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ORIGINAL ARTICLE

Knowledge, Attitudes and Practices of Mothers on Management of Childhood Diarrhoea Among Children Under Five Years in Al Mukalla City/ Yemen- 2022

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ABSTRACT

Background: Good knowledge, attitude and practices of caregivers is pivotal to protection, prevention and treatment of childhood diarrhoea, hence reduce mortality thereof.

Objective: Our aim in this study was to determine the level of knowledge, attitudes and practices of mothers on management of childhood diarrhoea among children less than 5 years in Al Mukalla City/ Hadhramout- Yemen.

Methods: Al Mukalla, Hadhramout Governorate/Yemen is the site of a cross-sectional study that was done with the help of the local population in both urban and rural settings. The 581 women whose children were younger than 5 years old were chosen at random. Information was gathered through the use of a standardised questionnaire. SPSS Statistical Package was used for the data analysis.

Results: Among 581 mothers, 58% of urban mothers knew about the meaning of diarrhoea and 66.7% of rural mothers knew that continuous vomiting is one symptoms of diarrhoea. There was 68.7% of mothers did not agree that immunization can prevent diarrhoea and given ORS during repeating vomiting or diarrhoea episode (86.8%). Around 88% of mothers continued to breastfeed their children during the diarrhoea. Mothers in urban (AOR 1.008; 95% CI 0.901- 3.104) and rural (AOR 1.906; 95% CI 0.995- 9.025) at age 30-39 years old were more likely to know about diarrhoea than mothers at age >40 years. The age had significant influence in increasing the knowledge about diarrhoea (urban p= 0.001, rural p= 0.001), while mothers with good and fair knowledge were more likely to have good practice of diarrhoea than poor knowledge in both areas.

Conclusion: Mother's knowledge and practice about diarrhoea and its management with ORS was poor among the rural areas, related on their knowledge pertaining to vital issues as danger signs of dehydration, enhanced maternal knowledge would have a positive effect on their treatment of diarrhoea in children.

Keywords: Diarrhoea, ORS, Knowledge, attitude, and practice.

INTRODUCTION

Three or more loose or liquid stools per day (more than is normal for individual), neither formed nor pasty stool by breastfed babies is considered as diarrhoea which usually is a symptom of an infection in the intestinal tract caused by bacterial, viral or parasitic organisms. Infection is spread by contaminated food, drinking water, objects or person to person as a result of poor hygiene, or food preparers who do not wash their hands before cooking. [1] Regarding to childhood immunization. Rotavirus is the leading cause of acute diarrhea and causes about 40% of hospitalizations in children under five. [2]

In resource- limited countries, diarrhoea remain one of the most leading cause of childhood mortality and morbidity. Globally, diarrhoea is responsible on 1.3 million of deaths annually, and 2,195 every day, [3] with 25% of deaths among young children especially those living in LMICs of Africa and South- East Asia. [4, 5] However; in high mortality countries, the mother practice is to seek treatment from private retailers (drug shop and pharmacies) has risk for unregulated distribution of drugs, more expensive and ineffective treatment, and this problem increases and reach to unexpected proportions. [6,7] The knowledge of Asian mothers towards definition of diarrhoea as per the WHO description of diarrhoea varied from one area to another. The proportion in Rewa, Madhya Pradesh was 50%; [8] Wardha, Maharashtra 68%; [9] and 47% in Southern Odisha, [10] while 72% of mothers in Pakistan [11] and 88% in Bangladesh had good knowledge. [12] Majority of mothers knew that unclean hands and unsafe water, and failure to wash hands after defecating as common reasons for diarrhoeal diseases among children. [13] Other studies reported the teething is responsible for development of diarrhoea. [11,14] The mother's knowledge of the dangerous signs of diarrhea contributes greatly to the speed of intervention and treatment. Agha A et al, [15] and Dzeyie KA et al. [16] stated that 40% of mothers were not able to specify the dangerous signs of diarrhoea; while other studies in Jamaica and India, showed that most mothers did not consider diarrhoea to be dangerous. [17,18] Other countries reported that mother's knowledge towards prevention and home management were good, as in Iran (70%), [19, 20] There has been a significant improvement in maternal knowledge about ORS in many countries. [11] But still a gap exists between maternal knowledge and the practice of ORS. This gap may be due to social values, way to help find childhood illnesses, or prevent mothers from accessing health care centers.

Yemen like any low-income country had no exact figures on morbidity or mortality rate, beside to the lake about etiology, risk factors of children diarrhoeal diseases. Al Mukalla like any city in Yemen had inadequate infrastructures, and the health system show some suffering due to shortages of resources and improper planning, which are adversely reflected on the health of children. Furthermore, there is insufficient knowledge on how mothers deal with their children during illness, and whether they encouraged to use the health facilities.

MATERIALS AND METHODS

In Al Mukalla, Hadhramout Governorate/Yemen, a cross-sectional study was undertaken in both urban and rural communities. Mothers with at least one child between the ages of 0 and 59 who live in either an urban or rural setting are eligible to participate in the study. Mothers with severe mental illness, hearing or speech impairments, or children who are not being cared for by their mothers are excluded from the study (baby sitters, friends, etc.). After obtaining approval from the Al Mukalla health authority and mothers' verbal informed consent for interviews, 581 moms were chosen at random using the Random Walk Method. Streets in the area were numbered starting from the community's approximate centre.

The questionnaire used to learn more about mothers' knowledge, attitude, and practise about diarrhoea was adapted and modified from the multiple indicator cluster survey for children younger than five years old. The outcomes of this research were examined, summarised, univariate, and data distributions explored used frequencies and percentages. Multinomial logistic regression was utilised to assess predictors of the diarrhoea knowledge, attitude and practise. The Spearman test for determining whether

or not two independent variables are significantly correlated yields three levels of interpretation: weak (0.01-0.24), intermediate (0.25-0.74), and strong (0.75-0.99).

RESULTS

In table 1, 58% of urban mothers knew about the meaning of diarrhoea, and more than 90% knew that laxity considers a symptom, and 83.3% considers sunken eyes as signs of diarrhoea. In rural areas, 66.7% of mothers knew that continuous vomiting is the symptoms of diarrhoea, while around majority (60%) of rural mothers had no knowledge about signs of diarrhoea. Related to ORS, 83.7% of the urban mothers knew about the benefit of ORS, while 84.1% of rural mothers did not know about the way of ORS preparation at home. Concerning the amount of fluids, urban mothers had the idea to give the child the same amount of fluids like usual (72.9%), while rural others knew that it must be given more than the usual amount (56.8%). Mothers agreed about diarrhoea cause death (67.6%), breast feeding prevents dehydration (79.9%), taking children to clinic during diarrhoea episode (77.1%), this attitudes presence high among urban mothers. While 68.7% of mothers did not agree that immunization can prevent diarrhoea, given ORS during repeating vomiting or diarrhoea episode (86.8%) and not given antibiotics unless seen blood in stool (78.1%), these attitudes were high among rural mothers.

The majority of mothers continued to breastfeed during the diarrhoea (87.3%), and 46% more than usual (a high percentage among mothers in urban areas). 50.6% of mothers gave fluids during diarrhoea, especially in urban areas, more than usual (54.7%). Rural mothers breastfeed their babies during diarrhoea as normal (54.7%), and give other fluids (51.6%), but in less amounts than usual during diarrhoea (57.3%). Around 60% of mothers asked treatment for diarrhoea, 30.2% of them got the treatment from the primary health facilities when child became unable to eat or drink (51.3%). Majority of urban mothers (86.4%) received the treatment from primary health facilities when their child became lethargic (63.6%), while rural mothers got the treatment from mobile clinics. Related to the source of getting ORS, urban mothers got it from monthly visit or from pharmacies (70.5% and 87.5% respectively), while rural mothers got it from mobile clinics (100%). All reasons for not giving ORS were higher among rural mothers.

Urban mothers (AOR 1.008; 95% CI 0.901- 3.104) and rural mothers (AOR 1.906; 95% CI 0.995- 9.025) at age 30-39 years old were more likely to know about diarrhoea than mothers at age >40 years. Working mothers were more likely to know about diarrhoea than not working mothers in urban (AOR 1.332; 95% CI 0.616-2.879), and rural (AOR 1.950; 95% CI 0.575- 6.608). Age had significant influence in increasing the knowledge about diarrhoea (urban p= 0.001, rural p= 0.001)

In table 5, divorced urban mothers (AOR 1.100; 95% CI 0.045- 22.175) were more likely to have good practice about diarrhoea than widowed. Working urban (AOR 1.010; 95% CI 0.560- 1.821) and rural mothers (AOR 1.705; 95% CI 0.833- 3.492) were more likely to have good practice than non-working mothers, while good and fair knowledge were more likely to have good practice of diarrhoea than poor knowledge in both areas, and with significant influence (p= 0.001).

There was a strong correlation between knowledge and attitude among urban mothers R= 0.843, P= 0.000). Both the knowledge and attitude had a significant correlation (R= 0.547, p= 0.000), and attitude and practice also showed a significant correlation among rural mothers (R= 0.474, p=0.000)

Table 1: Knowledge of mother about childhood diarrhoea and oral rehydration solution or fluids given to child during diarrhoeal Disease.

Knowledge	Total No (%)	Urban No (%)	Rural No (%)
The meaning of diarrhoea			
Watery stool (more than 3 times / day)	476 (82)	273 (58)	203 (42)
Repeated vomiting and stool with blood	89 (15.3)	13 (14.6)	76 (85.4)
Sunken fontanel	16 (2.7)	4 (25)	12 (75)
Cause of diarrhoea			
Contaminated water/foods	182 (31.3)	81 (44.5)	101 (55.5)
Unhygienic surroundings	66 (11.3)	46 (69.7)	20 (30.3)
Unclean hands	45 (7.7)	27(60)	18 (40)
Teething	121 (20.8)	54 (44.6)	67 (55.4)
*Others	122 (21)	63 (51.6)	59 (48.4)
I don't know	45 (7.7)	19 (42)	26 (58)
The symptoms of diarrhoea for asking treatment			
Fever	170 (29.3)	89 (52.3)	81 (47.7)
Continuous vomiting	69 (11.9)	23 (33.3)	46 (66.7)
Inability to eat or drink	73 (12.5)	63 (86)	10 (14)
Laxity and inability to move	43 (7.4)	40 (93)	3 (7)
Blood and pus in child stool	209 (36)	64 (30.6)	145 (69.4)
I don't know	17 (2.9)	11 (64.7)	6 (35.3)
The signs of dehydration			
Sunken eyes	120 (20.7)	100 (83.3)	20 (16.7)
Thirsty and dry skin	42 (7.2)	24 (57.1)	18 (42.9)
I don't no	419 (72.1)	166 (39.6)	253 (60.4)
Giving child ORS during diarrhoea is benefit			
Yes	221 (17.2)	185 (83.7)	36 (16.3)
No	360 (82.8)	105 (29.2)	255 (70.8)
Way of preparation ORS at home			
Yes	190 (32.7)	128 (67.4)	62(32.6)
No	391 (67.3)	62 (15.9)	329 (84.1)
the amount of fluid requires to be given to children during diarrhoea			
More than usual	315 (54.2)	136 (43.2)	179 (56.8)
Same like usual	133 (22.8)	97 (72.9)	36 (27.1)
Less than usual	11(2)	5 (45.5)	6 (54.5)
I don't know	122 (21)	52 (42.6)	70 (57.4)

Note: * Others (incomplete immunization, bottle feeding, worm infection)

Table 2: Attitudes of mothers about diarrheal Disease

Attitude	Total No (%)	Urban No (%)	Rural No (%)
Diarrhoea cause death in children under five years of age			
Yes	393 (67.6)	203 (51.7)	190 (48.3)
No	188 (32.4)	87(46.3)	101 (53.7)
Immunization prevents childhood diarrhoea			
Yes	182 (31.3)	137 (75.3)	45 (24.7)
No	399 (68.7)	153 (38.3)	246 (61.7)
Breast feeding during diarrhoea prevents dehydration and malnutrition			
Yes	464 (79.9)	288 (62.1)	176 (37.9
No	117 (20.1)	2(61.5)	115 (38.5)
Taking child to the health clinic when they have diarrhoea			
Yes	448 (77.1)	249(55.6)	199(44.4)
No	133 (22.9)	41 (13.7)	92 (86.3)
Given ORS when vomiting and diarrhoea repeatedly			
Yes	77 (13.2)	50 (64.9)	27 (35.1)
No	504 (86.8)	240 (47.6)	264 (52.4)
Not given anti diarrhoea drugs			
Yes	103 (17.7)	87 (84.5)	16 (15.5)
No	478 (82.3)	201 (42.1)	275 (57.1)
Antibiotics should not be given to a child with diarrhoea unless there is blood in the stool			
Yes	127 (21.9)	94 (74)	33 (26)
No	454 (78.1)	196 (43.2)	258 (56.8)

Table 3: Practices of mother about childhood diarrhoea

Practice	Total No (%)	Urban No (%)	Rural No (%)
Continuous of breastfeed a baby during diarrhoea episode	507 (87.3)	254 (50.1)	253 (49.9)
Given child other fluid during diarrhoeal episode than breast milk	294 (50.6)	151 (51.4)	143 (48.6)
Give to child ORS at diarrhoea	173 (29.8)	105 (60.7)	68 (39.3)
Breast feeding during diarrhoea			
More than usual during diarrhoea	267 (46)	143 (53.6)	124 (46.4)
As usual during diarrhoea	159 (27.4)	72 (45.3)	87 (54.7)
Less than usual during diarrhoea	81 (13.9)	39 (48.1)	42 (51.9)
Amount of fluids given during diarrhoea			
More than usual during diarrhoea	95 (32.3)	52 (54.7)	43 (45.3)
As usual during diarrhoea	103 (35)	57 (55.3)	46 (44.7)
Less than usual during diarrhoea	96 (32.7)	41 (42.7)	55 (57.3)
Getting advice or treatment from			
The primary health facilities	103 (30.2)	89 (86.4)	14 (13.6)
Mobile clinic	61 (18)	16 (26.2)	45 (73.8)
Private health centre	92 (26.9)	52 (56.5)	40 (43.5)

*Others	85 (24.9)	19 (22.4)	66 (77.6)
Symptoms of getting treatment			
Fever	57 (9.8)	36 (63.2)	21 (36.8)
Continuous vomiting	130 (22.4)	82 (63.1)	48 (36.9)
Inability to eat or drink	298 (51.3)	137 (46)	161 (54)
Lazy	55 (9.5)	35 (63.6)	20 (36.4)
Source of getting ORS (210 mothers)			
Monthly visit to the clinic for routine immunization	95 (45.2)	67 (70.5)	28 (29.5)
Mobile clinic	20 (9.5)	0 (0.0)	20 (100)
During camping of cholera	63 (30)	41 (65.1)	22 (34.9)
From pharmacy	32 (15.2)	28 (87.5)	4 (12.5)
Reason for not presence ORS at home (371 mothers)			
Lack of information of composition and preparation of ORS	36 (9.7)	6 (16.7)	30 (83.3)
Not available	66 (17.8)	8 (12.1)	58 (87.9)
Not heard about it	195 (52.6)	61 (31.3)	134 (68.7)
Culture not support ORS used	74 (19.9)	9 (12.2)	65 (87.8)

note: * Others (friends, relatives, community volunteers, midwifes)

Table 4: Factors associated with knowledge of diarrhoea among urban and rural mothers.

Characteristics	Knowledge Score of Diarrhoea			
	AOR (95% CI)	P-value	AOR (95% CI)	P-value
Age group				
<20	0.109 (0.001-2.003)	0.021	0.950 (0.207-5.106)	0.001
20-29	0.601 (0.119-6.003)		0.201 (0.022-3.007)	
30-39	1.008 (0.901-3.104)		1.906 (0.995-9.025)	
≥40	1		1	
Educational Level				
Illiterate	1.500 (0.450-5.005)	0.178	0.167 (0.024-1.171)	0.455
Primary	0.900 (0.350-2.313)		0.234 (0.047-1.172)	
Secondary	0.783 (0.289-2.121)		0.762 (0.170-3.420)	
University	1		1	
Marital Status				
Married	0.930 (0.083-10.430)	0.201	2.094 (0.188-23.374)	0.852
Divorced	0.521 (0.040-5.875)		6.001 (0.221-19.531)	
Separated but not divorced	0.333 (0.021-2.510)		0.091 (0.051-7.250)	
Widow	1		1	
Mother's Occupation				
Worked	1.332 (0.616-2.879)	0.417	1.950 (0.575-6.608)	0.587
Not Worked	1		1	

Note: AOR: Adjustive Odd Ratio, CI: Confidence interval, P-value considered significance <0.05

Table 5: Factors associated with practice of diarrhoea Among urban and rural mothers.

Characteristics	Practice Score of Diarrhoea			
	AOR (95% CI)	P-value	AOR (95% CI)	P-value
Age group				
<20	0.995 (0.343-2.069)	0.146	2.215 (0.588-8.340)	0.812
20-29	0.417 (0.190-0.917)		1.119 (0.588-8.340)	
30-39	0.582 (0.267-1.267)		1.154 (0.526-2.531)	
≥40	1		1	
Educational Level				
Illiterate	1.128 (0.431-2.955)	0.912	1.143 (0.389-3.355)	0.230
Primary	1.046 (0.458-2.389)		1.312 (0.481-3.581)	
Secondary	1.262 (0.524-3.040)		2.022 (0.725-5.636)	
University	1		1	
Marital Status				
Married	0.214 (0.027-2.216)	0.555	1.653 (0.148-18.452)	0.07
Divorced	1.100 (0.045-22.175)		6.000 (0.221-16.531)	5
Separated but not divorced	0.500 (0.019-12.898)		2.000 (0.051-8.250)	
Widow	1		1	
Mother's Occupation				
Worked	1.010 (0.560-1.821)	0.873	1.705 (0.833-3.492)	0.081
Not Worked	1		1	
Knowledge Score				
Good	2.141 (1.174-3.905)	0.001	2.653 (0.828-6.665)	0.001
Fair	5.198 (2.599-10.399)		2.210 (0.689-4.085)	
Poor	1		1	

Note: AOR: Adjustive Odd Ratio, CI: Confidence interval, P-value considered significance <0.05

Table 6: Correlation between mother's knowledge, attitude and practice towards diarrhoea

Correlation	R[a]	p-value
Knowledge * attitude		
Among urban mothers	0.843**	0.000
Among rural mothers	0.397**	0.000
Knowledge * practice		
Among urban mothers	0.092	0.118
Among rural mothers	0.547**	0.000
Attitude * Practice		
Among urban mothers	0.284**	0.000
Among rural mothers	0.474**	0.000

DISCUSSION

Regarding the area of study, urban mothers knew about the definition, symptoms and signs, while rural mothers thought that diarrhoea is caused by contaminated water/ food, and had no knowledge about signs of diarrhoea. The results in this study were lower than one study in Ethiopia, [32] but higher than other reports in Fagita Lekoma/ Ethiopia (65.4%), Karachi/ Pakistan (52.5%). [33,20] But in agree with that from Iran, [13] Ethiopia, [20] and India [24] that considered unclean hands, drinking contaminated water as being the common causes, while other studies reported the teething is responsible for development of diarrhoea. [25]

The explanation for good knowledge among urban mothers may be the presence in the city of numerous mass media and health facilities that can spread information to the people, while among rural mothers the lack of knowledge about the role of ORS in diarrhoea may be due to their poor knowledge about the concept of diarrhoea and rehydration. These findings are lower than that reported in India by Gupta KR when about 80% of mothers knew about the benefits of ORS for children suffering from diarrhoea, but higher than that reported when 20% of mothers knew how prepare ORS at home. [26]

However, the current study found that urban mothers agreed that diarrhoea leads to death, breastfeeding prevents dehydration, and the child must be referred to the clinic when suffering from diarrhoea. These findings did not agree with Garg N et al. who reported most mothers agreed that immunization can prevent diarrhea. [27].

The current results in Hadhramout were similar to a report from Diredawa/Ethiopia when the mothers sought medical treatment for their children during diarrhoeal episode, [22] and did not differ with the poor practice among rural mothers in Ethiopia; [29] but relatively lower than reported by Workie HM, [22] with more than 40% of mothers having good practice about diarrhoea and its treatment.

Some sociodemographic variables in this study like age and occupation had significant association with knowledge about diarrhoea. The mothers aged 30-39 years in this study and those working mothers were more likely to have good knowledge. This finding did not agree with the study in Bharuch/ India showing no significant association between age of mothers and level of knowledge. [30] The current study showed that divorced mothers were more likely to have good practices about diarrhoea and its treatment in urban and rural areas. The reason may be divorced

mothers are trying to take care of the child properly and take them to health care centers and follow up their treatment so that they are not blamed by society for neglect. This was not supported by the study Ethiopian study. [20] when those mothers who had high level of educational had good practice about diarrhoea and its management.

CONCLUSION

Mother's knowledge and practice about diarrhoea and its management with ORS was poor among the rural areas, related on their knowledge pertaining to vital issues as danger signs of dehydration, actual role and amount of ORS during diarrhoea. Both urban and rural areas showed a significant association between knowledge and practice during management of diarrhoea. increasing the level of mother's knowledge and attitude through health education of the mothers on benefits of ORS and how preparing it, home fluid preparation, early identification of danger sign of dehydration would have a positive effect on their treatment of diarrhoea in children.

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