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Original Research Article

Use of oral rehydration solution by mothers of under-five children in a rural area of Kancheepuram district, Tamil Nadu: a KAP study

Muthulakshmi M., Gopalakrishnan S.*

Department of Community Medicine, Sree Balaji Medical College and Hospital, Bharath University, Chennai, Tamil Nadu, India

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***Correspondence:**
Dr. Gopalakrishnan S.,
E-mail: drsgopal@gmail.com

ABSTRACT

Background: Diarrhoea is defined as the passage of loose, liquid or watery stools more than three times a day. Globally, diarrhoeal disease is the second leading cause of death in children under five years of age. Timely management of the children with ORS has substantially declined the morbidity and mortality from acute infectious diarrhoea. This study was planned with an objective to find out the knowledge, attitude and practice about the use of ORS among mothers of under five children.
Methods: This is a cross sectional descriptive study carried out in the rural field practice area attached to a medical college in Kancheepuram district. Using simple random sampling method, the study group of 450 mothers of under-five children were identified. The data was collected using a pretested structured questionnaire containing 10 questions for assessing the knowledge and 8 for attitude and practice each. The answers were scored accordingly. Data was analysed using SPSS 17 software. Knowledge, attitude and practice were calculated using percentages.
Results: It is observed that 72% had adequate knowledge, 92% had positive attitude and 94% had good practice regarding the use of ORS among mothers of under-five children.
Conclusions: In this study, most of the mothers had adequate knowledge, attitude and practice about the use of ORS. However, knowledge, attitude and practice of mothers towards use of ORS for the treatment of diarrhoea need a little more improvement. This improvement can be achieved through effective health education strategies.

Keywords: Acute diarrhoeal disease, Dehydration, Under-five mortality

INTRODUCTION

Diarrhoea is defined as the passage of loose, liquid or watery stools more than three times a day. The consistency and character of the stool is more important than the number of stools. Globally, diarrhoeal disease is the second leading cause of death in children under five years of age, and is responsible for killing around 525,000 children every year.[1]

In India, diarrhoea is the second most common cause of death in under-five children, responsible for 13% of all deaths.[2,3] It is responsible for 1.5 billion episodes of diarrhoea annually. Almost 1.5-2.5 million deaths are estimated to occur annually in children under-five years of age.[4]

Infection due to bacteria, virus and parasites are the most common causes of diarrhoea.[1] Low socio-economic status (SES), inadequate breastfeeding, malnutrition, poor sanitation and poor hygiene practices of the mother, poor maternal literacy, the presence of under-five sibling in the family, low birth weight, young age, are associated with a higher incidence of diarrheal diseases in young children.[5,6]

In the last two decades, the mortality due to diarrhoea in children under 5 years has reduced. This reduction may be due to correct diarrhoeal management as per standard treatment guidelines recommended by WHO.[4] Two recent advancements in managing diarrhoeal disease have drastically reduced the mortality of children dying due to diarrhoea. They are oral rehydration solution (ORS) containing lower concentrations of glucose, salt and success in using zinc supplementation.[7]

Timely management of the children with ORS has substantially declined the morbidity and mortality from acute infectious diarrhoea.[8] ORS contains glucose and electrolytes that could be used to prevent and treat dehydration due to diarrhoea of any aetiology and in patients of all ages.[9-15]

According to WHO guidelines for the management of diarrhoea; anti-diarrhoea, anti-amoebic and antibacterial drugs have a little role to play. Community health education is of utmost importance for the effective case management. Effective health education can only be provided on the basis of an accurate understanding of prevailing knowledge, attitude and practices (KAP) of the community about the use of ORS therapy.[16] It is commonly observed that most of the mothers neither can mix commercially available ORS properly nor are able to realize the significance of giving more fluids during acute diarrhoea to their children.[17]

With this background, this study was planned with an objective to find out the knowledge, attitude and practice about the use of ORS among mothers of under five children, in the rural field practice area of our institution.

METHODS

Study design

This is a population based cross sectional descriptive study carried out in rural area of Padappai.

Study area

The study area is the rural field practice area of the rural health training centre attached to our institution, located at Padappai in Kancheepuram district of Tamil Nadu.

Study population

The population covered by the rural health training centre attached to our institution is 21187 as per Census 2011. Total number of households in Padappai village is 1851. The total population is 7198, consisting of 3709 males and 3489 females. The under-five children of Padappai village are 1365. Study population identified were mothers of under-five children residing in the study area permanently at the time of the study.

Study period

This study was carried out from August 2016- January 2017.

Sample size

The sample size of the study was calculated based on a previous study by Hemant Jain et al, where 80% of the mothers were aware of ORS usage.[(18)] Using the formula $4pq/D^2$, the sample size was calculated to be 400 with an absolute precision of 4%. Adding 10% refusal rate, the sample size was calculated to be 440, which was rounded off to 450.

Inclusion criteria

Mothers of under-five children residing in the study area and willing to participate in the study were included for this study.

Sampling technique

Simple random sampling method was used to identify the study subjects. The under-five population of Padappai village is 1365; their list was taken from RHTC and the 450 samples were identified by computer generated random number from among the 1365 under-five children present in the study area.

Data collection

The data for this study was collected using a standardized pretested structured questionnaire schedule consisting of background information and questions to assess the knowledge, attitude and practice on the use of ORS among mothers of under-five children. The interview schedule consisted of 10 questions on knowledge, 8 on attitude and 8 on practice.

Data analysis

For each of the study component, the correct response to the question was given a score of '1' and any other response was given '0' score. The maximum score that could be obtained at the end of the interview was '10'for knowledge, '8' for attitude and '8' for practice. A score of above 50% in each component was taken as adequate knowledge, positive attitude and good practice. All the data collected were entered into the Microsoft excel. The data analysis was carried out using SPSS software version 17. The level of knowledge, attitude and practice on the use of ORS was calculated using percentage.

Ethical clearance and informed consent

The study was carried out after obtaining approval from the Institutional Ethical Committee. The participants were briefed about the purpose of the study and informed consent was obtained prior to the data collection.

RESULTS

Socio-demographic characteristics of the study population are represented in Table: 1. Among the 450 women, 58% belonged to 27 – 35 years age group and 42% belonged to 18- 26 years. Nearly 32% had primary education, 30% had secondary education and 18% had high school education. Almost 14% were illiterates. Most of the women, 62% were multiparous and 38% were primi-parous. Socio economic status of the study participants was classified based on BG Prasad Scale. Among the study participants, 32% belonged to Class III socio economic status and 30% belonged to class IV socio economic status. Nearly 48% were Hindus and 42% were Christians in the study population.

Table 1: Socio-demographic characteristics of the study population.

S. No.	Characteristics	Frequency (n=450)	Percentage (%)
1.	**Age of the mother**		
	18-26 years	189	42
	27-35 years	261	58
2.	**Education**		
	Illiterate	63	14
	Primary	144	32
	Secondary	135	30
	High School	81	18
	PUC/Diploma	18	4
	Graduate	9	2
3.	**Parity**		
	Primi-parous	171	38
	Multiparous	279	62
4.	**Socio economic status (BG Prasad scale)**		
	Class I	18	4
	Class II	126	28
	Class III	144	32
	Class IV	125	30
	Class V	27	6
5.	**Religion**		
	Hindus	216	48
	Christians	189	42
	Muslims	45	10

Knowledge regarding the use of ORS among mother of under-five children is shown in Table: 2. Almost 99% of the mothers had seen the ORS packet. Nearly 90% of the mothers came to know about ORS through health workers, 6% through friends and relatives, 2% through media. Moreover, 94% knew ORS could help manage diarrhoea. Nearly 82% of the mothers knew how to mix the ORS packet and 76% of the mothers knew how to prepare ORS at home without the packet.

Among the mothers, 78% knew that they have to wash their hands and vessels before preparing ORS and 88% knew that they have to use boiled water for preparing ORS. Almost 42% of the mothers knew that ORS should not be stored for more than 24 hours. It was observed that 92% of the mothers knew they should continue breastfeeding even when the child is on ORS therapy [Table 2].

Table 2: Knowledge regarding ORS usage among mothers of under-five children.

S. No.	Knowledge about ORS usage	Frequency (n=450)	Percentage (%)
1.	**Have you seen this oral rehydration solution (ORS) packet? (Showing the packet)**		
	Yes	448	99.5
	No	2	0.5
2.	**From where did you learn about ORS?**		
	Health worker	405	90
	Relatives or friends	27	6
	Print or social Media	9	2
	Others	9	2
3.	**Will ORS help in managing diarrhoea?**		
	Yes	423	94
	No	9	2
	Don't know	18	4
4.	**Do you know how to prepare ORS? Enumerate the steps of preparation.**		
	Correct answer	369	82
	Incorrect answer	81	18
5.	**Do you know how to prepare ORS solution at home if the packet is not available? Enumerate the steps of preparation**		
	Correct answer	342	76
	Incorrect answer	108	24
6.	**Should we wash our hands and the vessels before preparing ORS?**		
	Yes	351	78
	No	18	4
	Don't know	81	18
7.	**Should boiled water be used for preparing ORS?**		
	Yes	396	88
	No	27	6
	Don't know	27	6
8.	**Can we store ORS for more than one day?**		
	Yes	180	40
	No	182	42
	Don't know	81	18
9.	**Should breastfeeding be continued, while the child is on ORS therapy?**		
	Yes	414	92
	No	9	2
	Don't know	27	6
10.	**Is ORS available free of cost?**		
	Yes	405	90
	No	27	6
	Don't know	18	4

Table 3: Attitude regarding the use of ORS among mothers of under-five children.

S. No.	Attitude towards the use of ORS	Frequency (n=450)	Percentage (%)
1.	**Do you think ORS helps in managing diarrhoea?**		
	Yes	432	96
	No	18	4
2.	**Will you prepare ORS?**		
	Yes	423	94
	No	27	6
3.	**Will you wash your hand and vessels before preparing ORS?**		
	Yes	405	90
	No	45	10
4.	**Will you boil the water for preparing ORS?**		
	Yes	387	86
	No	63	14
5.	**If ORS sachet is not available, will you prepare ORS at home?**		
	Yes	387	86
	No	63	14
6.	**Will you store ORS for more than one day?**		
	Yes	279	43
	No	171	57
7.	**Do you think breast feeding should be continued when the child is on ORS therapy?**		
	Yes	441	98
	No	9	2
8.	**Will you buy ORS?**		
	Yes	423	94
	No	27	6

Table 4: Practice regarding the use of ORS among mothers of under-five children.

S. No.	Practice regarding the use of ORS	Frequency (n=450)	Percentage (%)
1.	**Have you used ORS for your child, who is suffering from diarrhoea?**		
	Yes	414	92
	No	36	8
2.	**Have you prepared ORS from the sachet available?**		
	Yes	410	91
	No	40	9
3.	**Have you prepared ORS at home if ORS sachet is not available?**		
	Yes	369	82
	No	81	18
4.	**Have you washed your hands and vessel before preparing ORS?**		
	Yes	432	96
	No	18	4
5.	**Have you boiled water before preparing ORS?**		
	Yes	405	90
	No	45	10
6.	**Have you stored ORS for more than one day?**		
	Yes	63	14
	No	387	86
7.	**Have you continued breastfeeding when the child is on ORS?**		
	Yes	423	94
	No	27	6
8.	**Have you bought ORS?**		
	Yes	441	98
	No	9	2

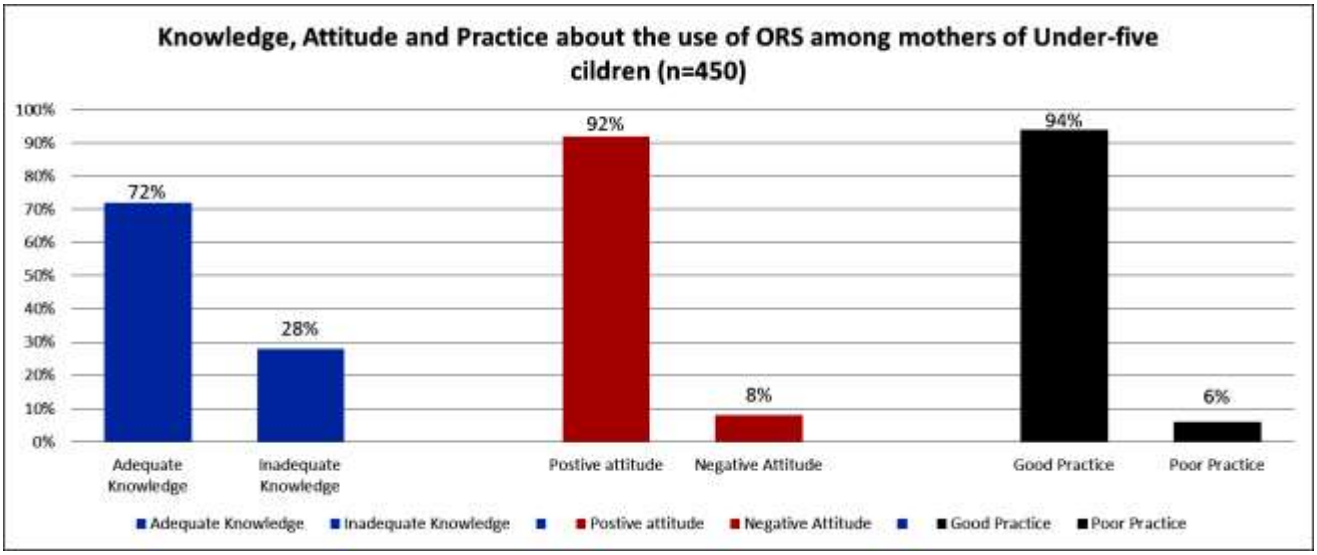

Figure 1: Knowledge, attitude and practice about the use of ORS among mothers of under-five children.

Attitude regarding the use of ORS among mothers of under-five children is represented in Table 3. Nearly 96% of the mothers thought ORS will help in managing diarrhoea. Almost 94% of the mothers were ready to prepare ORS. It is seen that, 90% of the mothers had an attitude to wash the vessels and hands before using ORS. Nearly 86% of the mothers had an attitude to use boiled water for preparing ORS. But, 43% of the mothers had an attitude to store ORS for more than one day. Almost 98% of the mother felt it is necessary to breastfeed the child on ORS therapy. Nearly 94% had the attitude to buy ORS.

Practice regarding the use of ORS among mothers of under-five children is shown in Table 4. It is observed that 92% of the mothers used ORS for their child suffering from diarrhoea. Moreover, 91% of the mothers prepared ORS using the packet and 82% had prepared ORS at home when the packet was not available. Nearly 96% of the mothers washed their hands and vessels before preparing ORS. Almost 90% of the mothers used boiled water for preparing ORS. Almost 87% of the mothers had a good practice of not storing the ORS for more than 24 hours. It was seen that 94% of the mothers continued breast feeding when their child was on ORS therapy. Nearly 98% of the mothers had bought ORS.

The overall knowledge, attitude and practice about the use of ORS among mothers of under-five children is depicted through a bar diagram in Figure 1. It is observed that 72% of the mothers had adequate knowledge, 92% of the mothers had positive attitude and 94% of the mothers had good practice.

DISCUSSION

Acute diarrhoeal disease is one of the most deadly diseases, which mostly affects children of under-five age group. The mortality due to diarrhoeal diseases is decreasing in the recent times mainly due to proper treatment using ORS and zinc supplementation. This study has given an interesting insight to the level of knowledge, attitude and practice, the mothers of under-five children possess in the study area.

The study participants included mothers of under -five children, 58% of them belonged to 27-35 years and 42% belonged to 18-26 years. Nearly 32% of them had primary education and 30% of them had secondary education. Most of the women, 62% were multiparous. Almost 32% belonged to Socio economic status Class III of BG Prasad scale and 30% belonged to Class IV. The distribution of socio demographic characteristics were found to be almost similar to the findings of other studies done elsewhere.[3,19-21]

In this study, 99.5% of the mothers had seen the ORS packet. Whereas, in a study conducted in Bangladesh by Taha et al, only 76.7% of the study subjects recognised the packet.[22] In this study, 94% of the mothers knew ORS will help manage diarrhoea, similar to a study by Jha et al, were 97.6% of the mothers had information about ORS and knew its usefulness in the management of dehydration due to diarrhoea.[23] In a study by Jain et al, 98% were aware about ORS. In a study by Raghu MB et al, 69% of them were aware of ORS, which was similar to the study done by Taha, 63% were aware of ORS.[18,24,22]

In this study, 90% of the mothers came to know about ORS through health care workers, which was similar to a study done by Mahor.[21] Whereas, in a study done by Sultana et al, 37% of them came to know about ORS through various sources other than media, friends, mothers and relatives.[19]

In this study, 82% of the mothers knew how to correctly prepare ORS. However, in a study by Sultana et al, 60% of them had adequate knowledge about the preparation of ORS, which was similar to studies done by Jha et al (50%), Taha et al (64.3%), Chaudhary et al (72%) and Mahor (39%).[19,21,22,23,25] In a study by Datta et al, 37.8% knew correctly how much water should be mixed.[20]

In this study, 86% discarded the prepared ORS within 24 hours similar to the study by Shaw et al, were 82% discarded the prepared ORS within 24 hours.[26]

In this study 92% of the mothers knew that breast feeding should be continued during ORS therapy similar to a study done by Taha, were 96.1% of the mothers knew they had to breast feed during ORS therapy.[22]

From this study it is evident that 72% have adequate knowledge, 92% have positive attitude and 94% have good practice. It is seen that, good practice among mothers outnumber the level of knowledge among them. In-spite of slightly lower level of knowledge about the use of ORS, mothers have a positive attitude and good practice. Since the level of good practice may vary any time, the sustainable level of good practice can be maintained only if the level of knowledge is strengthened. With adequate knowledge, the chances for the good practice level will also continue. This gap between the knowledge and practice can be filled by effective health education methods.

CONCLUSION

In this study, 72% of the mothers have adequate knowledge, 92% have positive attitude and 94% have good practice about the use of ORS. High levels of attitude and practice has been adapted even in slightly lower levels of necessary knowledge. The knowledge, attitude and practice of mothers towards use of ORS for the treatment of diarrhoea need a little more improvement. There is a need to sensitize the community on the use of ORS in diarrhoea management by using newer IEC strategies through efficient health education, increase women's educational status, improve sanitation and health care services. These are expected to decrease the diarrhoeal diseases morbidity and mortality in the long run.

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