Section: Community Medicine

Original Research Article

ASSESSMENT OF LEVEL OF AWARENESS IN RECOGNISING DANGER SIGNS & FEEDING PRACTICES DURING DIARRHOEA AMONG MOTHERS OF UNDER 5 YEARS CHILDREN IN URBAN AND RURAL AREAS: A CROSS-SECTIONAL STUDY

Mahender Singh[1], Diksha Choudhary[2], Himani Tak[3], Satish Kumar Aggarwal[4]

[1]Assistant Professor, Department of Community Medicine, VIMS, Gajraula, India.
[2]Senior Resident, Department of Community Medicine, MAMC, Agroha, India.
[3]Assistant Professor, Department of Community Medicine, NCMCH, Israna, India.
[4]Professor and Head, Department of Community Medicine, NCMCH, Israna, India.

Received : 24/11/2023
Received in revised form : 03/01/2024
Accepted : 17/01/2024

Keywords:
Attitude, diarrhoea, knowledge, ORS, practices, under five-children.

Corresponding Author:
Dr. Himani Tak,
Email: cleotak@gmai.com

DOI: 10.47009/jamp.2024.6.1.247

Source of Support: Nil,
Conflict of Interest: None declared

Int J Acad Med Pharm
2024; 6 (1); 1243-1248

Abstract

Background: Despite lowering the mortality of childhood diarrhoea, prevalence of the disease is still high. Young age, low socioeconomic status, poor literacy, inadequate breastfeeding, malnutrition, poor sanitation and hygiene practices of the mother are found to be responsible for higher incidence of diarrhoea among children. This study aimed to assess the level of knowledge and practices regarding diarrhoea management among mothers of children under five years of age. **Materials and Methods:** The study was done from January to February, 2023. A multistage-random sample design was used to produce a representative sample. A semi structured questionnaire was administered to mothers to collect data. The study was carried in rural and urban settings using cross- sectional design. Data was presented in the form of frequency and proportion for categorical variables and mean and standard deviation for continuous variables. Association between different variables was established using chi square test. **Result:** 600 mothers of age ranging between 20 to 49 years were interviewed. 96% mothers had good knowledge, 89.83% had positive attitude and 79.33% followed good practices regarding diarrhoea management. Better knowledge attitude and practices were associated with locality, type of family, socioeconomic status, mother's education and occupation ($p<0.05$). **Conclusion:** Most of the mothers had good knowledge about diarrhoea and its causes, signs of dehydration, danger signs, preparation of ORS and its use. Also, most mothers had a positive attitude towards hand washing, exclusive breastfeeding, vaccination, ORS and vitamin A supplementation being protective against diarrhoea.

INTRODUCTION

Diarrhoea is the second leading cause of death among children under five years of age. There are around 1.7 billion cases of childhood diarrhoea each year, taking a toll over around 5.25 lakh lives each year globally.[1] 72% of deaths due to diarrhoea occurs within two years of life. Risk factors reported for these deaths are undernutrition, sub-optimum breast feeding and zinc deficiency. Global burden for childhood diarrhoea incidence and mortality is highest in southeast Asia and Africa.[2] According to NFHS-5, prevalence of diarrhoea in children under 5 years of age is 7.3%.[3] Average diarrhoea incidence is estimated to be 1.71 and 1.09 episodes/person/year in rural and urban areas respectively, accounting to a proportionate mortality of 9.1% in the age group of 0-6 years.[4,5] Young age, low socioeconomic status, poor maternal literacy, presence of under-five sibling in the family, birth weight, inadequate breastfeeding, malnutrition, poor sanitation and hygiene practices of the mother are found to be responsible for a higher incidence of diarrhoea among children.[6] Low osmolarity oral rehydration salt solution (ORS), zinc and continued feeding of energy dense feeds in addition to breastfeeding are recommended as the standard management of diarrhoea by the Ministry of Health and Family Welfare, Government of India. Oral rehydration therapy is considered as the most effective strategy to prevent death due to diarrhoea in children.[7] Though it was found in a study that the knowledge of ORS/ORT among mothers of under-

five children in India is good (73%), but there is a big gap between knowledge and practice as reflected in poor ORS usage rates (43%).[7,8] Zinc supplementation (10 mg of elemental zinc for 14 days for children aged 2-6 months and 20 mg/day for older children) reduces the morbidity and mortality by reducing the duration and severity of diarrhoea. But low coverage of zinc prescription has been found in a study, due to lack of knowledge and awareness among the care providers.[9] The same is reflected in NFHS-5, where during a diarrhoea episode, only 60.6% children received oral rehydration solution (ORS) and 30.5% received zinc tablets.[3]

Despite being able to lower the mortality due to childhood diarrhoea, prevalence of the disease is still quite high. So, this study aims to assess the level of knowledge and practices regarding diarrhoea management among urban and rural mothers of children less than five years of age in field practice areas of a private medical college, Panipat, Haryana.

MATERIALS AND METHODS

This is a community based cross sectional study conducted from January to February 2023 in the urban and rural field practice areas of Community Medicine Department, NCMCH, Panipat. A multistage-random sample design was used to produce a representative sample of mothers. In the first stage, a list of all Anganwadi Centres was prepared. The Anganwadi Centres were grouped into rural and urban zones. Ten Anganwadi Centres were selected randomly from each zone. In the second stage, list of all children and their mothers who were eligible to participate was prepared andthe target sample size will be drawn by systematic random sampling technique. Sample size was calculated by taking into account the following-

1. Prevalence of diarrhoea related knowledge among mothers is presumed to be 50%.
2. Confidence limit of 95%.
3. Absolute error of 5%.
4. Design effect 1.5

Thus, the sample size calculated is 600. Out of this, 300 samples will be taken from rural and urban areas each.

A semi structured questionnaire was used to collect data. The questionnaire was validated by conducting a pilot study. Data was collected by the help of health workers at UHTC and RHTC who were trained before data collection, in the department of Community Medicine, NCMCH, Panipat. Data regarding the socio-demographic profile, knowledge, attitude and practices of mothers of under five years children regarding diarrhoea was collected. All the data collected was entered into MS Excel. Data analysis was done by using SPSSv.26 statistical software. Data was presented in the form of frequency and proportion for categorical variables and mean and standard deviation for continuous variables. Association between different variables was established using chi square test.

Demographic profile

In the present study, the age of the participant mothers (N=600) ranged between 20 to 49 years; mean age being 26.8 years ±3.40 years. 50% belonged to urban locality and 50% belonged to rural area. 65.17% mothers belonged to joint families. 29.33% fathers had completed education up to senior secondary level, majority of them (36.83%) were self- employed. Similarly, 35% of mothers were educated up to senior secondary level and majority (92.17%) of them were housewives. 8.17% and 2.83% of the mothers and fathers, respectively were illiterate. 45.5% of mothers belonged to Class III, according to modified B.G. Prasad classification. Most of the participants (75.67%) had household water supply through municipality. 62.83% participants did not use any household method of water purification. 46.83% participant responded that on the average their child had 2 episodes of diarrhoea per year [Table 1].

Knowledge, Attitude and practices regarding diarrhoea

There were nine questions in the questionnaire to assess knowledge. Each correct response was given a point of 1 and wrong response was given 0 point. A score of ≤5 and >5 was considered as having poor and good knowledge, respectively. Question No 1, 2, 3, 5, 7, and 9 were rightly answered by more than 90% of participants. Mothers with good knowledge regarding diarrheal symptoms were 96.83%, regarding causes were 95.5%, and regarding treatment of diarrhoea illness 94.33%. [Table 2]. Attitude about diarrheal illness was regarded as positive or negative based on their approach toward diarrhoea by asking nine questions. Mothers who had positive attitude toward diarrheal illness were 89.83%. 81.67% participants had a positive attitude towards vaccination as protective factor. [Table 3]. Practices regarding diarrheal illness were considered as good or poor by asking nine questions. Majority of mothers (94%) practiced exclusive breastfeeding for the first 6 months. There were more than three fourth (76%) of mothers, who continued breastfeeding during diarrheal episodes. Only 3.17% mothers responded correctly regarding frequency at which ORS should be given. 30% participants responded that there was indiscriminate disposal of stool. [Table 4].

Statistically significant association was observed between locality and KAP regarding diarrhoea. Knowledge and practices were observed better in urban participants (pk- 0.012, pp- <0.00001). Positive attitude was associated with rural participants (p- 0.02).

Statistically significant association was observed between type of family and knowledge (p-0.02), attitude (p<0.00001) and practices regarding diarrhoea (p <0.00001).

Statistically significant association was observed between socioeconomic status and practices

ISSN (O): 2687-5365; ISSN (P): 2753-6556

regarding diarrhoea (p- 0.000024), whereas no significant association was observed between socioeconomic status and knowledge (p- 0.21) and attitude (p- 0.10) regarding diarrhoea

Mothers' education status was associated with positive attitude (p- 0.002). No significant association was observed with knowledge and practices regarding diarrhoea.

Mother's occupation was associated with knowledge (p<0.00001), attitude (p<0.00001), and practices (p - 0.00001) regarding diarrhoea which was significant [Table 6].

RESULTS

Table 1: Socio-demographic profile of the participants (N=600)

Locality	**Rural**				**Urban**			
	300 (50%)				300 (50%)			
Religion	Hindu				Muslim			
	598 (99.67%)				002 (0.33%)			
Type of family	Nuclear		Joint		Three generation			
	178 (29.66%)		391 (65.17%)		31 (05.17%)			
Father's education	Illiterate	Primary	Middle	Secondary	Senior secondary	Diploma	Graduate	Post graduate
	17 (2.83%)	25 (4.17%)	159 (26.50%)	07 (1.17%)	176 (29.33%)	29 (4.83%	117 (19.50%)	70 (11.60%)
Occupation of father	Self employed	Govt. sector	Pvt. sector	Retired	Labourer	Unemployed		
	221 (36.83%	41 (6.83%)	152 (25.33%)	03 (0.5%)	178 (29.67%)	02 (0.33%)		
Socioeconomic class (B. G. Prasad classification)	Class I (Upper class)	Class II (Upper Middle class)	Class III (Middle class)	Class IV (Lower middle class)	Class V (Lower class)			
	63 (10.5%)	180 (30%)	273 (45.5%)	84 (14%)	0 (0%)			
Mother' education	Illiterate	Primary	Middle	Secondary	Senior secondary	Diploma	Graduate	Post graduate
	49 (8.17%)	34 (5.67%)	133 (22.17%)	10 (1.67%)	210 (35%)	06 (1%)	115 (19.17%)	43 (7.16%)
Occupation of mother	House wife	Self employed	Government sector	Private sector	Labourer			
	553 (92.17%)	06 (1%)	04 (0.67%)	32 (5.33%)	05 (0.83%)			
Household water supply	Pipelined water from PHED			Hand pump				
	454 (75.67%)			146 (24.33%)				
House hold water purification	Yes			No				
	223 (37.17%)			377 (62.83%)				

Table 2: Distribution of participants according to Knowledge

Diarrhea	Yes			No		Don't know	
	581 (96.83%)			15 (2.5%)		4 (0.67%)	
Causes of diarrhea	Yes			No		Don't know	
	573 (95.5%)			15 (2.5%)		12 (2%)	
Signs of dehydration	Yes			No		Don't know	
	540 (90%)			24 (4%)		36 (6%)	
Danger signs of diarrhea	Yes			No		Don't know	
	446 (74.83%)			35 (5.83%)		119 (19.83%)	
Treatment	Yes			No		Don't know	
	566 (94.33%)			23 (3.83%)		11 (1.83%)	
Source of getting ORS	AWW	ASHA	ANM	Government Hospital	Private Hospital	Medical store	NA
	60 (10%)	182 (30.33%)	91 (15.17%)	43 (7.17%)	11 (1.83%)	204 (34%)	9 (1.5%)
Making ORS solution	Yes			No		Don't know	
	560 (93.33%)			28 (4.67%)		12 (2%)	
Homemade ORS	Yes			No		Don't know	
	519 (86.50%)			32 (5.33%)		49 (8.17%)	
Duration of use	Yes			No		Don't know	
	552 (92%)			27 (4.5%)		21 (3.5%)	

Table 3: Distribution of participants according to attitude

Hand wash for prevention	Agree	Don't know	Disagree
	540 (90%)	10 (1.67%)	50 (8.33%)
Treatable at home	Agree	Don't know	Disagree
	524 (87.33%)	22 (3.67%)	54 (9%)
Fatality	Agree	Don't know	Disagree
	591 (98.5%)	7 (1.17%)	2 (0.33%)
	Agree	Don't know	Disagree

ISSN (O): 2687-5365; ISSN (P): 2753-6556

Exclusive breast feeding as protective factor	594 (99%)	4 (0.67%)	2 (0.33%)
More foods during diarrhea	Agree	Don't know	Disagree
	516 (86%)	20 (3.33%)	64 (10.67%)
More fluids during diarrhea	Agree	Don't know	Disagree
	596 (99.33%)	3 (0.5%)	1 (0.17%)
Vaccination as protective factor	Agree	Don't know	Disagree
	490 (81.67%)	29 (4.83%)	81 (13.50%)
Vitamin A as protective factor	Agree	Don't know	Disagree
	384 (64%)	160 (26.67%)	56 (9.33%)
ORS alone as treatment	Agree	Don't know	Disagree
	586 (97.67%)	10 (1.17%)	4 (0.66%)

Table 4: Distribution of participants according to practices

Started home treatment with	ORS	ORS + Light meals	Light meals + fluids	Light meals only	ORS + Light meals + Fluids
	02 (0.33%)	138 (23%)	02 (0.33%)	01 (0.17%)	457 (76.17%)
Hospital treatment	Yes		No		
	13 (2.17%)		587 (97.83%)		
Breast feeding to continue	Yes		No	Not applicable	
	456 (76%)		01 (0.17%)	143 (23.83%)	
Food intake during diarrheal episode	Reduced		Stopped	Increased	
	9 (1.5%)		7 (1.17%)	584 (97.33%)	
Frequency at which ORS was given	After each stool	Once a day	On demand	2-3 times a day	When mother feels like	Not given at all
	19 (3.17%)	52 (8.67%)	92 (15.33%)	430 (71.67%)	03 (3.05%)	04 (0.67%)
Stool disposal	Toilet			Indiscriminate throwing		
	420 (70%)			180 (30%)		
Average episodes of diarrhea per year	1	2	3	4	5	
	125 (20.83%)	281 (46.83%)	173 (28.83%)	19 (3.17%)	02 (0.33%)	

Table 5: Association between locality, type of family, education, socioeconomic status, and knowledge, attitude, practices regarding diarrhoea in participants

Category (N=600)	**Knowledge**		**Attitude**		**Practices**		**p value**
	Good (N=576)	**Poor (N=24)**	**Positive (N=539)**	**Negative (N=61)**	**Good (N=476)**	**Poor (N=124)**	
Locality							Knowledge- 0.012 Attitude- 0.02 Practices- <0.00001
Urban	294	06	261	39	265	35	
Rural	282	18	278	22	211	89	
Type of family							Knowledge- 0.02 Attitude-<0.00001 Practices-<0.00001
Nuclear	176	02	142	36	129	49	
Joint	372	19	375	16	332	59	
Three generation	28	03	22	09	15	16	
Socioeconomic class (B. G. Prasad classification)							Knowledge- 0.21 Attitude- 0.10 Practices- <0.000024
Class I (Upper class)	58	5	54	09	52	11	
Class II (Upper Middle class)	171	9	159	21	156	24	
Class III (Middle class)	266	7	254	19	217	56	
Class IV (Lower middle class)	81	3	72	12	51	33	
Mother's education							Knowledge- 0.28 Attitude- <0.002 Practices- 0.00
Illiterate	45	4	42	07	19	30	
Primary	33	1	31	03	17	19	
Middle	128	5	116	17	95	38	
Secondary	09	1	06	04	07	03	
Senior secondary	203	7	191	19	190	20	
Diploma	05	1	06	03	05	01	
Graduate	113	2	108	07	111	04	
Post graduate	40	3	42	01	38	05	
Occupation of mother							Knowledge- <0.00001 Attitude- <0.00001 Practices-<0.00001
House wife	537	16	517	36	457	96	
Self employed	05	01	05	01	03	03	
Government sector	03	01	02	02	02	02	
Private sector	30	02	13	19	11	21	
Labourer	01	04	02	03	03	02	

ISSN (O): 2687-5365; ISSN (P): 2753-6556

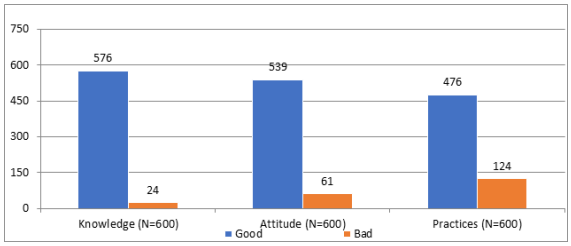

Figure 1: Distribution of knowledge, attitude and practices

DISCUSSION

This study has assessed the knowledge, attitude and practices of mothers of under 5 years old children regarding diarrhoea management, feeding practices and recognising danger signs during diarrhoea. Based on the findings of the respondents, 96% mothers had good knowledge, 89.83% had positive attitude and 79.33% followed good practices regarding diarrhoea management. Most of the mothers had good knowledge about diarrhoea and its causes, signs of dehydration, danger signs, preparation of ORS and its use. Also, most mothers had a positive attitude towards hand washing, exclusive breastfeeding, vaccination, ORS and vitamin A supplementation being protective against diarrhoea. More than three fourth mothers managed diarrhoea episode at home using ORS and appropriate feeding practices-light meals, more fluids, increased food intake following a diarrhoea episode and continued breastfeeding.

In this study, 95.5% mothers knew the right causes of diarrhoea but 2.5% mothers were ignorant of the causes of diarrhoea. A study done by Garg N et al also documented 97.8% mothers correctly identified contaminated food and water as the causes of diarrhoea.10 90% mothers knew signs of dehydration while 75% were aware of the danger signs of diarrhoea. A similar study done by Gollar et al reported that 82% mothers had good knowledge of symptoms, 72% regarding spread and 68% regarding prevention of diarrhoea but only 40% had limited knowledge of dehydration and danger signs.[11]

Despite good knowledge about diarrhoea disease, 63% households still did not use any water purification method at home which could be because majority of the participants were from rural areas and urban slum areas. Though 98% of mothers agreed that ORS alone can treat diarrhoea but in practice they considered only ORS (0.33%) to be insufficient to manage diarrhoea and added homebased fluids to it. A similar study done in India also revealed that 0.9% mothers used only ORS to manage diarrhoea and 29% gave ORS plus homebased fluids.10 2.17% mothers sought immediate medical care as they believed that diarrhoea cannot be managed at home. It was because ORS prevents dehydration and do not stop diarrhoea. Hence, mothers were disappointed after giving ORS as diarrhoea didn't stop immediately and they either added other homebased fluids or sought medical care. Some earlier studies reported food restriction as mothers believed that during diarrhoea child's intestines becomes weak and bowel needs rest and more the child eats, more severe will be the diarrhoea.[12,13] However, in this study, majority of the mothers continued breastfeeding and increased fluid and food intake during an episode which is consistent with the results of other studies.[10,11] This is a good practice as food restriction during diarrhoea may further lead to malnutrition. Though 93% mothers knew how to prepare ORS and its duration of use but more than three fourth mothers didn't know how to give ORS. Around 72% mothers gave ORS 2-3 times a day, 8.6% gave once a day and 3% gave whenever she felt required during an episode of diarrhoea. It suggested that though awareness among mothers regarding diarrhoea has increased owing to IEC campaigns, IDCF activities, increased female literacy, health workers and mass media but it could not be translated into practice. A study done in Haryana suggested that 77.7% mothers first consulted their mother-in-law, 16.66% consulted their husband and 18.5% consulted RMPs for treatment of diarrhoea.[13] Hence, health campaigns should also include men and elderly women as they also influence health seeking behaviour and practices of mothers.

CONCLUSION

Factors found to be significantly associated with knowledge and attitude of mothers were location of residence, family structure and occupation of mother. Factors found to be significantly associated with diarrhoea management and feeding practices among mothers were area of residence, family composition, socioeconomic class, education and occupation of mother. Apart from the conventional case management approach, addressing the social and environmental determinants like hand washing, hygiene practices, safe drinking water, health education of men and elderly women etc. will prove to be cost effective and acceptable interventions in Indian community.

Limitations

Use of Zinc tablets could not be assessed as it plays an important role in reducing severity and frequency of diarrhoea. Feeding practice is not detailed in this study as to what foods and fluids are actually given to child during a diarrhoea episode.

REFERENCES

1. Diarrhoeal disease. [cited 2022 Aug 12]. Available from: https://www.who.int/news-room/fact-sheets/detail/diarrhoeal-disease
2. Fischer Walker CL, Rudan I, Liu L, Nair H, Theodoratou E, Bhutta ZA, et al. Global burden of childhood pneumonia and diarrhoea. Lancet. 2013 Apr 20 [cited 2022 Aug 15];381(9875):1405–16.
3. Family N, Survey H. Government of India Ministry of Health and Family Welfare COMPENDIUM OF FACT SHEETS INDIA AND 14 STATES/UTs (Phase-11).

ISSN (O): 2687-5365; ISSN (P): 2753-6556

4. Lakshminarayanan S, Jayalakshmy R. Diarrheal diseases among children in India: Current scenario and future perspectives. J Nat Sci Biol Med . 2015 Jan 1 [cited 2022 Aug 16];6(1):24-28.
5. Burden of Diseases in India. New Delhi, India: National Commission on Macroeconomics and Health, Ministry of Health and Family Welfare G of I 2005. p. 182-7.
6. Park K. Textbook of Preventive and Social Medicine. 19th ed. Jabalpur IBB 2007. Epidemiology of communicable disease; pp. 142–7.
7. Bhatnagar S, Lodha R, Choudhury P, Sachdev HP, Shah N, Narayan S et al. IAP Guidelines 2006 on management of acute diarrhea.Indian Pediatr.2007;44:380–9.
8. International Institute for Population Sciences (IIPS) and Macro International. National Family Health Survey (NFHS-3) 2005-06: India. Available from: http://www.rchiips.org/NFHS/report.shtml .
9. Bajait C, Thawani V. Role of zinc in pediatric diarrhea. Indian J Pharmacol 2011;43:232-5.
10. Garg N, Kikon S, Ramesh RM, Garg SC. Knowledge, attitude and practices of childhood diarrhoea among mothers of children under five years of age: a cross sectional study. Int J Community Med Public Heal. 2019 Oct 24 [cited 2023 May 11];6(11):4754–64.
11. Gollar L, Avabratha Ks. Knowledge, attitude, and practice of mothers of under-five children regarding diarrheal illness: A study from coastal Karnataka. Muller J Med Sci Res. 2018 [cited 2023 Jun 20];9(2):66.
12. Paintal K, Aguayo VM. Feeding practices for infants and young children during and after common illness. Evidence from South Asia. 2016 [cited 2023 Aug 9].
13. Sood AK, Kapil U. Knowledge and practices among rural mothers in Haryana about childhood diarrhea. Indian J Pediatr. 1990;57(4):563–6.

ISSN (O): 2687-5365; ISSN (P): 2753-6556