Egyptian Journal of Community Medicine, 2024;42(3):193 -201

Egyptian Journal of Community Medicine

Mothers' Knowledge and Behavior Regarding Home Management of Diarrhea among Children under Five Years - Interventional Study

Hanaa S. Said [1,2*], Lamiaa L. Elhawy [3], Eman M. Abd El-Sattar [1]

1 Department of family medicine, faculty of medicine, Zagazig University, Egypt.
2 Internal medicine department, family medicine, Faculty of medicine, Mutah university, Jordan.
3 Department of Public Health and Community Medicine, faculty of medicine, Zagazig University, Egypt.

Submission Date: 00-00-2021

Revision Date: 00-00-2022

Acceptance Date: 00-00-2022

Key Words: Mothers, children, Diarrhea, Egypt, Health education, Knowledge, Behavior.

ABSTRACT

Background: Egypt had an extended program to eradicate childhood diarrhoea and its complications. According to the Egyptian family health survey-2021, the prevalence of diarrhoea among children under five years is 12% with higher prevalence in mothers with lower educational level. **Objective:** To evaluate the effect of health education and determine the influencing factors on mothers' knowledge and behavior regarding managing diarrhoea. **Method:** pretest-post-test intervention study was carried out in the paediatric clinic on 117 mothers who had children under five years. An interviewer-administered questionnaire was used, composed of three parts (sociodemographic, knowledge assessment, and home management behavior parts). Post-test evaluation was carried out three months after health education. **Results:** There was a significant improvement pre- and post-test in adequate knowledge (40.5% and 89.2%, respectively) and good home management behavior (27% and 83.8%, respectively). Multivariate regression analysis showed that young age and lower educational levels were independent predictors of an inadequate total knowledge score. Young age (less than 25 years old), non-working, and being of medium or low social class were independent predictors of an inadequate total home management behavior for diarrheal disease. Relatives and social media were the main sources of mothers' information (87% and 65%, respectively). **Conclusions:** Health education was associated with a significant improvement in the mothers' total knowledge and home management behavior, which will positively impact child's health. Being a simple costless source of information, social media can play a major role in educating mothers about home management of childhood diarrhoea.

INTRODUCTION

Diarrhea is a common and potentially life-threatening condition among children under the age of five years, particularly in low- and middle-income countries. Effective home management of diarrhea is crucial for preventing severe dehydration and associated morbidity and mortality in this vulnerable population.[1] Diarrhoea is defined by the WHO as the passing of three or more fluid-filled or loose stools per day, as well as any stools that mothers deem abnormal or additional frequency of stools for a kid. It is preventable and treatable.[2] Worldwide, viral infections are the main cause of most cases of acute infectious gastroenteritis. Infections with viral gastroenteritis may be to blame for more than 200,000 child mortality annually worldwide.[3] For children under five years, diarrhoea is the second most prevalent cause of mortality in Egypt.[4]

Even though acute diarrheal sickness usually resolves on its own, it can have serious side effects in young children. There are several reliable preventive measures for diarrhoea, making it a sickness that can be avoided as water, sanitation, and hygiene in addition to rotavirus vaccine, encouragement of early and exclusive breastfeeding, and vitamin A supplementation.[5] Since diarrhoea

Corresponding Author: Hanaa S. Said, Department of Family Medicine, Faculty of Medicine, Zagazig University, Egypt
Email: HSAlsayed@medicine.zu.edu.eg, drhanasalah@yahoo.com.

typically begins at home and remains there after being treated at a medical facility, home treatment of diarrhoea is crucial. The most cost-effective and efficient technique to treat diarrheal dehydration is with an oral rehydration solution (ORS).[6]

Mothers, who serve as the children's primary carers, are crucial to reducing the morbidity and mortality brought on by diarrheal disorders.[7] Poor home management of diarrhoea is a result of mothers' limited understanding, which also prevents them from acting in a suitable and timely manner. This raises the need for health education as it has a great role in improving home management of diarrhoea and consequently the child survival.[8] Given the complexity of the factors influencing mothers' knowledge and behavior regarding home management of diarrhea among children under five years, the current study aims to evaluate the effect of health education and determine the influencing factors on mothers' knowledge and behavior regarding managing diarrhea.

METHODS

An intervention study (pretest- posttest study) was carried out in the outpatient pediatric clinic, Zagazig University hospitals, Egypt from first of June 2023 till end of December 2023.

Mothers who had children under five years were included in the study while mothers who had children over five or severely ill babies were excluded from the study.

Assuming that the frequency of mothers stopped feeding was (30%) versus (7%) before and after intervention[8], at power 80% and 95% CI, the estimated sample was (106) mothers, with 10% drop out, sample was (117) mothers, using online Open Epi sample calculator. Systematic random sampling technique (We select the fifth mother who fulfills the inclusion criteria) was adopted for selection of mothers who attended outpatient pediatric clinic, Zagazig University hospitals.

Study tools: The instrument for data collection was an interviewer-administered questionnaire which was consisted of three parts. *First part:* Socioeconomic level as was assessed by Fahmy et al.[9] *Second part:* knowledge assessment part: The knowledge part asked about definition of diarrhea, causes (hygiene and food poisoning), the causative organisms, signs and symptoms and knowledge about ORS.[10] *Third part:* Mothers home management behavior which includes**:** *Home care* asked about the fluids used during treatment, breast feeding during diarrhea, practice of feeding the child, washing child hands, and washing the used utensils.[10] ORS *use*, it was adapted from the study

Table 1: Sociodemographic characteristics of studied sample (N=117)

	No. (%)
Age (years)	
<25	61 (52.1)
25-35	44 (37.6)
>35	12 (10.5)
Education	
Illiterate	0 (0.0)
Read and write &Primary&	29 (24.8)
Secondary educated	67 (57.3)
University& post educated	21 (17.9)
Occupation	
Non worker	84 (71.8)
Worker	33 (28.2)
Marital status	
Married	108 (92.3)
Widow or divorced	9 (7.7)
Social class	
Low	87 (74.4)
Medium	12 (10.3)
High	18 (15.4)
No of all children	
One	47 (40.2)
More than one	70 (59.8)
No of children less than 5 years:	
One	103 (88.0)
More than one	14 (12.0)

of Workie et al. [11] In this part mothers were asked about how ORS was made and how often should it be given and how long it lasts. *Preventive measures* of diarrhea among children were adapted from the study of Momoh et al. [2] This part was about the preventive measures as duration of exclusive breast feeding, hand washing practice, and the place of disposal of child wastes.

Validation of study tool: The adapted questionnaire was translated into Arabic language and tested by a pilot test for clarity of questions and applicability. The content and face validity of the questionnaire were tested by panel of experts of community and podiatric medicine departments. the reliability was tested by (Cronbach's alpha coefficient (0.879).

Scoring system: The total knowledge score contains 15 items elicited responses concerning knowledge of mothers on diarrhoea. Each item is scored on as correct and incorrect where correct responses were given the score of 1 and 0 for the incorrect response. Behavioural score was expressed

Table 2: Comparison between studied group before and after intervention regarding Total knowledge and management Behavior of diarrheal disease (N=111)*

	Pre-intervention No (%)	Post-intervention No (%)	# P value
Total knowledge score			
Adequate knowledge	45 (40.5)	99 (89.2)	<0.001**
Inadequate knowledge	66 (59.5)	12 (10.2)	
Management of diarrheal disease:			
1- Mothers' practices during diarrhea:			
Good	33 (29.7)	105 (94.6)	<0.001**
Poor	78 (70.3)	6 (5.4)	
2- Correct use of oral rehydration solution			
Adequate	47 (42.3)	97 (87.4)	<0.001**
Inadequate	64 (57.7)	14(12.6)	
3- Preventive measurements score:			
Good	21 (18.9%)	98 (88.3)	<0.001**
Poor	90 (81.1%)	13 (11.7)	
4- Total home management behavior score:			
Good	30 (27.0)	93 (83.8)	<0.001**
Poor	81 (73.0)	18 (16.2)	

** Dropouts were 6 (5.13%) mothers # Mc Namar test, **p≤0.001 is statistically highly significant*

as three components. Regarding knowledge, mothers who respond to 60% or more of the questions correctly were assigned as having "good knowledge". The Practice was considered good when achieving score 60% or more.[12] Mothers home care behavior: contained 19 items concerning practices of mothers on home management of diarrhea. Each item is scored using (agree and disagree) rating scale where the score of 0 or 1 was given to each item depending on the rate of agreement or disagreement. ORS use and prevention measures questions were scored as correct and incorrect where correct responses were given the score of 1 and 0 for the incorrect response. The total home management behavior score was obtained from the total of mothers practice, ORS practice and the preventive measures practice.

Study phases: The study is composed of three phases. *First phase*: it was the baseline assessment of mothers' knowledge and behavior. *Second phase:* was a health education intervention .it was done through four complementary sessions (two face-to-face and two online sessions through zoom meeting and WhatsApp group). The sessions contained all the needed information about diarrhea causes, preventive measures, and correct home management behavior. Each session took about 30 minutes using different tools like booklet, pictures, and PowerPoint presentation. It took about one month. *Third phase:* was post-intervention assessment after 3 months by using the same questionnaire to evaluate the effect of health education on those mothers.

Statistical analysis: Data analysis was performed using Statistical Package for the Social Sciences version 20 (SPSS-20). Depending on the type of data, the absolute frequencies of categorical variables were used to describe them, and the chi square test was used to compare them. Fisher's Exact Test was used when one or more of the expected cells were less than 5 . Chi square for trend test was utilized to compare ordinal data between two groups . McNemar's test was used to compare pre- and postintervention. Binary logistic regression was used to identify independent risk factors for total knowledge and behavior score of diarrheal disease and its management preintervention. P≤0.05 was used as the statistical significance level. If p≤0.001, a highly significant difference was evident.

RESULTS

The current study was conducted on 117 mothers attending pediatric outpatient clinic. Most of them were married, not working and of low social class. More than half of them were less than 25 years old, secondary educated and had more than one child and most of them 103 (88.0%) had only one child less than five years. (Table 1). Regarding adequate total knowledge score and good total home

Table 3: Relation between some sociodemographic characteristics of studied group and total knowledge score of diarrheal disease preintervention

	Total knowledge score preintervention (No=117)		COR (95% CI)	P value
	Inadequate (No=71)	Adequate (No=46)		
Age				
<25y (no= 61)	50 (82.0%)	11 (18.0%)	6.36 (1.67-23.83)	0.013 * $
25-35 (no = 44)	16 (36.4%)	28 (63.6%)	0.80 (0.22-2.94)	
>35 (no =12)	5 (41.7%)	7 (58.3%)	1	
Education				
Read and write &Primary (No=29)	27 (93.1%)	2 (6.9%)	57.38 (9.45-348.01)	<0.001 **$
Secondary educated (No=67)	40 (59.7%)	27 (40.3%)	6.30 (1.91-20.77)	
University& post educated. (No=21)	4 (19.0%)	17 (81.0%)	1	
Occupation				
Non worker (No=84)	54 (64.3%)	30 (35.7%)	1.69 (0.749-3.83)	0.203 #
Worker (No=33)	17 (51.5%)	16 (48.5%)	1	
Marital status				
Married (No=108)	64 (59.3%)	44 (40.7)	1	0.479 F
Widow or divorced (No=9)	7 (77.8%)	2 (22.2%)	2.41(0.43-24.64.13)	
Social class				
Low (No=87)	65 (74.7%)	22 (25.3%)	14.77 (3.90-55.89)	
Medium (No=12)	3 (25.0%)	9 (75.0%)	1.67 (0.275-10.09)	0.173 $
High (No=18)	3 (16.7%)	15 (83.3%)	1	
No of all children				
One (No=47)	36 (76.6%)	11(23.4%)	3.27 (1.44-7.45)	0.004 *#
More than one (No=70)	35 (50.0%)	35 (50.0%)	1	
No of children less than 5 years:				
One (No=103)	69 (67.0%)	34 (33.0%)	12.18 (2.58-57.5)	<0.001 **#
More than one(No=14)	2 (14.3%)	12 (85.7%)	1	

*COR, crude odds ratio; #, Chi square test; $, Chi square for trend; F, Fisher Exact test *p<0.05 is statistically significant **p≤0.001 is statistically highly significant*

Table (4) Multivariate regression analysis of predictors of Inadequate Total knowledge score preintervention

Predictors	β	P	AOR	95% C.I.	
				Lower	Upper
Age (25-35y vs >35)	-14.498	0.999	67.3	0.0	9514.0
Age (<25y vs >35)	5.011	0.002*	150.0	5.9	3742.0
Education (Secondary Educated vs university or higher)	4.344	<0.001**	77.0	6.2	963.7
Education (Read and Write & Primary vs university or higher)	9.428	<0.001**	124.3	37.8	4080.5
Number of all children (have one child)	12.847	0.999	38.0	0.0	6783.8
Number of children under-five (have one child)	0.847	0.510	2.3	0.2	29.0

*AOR, adjusted odds ratio; CI, confidence interval. *p<0.05 is statistically significant **p≤0.001 is statistically highly significant*

management behavior of diarrheal disease among studied mothers preintervention, they were 46 (39.3%) and 29 (24.8%) respectively (Table 3 & 5). Main sources of maternal knowledge and behavior about diarrheal disease and its management were from their relatives and social media (85% & 67%) respectively (Figure 1). There was statistically significant improvement in total knowledge score about diarrheal disease, practice of mothers during diarrhea, using ORS, preventive measurements score, and total home management

Table 5: Relation between some sociodemographic characteristics of studied group and Total home Management Behavior of diarrheal disease preintervention

	Total overall behavior score preintervention (no=114)		COR (95% CI)	P value
	Poor (no=88)	Good (no=29)		
Age				
<25y (No= 61)	46 (75.4%)	15 (24.6%)	15.33 (3.015-77.96)	0.023 *$
25-35 (No = 44)	40 (90.9%)	4 (9.1%)	50 (7.9-312.76)	
>35(No =12)	2 (16.7%)	10 (83.3%)	1	
Education				
Read and write &Primary (No=29)	27 (93.1%)	2 (6.9%)	128.25 (16.58-992.245)	<0.001 **$
Secondary educated (No=67)	59 (88.1%)	8 (11.9%)	70.06 (13.68-358.84)	
University& post educated. (No=21)	2 (9.5%)	19 (90.5%)	1	
Occupation				
Non worker (No=84)	74 (88.1%)	10 (12.3%)	10.04 (3.86-26.10)	<0.001 **#
Worker (No=33)	14 (42.4%)	19 (57.6%)	1	
Marital status				
Married (No=108)	80 (74.1%)	28 (25.9%)	1	0.445 F
Widow or divorced (No=9)	8 (88.9%)	1 (11.1%)	2.9 (0.35-24.21)	
Social class				
low (No=87)	81 (93.1%)	6 (6.9%)	229.5 (25.93-2031.56)	<0.001 **$
Medium (No=12)	6 (50.0%)	6 (50.0%)	17 (1.68-171.7)	
High (No=18)	1 (5.6%)	17 (94.4%)	1	
No of all children				
One (No=47)	34 (72.3%)	13 (27.7%)	0.78 (0.33-1.81)	0.555 #
More than one (No=70)	54 (77.1%)	16 (22.9%)	1	
No of children less than 5 years:				
One (No=103)	76 (73.8%)	27 (26.2%)	0.469 (0.099-2.23)	0.513 F
More than one(No=14)	12 (85.7%)	2 (14.3%)	1	

*COR, crude odds ratio; #, Chi square test; $, Chi square for trend; F, Fisher Exact test *p<0.05 is statistically significant **p≤0.001 is statistically highly significant*

behavior score of diarrheal disease post intervention. (Table 2) (Figure 2).

There was statistically significant relation between some sociodemographic characteristics and total knowledge score of diarrheal disease preintervention where being less than 25 years old, less than university educated, having only one child and having only one child less than 5 years were all risk factors of inadequate total knowledge score of diarrheal disease (p=0.013, p=<0.001, p=0.004 and p=<0.001) respectively. (Table 3) Multivariate regression analysis showed that young age (less than 25 years old), secondary education and read and write &primary education were independent predictors and increased risk of inadequate total knowledge score preintervention by (150, 77 and 124) folds respectively (p=0.002, p= <0.001 and p=<0.001) respectively (Table 4).

There was statistically significant relation between some sociodemographic characteristics and total home management behavior of diarrheal disease preintervention where being less than 35 years old, less than university educated, not working and of medium or low social classes were all risk factors of bad total home management behavior of diarrheal disease (p=0.023, p=<0.001, p=<0.001 and p=<0.001) respectively. (Table 5). Multivariate regression analysis showed that young age (less than 25 years old), non-working and of medium or low social classes were independent predictors and increased risk bad total home management behavior of diarrheal disease preintervention (43.5, 13.07, 12.42 and 84.06) folds respectively (p=0.022, p= 0.044, p=0.047 and p=0.035) respectively (Table 6).

DISCUSSION

Childhood diarrheal illnesses are the second most significant cause of morbidity and death among children under five years in low-income countries, with almost 1.7 billion cases worldwide in 2017. Most developing countries see considerable increases in the prevalence of diarrhea due to socioeconomic and

behavioral variables, which are common causes of the disease.[13]

This study was an interventional study, was done on 117 mothers who had children under five years. The sample units were collected from the outpatient pediatric clinic, Zagazig University hospitals. The majority of the sample were married, less than 25

Table 6: Multivariate regression analysis of predictors of Poor Total home Management Behavior of diarrheal disease preintervention

	β	p	AOR	95% C.I.	
				Lower	Upper
Age (25-35y vs >35)	0.965	0.469	2.5	0.2	35.7
Age (<25y vs >35)	3.767	0.022*	43.5	1.7	1084.6
Education (Secondary Educated vs university or higher)	-1.009	0.375	0.4	0.0	3.1
Education (Read and Write & Primary vs university or higher)	-0.421	0.858	0.7	0.0	54.9
Occupation (non-working)	2.578	0.044*	13.0	1.1	162.0
Social class (Medium vs high)	2.520	0.047*	12.4	1.0	148.8
Social class (low vs high)	4.432	0.035*	84.1	1.3	5220.2

*AOR, adjusted odds ratio; CI, confidence interval; *p<0.05 is statistically significant*

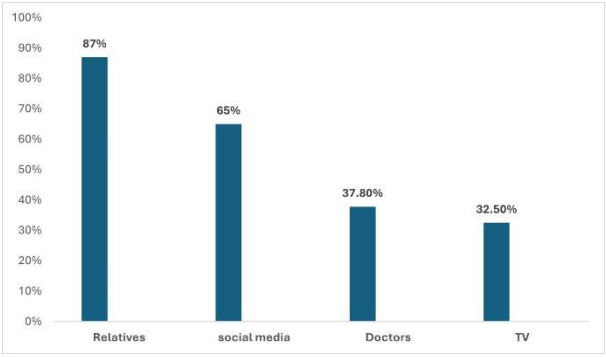

Figure 1: Main sources of maternal knowledge and Behavior about diarrheal disease and its management

Note: *More than one choice was allowed*

years old, secondary educated, non-workers, of low social class. The study revealed that the majority of the sample (59.5%) had inadequate pre-intervention total knowledge. The study discussed the knowledge regarding many items about diarrheal diseases as definition, causes, symptoms and signs, and ways of contamination. The younger age of the mothers, inadequate education (less than secondary education) and mothers having more than one child were the most relevant risk factors which lead to inadequate knowledge. That can be interpreted by low experience, decreasing awareness and busy mother had other children. Multivariate regression analysis discussed the predictors of inadequate total knowledge score pre-intervention and demonstrated that young age of mothers and inadequate education were the most significant factors affecting mothers' knowledge.

A descriptive study [2] was conducted in Nigeria, 2022 on 360 mothers who had children under five years demonstrated the contrary that about 59.2% of the sample had good knowledge regarding diarrheal diseases in contrast to the current study. The difference in the results was because most of its sample was older in age (26-35 years old), of tertiary education and of skilled and employed occupation which showed a good level of experience. On the other hand, it was concomitant with the current study in the older the age of the mother, the higher level of education and the employed and skilled occupation the more adequacy of the knowledge.

Along with the current study a Turkish study was carried out on 577 mothers reported that Maternal education level is determined to be a significant variable that positively affects diarrhea knowledge levels. Where the higher the education level of the mothers the better the knowledge.[14] A study was carried out in Tanzania described the same results as the current study were most of the sample had poor knowledge about diarrheal diseases. Where only one third of the mothers were aware about risk factors of childhood diarrhea and most episodes of diarrhea were mistakenly thought to be an ordinary growing stage. Also, the young age and low education of the mothers were strong predictors of inadequate knowledge.[15]

On the same line a hospital-based study was done in Omdurman city, Sudan on 120 mothers of children under five years showed very poor knowledge level of the mothers regarding all aspects of diarrheal diseases (risk factors, symptoms, signs, and complications).[16] A study was done in Pakistan on 200 mothers reported inadequate maternal knowledge and practice towards children under five years diarrhea and its prevention. The study

recommended a great need for public health education.[17]

Regarding home management behavior of mothers towards diarrhea the study revealed that there were poor mothers' practices at home, inadequate correct use of ORS, poor behavior regarding preventive measures followed to prevent diarrhea, with poor total home management behavior in the preintervention stage in the majority of the sample. In the current study, home management behavior discussed many items as practices of mothers on

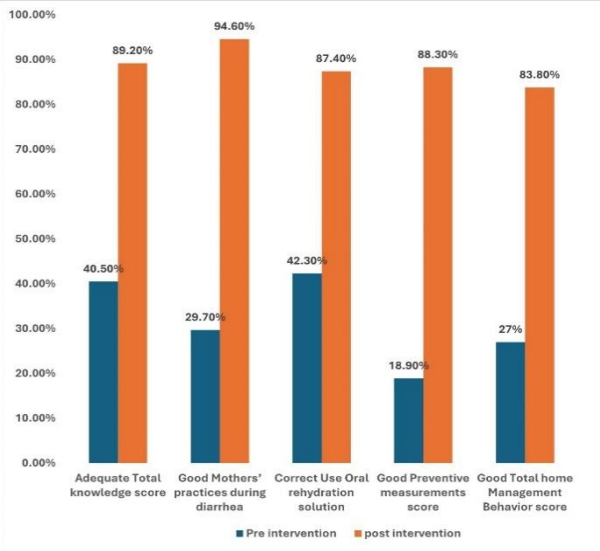

Figure 2: Adequate total knowledge and good management behavior of diarrheal disease before and after intervention.

types of fluids used to manage diarrhea, hand wash, breastfeeding behavior, home-made food, how is ORS prepared, how often should be given and preventive practices to prevent a second episode.

There were many predictors associated with poor behavior and practices of mothers during diarrhea, by multivariate analysis the current study showed that young age of the mothers (< 25 years), non-working, and of low and medium social class were the most significant predictors that affect the mothers home management behavior pre-intervention. It may be explained by the lack of awareness and home resources and capabilities of those mothers.

A study done based on Demographic and Health Survey data from 12 countries in sub-Saharan Africa with high burdens of childhood diarrhea found that the prevalence of good diarrhea management is low in 11 out of 12 analyzed surveys, varying from 17 % in Cote d'Ivoire to 38 % in Niger. The study referred these results to cling of mothers to traditional treatments and practices in these countries.[18] On the same line, a community-based study revealed poor home management behavior in (52.8%) of the sample and found strong association between mothers' age (<25 years), education (primary or less), low income and poor management behavior by multivariate analysis.[19] A cross section survey was done in Syria demonstrated that mothers' attitudes and behaviors towards the treatment and prevention of diarrhea in children under five years were insufficient. Employed women, high socioeconomic status and high educational level were significant predictors for good behavior.[20] On contrary a study was carried out in Ethiopia showed that (62.9%) of mothers were categorized as having favorable practices regarding home management of diarrhea. It was illustrated by mothers reported that they sought treatment from licensed medical practitioners was better and common use of ORS during the diarrheal episodes except some different beliefs as considering teething was the most common cause of diarrhea in children under five years.[21]

There was a great significant improvement regarding knowledge and home management behavior pre-intervention (40.5% & 27% respectively) and post-intervention (89.2% & 83.8% respectively) which indicate the importance of health education in increasing the community awareness and improving its positive behavior. According to interventional research carried out in nine distinct areas around Nepal, educational interventions significantly improved the public knowledge, attitudes, and practices about childhood diarrhea. Knowledge, attitude, and practice median scores climbed from 14, 7, 6, to 26, 9, 13, respectively.[22] Sudanese interventional research demonstrated that mothers' knowledge concerning the definition of diarrhea, its dangers, when to seek medical attention, and beneficial home management practices, which was found to be 35, 28, 13, and 29%, dramatically improved after intervention to 91, 94, 92, and 93%, respectively. The study strongly advises that health care should promote community-based programs to strengthen mothers' knowledge of and behavior towards unwell children.[8]

The current study showed that the main source of the mothers' knowledge and behavior regarding childhood diarrhea was asking relatives (87%) whereas information from social media (65%) and doctors was only (37.8%). These results may illustrate the high level of inadequate knowledge and poor home management behavior shown in this study. A study was conducted in Iran revealed that

Media (46%), health system (41%), and family and friends (34.4%) were the top information sources for mothers during diarrhea. Overall, 52.2% of the mothers had low and moderate levels of knowledge.[23] A study was conducted in Ethiopia reported that 60.7% of the sample went to hospital to ask for advice or treatment during diarrhea as a first place with 65% of mothers had a good knowledge.[11] We note that the difference in the first sources of information between countries had a great impact on the level of mothers' knowledge.

CONCLUSIONS

Health education was associated with a significant improvement in the mothers' total knowledge and home management behavior, which will positively impact child's health. Being a simple costless source of information, social media can play a major role in educating mothers about home management of childhood diarrhea.

Ethical Approval

The study has obtained required approval from the Institutional Review Board (IRB) at Faculty of Medicine, Zagazig University hospitals (ZU-IRB #10765). A written consent was voluntarily taken from the participants, after clarifying the aim of the study, methods, and duration of the study**.**

***Recommendations*:** Frequent structured interventions should be conducted to increase mothers' awareness (health units education sessions, booklets, figured educational messages). Media Messages should be directed to help the governmental health programs to achieve their targets. Confidentiality of data was ensured, and data used only for the purpose of the research.

***Study limitations*:** The crowdedness of the pediatric clinic under the study and unfavorable health education environmental conditions were constraints to apply ideal health education. The study work was on one group (pre-post-test) with no control group, which helps to clarify other confounders. Post-test was carried out only after three months of the health education. Further studies are required to examine whether improved knowledge will be followed by positive behavior and practice.

Funding: The authors received no financial support related to this research

Conflict of interest: All authors have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

***Author contributions*:** HSS: formulated the research concept. EMA wrote the literature, study design, and methodology. HSS, LLE, and EMA collected the data. LLE analyzed the data and represented it by tables and figures. HSS wrote the discussion, conclusion, limitations, and recommendation sections. HSS, LLE, and EMA did the manuscript editing, drafting, and proofing. All the authors have reviewed the manuscript and accepted the whole work.

Acknowledgement: as authors, would like to appreciate the authority of the hospital under study and the valued participation of all respondents to the study questionnaire.

REFERENCES

1. World health organization, factsheets, diarrheal disease, available through: https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease (accessed August 2023)
2. Momoh FE, Olufela OE, Adejimi AA, Roberts AA, Oluwole EO, Ayankogbe OO, Onajole AT. Mothers' knowledge, attitude and home management of diarrhoea among children under five years old in Lagos, Nigeria. African Journal of Primary Health Care & Family Medicine. 2022 May 27;14(1):3119.
3. Florez ID, Nino-Serna LF, Beltran-Arroyave CP. Acute infectious diarrhea and gastroenteritis in children. Current infectious disease reports. 2020 Feb;22:1-2..
4. Haris M, Malik FR, Ahmad S, Shah SM, Sultan S, Shah ZU. Maternal knowledge of infantile diarrhea: a cross sectional study in private teaching hospitals of district Peshawar-Pakistan. Journal of Postgraduate Medical Institute. 2021 Jun 30;35(2):100-5.
5. BEKAR P, Arikan D. The Effect of Training Provided to Mothers on Their Non-Functional Practices and Maternal Self-Efficacy in Preventing Early Childhood Diarrhea. International Journal of Traditional and Complementary Medicine Research. 2022 May 8;3(2):82-90..
6. Ugboko HU, Nwinyi OC, Oranusi SU, Oyewale JO. Childhood diarrhoeal diseases in developing countries. Heliyon. 2020 Apr 1;6(4).
7. Desta BK, Assimamaw NT, Ashenafi TD. Knowledge, practice, and associated factors of home-based management of diarrhea among caregivers of children attending under-five clinic in Fagita Lekoma District, Awi Zone, Amhara Regional State, Northwest Ethiopia, 2016. Nursing research and practice. 2017 Aug 21;2017.
8. Haroun HM, Mahfouz MS, El Mukhtar M, Salah A. Assessment of the effect of health education on mothers in Al Maki area, Gezira state, to improve homecare for children under five with diarrhea. Journal of family and community medicine. 2010 Sep;17(3):141.
9. Fahmy SI, Nofal LM, Shehata SF, El Kady HM, Ibrahim HK. Updating indicators for scaling the socioeconomic level of

families for health research. Journal of the Egyptian Public Health Association. 2015 Mar 1;90(1):1-7.

10. Ndayisaba A, Uwizeyimana A, Tuyisenge MJ, Chironda G. Knowledge and practices of mothers on home management of diarrhoea in under-fives children at selected primary health care Centre, Rwanda: A descriptive cross-sectional study. International Journal of Africa Nursing Sciences. 2022 Jan 1;17:100508.
11. Workie HM, Sharifabdilahi AS, Addis EM. Mothers' knowledge, attitude and practice towards the prevention and home-based management of diarrheal disease among under-five children in Diredawa, Eastern Ethiopia, 2016: a cross-sectional study. BMC pediatrics. 2018 Dec;18:1-9.
12. El-Hawy LL, Said HS. Public Opinion Regarding The New National Children's Obligatory Vaccination Schedule (2018). Egyptian Journal of Community Medicine. 2021 Jan;39(1).
13. Mosisa D, Aboma M, Girma T, Shibru A. Determinants of diarrheal diseases among under five children in Jimma Geneti District, Oromia region, Ethiopia, 2020: a case-control study. BMC pediatrics. 2021 Dec;21(1):1-3.
14. Yüksel Kaçan C, Palloş A, Özkaya G. Examining knowledge and traditional practices of mothers with children under five in Turkey on diarrhoea according to education levels. Annals of Medicine. 2022 Dec 31;54(1):674-82.
15. Gavhi F, Kuonza L, Musekiwa A, Motaze NV. Factors associated with mortality in children under five years old hospitalized for Severe Acute Malnutrition in Limpopo province, South Africa, 2014-2018: A cross-sectional analytic study. PloS one. 2020 May 8;15(5):e0232838.
16. Majoun RH, Mokhtar KM. Mother's Knowledge Regarding Diarrheal Disease Among Children under five years Mohammed Alarmin Hamid Pediatric Hospital. LOJ Nur Heal Car 2(1)- 2018. LOJNHC.MS.ID.000130. DOI:10.32474/LOJNHC.2018.02.000130
17. Mumtaz Y, Zafar M, Mumtaz Z. Knowledge attitude and practices of mothers about diarrhea in children under 5 years. Journal of the Dow University of Health Sciences (JDUHS). 2014 Apr 10;8(1):3-6.
18. Carvajal-Vélez L, Amouzou A, Perin J, Maïga A, Tarekegn H, Akinyemi A, Shiferaw S, Young M, Bryce J, Newby H. Diarrhea management in children under five in sub-Saharan Africa: does the source of care matter? A Countdown analysis. BMC public health. 2016 Dec;16(1):1-4.
19. Dodicho T. Knowledge and practice of mothers/caregivers on home management of diarrhea in under five children in Mareka district, Southern Ethiopia. J Health Med Nurs. 2016;27(2422-8419):71-9.
20. Bohsas H, Swed S, Sawaf B, Alibrahim H, Elsayed M. Knowledge, Attitude and Practice of Syrian Mothers' Towards Diarrhea Management and Prevention Among Under-Five Children: A Cross Sectional Study from Syria. International Journal of Medical Students. 2022:S212-.
21. Yüksel Kaçan C, Palloş A, Özkaya G. Examining knowledge and traditional practices of mothers with children under five in Turkey on diarrhoea according to education levels. Annals of Medicine. 2022 Dec 31;54(1):674-82.
22. Tareke AA, Enyew EB, Takele BA. Pooled prevalence and associated factors of diarrhea among under-five years children in East Africa: a multilevel logistic regression analysis. PLoS One. 2022 Apr 14;17(4):e0264559.
23. Shafizadeh F, Nasiri-Amiri F, Sayyari A, Imanzadeh F. Mothers' knowledge and perception of childhood diarrhea and its management with diet in north and east of Tehran. Caspian Journal of Pediatrics. 2019 Mar 10;5(1):342-9.

Cite this article as: Hanaa S. Said, et al. Mothers' Knowledge and Behavior Regarding Home Management of Diarrhea among Children under Five Years - Interventional Study. *Egyptian Journal of Community Medicine*, 2024;42(3):193-201.
DOI: 10.21608/ejcm.2024.270388.1285

-

-