

## Knowledge, Attitude and Practice of Mothers about Diarrhea in Children

Mohankumar MK<sup>1</sup>, Basima Amathu Raheem<sup>2</sup>

### Abstract

**Background:** Diarrhea, a common disease, is one of the major determinants of childhood morbidity and mortality in India. Diarrhea is the 2<sup>nd</sup> most common killer disease among children below 5 years worldwide. The treatment is mostly initiated at home by the mother and their knowledge about how to assess dehydration, prepare and give ORS, and when to seek medical attention (recognizing danger signs) are very important in preventing morbidity and mortality. **Methods:** It was a cross-sectional study using a self-designed and pretested structured questionnaire to gather data on mothers' knowledge attitude and practice about diarrhea in children. A total of 200 consecutive mothers admitted for various diseases of their children, having at least one child below 5 years were included for study. **Results:** Regarding Knowledge, most mothers (98%) could define diarrhea and the causes were correctly identified by (81%). Dehydration as an immediate concern was identified by 62%. 75% knew how to prepare and give ORS. Only 9.5% identified increased thirst & 17.5% identified sunken eyes as danger signs to seek medical attention. All seven signs were identified by 1 mother (0.5%). Only 20% knew that a vaccine is available to prevent diarrhea. Regarding Attitude, 50% of mothers would wait for medical advice before starting treatment. 66% opined that breast milk should be continued. Only 31.5% opined that usual diet to be continued. Regarding practice, almost all were having good practices to prevent diarrhea. **Conclusion:** Even in a State where there is nearly 100% literacy, mothers' knowledge about identifying signs of dehydration and picking up danger signs in order to seek medical attention were poor.

**Keywords:** Knowledge; Attitude Practice; Diarrhea, Mothers.

**Author Affiliation:** <sup>1</sup>Professor <sup>2</sup>Junior Resident, Department of Pediatrics, Government Medical College, Thrissur, Kerala 680596, India.

**Corresponding Author: Basima Amathu Raheem**, Junior Resident, Department of Pediatrics, Government Medical College, Thrissur, Kerala 680596, India.

**E-mail:** basimaamathuraheem@gmail.com

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### Introduction

Diarrhea, a common disease, is one of the major determinants of childhood morbidity and mortality in India. Diarrhea is the 2<sup>nd</sup> most common killer disease among children below 5 years worldwide. The treatment is mostly initiated at home by the mother and her knowledge about how to assess dehydration, prepare and give ORS and when to

seek medical attention (recognizing danger signs) are very important in preventing morbidity and mortality. Kerala is having near total literacy and healthy practices. Even then diarrhea continues to be a major health problem.

Mothers' basic knowledge about diarrhea depends on various factors such as educational status, prior experience of managing the disease and those created by advertisements. Studies in the

literature show that though most of the mothers were familiar with the term oral rehydration salt (ORS), there were knowledge gaps as regards its correct preparation and administration [2,7,6]. The signs of dehydration due to diarrhea remain unnoticed by the majority of the mothers [4]. There are certain fluids which are beneficial to be given during diarrhea (Home available fluids) and most mothers are aware of it [4]. Mothers' knowledge about diarrhea can be improved through educational interventions but written information alone is not enough. It is more effective if pictorials and demonstrations are included along with written material.

This study was designed to accomplish the objective of determining mothers' knowledge about childhood diarrhea and its management in a state where there is near hundred percent literacy.

## Methods

A cross-sectional survey was carried out from June to December 2018 using in-person structured questionnaire among mothers of children admitted in pediatric wards of Government Medical College Thrissur. All mothers who have at least one under 5 year child at present and are willing to participate were included, irrespective of the indication for which their children were admitted. A questionnaire was given on the penultimate day of admission when they were relaxed from the stress of admitting their child. They were informed that there are correct and wrong responses and may have more than one correct response. Negative marks will be there for wrong response. Same mark will be given for negative as well as positive response. If there is equal number of negative and positive response, the net mark will be zero. The answered questionnaires were collected within half hour. Written informed consent was obtained from each of the subjects enrolled in the study.

A self-designed and pre-tested structured questionnaire designed with the objective of the study in mind was employed. The questionnaire was divided into three parts: Knowledge, attitude and practice. Socio-demographic characteristics were also obtained simultaneously. 12 knowledge-related questions consisting of knowledge about definition of diarrhea (2 out of 3 options correct, most accurate if both correct options picked), causative factors for diarrhea (4 out of 7 options correct), signs of dehydration (all 3 correct), preparing and giving ORS (1 out of 3 options correct), danger signs in diarrhea (7 out of 7 options correct)

To assess their attitude, 5 questions related to when to start treatment, when to consult doctor and whether to continue breast feeds, cow's milk, usual diet (1 out of 3 options correct) were included.

To assess their practices in preventive measures 4 questions were asked relating to use of drinking water (2 out of 4 options correct), food (1 out of 3 options correct) while dining outside (3 out of 4 options correct), defecation and toilet training (3 out of 4 correct) were asked.

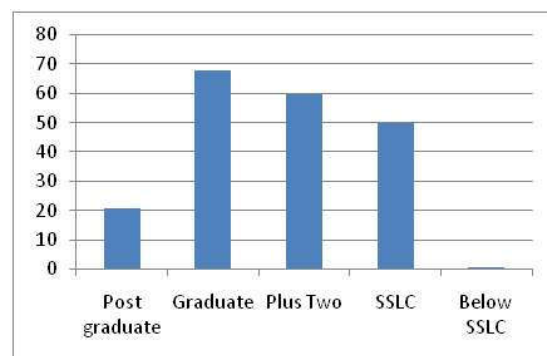
The options were determined on the basis of WHO guidelines. The instrument contained questions with single as well as multiple correct options. One score was assigned for each correct answer as per the option and one score deducted from correct response for each wrong answer.

A total of 200 subjects were enrolled in the study. Sample size was calculated using the formula  $4pq/d^2$ , where p is the prevalence rate in similar studies in India. 50% had knowledge regarding cause of diarrhea, 34% about danger signs, and 19% in preparing ORS. Considering the maximum prevalence value of 50%, a sample size of 200 was arrived. Non-random convenient sampling was adopted. Mothers of all children admitted to pediatric ward (having at least one child below 5 years) were included. Those unwilling to participate were excluded. This study was cleared by hospital ethical committee. Written consent was obtained. All expenses were borne by the investigator.

## Results

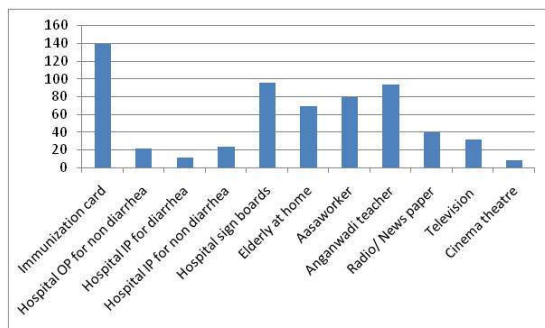
### a. Socio-demographic characteristics

Majority of the mothers were from the two categories of age groups: 21-30 years (73%) and 31-40 years (22%). Almost all were educated up to SSLC or above (99.95%).



b. From where did they gather information about diarrhea?

Most mothers gathered information from immunization card. During hospital visits most information were gathered from sign boards. Outside hospital, information regarding diarrhea was provided mainly by the Anganwadi workers & ASHA workers.



c. Prior episodes of diarrhea in their children

Children of 96 mothers (48%) had prior episodes of diarrhea. As some children had more than one episode, the total diarrheal episodes were 125. Out of this 25 were treated at home, 76 as outpatients and 24 as inpatients.

d. Mothers' knowledge about diarrhea and its danger signs (n=200), (c) correct, (w) wrong

Most of the mothers (98%) could define what is diarrhea and 81% correctly identified the causes of diarrhea. Though 62% were aware that the immediate problem is dehydration, only 6.5% identified all 3 symptoms of dehydration. 90% mothers were aware about one or other home available fluids. 77% knew how to prepare ORS, but regarding giving ORS to child below 2 years, only 54% gave correct response. 73% knew that anti emetics were not routinely indicated. Only one mother (0.5%) picked up all danger signs that necessitated seeking medical advice. 79.5% were unaware that a vaccine is there to prevent diarrhea.

**Table 1.a:** Mothers' perception regarding the causes for diarrhea

N = 200	Total number	Percentage of total (N=200)
Tooth eruption (w)	38	19
Contaminated food, water (c)	172	86
Intestinal rotation (w)	24	12
Unimmunized (c)	8	4
Unhealthy surroundings (c)	99	49.5
Bottle feeds (c)	16	8
Over eating (w)	4	2
Don't know	5	2.5

More than one correct response. Hence total number need not tally with N

**Table 1.b:** Percentage of mothers with correct responses regarding the causes of diarrhea

Response	Total	%
1. One correct response	100	50 %
2 Two correct responses	62	31 %
3 Three correct responses	3	1.5 %
4 Four correct responses	1	0.5 %
5 Wrong responses	4	2 %
6 Don't know	5	2.5 %
5 (c): (w) responses = 1:1	25	12.5 %

Even though most mothers identified contaminated food and water as a major cause for diarrhea (86%), all the four factors were identified by 0.5% only. 19% of mothers still believe that teething is a cause for diarrhea.

**Table 2.a:** Mothers' knowledge regarding identification of dehydration

N = 200	Total number	Percentage of total (N=200)
Increased thirst (c)	66	33
Sunken eyes (c)	44	22
Lethargy (c)	156	78
Don't know	16	8

More than one correct response. Hence total number need not tally with N

**Table 2.b:** Percentage of mothers with correct responses regarding identification of dehydration

Response	Total	%
1 One correct response	115	57.5 %
2 Two correct responses	56	28 %
3 Three correct responses	13	6.5 %
4 Don't know	16	8 %

Only 6.5% of mothers identified all three signs of dehydration.

**Table 3:** Mothers' knowledge regarding preparation of ORS

N = 200	Total number	Percentage of total (N=200)
Dissolve entire powder in amount of water specified in packet (c)	154	77
Take required amount of powder and dissolve (w)	34	17
Give powder to child and then give water (w)	2	1
Don't know	10	5

**Table 4.a:** Mothers' knowledge of danger signs necessitating seeking medical advice in a diarrheal illness

N = 200	Total number	Percentage of total (N=200)
Increased thirst (c)	19	9.5
Sunken eyes (c)	35	17.5
Lethargy (c)	102	51
High fever (c)	12	6
Repeated vomiting (c)	48	24
Blood in stools (c)	65	32.5
More loss than intake (c)	119	59.5
Don't know	13	6.5

More than one correct response. Hence total number need not tally with N

**Table 4.b:** Semi quantitative analysis of maternal knowledge regarding danger signs

1	One correct response	66	33 %
2	Two correct responses	66	33 %
3	Three correct responses	33	16.5 %
4	Four correct responses	13	6.5 %
5	Five correct responses	8	4 %
6	Six correct responses	1	0.5 %
7	Seven correct responses	1	0.5 %
8	Don't know	12	6 %

*e. Mothers' attitude towards diarrhea (n=200); (c) correct, (w) wrong*

Fifty (50%) of mothers responded that they would start treatment only after consulting a doctor. Only 25% knew that antibiotics were needed only if there was blood in stools. Only 66% mothers opined that breast feeding should be continued and 75% opined that cow's milk should be given further diluted.

**Table 5:** Mothers' knowledge regarding initiation of treatment for a diarrheal illness

N = 200	Total number	Percentage of total (N=200)
Start treatment only after consulting doctor (w)	100	50
Give home available fluids and seek medical help only if danger signs (c)	94	47
Since diarrhea is a mild disease, not much care needed (w)	1	0.5
Don't know	5	2.5

**Table 6:** Mothers' knowledge regarding breast feeding in a child with diarrhea

N = 200	Total number	Percentage of total (N=200)
Stop temporarily (w)	46	23
Should be continued (c)	132	66
Stop permanently (w)	2	1
Don't know	20	10

**Table 7:** Mothers' idea of continuing usual diet during diarrheal illness

N = 200	Total number	Percentage of total (N=200)
Yes (c)	63	31.5
Decrease quantity (w)	97	48.5
Stop till diarrhea stops (w)	22	11
Don't know	18	9

*f. Mothers' practices to prevent diarrhea (n=200); (c) correct, (w) wrong*

Ninety nine (99%) mothers are practicing giving safe water to their children. 83.5% are washing hands with soap after defecation, but only 36.5% are washing hands with soap after touching child's stool. 46 % start toilet training their child by 2 years and 5% allow open yard defecation. 90% opined that they give only freshly prepared foods & 10% rewarmed foods.

## Discussion

Childhood diarrhea is a widespread problem in developing countries like India and is a common public health concern. Among the socio-demographic factors, mothers' education plays an important role in mothers' knowledge about diarrhea and its management apart from mothers' personal attitude and behavior.

#### a. Demographic Characters

This study shows that almost all were educated upto SSLC or above (99.95%). In a similar study by Sadasiba Pandey et al Odisha [7], 86 (28.7%) mothers were having higher secondary or above education, 120 (40%) were having primary or secondary education, rest 94 (31.3%) mothers below that.

#### b. Knowledge

Most mothers (98%) could define what is diarrhea. This is higher than other studies by Priti Chaudhary et al Delhi (96%) [6], Hailemariam et al Ethiopia (92.2%) [4], Hackett KM et al. Bangladesh (88%) [3] and Mumtaz Y et al. Karachi (72%) [5], Sadasiba Odisha, India (48%) [7], possibly due to higher literacy rate in Kerala.

The causes of diarrhea were correctly identified (81%), which is higher than similar studies in Karachi (47%) [5] and by Usfar AA et al Indonesia [6]. 82% mothers recognized that infection through food and water is one of the important cause for diarrhea, but 19% felt that teething is a cause for diarrhea. These are 80% and 24% respectively in Delhi study [6].

The immediate concern of diarrhea as dehydration was identified by 62%. Among the three signs of dehydration mentioned, 57.5% picked up one sign and 28% two signs. In similar study in Karachi [5] this was 35% and 26% respectively.

Regarding the amount of fluid to be given during diarrhea, 85.5% opined that more than usual amount to be given. This is higher than Delhi study [6] which showed 72% and Ethiopia [9] 28.1%. 75% knew how to prepare and give ORS. This is similar to study in Karachi (75.5%) [5] and by Ansari M et al Nepal (70%) [1].

Only 33% picked up 1 out of 7 signs of dehydration. Another 33% picked up 2 signs and 16.5% picked 3 signs. All seven signs were identified by one mother only (0.5%). In Odisha study [7] 34% had good knowledge about danger signs, number of signs to be picked up to categorize as good is not mentioned.

Only 20.5% knew that a vaccine is available to prevent diarrhea

#### c. Attitude

Regarding the attitude towards diarrhea, 47% opined that they will start home treatment immediately and 50% that they will start treatment only after medical advice. Regarding the need for

antibiotics in diarrhea, blood in stools was correctly mentioned by 25% only.

Regarding continuation of breast milk 66% correctly mentioned that it should be continued. Regarding continuation of cow's milk only 2% correctly opined that it can be continued as such. Majority 75% opined that it should be given further diluted which is incorrect.

Only 31.5% opined that normal diet have to be continued. 48.5% thought that they have to decrease the quantity, which is incorrect.

#### d. Practice

Regarding steps to prevent diarrhea, nearly all of them are taking precautions. Almost all informed that they will give only safe drinking water (99%), freshly prepared foods (90%), and adequate precautions while dining outside (96%). This is higher than Karachi study (62%) [5] and by Sillah F Gambia research (45%) [8]. Regarding safe drinking water practices, study in Karnataka 2 showed a much lower percentage (25%), and Odisha study [7] (33%). Regarding hand washing with soap and water after defecation, 83.5% opined that they are practicing it, which is similar to Delhi study [6] which showed 81%. The study from Nepal showed positive correlation between mother's education and knowledge about diarrhea [1].

Regarding the source of information, while attending hospitals, most got information from sign boards (48%). From outside hospital, most were informed by Anganwadi teacher (47%). 70% got information while attending immunization clinic mostly from immunization card.

### Conclusion

Even in Kerala where there is near 100% literacy, overall knowledge about diarrhea and its management at home needs improvement. Although mothers were aware about diarrhea and its home management, their knowledge pertaining to vital issues such as identifying dehydration & danger signs of diarrhea to seek medical attention was poor. Half of the mothers were of the impression that they will start treatment only after seeking medical advice. This shows lack of awareness and confidence in ORS. Knowledge regarding continuation of breast milk, cow's milk, normal diet was also poor. Knowledge regarding vaccine against diarrhea was very poor. Prior information about diarrhea was mostly obtained

from immunization cards and sign boards in hospital. The transmissions of information through television, cinema theatre are to be utilized. As most gathered information from immunization card, this need to be improvised with pictures. Thus, there is a need for extensive educational interventions even though the literacy rate is very high.

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