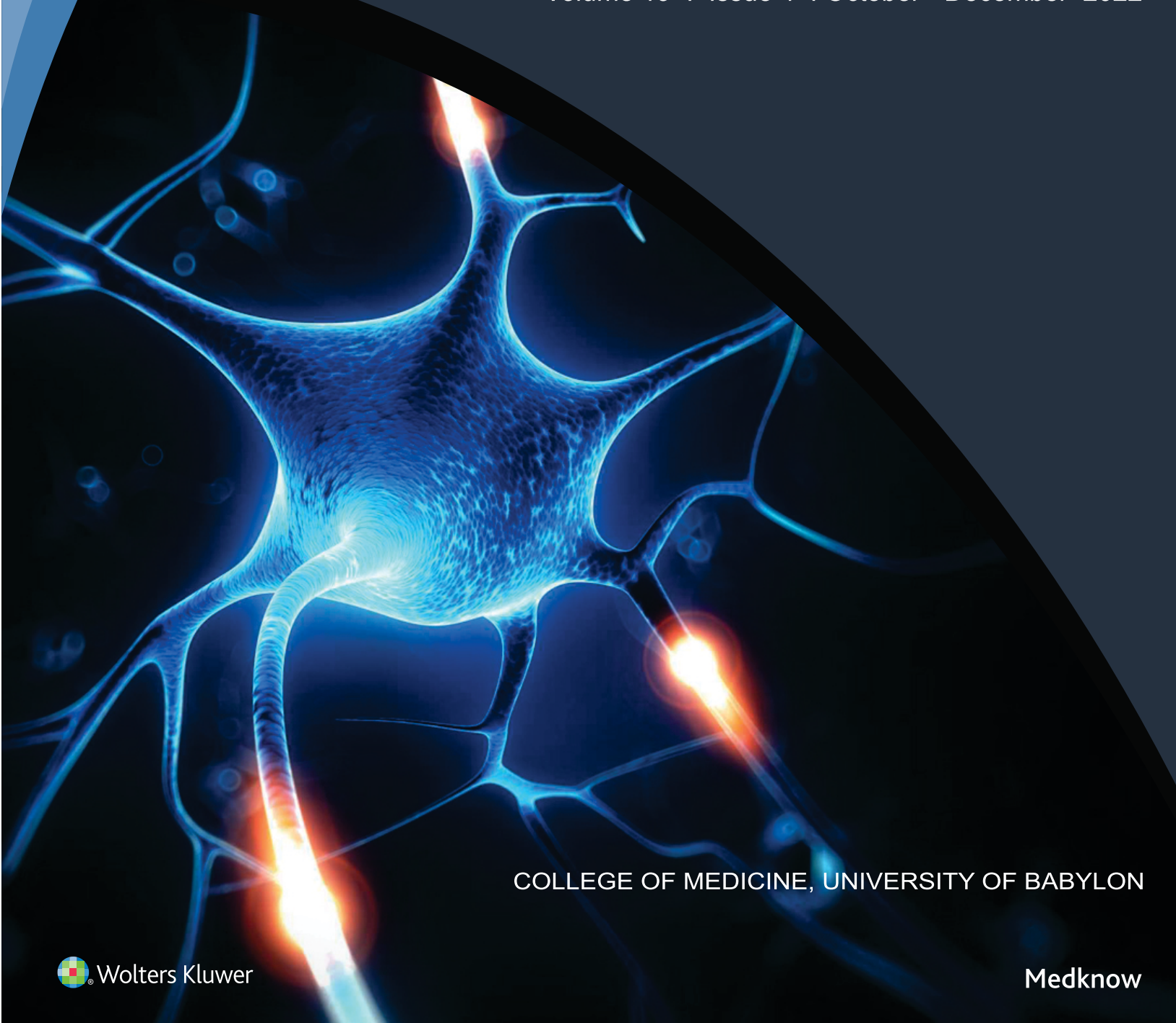


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Mother's Perception Toward Childhood Diarrhea: A Cross-sectional Study

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Abstract

Background: Diarrheal disease is considered as the second most common cause of death among under-5 children globally. **Objective:** The aim of this article is to determine mothers' knowledge and practices regarding diarrhea causes and principles of management. **Materials and Methods:** A cross-sectional study was conducted on 200 mothers of under-5 children who attended the pediatric outpatient department for diarrhea. The correlation between mothers' age and level of education with their knowledge regarding signs of dehydration and their awareness of the use of oral rehydration solution (ORS) and management of diarrhea was done. The χ^2 test was used, and a *P*-value of 0.05 was considered significant. **Results:** Nearly half (45%) of the mothers believed intestinal infection caused that diarrhea, whereas (37.5%) blamed the teething process. Mothers rated the severity of diarrhea as increased frequency (70%), change in consistency (62.5%), foul smell stool (13.5%), and change in stool color (7%). The study showed that 45% of the mothers did not know any sign of dehydration and indicated poor mothers' adherence to ORS use (4%), despite their awareness of ORS (66.5%). The study showed a significant correlation between mothers' education and initial management of diarrhea at home (*P* < 0.05), but not with their awareness of ORS or their knowledge about signs of dehydration. There was no significant relation between mothers' age and their awareness of ORS, their knowledge regarding the signs of dehydration, and their initial action to manage diarrhea at home. **Conclusion:** Most respondents lack satisfactory knowledge of diarrheal diseases. Therefore, mothers need health education to create a better attitude toward the prevention and management of diarrheal diseases.

Keywords: Knowledge, management, perception, respondents

INTRODUCTION

According to the World Health Organization (WHO), diarrhea is defined as the passage of three or more loose or watery stools per day or stools more frequent than normal for a child.^[1] Diarrhea is considered as the second most common cause of death among under 5 children globally.^[2] Each year diarrheal disease kills about 7,600,000 children under five years, and 1.7 billion cases are reported every year. Deaths are mainly due to dehydration, which can be prevented by treatment with home-based oral fluids.^[3] Mothers are the main caregivers at home, and they took the responsibility for decision about the overall management of the disease. Therefore, mothers' knowledge and attitude about diarrheal diseases are significant in taking appropriate timely actions.^[4] Poor maternal perception of diarrhea

and delayed care can lead to morbidity and mortality.^[5] Different factors may affect the knowledge of mothers about management of childhood diarrhea, such as the level of education, previous experience of managing the disease, occupation, personal attitude, and behavior.^[6] Many studies on diarrhea have shown that correct and prompt care are essential to reduce the negative consequences. Simple, immediate intervention by mothers or caregivers is the key to save the children's

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lives.^[7,8] Hence, it can prevent most diarrhea-related emergencies in children under 5 years of age.^[8]

The study was performed to detect mothers' knowledge and associated practices regarding home management of diarrhea in Basra community, south of Iraq. The findings of the study can be used to set up a society-specific education program to deal with under-5 childhood diarrhea.

MATERIALS AND METHODS

Study design

The study was carried out from January 2021 to April 2021.

Sample size

The study included 200 mothers (18–42 years) of under-5 children who attended the pediatric outpatient clinic in Al-Mawane Teaching Hospital for diarrhea during the study period and who showed a willingness to participate in the study.

Exclusion criteria

Mothers who were not willing to take part in this study are excluded.

Data collection

Data were collected using an interview-based questionnaire that included information about mothers' age, occupation level of education, family size, child's age, gender, order and feeding, mother's perception of the cause of diarrhea, her knowledge about signs of dehydration (like sunken eyes, loss of skin turgor, dry lips, and excessive thirst^[9]), correct preparation of oral rehydration solution (ORS) and management given at home. The data have been presented in numbers and percentages. The correlation between mothers' age and level of education with their knowledge regarding signs of dehydration and their awareness to the use of ORS and management of diarrhea was done. The χ^2 test was used, and a *P*-value of 0.05 is considered significant.

Ethical approval

The study was conducted according to the ethical principles that have their origin in the Declaration of Helsinki. It was performed with patients' verbal and analytical approval before taking the information. The study protocol and the subject information and consent form were reviewed and approved by a local Ethics Committee according to the document number 030411-037-2022 dated 3/4/2022.

RESULTS

Most respondents 116 (58%) aged 25–29 years (mean: 28.63). Seventy (35%) were younger than 24 years (21.18), and 14 (7%) were older than 35 years (39.42). Respondents

were predominantly [198 (98%)] housewives of different educational backgrounds. More than half of the attending children were infants (0–12 months), with a male-to-female ratio of 1.5. Most children (68.5%) belonged to large families (more than five members), and 37 (18.5%) were first-born babies and most of those younger than 2 years were formula-fed. The demographic data of participants are presented in Table 1. Nearly half (*n* = 90; 45%) of the mothers believed that intestinal infection caused diarrhea, whereas 75 (37.5%) blamed the teething process, other 18 mothers (9%) related diarrhea to common cold, and few (13; 6.5%) related that to ingestion of contaminated food or drink or eating with dirty hands (4; 2%) [Figure 1].

In this study, mothers rated the severity of diarrhea as: increased frequency 140 (70%), change in consistency (fluid or watery) 125 (62.5%), foul smell stool 27 (13.5%), change in color (green) 14 (7%), and interfere with child's activity 2 (1%) [Table 2].

Signs of dehydration recognized by mothers were sunken eyes 49 (24.5%), dry mouth 16 (8%), excessive thirst 18 (9%), tearless eyes 4(2%), and loss of skin turgor 58 (29%),

Table 1: Sociodemographic characteristics of the study population

	Number	Percent
Mother's age (year)		
<24	70	35
25–35	116	58
>35	14	7
Mother's education		
None	66	33
Primary	68	34
Secondary	57	28.5
College	9	4.5
Mother's occupation		
Housewife	196	98
Employee	4	2
Child's age (years)		
0–1	117	58.5
1–5	83	41.5
Child's sex		
Male	120	60
Female	80	40
Child's order		
First	37	18.5
Second and above	163	81.5
Child's feeding		
Breast milk	51	25.5
Formula	120	60
Mixed	27	13.5
Family food	2	1
Family size		
<5	63	31.5
>5	137	68.5

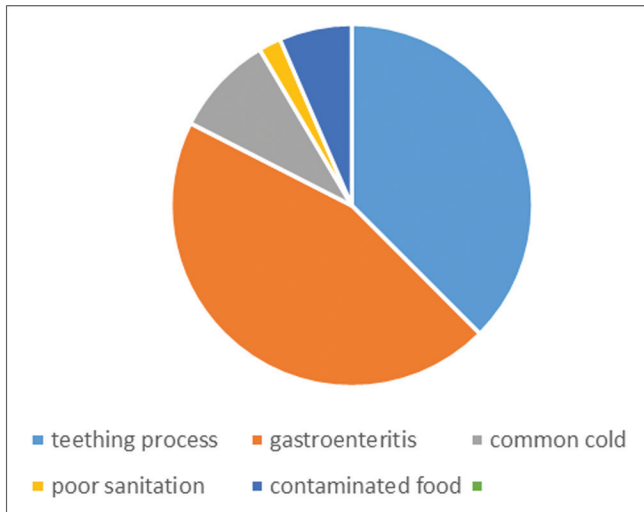


Figure 1: Mother's perception toward the cause of diarrhea

Variable	Number	Percent
Increased frequency	140	70
Change in color of stool	14	7
Consistency (loose, watery)	125	62.5
Smell	27	13.5
Interfere with daily activity	2	1

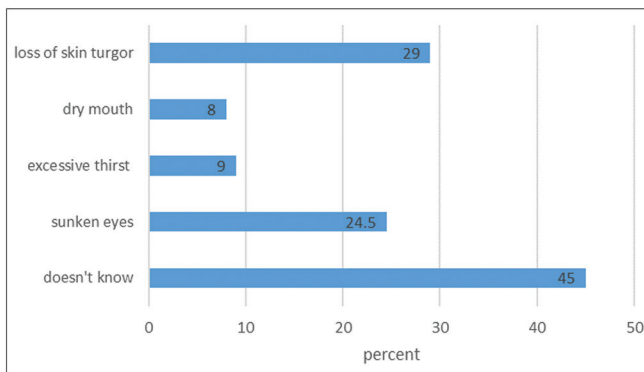


Figure 2: Mothers' knowledge regarding signs of dehydration

whereas 90 (45%) do not know any signs of dehydration [Figure 2].

Most mothers 133 (66.5%) were aware of oral rehydration solution (ORS), having information about composition 110 (82.7%), correct preparation 125 (93.98%), using suitable water for preparation 120 (90.22%), and 115 (86.46%) know to discard the solution after 24 h; 134 (67%) agreed that ORS is effective to treat diarrhea [Table 3]. However, only 8 mothers (4%) utilized ORS at home. Table 4 presents the home-based management of diarrhea. Most mothers 113 (66.5%) claimed that they refer their children immediately to physicians, other 67 (33.5%) gave medications like antibiotics and antidiarrheal, whereas 35

Variable	Number	Percent
No information about ORS	67	33.5
Knows ORS	133	66.5
Composition		
Knows	110	82.70
Does not know	23	17.30
Preparation		
Correct	125	93.98
Incorrect	8	6.02
Use suitable water for preparation	120	90.22
Discard after 24 h	115	86.46
Use after 24 h	18	13.54
Effective in the treatment of diarrhea	134	67
Not effective	66	33

Variable	Number	Percent
ORS	8	4
Ordinary food	4	2
Stop feeding	0	0
Homemade solutions	35	17.5
Diluted milk	2	1
Medication	67	33.5
Refer to physician	113	66.5

mothers (17.5%) used homemade solutions, and only a few mothers continue on ordinary food (4; 2%) or used to dilute milk (2; 1%). A simple correlation was performed between mothers' level of education and their awareness to ORS, their knowledge about signs of dehydration, and their practice in home management of diarrhea [Table 5]. Another correlation was between mothers' age and their awareness to ORS, their knowledge about signs of dehydration, and their practice in home management of diarrhea [Table 6].

DISCUSSION

As mothers are primary caregivers for children, this study was planned to assess mothers' knowledge about childhood diarrhea and their practices in the home-based treatment of diarrhea in Basra city. Based on the finding, nearly half of the participants believed that diarrhea is caused by intestinal infection, and others (37.5%) blamed the teething process. In a previous study in Basra,^[10] 137 (68.5%) participating mothers perceived that teething process is the cause of diarrhea. Believing that teething causes severe illness may result in high morbidity among children.^[10] Few mothers (13; 6.5%) indicated eating or drinking contaminated food or water or eating with dirty hands (4; 2%) as causes of diarrhea. Osonwa Kalu *et al.*^[11] stated in a similar study that eating contaminated food (35.5%) and drinking contaminated water (25.0%) were

Table 5: Relation between mothers' education and awareness of ORS, knowledge about signs of dehydration, and home management of diarrhea

Level of education	ORS awareness Yes/no/total	P-value	Signs of dehydration Yes/no/total	P-value	Home management of diarrhea Yes/no/total	P-value
None	38/28/66	0.0759	33/33/66	0.2030	19/47/66	0.0090
Primary	51/17/68		42/26/68		39/29/68	
Secondary	36/21/57		28/29/57		26/31/57	
College	8/1/9		7/2/9		3/6/9	

Table 6: Relation between mothers' age and their awareness of ORS, knowledge about signs of dehydration, and home management of diarrhea

Mean age (years)	ORS awareness Yes/no/total	P-value	Signs of dehydration Yes/no/total	P-value	Home management of diarrhea Yes/no/total	P-value
21.18	45/25/70	0.2830	36/34/70	0.4046	25/45/70	0.1993
28.63	76/40/116		68/48/116		54/62/116	
39.42	12/2/14		6/8/14		8/6/14	

mostly indicated by mothers as reasons for diarrhea. Therefore, food safety should be the main concern of everyone.^[12]

The lack of knowledge about diarrhea and its management leads to a high degree of severe dehydration and death.^[13] The magnitude of dehydration in children, as stated by the WHO, is alarming. It is a treatable disease and can be managed easily if it is early recognized.^[14]

In the current study, about half of the participating mothers did not know about signs of dehydration. Poor recognition of signs of dehydration among mothers is observed globally.^[3,4,6,15,16] ORS is a simple solution to avoid complex problems caused by diarrheal diseases. It can greatly reduce child death due to diarrhea. About 2/3 of the respondents had ORS awareness, and this finding was less than that observed by Ambike *et al.* (83.6%).^[17] No significant relation was found between mothers' level of education and ORS awareness ($P > 0.05$), a result different from that reported by Duggal *et al.*,^[18] in which maternal awareness was significantly associated with maternal education. These differences may be attributed to the small-sized sample obtained from a single center.

Most respondents had correct information about the preparation of ORS. However, about one-third claimed that ORS is not effective in the management of diarrhea and only 8 (4%) administered ORS at home. This is much lower than that stated by Dhingra *et al.*,^[9] in which 69.3% of the respondents used ORS for rehydration at home. This may be related to the difference in the level of education of participants of the two studies.

The study shed light on mothers' practice in the management of diarrhea at home; the majority reported that they immediately sought medical treatment, referring

the child to a pediatrician, others give self-medication like antibiotics and antidiarrheal, a result consistent with a similar study conducted in Karachi.^[3] Self-medication may result in antibiotic selection errors, inadequate dosages, or excessive therapy.^[19-24] Few participants (17.5%) used homemade solution. In a similar study,^[13] most respondents (61.4%) disagreed to treat diarrheal disease at home. Only two mothers wrongly gave diluted milk. The study showed a significant correlation between mothers' education and initial management of diarrhea at home ($P < 0.05$), but not with their awareness of ORS or their knowledge about signs of dehydration. There was no significant relation between mothers' age and their awareness of ORS, their knowledge regarding signs of dehydration, and their initial action to manage diarrhea.

The work was limited by the small-sized sample; it can be used as a baseline for other studies.

CONCLUSION

The result of this study indicated poor mothers' adherence to ORS use at home and determined that most respondents lack satisfactory knowledge toward childhood diarrhea. We recommend that mothers' knowledge should be improved and more efforts done to increase their competence to deal with diarrhea at home.

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Conflicts of interest

There are no conflicts of interest.

Authors' contribution

AAK: data collection, literature search, data analysis, manuscript review. MKY: study concept and design, literature search, data and statistical analysis, manuscript preparation and editing, manuscript review, manuscript submission, corresponding author. HAM: data collection, literature search, manuscript review. The article was read and approved by all the authors.

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