

## Original Research Article

# Knowledge, attitude and practice of acute diarrheal disease and use of oral rehydration therapy among mothers of under five children

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## ABSTRACT

**Background:** Acute diarrhea in children is among the commonest causes of outpatient and inpatient attendance in medical setup. Though enough has been done in imparting knowledge about diarrhea and its management, there is a gap between knowledge and practice in the population. Aim of the study is to assess the mother's knowledge, attitude and practice about diarrhea in children.

**Methods:** Cross-sectional survey, conducted in the pediatric department of a peripheral hospital in Pune, Maharashtra.

**Results:** Of the 305 mothers surveyed, their knowledge about diarrhea was good with 77.1% knowing correct definition, and most mothers knowing correctly about its mode of transmission, the positive role of good hygiene & sanitation, breast feeding and oral rehydration therapy (ORT) in prevention and management of acute diarrhea. However, their attitude and practice were found lacking, with higher rate of bottle feeding (59.3%) and lesser use of standard (46.3%) as well as home based (69.9%) ORT measures.

**Conclusions:** There is discrepancy between the knowledge and practice. Hence, there is the need of sustained efforts in imparting both knowledge and practice among the population.

**Keywords:** Acute diarrhea, Attitude, Children, Knowledge

## INTRODUCTION

Diarrhea is one of the major killer of the under five children, mainly in the developing nations. The current worldwide estimates in under five children suggest approximately 1.4 billion yearly episodes of diarrhea, with annual 123 million clinic visits and 9 million hospital admissions, leading to a loss of 62 million disability adjusted life years (DALYs).<sup>1</sup> Diarrheal deaths account for approximately 9% of all under five deaths in India.<sup>2</sup> During the year 2013, about 10.7 million cases with more than 1600 under 5 daily diarrheal deaths were reported in India. After the initiation of Diarrheal Disease Control Program by WHO, the worldwide under five

diarrheal deaths due to dehydration decreased drastically from 4.6 million in 1980 to 1.2 million in 2015.<sup>3</sup> This could only be achieved by the aggressive steps taken by the WHO, Government and other nodal agencies over the last three decades, in improving the general living condition of the population, promotion of vaccination, breastfeeding and advances in oral rehydration therapy, reducing incidence of malnutrition and related illness and through the implementation of Integrated Management Of Childhood Illness. Though the deaths have decreased by more than a third, but the numbers are still alarming. Most of the deaths occur among children under two years of age. India is still the largest contributor to worldwide under five child mortality.<sup>4</sup> Simple and effective

treatment measures like oral rehydration therapy (ORT) and zinc supplementation have markedly improved the outcome of diarrheal disease in children with diarrhea. However, these standard therapy guidelines may not be sufficient in decreasing diarrhea and its related morbidity. There is an utmost need to spread the awareness in the form of knowledge, attitude and practice (KAP) about the preventive aspects, use of standard as well as home based oral rehydration therapy measures to prevent dehydration, identification of danger signs and early health care seeking behavior among parents in diarrheal illness. In a developing country like India, with the lack of diarrhea & ORT related knowledge in the community, diarrhea continues to remain a major public health problem.<sup>5</sup>

Based on the assumption that the knowledge of mothers regarding diarrhea and its management may be lacking, an attempt was made to evaluate the KAP regarding acute diarrheal disease prevention and management among mothers of under five children presenting to pediatric OPD with acute diarrhea.

## METHODS

A cross-sectional question based survey was conducted in the pediatric OPD of a peripheral hospital in Pune, Maharashtra from mothers of under five children, presenting with acute diarrhea, from January 2018 to December 2018. Questions were formulated in the domains of knowledge, attitude and practice about acute diarrhea from literature. An initial pilot study was conducted with 15 mothers assessing their ability to understand the questions, and based on their feedback, the language and wordings were modified to make it more user friendly. 28 questions with response option of Yes/no, agree/disagree and Likert Scales were used as appropriate. The responses were entered in excel sheet. Analysis of the response was made with simple descriptive statistics with frequency and percentage as applicable. Based on a previous study, wherein the mother's KAP regarding prevention and management of diarrhea was made, a sample size of 300 was assumed adequate.<sup>6</sup> Anticipating 10% mothers will not complete the survey it was proposed to include a minimum of 330 mothers for the survey. Informed consent was taken prior to participation. The mothers were not given any monetary assistance for participation. The study was approved by the institutional ethical committee. The mothers were given health education about diarrhea and its prevention, identification of danger signs, use of standard and home based oral rehydration therapy post survey.

## RESULTS

A total of 305 mothers completed the survey. All belonged to the same socioeconomic status. Mean age of mother was 29.96 years (SD 4.59 range 19-39). 52.8% children were under 2 years of age. 52.1% children were

male. The demographic information of the population in survey is illustrated in Table 1.

### Knowledge

Most mothers (77.1%) knew the correct definition of diarrhea. Most (90.5%) answered correctly that diarrhea is a water borne illness. 83.4% answered correctly that diarrhea is caused due to poor hygiene/sanitation. 77.7% knew correctly the beneficial role of breastfeeding in diarrhea. 71.2% believed breastfeeding or other feeds should not be stopped in diarrhea. 44.9% believed antibiotics and antidiarrheal can stop diarrhea early. Most 93.8% knew that ORT is beneficial in treating diarrhea. 58.7% knew the correct method of preparing ORT. 60.9% mothers believed that rotavirus vaccination can prevent all diarrheal episodes. Only 40.3% mothers knew the beneficial role of zinc supplementation in diarrhea. Only 44.6% mothers agreed ability to identify dehydration in their child in diarrhea. Only 43.9% mothers knew about home-made rehydration fluids and diets to be given in diarrhea.

### Attitude

All mothers agreed to have visited a doctor for diarrhea. Most (78.1%) agreed to have visited the emergency department in off hour services for diarrhea. 71.1% mothers believed correctly that cleaning the feeding bottle properly will not prevent their child from having diarrhea. 51.2% mothers believed diarrhea should be stopped immediately with antibiotics and antidiarrheal. Parental expectation while visiting a physician due to diarrhea were for to obtain medication 38.1%, physical examination 23.3%, advice on identification of alarm signs and home remedy measures 22.6%, reassurance 16.1% respectively. 64.6% mothers expected diarrhea to stop within 2-3 days. 41.3% believed intra venous (IV) fluids to be better than ORT in management of diarrhea.

**Table 1: Demographic characteristics of responders (Total respondents = 305).**

Baseline Characteristics <sup>a</sup>	% (n)
Mean age of responders in Years (+/- SD)	29.96(4.59)
Parity	
1child	121
>1child	184
Education level	
Up to Secondary level	(36.4%) 111
Higher secondary	(37.7%) 115
Graduation and above	(25.9%) 79
Male children	(52.1%) 159
Children up to 2 years	(52.8%) 161
Children 2 to 5 years	(47.2%) 144

<sup>a</sup> All indicate numbers unless specified

**Table 2: Responders response to questionnaire on knowledge, attitude and practice of acute diarrheal disease and oral rehydration therapy (Total respondents = 305).**

Questions	Positive response% (n)	Negative response % (n)
<b>Knowledge</b>		
Knew the correct definition of diarrhea	(77.1%) 235	(22.9%) 70
Diarrhea is a water borne illness	(90.5%) 276	(9.5%) 29
Diarrhea is caused due to poor hygiene/sanitation	(83.4%) 256	(16.6%) 49
Beneficial role of breastfeeding in diarrhea	(77.7%) 237	(22.3%) 68
Breastfeeding or other feeds should not be stopped in diarrhea	(71.2%) 217	(28.8%) 88
Antibiotics and antidiarrheal medications can stop diarrhea early	(44.9%) 137	(55.1%) 168
Oral rehydration therapy is beneficial in treating diarrhea	(93.8%) 286	(6.2%) 19
Know correct method of preparing oral rehydration solution	(58.7%) 179	(41.3%) 126
Rotavirus vaccine will prevent all diarrhea	(60.9%)186	(39.1%) 119
Zinc is beneficial in treating diarrhea	(40.3%) 123	(59.7%) 182
Know how to identify dehydration due to diarrhea	(44.6%) 136	(55.4%) 169
Know to give home-made rehydration feeds in diarrhea	(43.9%) 134	(56.1%) 171
<b>Attitude</b>		
Ever visited a doctor for diarrhea in child	(100%) 305	(0%) 0
Visited in off hour services for diarrhea	(78.1%) 238	(21.9%) 67
If bottle-fed cleaning the bottle properly will not prevent diarrhea	(71.1%) 167	(28.9%) 88
Antibiotics & antidiarrheal should be given for diarrhea	(51.2%) 156	(48.8%) 149
Expectation while visiting physician		
Physical examination	(23.3%) 71	
Reassurance	(16.1%) 49	
Advice on alarm signs and home remedy measures	(22.6%) 69	-----
To obtain medication	(38.1%) 189	
Diarrhea should stop in 2-3 days	(64.6%) 197	(35.4%) 108
IV fluids better than oral fluids in diarrhea	(41.3%) 126	(58.7%) 179
<b>Practice</b>		
Made Oral rehydration fluid at home in diarrhea before coming	(43.6%) 133	(56.4%) 172
Oral rehydration powder kept at home for diarrhea	(36.1%) 110	(63.9%) 195
Gave glucose/sugar or plain water in diarrhea	(44.9%) 137	(55.1%) 168
Stopped feeding baby in diarrhea	(31.5%) 96	(68.5%) 209
Did you bottle feed your child	(59.3%) 181	(40.7%) 124
Gave home based rehydration fluids & feeds in diarrhea	(69.9%) 213	(30.1%) 92
Asked for antibiotics if diarrhea didn't resolve early	(32.1%) 98	(67.9%) 207
Asked to give IV fluids in diarrhea	(24.9%) 76	(75.1%) 229
Could take care of hydration & feeding needs at home	(64.9%) 198	(35.1%) 107

**Practice**

Only 43.6% mothers agreed to have practiced making ORT at home in diarrhea before consultation. Only 36.1% mothers had ORT powder kept at home. 44.9% mothers had given their children dextrose/sugar solution or plain water in diarrhea. 31.5% mothers had stopped feeding their children for diarrhea. 59.3% mothers had bottle fed their baby at one time. 69.9% mothers agreed having given their children home based rehydration fluids and diet in diarrhea. 32.1% parents agreed having tried to persuade the physician to prescribe antibiotics in case diarrhea didn't resolve early. 24.9% mothers asked the physician to give IV fluids rather than ORT in diarrhea.

64.9% mothers could take care of hydration and feeding needs of their child at home in diarrhea. The details are depicted in Table 2.

**DISCUSSION**

The study showed that mothers had good knowledge about diarrhea, its mode of spread and the beneficial role of breast feeding, oral rehydration therapy and the need to continue feeding in diarrheal episodes. A substantial population believed that rotavirus vaccine and antibiotics might prevent and treat all diarrheal illnesses. Similarly, the knowledge of beneficial role of zinc supplementation, use of home based rehydration fluids and identification of dehydration was below satisfaction. The health care

seeking attitude among mothers was good. A substantial population believed that antibiotics & antidiarrheal must be given. They also believed that diarrhea should stop early and IV fluids may fare better than oral fluids in diarrhea. The practice of mothers was found to be poor, with less mothers having made ORT at home correctly. Many gave dextrose water or had stopped feeding their child in diarrhea. Few had even requested the doctor to give IV fluids, antibiotics or antidiarrheal.

In our study, majority of children were males and under 2 years of age, as also seen by other authors.<sup>6-8</sup> There was adequate knowledge among mothers regarding diarrhea, its risk factors and prevention, but lesser mothers were aware of beneficial role of breastfeeding and the adverse effect of bottle feeding, as also seen by other authors.<sup>6,9,10</sup> In spite of good knowledge about diarrhea, there was a lag in their attitude and practice. According to standard therapy and WHO guidelines in management of diarrhea, there is limited role of antibiotics, antidiarrheal and anti-moebic medications as most diarrheal diseases are of viral etiology.<sup>6</sup> However, a substantial number of mothers had false belief that antibiotics and antidiarrheal are beneficial in all diarrhea. The practice of oral rehydration therapy was below satisfaction, with mothers having misbelief that IV fluids will have a better outcome which is against the standard protocol of therapy. Similar findings were also observed by other authors also.<sup>6,9,11-13</sup> 58.7% mothers had knowledge about preparation of ORT, but only 43.6% mothers had made ORT at home and only 36.1% mothers had ORT powder available at home. This implies that in spite of having adequate knowledge, the attitude and practice of ORT was lacking in our study population. Similar results were also observed by other authors.<sup>14,15</sup> Bottle feeding rate was also found to be higher (59.3%), in spite of 71.1% mothers believing that bottle feeding will cause diarrhea. This showed that there is a lag in KAP among mothers. Many authors noted in their study that the mothers had poor knowledge, owing to their poor educational level.<sup>6,7-9,11,12</sup> But in our study population, all the mothers were literate with most mothers having higher level of education. This implies that though we may have been able to impart the right knowledge, still lots of efforts are required for change in attitude. Imparting knowledge alone without a change in attitude will not be successful, and this needs to be considered by various agencies imparting knowledge through various health education programs. Knowledge should be imparted in such a manner so that the attitude and the practice of the population also changes.

## CONCLUSION

To conclude, there is discrepancy between the knowledge and practice among mothers about diarrhea and its management. Hence, there is the need for sustained efforts in imparting both knowledge and practice among the population.

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