Original Article

A Study of Knowledge, Attitude and Practice among the Mothers Regarding Management of Childhood Diarrhoea

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Background : Mothers are the primary health care providers so that mother's knowledge regarding causes of Diarrhoea, sign and symptoms, prevention and control are very essential for decreasing morbidity and mortality due to Diarrhoea.

Objective : To study knowledge, observe attitude and assess practice of mother regarding childhood diarrhoeal disease management.

Methods : A cross sectional observational study conducted in Department of Pediatrics at a Tertiary Care Hospital. Total 150 mothers of children affected with Diarrhea attending Pediatric Outpatient Department or admitted were included in study. All the mothers who were qualified under the inclusion criteria along with informed consent are subjected to Knowledge, Attitude and Practice (KAP) designed format for the record. Data was collected from mothers by standard questionnaire method.

Results : In our study, 44% mothers were having excellent knowledge, 52% of mothers have negative attitude towards management of Diarrhoea on home basis and using ORS and 42% of mothers practicing poorly. We found significant association of mother's education to their knowledge and practice and also between Socio-economic status and mother's attitude and practice.

Conclusion : There is need of proper and effective health education to mothers regarding diarrhoea, it's causes, prevention and management. Healthy practices adopted by mother can raise healthful living condition thereby lessens the morbidity and mortality of children.

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Key words **: Diarrhoea, Oral Rehydration Solution, Knowledge, Attitude, Practice.**

Diarrhoea remains the second leading cause of death for children under five worldwide[1]. In India, Control of Diarrhoeal Disease (CDD) was implemented from 1980 as a part of Sixth Five Year Plan (1980-85) with the primary thrust of improving the knowledge and practices of appropriate case management among caretakers and health care providers and primary objective of preventing deaths due to dehydration. This program was integrated within Child Survival and Safe Motherhood (CSSM) program[2]. Diarrhoea is due to infections caused by a wide range of organisms which include bacteria, viruses and protozoans. 58% of deaths due to Diarrhoea have been attributed to unsafe water supply and lack of sanitation and hygiene (inadequate wash)[3]. The key components of preventing childhood diarrhoea are improving access to safe drinking water, adequate sanitation and promoting good hygiene[4]. Diarrhoea-related mortality and morbidity can be decrease with implementation of clean water use, hand washing, exclusive breastfeeding, immunization and proper sanitary disposal of excreta. Secondary measures include early detection of dehydration due to Diarrhoea and prompt oral rehydration, increasing and continuing intake of energy-dense foods in addition to breastfeeding and Zinc therapy[5]. Timely and appropriate management at household and in health services remain an important intervention for reducing mortality and morbidity due to childhood Diarroea[6]. However, poor Socio-economic status, lack of caregiver's knowledge and inability to provide treatment when needed are barriers to preventing diarrheal deaths[7]. Its burden has reduced from 11% of childhood deaths to 9% from the year 2008 to 2015[8,9]. The mortality due to Diarrhoea in children under 5 years

Editor's Comment :

- Health education is the most important tool for effective management of childhood diarrhoea.
- It increases capability to recognize danger signs of diarrhoea in children and to encourage appropriate and early case seeking behaviours which can only be provided on the basis of an accurate understanding of prevailing knowledge, attitude and practices of mothers.

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has been reduced in last two decades. This reduction may be due to proper management of cases by following standard treatment guidelines recommended by WHO and using oral rehydration therapy as the cornerstone of management[10]. Effective health education can only be provided based on a thorough understanding of the community's general Knowledge, Attitudes and Practices (KAP). Therefore, obtaining relevant information on maternal KAP on Diarrhoea is essential for successful control activities. As mothers are the primary health care providers, their awareness of the causes, signs and symptoms, prevention and management of diarrhoea is of great importance, thereby reducing the morbidity and mortality of Diarrhoea. Considering the central role of mothers in managing Diarrhoea, the joint statement of the World Health Organization and UNICEF emphasized the need to understand the mother's knowledge, attitude and practice regarding Diarrhoea[11].

The purpose of this study is to evaluate and compare the level of awareness and observe the mother's attitude and practice regarding the causes of diarrhoea and its prevention and management.

Materials and Methods

A cross sectional observational study was conducted over a period of 2 year in Department of Paediatrics at a Tertiary Care Hospital, Ahmedabad. All Patients below 5 years of age from Outpatient and inpatient department with Acute Diarrhoea (<14 days) were included in this study and patients having chronic diarrhoea (>14 days), known case of malabsorption syndrome, Celiac disease and patients having dysentery were excluded from this study. 150 mothers of children affected with Diarrhoea who were qualified under inclusion criteria along with informed consent were subjected to KAP designed format for record. Data was collected from mothers in pre-designed proforma consisting of demographic data and standard questionnaire for knowledge, attitude and practice of mother about management of childhood Diarrhoea. Data were entered in Microsoft excel 2016 and analysis was carried out using SPSS version 21. Chi-square test with level of significance <0.05 was used for as statistical test to test various associations.

Discussion and Results

In present study, 68% of patients were below 24 months of age group followed by 20% patients which were in 25 to 59 months age group. In this study it was found that children less than 2 years of age are more prone to having Diarrhoea. Mean age is 26.89 months.

In a study by Walker, *et al*[12] Diarrhoea incidence rates were highest among children 6-11 month of age and lowest among children 24-59 month of age. Distribution according to age groups of mothers shows majority of the mothers 62.7% mothers were in age group of 21 to 30 years. In a study conducted by Workie, *et al*[13] 51.5% mothers were in the age group of 25 to 34 years. Another similar study conducted by Gollar, *et al*[14] 71% mothers were in age group of 21 to 30 years. It suggests 35.3% mothers were educated up to secondary level, 28% mothers were educated up to higher secondary level while 9.3% mothers were illiterate. In a study by Gollar, *et al*[14] 47% mothers were educated up to secondary level and 37% mothers were educated up to higher secondary level. Distribution according to area of residence showed amongst 150, 148 (98.7%) mothers were living in Urban area and only 2 (1.7%) mothers were living in Rural area. Socio-economic status of patients showed majority of the mothers (43.3%) were belongs to lower middle class followed by 22% to middle class and 18% to lower class. In the study conducted by Mukhtar, *et al*[15] 44.6% mothers were belonging to lower class. Lower Socio-economic status did influence knowledge, attitudes and practices, household with lower socio-economic status tends to rely more on local options, especially drug stores whereas higher Socio-economic status households preferred to visit private Physicians and even distant options more frequently. Amongst 150 children, overcrowding was present in 135 (90%) and absent in 15 (10%) children. Overcrowding makes sanitation difficult and makes children more susceptible to Diarrhoea. Distribution of patients according to immunization status shows majority of the children (82%) have completed their immunization for age and 18% children did not complete their immunization for age. Though the majority of patients are from Lower middle and lower Socio-economic status, immunization among the children is quite promising. It suggests strong results from impact of Anganwadi workers, ANM, ASHA workers and Government programs. According to feeding history of the patients 53.3% children practiced or practicing exclusive breastfeeding and 46.7% children did not practice exclusive breastfeeding. Moreover, history of bottle feeding was absent in 76.7% patients and present in 23.3% patients. A similar study conducted by Rokkappanavar KK, *et al*[16], showed that only 50.49% of mothers were exclusively breastfeeding at the time of the study. The rest were either unaware of exclusive breastfeeding or did not practice breastfeeding. Of the study subjects, 20.09% practiced/practicing bottle feeding at the time of the study.

Table 1(A) indicates majority of mothers know about causes of Diarrhoea.

When it comes to breastfeeding and ORS, most mothers are aware of its beneficial role. In a similar study, Rokkappanavar KK, *et al*[16] showed that most of the subjects (86.27%) were aware of ORS sachets. When asked about the appropriate time to administer ORS to their children, the majority (52.27%) of mothers gave the correct answer of administering ORS during an episode of Diarrhoea while 46.02% mother prefer to give ORS to child whenever child is sick. The majority of mothers (58.52%) had sufficient knowledge about the preparation and use of ORS solution. In our study, 44% mothers have excellent knowledge of childhood Diarrhoea and its management followed by 36% mothers who have poor knowledge about it. Mean knowledge score is 6.68 and SD is 4.05.

Table 1(B) shows association between knowledge and education and Socio-economic status of mothers, which is statistically significant. It can be observed that in all the knowledge components higher percentage of mothers with higher secondary and above educational level have correctly responded than those with lower educational level. Similarly, higher numbers of mothers from upper middle and above level of Socio-economic class have responded correctly than those from middle and lower socio-economic class.

Table 2(A) denotes attitude of mothers towards management and use of ORS in childhood Diarrhoea. Majority of mothers believe that Diarrhoea is not manageable at home with help of ORS. In our study, 48% of mothers have positive attitude about childhood Diarrhoea and its management with ORS while 52% mothers have negative attitude about it. Mean attitude score is 3.19 and SD is 2.58.

Table 2(B) suggest that education and Socio-economic status of mother is statistically significantly ($p<0.01$) associated with attitude of mother in majority of questions. So, it can be observed that in all the attitude components higher percentage of mothers have correctly responded whose education status is higher secondary and above level and from upper middle and above socio-economic class. In a similar study, Gollar, *et al*,[17] it was found that mothers who had serious attitude toward diarrheal illness were 71%. In mothers who were in the age group of <25 years, 42% mothers and 40% of mothers who had completed school education and 56% of mothers who belonged to higher socio-economic status had serious attitude regarding Diarrhoea.

Table 3(A) suggests practice of mothers about childhood Diarrhoea. Regarding practice we have observed that majority of mothers use ORS at home. Most of mothers increases food and fluid offering to their children and also higher percentage of mothers continue breastfeeding during Diarrhoea. In our study, we observed poor practice of management of childhood Diarrhoea in higher percentage ie, 42% of mothers followed by excellent practice in 36%. Mean practice score is 7.11 and SD is 4.03.

It is evident from Table 3(B) that there is statistically significant association of mother's educational and Socio-economic status with practice levels ($p<0.01$). It can be observed that 67.4% of mothers with education level higher secondary and above have excellent practice of management of childhood Diarrhoea as compared to mothers with secondary and below level education group among whom poor practice is in highest percentage ie, 44.4%. Similarly, it can be observed that higher percentage ie,76 % of mothers with Socio-economic status upper middle and above

Table 1(A) — *Knowledge of mothers regarding childhood diarrhoea (N=150)*

Knowledge of mothers regarding childhood diarrhoea	Response	
	No of mothers	% of mothers
What is diarrhoea		
Correctly described	122	81.3
Incorrectly described	28	38.7
Cause of diarrhoea		
Viral/bacterial infection	95	63.3
Teething	39	2
Eating spicy food	15	10
No idea	01	0.7
Knowledge about role of breast feeding in diarrhoea		
Correct response	81	54
Incorrect response	69	46
Knowledge about role of bottle feeding in diarrhoea		
Correct response	86	57.3
Incorrect response	64	42.7
Age at which child sufferfrom diarrhoea		
Less than 2 years	99	66
2 to 5 years	37	24.7
More than 5 years	14	9.3
Knowledge about use of ORS in diarrhoea		
Yes	133	88.7
No	17	11.3
How Oral Rehydration Solution is beneficial inchild?		
It replaces water lost in diarrhoea from child'sbody	113	75.3
It cures diarrhoeal disease	31	20.7
No idea	06	04
Are health care interventions required to treat diarrhoea?		
Yes	69	46
No	19	12.7
Not in all cases	62	41.3

Table 1(B) — *Association of Knowledge of mothers regarding childhood diarrhoea with their educational and socio-economic status (N=150)*

Knowledge of mothers regarding childhood diarrhoea Question/ Response	Education status: Secondary and below No of mothers	Secondary and below % of mothers	Higher secondary and above No of mothers	Higher secondary and above % of mothers	Test statistics	Socio-economic status: Middle level and below No of mothers	Middle level and below % of mothers	Upper middle and above No of mothers	Upper middle and above % of mothers	Test statistics
What is diarrhoea										
Correctly described	74	76.3%	48	90.6%	χ^2= 4.6 df=1	101	80.8%	21	84%	χ^2= 0.14 df=1
Incorrectly described	23	23.7%	05	9.4%	p=0.03	24	19.2%	04	16%	p=0.7
Cause of diarrhoea										
Correct	50	51.5%	45	84.9%	χ^2= 16.4 df= 1	72	56.7%	23	92%	χ^2= 10.6 df= 1
Incorrect	47	48.5%	08	15.1%	p<0.01	53	42.4%	02	8%	p<0.01
Knowledge about roleof breast feeding indiarrhoea										
Correct	30	30.9%	42	79.3%	χ^2=32.0 df= 1	49	39.2%	23	92%	χ^2= 23.2 df= 1
Incorrect	67	69.1%	11	20.8%	p<0.01	76	60.8%	02	8%	p<0.01
Knowledge about role of bottlefeeding in diarrhoea										
Correct	26	26.8%	39	73.6%	χ^2= 30.5 df= 1	46	36.8%	19	76%	χ^2= 13.03 df= 1
Incorrect	71	73.2%	14	26.4%	p<0.01	79	63.2%	06	24%	p<0.01
Age at which child suffer from diarrhoea										
Correct	37	38.1%	44	83%	χ^2= 27.8 df= 1	59	47.2%	22	88%	χ^2= 13.9 df= 1
Incorrect	60	61.9%	09	17%	p<0.01	66	52.8%	03	12%	p<0.01
Knowledge about use of ORS in diarrhoea										
Yes	43	44.3%	43	81.1%	χ^2= 18.9 df= 1	65	52%	21	84%	χ^2= 8.7 df= 1
No	54	55.7%	10	18.9%	p<0.01	60	48%	04	16%	p<0.01
How Oral Rehydration Solution is beneficial in child?										
Correct	54	55.7%	45	84.9%	χ^2= 13.0 df= 1	76	60.8%	23	92%	χ^2= 9.03 df= 1
Incorrect	43	44.3%	08	15.1%	p<0.01	49	39.2%	02	08%	p<0.01
Are health care interventions required to										
Correct	81	83.5%	52	98.1%	χ^2= 7.3 df= 1	108	84.6%	25	100%	Yate's χ^2= 2.6
Incorrect	16	16.5%	01	1.9%	p<0.01	17	13.6%	00	0%	df= 1 p<0.01
Mode of spread of diarrhoea										
Correct	66	68%	47	88.7%	χ^2= 7.8 df= 1	91	72.8%	22	88%	χ^2= 2.6 df= 1
Incorrect	31	32%	06	11.3%	p<0.01	34	27.2%	03	12%	p<0.01
What are danger signs associated with diarrhoea in children?										
Correct	23	23.7%	39	73.6%	χ^2= 35.1 df= 1	42	33.6%	20	80%	χ^2= 18.5 df= 1
Incorrect	74	76.3%	14	26.4%	p<0.01	83	66.4%	05	20%	p<0.01
How diarrhoea can be prevented?										
Correct	30	30.9%	45	84.9%	χ^2= 39.9 df= 1	50	40%	25	100%	χ^2= 30 df= 1
Incorrect	67	69.1%	08	15.1%	p<0.01	75	60%	00	0%	p<0.01

Table 2(A) — *Attitude of mothers towards childhood diarrhoea and its management (N=150)*

Attitude of mothers towards childhood diarrhoea and its management	Response: No of mothers	% of mothers
Diarrhoea is preventable disease and manageable at home		
Agree	67	44.7
Disagree	83	55.3
Oral rehydration solution is first line of treatment for diarrhoea in children		
Agree	72	48
Disagree	78	52
Mother/family member can prepareoral solution at home		
Agree	86	57.3
Disagree	64	42.7
Giving oral rehydration solution at home can treat diarrhoea		
Agree	69	46
Disagree	81	54
My child dislikes the taste of oral rehydration solution		
Agree	70	46.7
Disagree	80	53.3
Oral rehydration solution replaces the fluid lost in diarrhoea		
Agree	117	78
Disagree	33	22

have excellent practice of management of childhood Diarrhoea as compared to mothers with middle and below level Socio-economic status group among whom poor practice is in highest percentage ie, 39.2%.

Conclusion

Most of the mothers were aware of the causes and management of Diarrhoea with ORS and the beneficial role of breastfeeding in Diarrhoea. Our study found a strong association between educational status, Socio-economic status of mothers and knowledge, attitude and practices related to management of diarrheal disease (p<0.001). Lack of awareness can lead to improper use

Table 2(B) — *Association of attitude of mothers towards childhood diarrhoea with their educational and socio-economic status (N=150)*

Attitude of mothers towards childhood diarrhoea Question/ Response	Education status: Secondary and below — No of mothers	Education status: Secondary and below — % of mothers	Education status: Higher secondary and above — No of mothers	Education status: Higher secondary and above — % of mothers	Test statistics	Socio-economic status: Middle level and below — No of mothers	Socio-economic status: Middle level and below — % of mothers	Socio-economic status: Upper middle and above — No of mothers	Socio-economic status: Upper middle and above — % of mothers	Test statistics
Diarrhoea is preventable disease and manageable at home										
Agree	25	25.8%	42	79.2%	χ^2= 36.9 df=1	44	35.2%	23	92%	χ^2= 27.2 df=1
Disagree	72	74.2%	11	20.8%	p<0.01	81	64.8%	02	08%	p<0.01
Oral rehydration solution is first line of treatment for diarrhoea in children										
Agree	37	27.8%	45	84.9%	χ^2= 44.7 df= 1	47	37.6%	25	100%	χ^2= 32.5 df= 1
Disagree	70	72.2%	08	15.1%	p<0.01	78	62.4%	00	00%	p<0.01
Mother/family member can prepare oral solution at home										
Agree	39	40.2%	47	88.7%	χ^2= 32.9 df= 1	61	48.8%	25	100%	χ^2= 23.2 df= 1
Disagree	58	59.8%	06	11.3%	p<0.01	64	51.2%	00	00%	p<0.01
Giving oral rehydration solution at home can treat diarrhoea										
Agree	28	28.9%	41	77.4%	χ^2= 32.4 df= 1	46	36.8%	23	92%	χ^2= 25.5 df= 1
Disagree	69	71.1%	12	22.6%	p<0.01	79	63.2%	02	08%	p<0.01
My child dislikes the taste of oral rehydration solution										
Agree	26	26.8%	44	83%	χ^2= 43.5 df= 1	47	37.6%	23	92%	χ^2= 24.7 df= 1
Disagree	71	73.2%	09	17%	p<0.01	78	62.4%	02	08%	p<0.01
Oral rehydration solution replaces the fluid lost in diarrhoea										
Agree	67	69.1%	50	94.3%	χ^2= 12.7 df= 1	92	73.6%	25	100%	χ^2= 8.4 df= 1
Disagree	30	30.9%	03	5.7%	p<0.01	33	26.4%	00	00%	p<0.01

Table 3(A) — *Practice of mothers for management of childhood diarrhoea (N=150)*

Practice of mothers for management of childhood diarrhoea	Response: No of mothers	Response: % of mothers
Do you prepare ORS at home ?		
Yes	114	76
No	36	24
How ORS is prepared ?		
One sachet of ORS to be mixed with 500 ml of water	47	31.3
One sachet of ORS to be mixed with 1000 ml of water	89	59.3
One sachet of ORS to be mixed with 1500 ml of water	14	9.3
Others (Specify)_____		
Is water used for making ORS is boiled initially?		
Yes	107	71.3
No	43	28.7
How long prepare ORS isused?		
Up to 24 hours	93	62
Up to 48 hours	38	25.3
Up to 72 hours	09	6
Up to 96 hours	04	2.7
Don't know	06	4
How often do you give ORS to your child?		
After every stool	54	36
Once a day	20	13.3
Two to three times a week	22	14.7
Whenever child wants to drink	54	36
Do you taste ORS before giving it to child?		
Yes	31	20.7
No	119	79.3

Practice of mothers for management of childhood diarrhoea	Response: No of mothers	Response: % of mothers
Practice of breastfeeding to child during episode of diarrhoea		
Continue breastfeeding	81	54
Not giving breastfeeding	64	42.7
Don't know	05	3.3
What is practice of giving fluid for drinking when he/she is suffering from diarrhoea?		
Less than usual	31	20.7
Same as usual	25	16.7
More than usual	94	62.7
What is practice of giving food for drinking when he/she is suffering from diarrhoea?		
Less than usual	72	48
Same as usual	24	16
More than usual	54	36
Do you use homemade solution to your child for diarrhoea		
Yes	96	64
No	54	36
How do you prepare homemade solution?		
Correctly described	49	32.7
Incorrectly described	47	31.3
What do you do to your child in case of diarrhoea initially?		
Household remedies with ORS	87	58
Health care center consultation	63	42

Table 3(B) — *Association of mother's educational and socio-economic status with practice categories (N=150)*

Practice level	Education status				Socio-economic status			
	Secondary and below		Higher secondary and above		Middle level and below		Upper middle and above	
	No of mothers	% of mothers	No of mothers	% of mothers	No of mothers	% of mothers	No of mothers	% of mothers
Excellent	27	27.8%	36	67.4%	44	35.2%	19	76%
Good	27	27.8%	06	11.3%	32	25.6%	01	04%
Poor	43	44.4%	11	20.8%	49	39.2%	05	20%
χ^2= 22.6, df= 2, p<0.01					χ^2= 14.8, df= 2, p<0.01			

of health services available in the community. Therefore, health education should be used as a tool to promote knowledge and good practice. As Mothers are the primary health care providers, mother's knowledge regarding causes of diseases, sign and symptoms, prevention and control are very essential thereby decreasing morbidity & mortality due to diarrhoea.

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