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ASSESSMENT OF MOTHER'S KNOWLEDGE AND PRACTICE ABOUT DIARRHEA AND ORAL REHYDRATION THERAPY (ORT) IN UNDER-FIVE CHILDREN IN AN URBAN SLUM OF WESTERN UTTAR PRADESH

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ABSTRACT

Background: A mother occupies pivotal role in relation to health of the family, especially for young children. If mother is having significant health awareness, will take the responsibility of increasing the family health, which facilitates high standards of living. Sufficient awareness and proper health seeking practices among the mothers lessens the mortality and morbidity of under-five children. **Methods:** Community-based observational cross-sectional study was conducted using self-designed pretested semi-structured questionnaire for data collection. A door to door survey was conducted among these families and mothers of under-five children, in each of family were interviewed. **Results:** Table 5.7.1 shows that, out of 282 mothers, 203(71.99%) mothers had knowledge about the HBS/SSS and its use during diarrhea while 79(28.01%) were not aware about HBS/SSS. Significant association was found with Mother's knowledge of ORS & diarrhea among under-five children. Lack of knowledge of ORS has more than twice higher odds of diarrhea among children. **Conclusion**: The caregivers must also be informed about the danger signs of diarrhea and when its needed to visit healthcare faculties for management. This adds on the importance of educating and reinforcing the practices of preparation of sugar salt solutions among mothers.

KEYWORDS: Diarrhea, Oral Rehydration Therapy (ORT), Mother, Under-five children.

INTRODUCTION

Under-five age group is one of the vulnerable age groups for developing the infectious diseases. Diarrheal diseases remain the second most leading cause of death next to pneumonia among under-five mortality globally, contributing to one-fifth of child deaths.[1,2] In India, acute diarrheal disease accounts for about 8 percent of deaths in under-five children.[3]

Diarrhea is more common in setting areas of poor sanitation and hygiene, including a lack of safe drinking water and among all diarrheal deaths, 88% is attributable to unsafe drinking water, inadequate sanitation, and poor hygiene. International Centre for diarrheal Disease Research, Bangladesh, considered leader in diarrheal research is credited with the discovery of oral rehydration therapy (ORT) and zinc supplementation, which is saving millions of children worldwide from diarrheal deaths, The active participation of mothers in diarrheal treatment; so that they are equipped with the confidence to treat it themselves. It also focused on improvement of hygiene, safe water, and sanitation through community-led approaches.[4]

A mother occupies pivotal role in relation to health of the family, especially for young children. If mother is having significant health awareness, will take the responsibility of increasing the family health, which facilitates high standards of living.

Sufficient awareness and proper health seeking practices among the mothers lessens the mortality and morbidity of under-five children. Since the child is unable to carry out even their daily activities mothers will be active health care takers or providers. So that mother's awareness regarding causes, its prevention and their health seeking practices are very essential.

MATERIALS AND METHODS

Study Area & Period: This community-based observational cross-sectional study was conducted in

Dadiyapura, a slum area of Jhansi, Uttar Pradesh from March 2016 to April 2017.

Methodology

The total population of study area is 5122 with 1247 households. All families with under-five children at UHTC, Dadiyapura, were enlisted and mothers of under-five children were considered as a Sampling unit.

Considering the prevalence of diarrhea episodes in under-five children within last 2 weeks from previous studies (20-25%) and from pilot study done in the study area, the sample size was calculated using the formula, $N = Z^2 \times PQ/L^2$ Where, $Z^2 = 1.96$, taking 20% as the prevalence (P) and 5% as the allowable error (L), and 10% non- responsive, sample size (N) was 282.

In 1247 households, 602 families with under-five children were enlisted and every 2nd family was chosen for interview, considering one mother in each family. A door to door survey was conducted among these families and mothers of under-five children, in each of family were interviewed.

All children reported with diarrhea within last 2 weeks, were considered as a case and was separately interviewed regarding various determinants of diarrhea, its association with socio-demographic factors, Use of ORS and other home based rehydration solution and health seeking practices followed during the episode of diarrhea.

The study includes the mothers, who were having under-five children, Available during the period of data collection and willing to participate in the study while those who were Not having under-five children, Not available during the period of data collection or Not willing to participate were excluded from the study.

A self-designed pretested semi-structured questionnaire was prepared for data collection as a study tool. The Questionnaire consists 4 sections as follows; Section 1- Contained information about the socio-demographic profile of the mother and child. Section 2- Looked at profile of under-five child, the anthropometric variables, vaccination status and nutritional status. Section 3- Contained information about housing condition, source of water, its storage, place of defecation, hand washing habits and sanitation with other important environmental determinants. Section 4- Awareness regarding diarrhoea, its causes, preventive measures, knowledge about home based rehydration solution including ORS and its use, feeding practices during episode of diarrhoea and health seeking practices during diarrheal episodes.

Data Entry & Statistical Analysis

The questionnaire responses were entered in Epi info software and the collected data were consolidated on visual dashboard and further analyzed in Epi-info 7.1.3.0 version software. Inferential statistics with various socio-demographic characteristics, knowledge of ORS and health seeking practices using chi-square test. p -value < 0.05 was considered statistically significant.

RESULTS

Table 1: Distribution of mother's perception regarding cause/mode of transmission of diarrhea.

Mother's perception regarding cause/mode of transmission			
	Responses	**Frequency**	**Percentage**
1.	Yes	195	69.15%
a)	Infection	37	18.97
b)	Unhygienic food	64	32.81
c)	Drinking unsafe water	22	11.28
d)	Poor hygiene and sanitation	32	16.41
e)	Teething	33	16.92
f)	Supernatural/Spirits/Dosh	7	3.61
2.	No	87	30.85%
Total		282	100%

Table 1 shows mother's perception regarding cause/mode of transmission of diarrhoea. Among 195(69.15%) mothers who were aware of diarrhea, 64(32.81%) percieved unhygenic food as cause of diarrhea followed by infection 37 (18.97%) and poor hygiene and sanitation 32 (16.41%). Teething was percieved as main cause of diarrhea among 33(16.92%) mothers followed by 7 (3.61%), who thought that supernatural, spitritual powers and dosh as main cause of diarrhea.

Table 2: Distribution of Mother's knowledge about home based solutions.

Mother's knowledge about home based solutions			
Responses		**Frequency**	**Percentage**
1.	Yes	203	71.99%
a)	Sugar salt solution	89	43.84
b)	Dal kapani	39	19.21
c)	Nimbu pani	36	17.73
d)	Chawal ka pani	21	10.34
e)	Dahi/ Chacch	15	7.39
f)	Other	3	1.48
2.	No	79	28.01%
Total		282	100%

Table 2 shows that, out of 282 mothers, 203(71.99%) mothers had knowledge about the HBS/SSS and its use during diarrhea while 79(28.01%) were not aware about HBS/SSS. Out of those 203 mothers who knew about home based solution, 89(43.84%) recommended sugar salt solution in diarrhea followed by dal ka pani 39 (19.21%), nimbu pani 36 (17.73%) and chawal ka pani 21 (10.34%). In 15(7.39%) mothers used dahi/chacch during diarrhea in children.

Table 3: Distribution of mother's knowledge regarding ORS.

Mother's knowledge regarding ORS				
Response			**Frequency**	**Percentage**
1.	Yes		198	70.21%
a)	Preparation	Correct	17	8.58%
		Partly Correct	65	32.81%
		Incorrect	57	28.79%
		Do not know	59	29.92%
b)	Storage	Correct	121	61.11%
		Incorrect	77	38.89%
c)	Volume	Correct amount	27	13.63%
		Incorrect amount	69	34.85%
		Do not know	102	51.52%
2.	No		84	29.79%
Total			282	100%

Table 3 shows that, among total respondents, 198(70.21%) had adequate knowledge about ORS while 84(29.79%) were still unaware about ORS. Out of 198 mothers who had adequate knowledge about ORS and its use**,** only 17(8.58%) prepared ORS correctly while 59(29.92%) did not know, how to prepare ORS. Regarding knowledge of storage of ORS among 198 mothers, 121(61.11%) mothers told that the prepared ORS should be placed in clean utensils and used within 24 hours of preparation. On considering volume of ORS out of 198 mothers, only 27(13.85%) knew the correct volume of ORS given during the episodes of diarrhea. Around 52% of mothers had no knowledge about the correct volume of ORS used during episode of diarrhea.

Table 4: Association of mother's knowledge of ORS with diarrhea in under-five children.

Variable		**Diarrhea (within last 2weeks)**			χ^2	**df**	**p-value**
	Response	**Yes**	**No**	**Total**			
Mother's knowledge of ORS	Yes	54 (17.53%)	254 (96.47%)	308 (73.51%)	43.457	1	0.0001*
	No	55 (49.55%)	56 (50.45%)	111 (26.49%)			
	Total	109	310	419			

χ^2 = Chi – square value, d. f. = Degree of freedom, p-value less than 0.05 is significant.

Table 4 shows that a highly significant association was found with Mother's knowledge of ORS & diarrhea among under-five children [43.457, 1, and 0.0001]. Lack of knowledge of ORS among mothers of under-five children increases the prevalence of diarrhea.

Table 5: Uni-variate analysis of risk factors for diarrhea related to mother's knowledge of ORS.

Variable	Response	OR	95% CI	p- value
Mother's knowledge of ORS	Yes	1	-	-
	No	2.79	1.81-4.29	0.0001*

* OR- Odds Ratio, 95% CI= 95% Confidence interval, p-value less than 0.05 is significant**.**

Table 5 shows an analysis of risk factor for diarrhea as related by mother's knowledge of ORS. Lack of knowledge of ORS has more than twice higher odds of diarrhea among children [2.79, 1.81-4.29 and 0.0001] and was found significant predisposing risk factor for diarrhea

DISCUSSION

In present study, out of 282 mothers, 203(71.99%) mothers had knowledge about the Home based solutions/ Sugar Salt Solutions and use them during diarrhea while 79(28.01%) were still unaware about Home based solutions/ Sugar Salt Solutions similar to the findings by Bhatia et al[5], Gupta N et al[6] and Thammanna S P et al study but higher than Merga N el al.[7]

About In 15(7.39%) mothers used dahi/chacch during diarrhea in children while in study of kaur P and Singh G[8], most of mothers gave chawal ka pani and khichri to the children during an episode of diarrhea. In Sudipta Basa study[9], mothers used home based solutions like sherbet (14.6%), sugar salt solution (10.7%), fruit juice (6.8%), lassi (3.9%) & plain water (2.9%) and only 60.2% used ORS during diarrhea. Similar finding was highlighted by Jain SK et al[10], where various other fluids such as plain water, fresh milk, sugar salt solution and 30% diarrhea cases were given ORS.

In present study, among total 282 respondents, 198(70.21%) had adequate knowledge about the ORS while 84(29.79%) were still unaware about ORS similar to the findings of study by Thammanna S P et al and Rao et al.[11] This finding is also in agreement with study conducted by Rasania SK et al[12] and Datta V et al[13] study. While according to Bhatia et al[14] study, most of the mothers (86.7%) had knowledge of oral rehydration solution similar to Pahwa et al[15] and Ahmed et al[16] study.

In our study, out of 198 mothers who had adequate knowledge about the ORS and its use, only 17(8.58%) prepared ORS correctly while 59(29.92%) did not know, how to prepare ORS similar to the findings of Uchendu U O et al[17], Rao et al[11] and Pahwa et al[15] study. Findings were quite lower than study of Ahmed et al[16] (57.8%) and Thammanna S P et al (47.6%) and higher than Ahmed et al[16] (25%) and Bhatia et al[5] study (18.7%). In Sudipta Basa study[9], 68.9% knew the correct method of ORS preparation. Similar finding were reported by Rasania SK et al[12], which reported majority of mothers who used ORS had the correct knowledge regarding the preparation of ORS. While Jain SK et al[10] in their study showed that most of the care givers were unable to demonstrate the correct method of preparation.

In present study despite of high level of knowledge among studied mothers, actual practices during diarrhea were not satisfactory. The findings shows that among those who had adequate knowledge of ORS, only 42(21.21%) mothers used ORS during diarrhea while 156(78.79%) didn't use ORS similar to findings of Ahmed F et al[16], Uchendu U O et al[17] and Jain SK et al[10] study, where less than one third of diarrhea cases were given ORS while higher ORS use during diarrhea in Gupta N et al[6], Datta V et al[13] and Sudipta Basa[9] study, where most of mothers used ORS during diarrhea.

In present study**,** Despite high level of knowledge of ORS among studied mothers, actual practices of ORS use during diarrhea were not satisfactory similar to finding of Lamberti M L et al[18], who addressed the diarrhea Alleviation through Zinc and ORS Treatment (DAZT) program carried out in 2011–2014, Uttar Pradesh (UP), India. It would hamper the prevention and treatment of diarrhea and contribute to morbidity and mortality among children.

CONCLUSION

This is known fact that mothers are the key caregivers of under-five children and to decide about the type of foods given to the children during diarrhea.[19] This adds on the importance of educating and reinforcing the practices of preparation of sugar salt solutions among mothers.

This clearly shows the need for extensive IEC activities and ORS preparation demonstration to raise the level of knowledge among mothers of under-five children.

Most of the mothers treat their children in their homes so the counseling on the three rules of home treatment (Give extra fluid, continue feeding and advise the mother when to return to health facility) is very crucial for the control and prevention of the diarrheal diseases.

The caregivers must also be informed about the danger signs of diarrhea and when its needed to visit healthcare faculties for management.

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Ethical approval: The study was approved by the Institutional Ethics Committee.

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