the reference studies. Most of the mothers were house wives while there was no mention of employment status of the mothers in other studies<sup>6-8,18</sup> may be because of their low literacy level and socio cultural settings of the study place<sup>6</sup> Major source of information was health care workers which was also found similar in the Karachi studies<sup>7,8</sup>. A good number of respondents had knowledge of diarrhea and its home management which was same as in other studies<sup>6-8,19</sup> as the studies were conducted in urban setting and respondents had the opportunity to reach the healthcare workers which was their major source of information. Knowledge regarding preparation of ORS from the sachet was more as compared to homemade oral rehydration solution may be because mothers source of information were healthcare workers who usually focus on preparation of ORS sachet as compared to homemade. The other

studies have a high level of knowledge regarding homemade oral rehydration solution. The difference may be attributable to mother's socio economic status, education and access to information at different settings<sup>6-8,19</sup>. In this study significant association was found between the perceived knowledge regarding diarrhoea and its home management as the mothers who knew about the condition was able to identify and then manage it at home before they reach a health care facility. Statistically significant association was also found between the number of children and home management of diarrhoea as this condition is quite common in developing countries and experience gained with each child rearing can influence the mothers in their management abilities in comparison to another study<sup>11,19</sup>. However there was no association found between the literacy level of the mothers and their knowledge as both these variables are equally distributed and the knowledge was related to their experience of rearing children. In another study it was attributable, as the literacy level was low in that study<sup>6</sup>.

## CONCLUSION

Majority of mothers had sufficient knowledge regarding diarrhea and its management at home with oral rehydration fluids and the type of food to be given. They lacked knowledge regarding correct preparation of oral rehydration solution by ORS Sachet or preparation by using ingredients easily available at home. Awareness campaigns and education of mothers can improve their knowledge in this aspect.

## ACKNOWLEDGEMENTS

We acknowledge the contribution of Ayesha, Mahrukh, Shaher Bano, Aqsa and Faria towards this study and the cooperation of the hospital staff and the mothers for their time and facilitation.

## LIMITATIONS OF THE STUDY

The study faced time limitations, a smaller sample size, non probability sampling technique,

recall bias and hospital study setting due to resource constraints.

### CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

### REFERENCES

- World Health Organization, Geneva: Diarrheal disease Fact Sheet No. 330. WHO 2013.
- Facts and Figure, WHO. Media Centre. Diarrhoeal disease. Fact sheet No 330 2013.
- UNICEF. Committing to child survival: A Promise Renewed, Progress Report, 2013.
- World Health Organization emergency cell Pakistan 2005. Mothers Knowledge, Attitudes and Practices related to Scabies, ARI and Diarrhea in the earthquake- affected areas of Pakistan; A Household Survey.
- Meier R, Burri E, Stenerwald M. The role of nutrition in diarrhea syndrome. *Curr opin clin Nutr Metab Care* 2003; 6(5): 563-7.
- Danjuma A, Afolaranmi T, Hassan ZI, Faith C, Patrick G, Ejiga C, et al. Knowledge and use of oral rehydration solution in the home management of diarrhea among mothers of under fives in Jos, Plateau State. *IJBR* 2017; 8(01): 33-7.
- Salamuddin, Shah I, Arif S, Ilyas A. Mother's Knowledge and Attitude Associated with Diarrhea in an Urban Area in Karachi, Pakistan. *IJIRD* 2015 29; 4(5): 138-41
- Zahid SS, Zehra N, Ullah S, Khan N, Javed MH, Khan M. Mother's Awareness and Practices Regarding Home Management of Childhood Diarrhea in a Squatter Settlement in Karachi. *Pak J Med Dent* 2014; 3(2): 1-5.
- Mahor GR. Knowledge and attitude of mothers regarding use of Oral Rehydration Solution in management of diarrhea. *AJBPS* 2013; 3(22): 6-8.
- Diarrhoeal disease. World Health Organization (WHO) Fact sheet. 2017.
- Uchendu UO, Emodi IJ, Ikefuna AN. Pre-hospital management of diarrhea among caregivers presenting at a tertiary health institution: Implications for practice and health education. *Afr Health Sci* 2011; 11(1): 41-7.
- Lauren S, Prisca A, Christine K, Robert F, Pavani K. Examining the Use of Oral Rehydration Salts and Other Oral Rehydration Therapy for Childhood Diarrhea in Kenya. *Am J Trop Med Hyg* 2011; 85(6): 1126-33.
- Shah D, Choudhury P, Gupta P, Mathew JL, Gera T, Gogia S, et al. Promoting appropriate management of diarrhoea: A systematic review of literature for advocacy and action. UNICEF-PHFI series on newborn and child health, India. *Indian Pediatr* 2012; 49(8): 627-49.
- Munos MK, Walker CL, Black RE. The effect of oral rehydration solution and recommended home fluids on diarrhoea mortality. *Int J Epidemiol* 2010; 39: 175-87.
- Facts and Figures; WHO. Media Centre. Diarrhoeal disease. Fact sheet No 330. 2013.
- Rasania SK, Singh D, Pathi S, Matta S, Singh S. Knowledge and attitude of mothers about Oral Rehydration Solution in few urban slums in Delhi *J Health Popul Persr* 2005; 28(2): 100-07.
- Boma AN, Balafama A. Home management of diarrhea by care givers presenting at the diarrhea training unit of a tertiary Hospital in southern Nigeria. *Br J Med Med Res* 2014; 4(35): 5524-40.
- How do I prepare an Oral Rehydration Salts ORS solution at home. Rehydration Project 2017.
- Hayat AS, Muqteetullah M, Humaira M, Sawal SH. Dehydration due to diarrhea; Knowledge, attitude and practices of mothers about use of oral rehydration salt (ORS) for management in children less than five years old. *Professional Med J* 2017; 24(6): 789-95.