

Original paper

Assessment of Mothers' Knowledge, Attitude, and Practice about Oral Rehydration Solution in Treatment of Diarrhea in Karbala.

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Abstract

Background. Diarrheal diseases still one of the major causes of preventable death in developing countries particularly among children under five years. The WHO estimates that there are more than 700 million episodes of diarrhea yearly among the children under five years of age in developing countries. Increased obtainable ORS has significantly reduced diarrheal-related deaths in children under five.

Aim: assessment the knowledge, attitude, and practice of the mothers about oral rehydration solution, and identify the source of information of mothers about the solution.

Methods: A cross sectional study was conducted among mothers attending Karbala teaching hospital for children and two primary health care in the period from 15th of January till 15th of August 2016, the sample size included 400 mothers of children who were under five years of age. Mothers randomly selected, and data collected using a designed questionnaire.

Results: In the current study, a total of 400 mothers were interviewed, aged 15 to 46 years with mean age of 30.21 ± 7.72 years. The ages of children ranged between 1 to 58 months with mean age of the youngest child was 22.2 ± 15.22 months. Most mothers received the information about ORS from medical staff by (90.8%). Regarding knowledge, attitude, and practice of mothers, 89.7% had awareness and heard about ORS, 79.7% of mothers used ORS, and 78% of them knew how to prepare it correctly. The vast majority of mothers (98.7%) continue feeding during attack of diarrhea, (72.3%) give home available fluids.

Conclusion: High percent of mothers had awareness about ORS and believe it is useful during attack of diarrhea. Most mothers had enough knowledge and practice about preparation of ORS. Majority of mothers had information about ORS and most of them received their information from medical staff.

Keywords: Knowledge, Attitude, Oral Rehydration Solution (ORS).

Introduction

Diarrheal diseases still one of the major causes of preventable death in developing countries particularly among children under five years⁽¹⁾.

The WHO estimates that there are more than 700 million episodes of diarrhea yearly among the children under five years of age in developing countries⁽²⁾, and also accounts for approximately 800.000 deaths annually in this age group, mostly in developing countries⁽³⁾.

Diarrhea is not fatal itself, the improper mother knowledge and their wrong approach towards its management leads to high degree of poor management and resultant severe dehydration⁽⁴⁾.

Dehydration is the leading cause of death from acute diarrhea which is preventable through Oral Rehydration Therapy (ORT)⁽⁵⁾.

In early diarrhea, the early and proper use of ORS, maintenance of hygiene and safe feeding reduce the severity, duration,

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hospitalization, and death of under five children with diarrhea⁽⁶⁾.

Increased obtainable ORS has significantly reduced diarrheal-related deaths in under five years children⁽⁷⁾, the use of oral rehydration solution was associated with a 25% reduction in unplanned follow-up visits for acute diarrhea in less than 5 years children⁽⁸⁾.

Adequate knowledge and use of ORS is an essential component of World Health Organization (WHO) diarrheal control program⁽⁹⁾.

Used Oral Rehydration Therapy (ORT) was highly recommended by WHO, it is simple, cheap and effective way to treat dehydration and decrease diarrhea mortality; and it is easily administered at home by the mothers at the beginning of diarrhea.⁽¹⁰⁾

Oral rehydration Solution (ORS), using a simple, inexpensive, solution containing glucose and electrolyte was highly recommended by the WHO, has decrease the deaths from dehydration as a result of diarrhea. Despite its efficacy, ORT has not been used widely in developed countries⁽¹¹⁾.

Oral rehydration solution (ORS) effective in preventing or treating dehydration result from diarrhea, it does not stop diarrhea but replaces the lost fluids and essential salts, Glucose in the ORS helps intestine absorb the fluid and salts more efficiently. ORS alone is an effective treatment in 90% of the diarrhea patients. It is on the WHO lists of essential⁽¹²⁾.

As ORS is an inexpensive remedy for diarrhea, its use largely depends on caretakers' knowledge and attitude toward it, this will help mothers take proper home measures to reduce the intensity of diarrhea in children, thereby decreasing work load on already weakened health system toward ORS use⁽¹³⁾.

Subjects and methods

A cross sectional study was conducted among 400 mothers of under five-year

children in Pediatric teaching hospital and two primary health care centers (ALabbasia ALgharbia and ALmulhak) in Karbala city during the period from 15th of January till 15th of August 2016.

The mothers of different age groups who had children under five years of age were selected randomly (one every three mothers). A convenient sample of 200 mothers were selected from the hospital (outpatient) and other 200 mothers were selected from the two primary health care centers (100 from each one), the mother of clinically tired child was excluded from the study.

The information was taken through specific questionnaire developed for this study and filled through direct interviews with the mothers. Specific questions were directed to the mothers of those children to assess their socio-demographic characteristics including the age, degree of education, residence, occupation and economic level of those mothers.

The questionnaire also included questions about knowledge, attitude, and practice of the mother about ORS by asking the mother if she heard about ORS, using ORS or not, preparation of ORS, time of giving ORS. Other questions included using home available fluids, source of information about ORS, maternal knowledge about causes and methods of prevention of diarrhea, continue feeding during diarrhea, stop ORS if

vomiting developed during diarrhea, ORS useful or not, acceptance the taste of ORS.

A pilot study was conducted over a period of two weeks on 18 patients to assess the feasibility of the questionnaire and to overcome any difficulties or related issues that may arise during data collection. Pilot study result in modification of some questions, the interview last 10 to 15 minutes. At the end of the interview there was explanation to the mother about importance of ORS and correct way for giving it.

Ethical approval on study conduction obtained from Iraqi Ministry of Health

Department of the Arab Board for Health Specialization and from Karbala Health Directorate. An oral consent was taken from each mother prior to the interview, with short explanation on the objectives of study.

Collected data were entered and analyzed, using statistical package for social science program (SPSS software version17).

Results

A total of 400 mothers were interviewed in the current study, the ages of them ranged between 15 to 46 years with mean age and SD of 30.21 ± 7.72 years. The ages of children ranged between 1 to 58 months with mean age and SD of the youngest child was 22.2 ± 15.22 months. The characteristics of the study population are shown in table (1) which shows that the majority (79.3%) of the sample lives in urban area, (95%) of the total population on study were housewives. (20.8%) were illiterate, (22%) write and read, (32%) had primary school education, (17%) had secondary school education, (8.2%) higher education. Regarding economic level (85.2%) had middle economic level. Majority of mothers had awareness or heard about ORS as shown in figure (1). Regarding using of ORS the figure below shows that most mothers give ORS to their children during attack of diarrhea. Figure (2). Table (2) shows that (89.9%) of mothers consider ORS is beneficial, also which shows that (72.3%) of mothers give home available fluids to their children and (98.7%) of them continue feeding during attack of diarrhea, (53.8%) said that the taste of ORS was not accepted by their children, and (29%) of mothers stop ORS when their children develop vomiting or continue diarrhea. Figure (3) shows that (78%) of mothers know how to prepare ORS correctly. Figure (4) demonstrates that only (9.7%) of mothers give ORS at correct time (after each bowel motion). Figure (5) shows that (39.8%) of mothers consider the infection is the cause of diarrhea, while (3.5%) of them

consider bad hygiene is the causes of diarrhea, (18%) of mothers don't know the cause of diarrhea. Regarding knowledge of mothers about danger signs of diarrhea that make the mother returns her child to the hospital immediately, figure (6) shows that (35.3%) of mothers consider increase frequency of diarrhea is the danger sign of diarrhea, (7.3%) said that dehydration is the danger sign of diarrhea, while (9%) express no knowledge about danger signs of diarrhea. Figure (7) explains maternal knowledge about methods of prevention of diarrhea, it shows that (52%) of mothers think that diarrhea can be prevented by good hygiene, while (37.2%) don't know any method of prevention, the remaining consider that diarrhea can be prevented by clean water and clean food. Table (3) shows that there was no significant association between educational levels of mothers and continuous feeding during attack of diarrhea. Although (84.4%) of mothers of higher educated level used ORS but there was no significant association educational level and using of ORS (p value =0.882) as shown in table (4). There is significant association between source of mothers' information about ORS and using of ORS, table (5) shows that from those mothers used ORS high percent took their information from the medical staff (92.7%), while (1.7%) took the information from the media.

Discussion

The study conducted on 400 mothers, educational level showed that 20.8% of mothers were illiterate; this percent is lower than that of urban slums of Bengaluru in India which was 75.7%⁽¹⁵⁾.

Majority of mothers (89.7%) heard about ORS, similar to the study conducted in Integrated Management of Childhood Illness (IMCI) clinic of a large community health center in South of Africa which was (89.4%)⁽¹⁶⁾, but higher than the result of urban slums of Bengaluru which was (47%)⁽¹⁵⁾, these reflect the good knowledge of our

society mothers about oral rehydration solution.

Table 1. Distribution of study population according to sociodemographic characteristics.

Characteristic		Number (N)	Percent
		400	100%
Residence	Urban	317	79.3
	Rural	83	20.7
Occupation	Employee	20	5
	Housewife	380	95
Education	Illiterate	83	20.8
	Read and write	88	22
	Primary school	128	32
	Secondary school	68	17
	Higher	33	8.2
Economic level	Low	53	13.3
	Middle	341	85.2
	Good	6	1.5

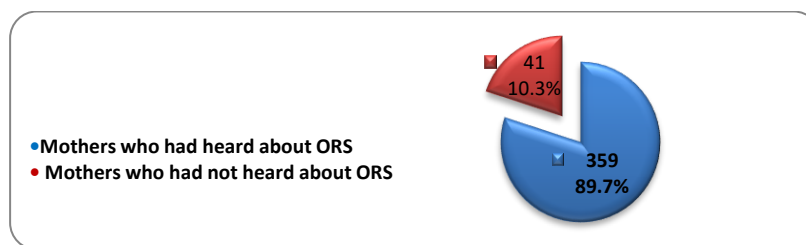


Figure 1. Hearing of mothers about ORS

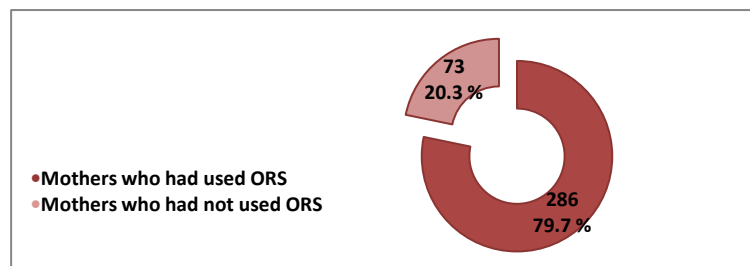


Figure 2. Using of ORS by mothers during attack of diarrhea

Table 2. Mothers' response about ORS

	Yes No. /%	No No. / %	Total
Benefit of ORS	257 89.9%	29 10.1%	286 100%
Using home available fluids during attack of diarrhea	289 72.3%	111 27.7%	400 100%
Continue feeding during diarrhea	395 98.7%	5 1.3%	400 100%
Acceptance of taste of ORS	132 46.2%	154 53.8%	286 100%
Stop ORS if vomiting develops or continue diarrhea	83 29%	203 71%	286 100%

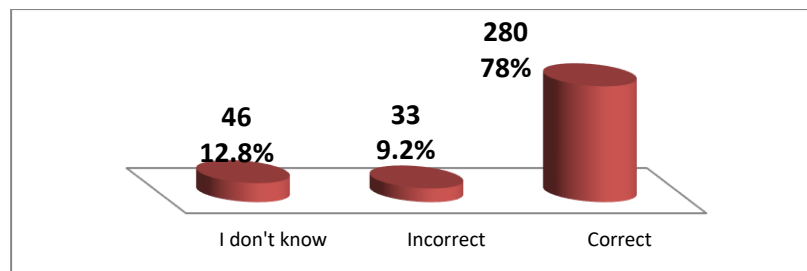


Figure 3. Knowledge of mothers about preparation of ORS

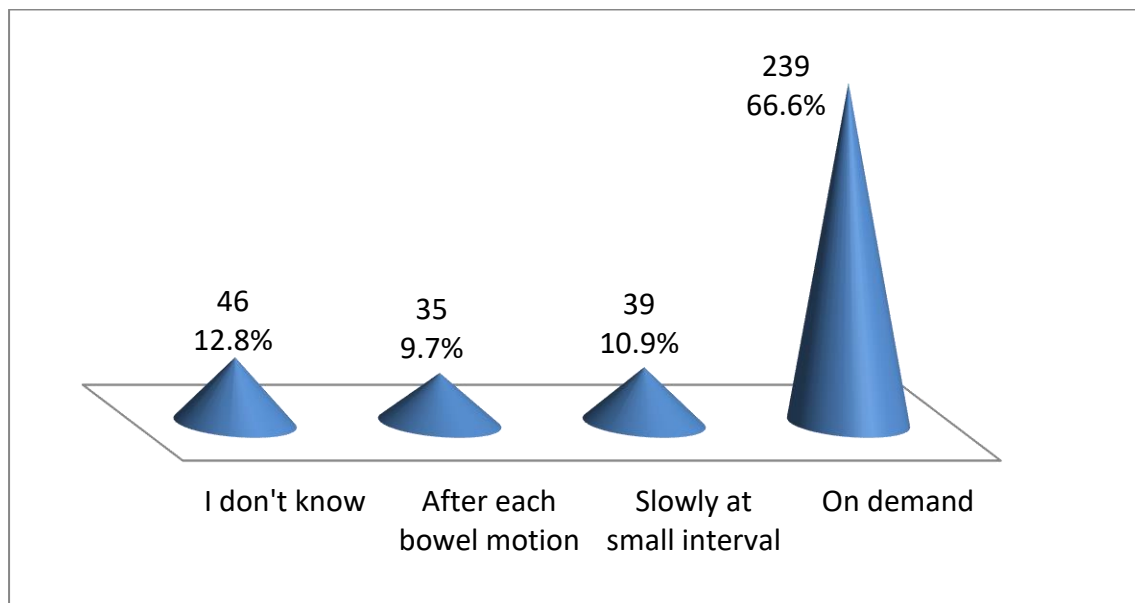


Figure 4. Knowledge of mothers about time of giving ORS

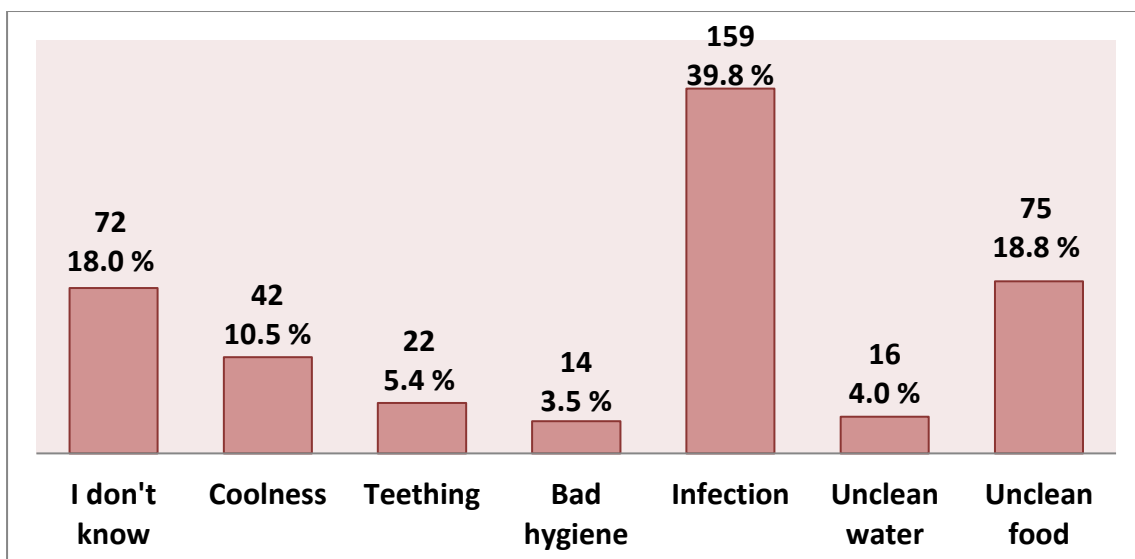


Figure 5. Knowledge of mothers about causes of diarrhea

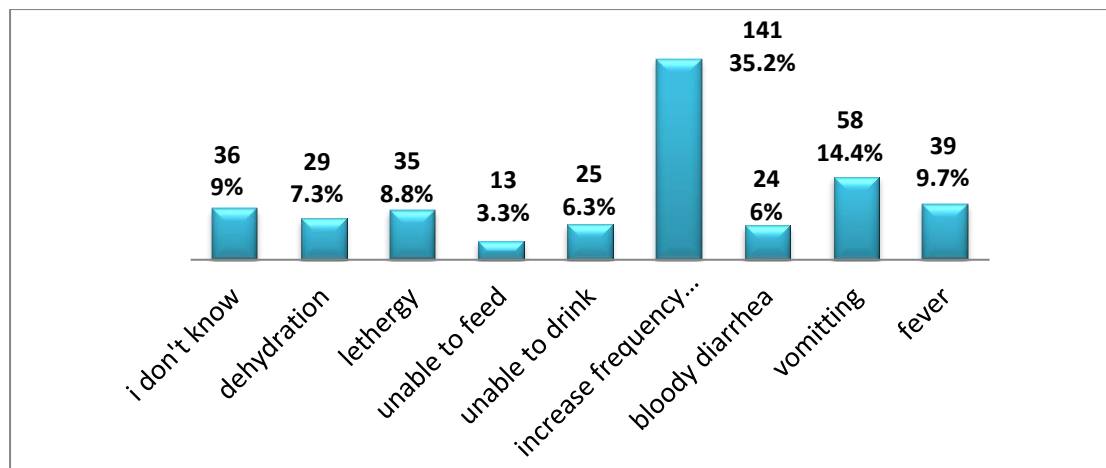


Figure 6. Knowledge of mothers about danger signs of diarrhea (When to return the child to hospital immediately).

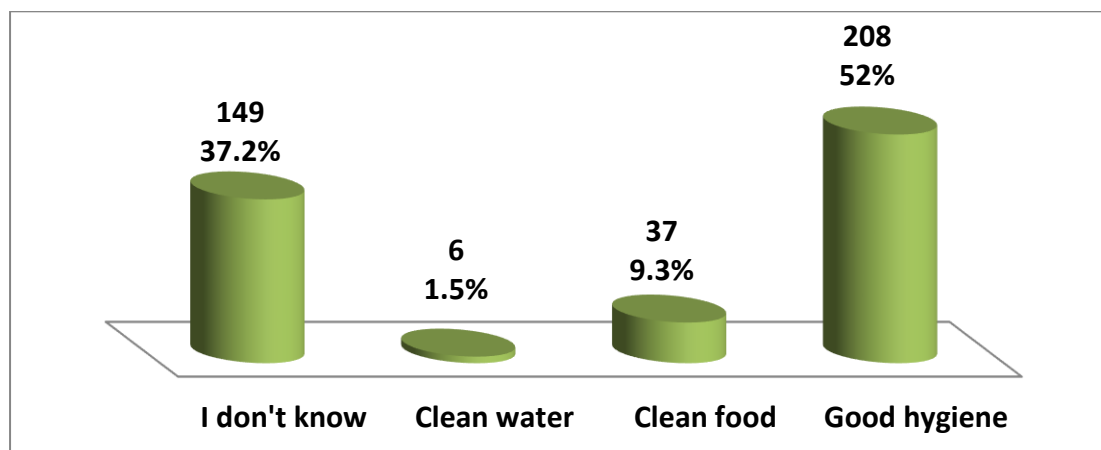


Figure 7. Knowledge of mothers about methods of prevention of diarrhea

Table 3. Association between educational level of the mothers and Continue feeding during diarrhea

		Continue feeding during diarrhea		Total
		Yes	No	
Education level of the mothers	Illiterate	82	1	83
		98.8%	1.2%	100.0%
	Write & read	88	0	88
		100.0%	.0%	100.0%
	Primary	126	2	128
		98.4%	1.6%	100.0%
	Secondary	66	2	68
		97.1%	2.9%	100.0%
Higher	33	0	33	
	100.0%	.0%	100.0%	
Total		395	5	400
		98.7%	1.3%	100.0%

$\chi^2=3.210$

P value=0.523

Table 4. Association between educational level of the mothers and using of ORS

Association between educational level of the mothers and using of ORS				
		Using of ORS		Total
		Yes	No	
Education level of the mothers	Illiterate	55	17	72
		76.4%	23.6%	100.0%
	Write& read	59	15	74
		79.7%	20.3%	100.0%
	Primary	95	22	117
		81.2%	18.8%	100.0%
	Secondary	50	14	64
		78.1%	21.9%	100.0%
Higher	27	5	32	
	84.4%	15.6%	100.0%	
Total		286	73	359
		79.7%	20.3%	100.0%

$$\chi^2=1.179$$

$$P \text{ value}=0.882$$

Table 5. Association between source of mothers' information about ORS and using of ORS

		Source of information about ORS				Total
		Medical staff	Media	Family	Neighbors	
Using of ORS	Yes	265	5	10	6	286
		92.7%	1.7%	3.5%	2.1%	100.0%
	No	19	2	5	1	27
		70.4%	7.4%	18.5%	3.7%	100.0%
Total		284	7	15	7	313
		90.8%	2.2%	4.8%	2.2%	100.0%

$$\chi^2=16.785$$

$$P \text{ value}=0.001$$

From those mothers who had heard about ORS (79.7%) were using oral rehydration solution, which is much higher than the study of Children's Hospital in Tabriz \ Northwest of Iran which showed that only (19.35%) were using ORS ⁽¹⁷⁾, and also higher than the study in Ganga Ram Pediatric Hospital in Lahore\Pakistan which was (49.6%) ⁽¹⁸⁾. This difference could be due to the mothers in present study have more awareness about the important role of ORS in treatment of diarrhea.

Regarding the preparation of ORS (78%) of mothers know how to prepare ORS correctly, this result is higher than the study of Baghdad which was (68%)⁽¹⁴⁾, and also

higher than the study of South of Africa which was (33.7%)⁽¹⁶⁾. The reason of this difference may be due to difference sample size.

More than half of mothers (66.6%) answered that ORS is giving on demand, a study in teaching hospital in southern Rajasthan (India) in showed that (40%) of mothers give ORS on demand ⁽¹⁹⁾.

In this study, infection was considered as a cause of diarrhea by (39.8%) mothers while the results that had been found in a study in teaching hospital in Nigeria showed that the infection was noted by (25.6%) as a causes of diarrhea⁽²⁰⁾.

In this study (14.4%) of mothers consider the vomiting is the danger sign of diarrhea, in the urban population of hilly region of Uttarakhand (North of India) (8.8%) of mothers consider the vomiting is the danger sign of diarrhea ⁽²¹⁾.

About half number of mothers (52%) said that the diarrhea can be prevented by good hygiene which is higher than the study of an Institute Urban Health Centre urban area of Puducherry in India which was 19.6% ⁽²²⁾. Majority of mothers (98.7%) continue feeding during attack of diarrhea which is higher than Baghdad study (90.9%)⁽¹⁴⁾, and also higher than the study in South of Africa (72.7%).⁽¹⁶⁾ These findings showed the proper practicing habits of mothers about the importance of breastfeeding during diarrheal disease.

Most of higher educated mothers give ORS (84.4%), know how to prepare it correctly (84.3%), and (100%) continue feeding during attack of diarrhea, in Baghdad study high percent of higher educated mothers (92.9%) give and know how to prepare ORS correctly, and (96.4%) continue feeding ⁽²³⁾. Health education should focus on the benefit, early initiation, and the preparation of ORT and the causes of diarrhea.

From those mothers who used ORS (92.7%) were taking their information from medical staff, (89.5%) prepare ORS correctly, whereas in the study of Sulaimania it was (73.2%), (58.5%) respectively ⁽²⁴⁾. This may clarify the presented efforts by medical staff in Karbala City in encouragement the mothers on using ORS.

Conclusions

High percent of mothers had awareness about ORS and believe it is useful during attack of diarrhea, and most of them received their information from medical staff.

Most mothers had enough knowledge and practice about preparation of ORS (regardless of the level of education).

Recommendations

These findings highlight the need for increase awareness about ORS, and encouragement mothers on more use of ORS through convening colloquiums signify its important role in management of diarrhea, and correction the wrong information about it.

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