

ORIGINAL ARTICLE

Knowledge and child care practices regarding childhood diarrhoea- A cross sectional studyAtul Choube¹, Shiv Prasad Bahal², Anurag Srivastava³, Mukesh Sharma⁴¹Assistant Professor, Department of Pediatrics, ²Assistant Professor, ³Professor & Head, Associate Professor, ^{2,3,4}Department of Community Medicine, Teerthanker Mahaveer Medical College and Research Center, Moradabad, Uttar Pradesh

Abstract	Introduction	Methodology	Results	Conclusion	References	Citation	Tables / Figures
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Abstract

Background: Diarrhea still continues to be a leading cause of childhood morbidity and mortality and holds the second rank (after pneumonia) for mortality in children < 5 years of age. The majority of these deaths can be avoided by timely intervention. The knowledge of caretakers about the severity of diarrheal illness ultimately affects the choice for childcare practices and influences the type of therapies received. **Objectives:** To assess the various aspect of maternal knowledge about diarrhea in under-five age children. To determine the child care practices of mothers during diarrheal episodes.

Materials and methods: A cross-sectional survey was carried out from February to May 2014. 5 villages were selected by systematic random sampling method in rural field training area of medical college. A self-designed and pre-tested structured questionnaire was used as study tool which covers different aspect of knowledge and childcare practices by mothers/caretakers regarding diarrhea. Overall responses of participants were scored as good, average and poor for assessment of knowledge and practice. **Results:** Total 972 mother/caretakers were interviewed. Most of the mothers/caretakers (62.1%) were in favor of giving of breast milk as preferred oral fluid during diarrheal episode. Nearly one fourth of mothers/caretakers (26.1%) identify symptoms and signs of "dehydration" and the need for consultation. During diarrheal episodes less amount of food and fluid was given by 49.9% and 20.4% mothers/caretaker respectively. The higher level educated and employed mothers had better practices (P < 0.001) **Conclusion:** The study showed that knowledge and childcare practices for diarrhea still remains a great challenge among the rural population. This could be only deals with improvement in female literacy and to develop and implement diarrhea related educational interventions for mothers/caretakers.

Key Words

Diarrhea; Maternal Knowledge; Childhood Morbidity; Oral Rehydration Solution (ORS); Childcare Practices.

Introduction

Diarrheal diseases comprise a major burden of disease in low and middle income countries. The incidence in under five children in those countries was estimated at 3.2 episodes per year per child in 2003 [1].

Diarrhea still continues to be a leading cause of childhood morbidity and mortality and holds the second rank (after pneumonia) for mortality in children < 5 years of age, despite the advances in case management and diagnostic technologies over the last decades [2,3]. Diarrheal deaths accounted

for ~15% of the global estimated 8.7 million under-five deaths [4]. During diarrheal episodes incapability of parents/caretakers to recognize early signs of dehydration and inappropriate management results in excessive fluid loss and electrolyte imbalance, which contribute to critical outcomes. The majority of these deaths can be avoided by timely intervention with recommended oral rehydration therapy and continued appropriate feeding practices [5]. Caretakers play a key role in managing childhood illness [6]. Child health care practices have been recognized as a significant factor behind mortality rates among under five age group children [7]. Timely

care seeking for diarrheal disease is positively related to survival [8]. Several studies have evaluated health care-seeking behavior and health care use among mothers in developing countries in relation to diarrheal diseases [9], and identified different factors that influence the pattern of health care seeking for diarrheal diseases [10]. The perception and attitude of caretakers about the severity of diarrheal illness ultimately affects the choice for seeking treatment [11]. Therefore this study was planned to review the caretakers' existing knowledge, and child care practices regarding diarrhea in a young child.

Aims & Objectives

To assess the various aspect of caretakers knowledge about diarrhea in under five age children and to determine the child care practices of caretakers during diarrheal episodes.

Material and Methods

A cross-sectional survey was carried out from February to May 2014 in villages of rural field training area of medical college. The study was approved by the institutional Research and Ethics Committee. Sample size was calculated by using single population proportion formula based on an assumption that 50% of the under five children had two-week prevalence of diarrhea; with marginal error of 5%, a standard score corresponding to 95% certainty. The calculated total sample size was 768 households that had at least one under-five child.

To achieve sample size out of 20 villages, 5 villages were selected by systematic random sampling method. First village was selected randomly then every fourth village was selected. In 5 villages 1000 households initially selected to participate in the survey and all had children under five years of age. Out of these, 972 mothers/ caretaker were interviewed completely, rest of the respondents either refuse to be interviewed or absent at the time of interview. A self-designed and pre-tested structured questionnaire was prepared with the consideration of objective of the study. The questionnaire was divided into two parts: Part A: socio-demographic characteristics and Part B: knowledge-related questions consisting of knowledge about preventive measures, preferred foods/fluids during diarrheal episodes, danger signal to contact doctor during episode, availability and preparation of ORS solution. Respondents for the administered questionnaire were mothers or caretakers (any person involves in childcare other than mother) in their absence, in the household that

had under-five child/children and lived in the household for the preceding six months. They were approached and interviewed at their households as per the instrument by a previously trained interviewer. Informed consent was obtained from each of the subjects enrolled in the study. Person aged seven years or above who can't read and write with understanding was considered as illiterate. After completion of questionnaire the scoring of the responses was performed based on likert scale. The total score was 32 (20 for knowledge plus 12 for practice) which was further divided in three categories including good knowledge (more than 15 scores)/practice (more than 9 scores), average knowledge (10-15) /practice (6-9) and poor knowledge (lower than 10 scores) /practice (lower than 6 scores).

The data was entered in Statistical Package for Social Sciences (SPSS) for Windows (version 20.0) SPSS Inc. Chicago and analyzed for descriptive statistics. The statistical significance of all results was considered when the p value was <0.05.

Results

Only 358 were found to be working whereas remaining were housewives. In this study, majority of the mothers were literate (624) but most were educated less than high school level (456).

Most of the mothers/caretakers (62.1%) were in favor of giving of breast milk as preferred oral fluid during diarrheal episode. Knowledge about Salt sugar solution as rehydration fluid was also high (53.2%) followed by ORS (48.3%). However, Fresh or powdered milk were preferred by 40.7% and Khichidi/Dalia and Dal ka Pani by 23.7% mothers. Regarding knowledge about place to obtain ORS, Maximum mothers/ caretakers responded in favor of Private Hospital/Clinic (80.2%), Pharmacy (72.9%), Primary Health Center (62.3%) and Public Hospital/Clinic (66.5%). 18.3% didn't have any knowledge about place to obtain ORS ([Table 1](#)).

Nearly one fourth of mothers/caretakers (26.1%) identify symptoms and signs of "dehydration" and the need for consultation. Only 8.4% supports to contact doctor in all cases of diarrhea from the beginning and 2.8% in no case of diarrhea. 46.5% mothers/caretakers considered duration of 3 days or more as the deciding factor to contact the doctor whereas only 5.6% considered Frequency (more than 3 or 4 times/day) is the most deciding factor ([Table 2](#)). Home care practices of mothers during diarrheal episodes were focused in this table, where it was

found that during diarrheal episodes less amount of food and fluid was given by 49.9% and 20.4% mothers/caretaker respectively. Feeding pattern changes showed reverse trend in case of fluid and food. During diarrheal episodes maximum mothers/caretakers offers more drinks and less food (42.4% and 49.9% respectively). Availability of ORS packet at home was found only with 10.4% respondents. Regarding treatment seeking practice of mothers/caretakers for diarrhea, subcenter and primary health center was preferred by most (15.7% and 27.2% respectively) of respondents whereas 21.4% were contacted to quack for the treatment (Table 3).

Respondents with ≥ 10 years of schooling (8.3%) were significantly less likely to have poor knowledge compared to those with < 10 years of schooling (17.1%) or illiterate (69.6%) ($p < 0.001$). Working status also showed a significant effect on knowledge status. Nonworking respondents (41.3%) were more likely to have poor knowledge on diarrhea than working (22.6%). More year of schooling and positive working status are shown to be the favorable factors for having good knowledge regarding diarrhea among mothers/caretakers (Table 4).

According to their practice evaluation, 42.0% of mothers/caretakers showed average level of practices during diarrhea management whereas 36.7% had low practice level and 21.6% practiced good. Chi-square test was applied to compare the level of education and working status of mothers in this study and a significant difference was found. The higher level educated and employed mothers had better practices ($P < 0.001$) (Table 5).

Discussion

The study aimed to evaluate mothers' knowledge and child care practices during diarrhea in order to identify the dimensions of knowledge and practice deficit so that appropriate measures can be taken for improvement in their knowledge and to modify their practices in right direction.

The mothers/caretakers were also asked about the knowledge of preferred food to be given to their child during diarrheal episodes. 62.1% respondent's favors breast milk as preferred fluid followed by sugar salt solution (53.2). The preferences of the mothers varied but majority of them preferred fluids and less of the respondents are in favor of a diet comprising of Khichri, bananas and porridge. A similar study conducted in Burkina also stated that during diarrhea, out of 500 mothers, 218 mothers

were in favor of giving pulses and Khichri, 23 mothers boiled rice water, 16 mothers banana, 113 mothers ORS and 7 mothers were for yoghurt [12]. Another study in Bangladesh showed a more than half of mothers were in favor of giving food and fluids during the illness and but less than 25% for oral rehydration therapy [13].

In a similar study conducted on 300 rural mothers in India, 39% of them used rice and milk, and 34% used diluted cow's milk [14]. In a study conducted in Chandigarh, 50.8% of mothers knew about salt-sugar solution [15]. Knowledge about right place to obtain ORS was good among respondents. Most of them know the correct places. These finding are supported by various other studies also [16].

In terms of knowledge about the signals to contact doctor during diarrheal episodes most of the (46.5%) mothers/caretakers considered duration of 3 days or more is the most prominent signal whereas 26.1% identify symptoms and signs of "dehydration" as important signal. In another study in Iran, the same finding was estimated in 32% of subjects [17], indicating a higher level of awareness than in our study population. Another study that was carried out in Gambat, Pakistan also stated the knowledge of danger signs of dehydration during diarrhea included lethargy (60%), weakness (20.8%), dry and sunken eyes (19.6%), loose skin (6.2%) and dehydration (4.1%) [18].

Only 22.0% of mothers did not restrict any foods during diarrhea. This is in contrast to a study conducted in Mirzapur where food was continued as usual in 66.25% of cases [19]. In the study conducted in Varanasi, only 38.2% of caretakers continued normal feeding during diarrheal episodes [20]. Variation in family customs and regional cultural believes are the probable reason behind this contrast.

Government health clinic was preferred only by 42.9% of mothers in this study but 21.4% prefer quacks, the possible explanation include the perceived remoteness of the government health facilities due to unavailability of doctors and free medicines, long waiting time and lack of confidence towards free services provided under different government schemes.

Our study revealed that Education and working status of mothers/caretakers showed a significant positive effect over knowledge and health care practices during diarrheal episodes. Virtually all studies that have looked at caregiver's education and

healthcare-seeking practice have shown a positive relationship between the two variables [21].

In a study carried out in north of Iran explored that most of the mothers had shown moderate awareness and well awareness only evaluated in 6% of them. Only 1.1% of the illiterate participants had good knowledge whereas 69.6% of them had a poor level of knowledge in our study [17]. According to a study conducted in Ethiopia, 79.3% mothers or baby nurses were illiterate therefore only 7.5% of the studied subjects had adequate information about diet and treatment of diarrhea. In their study, it was demonstrated that maternal education and literacy levels were directly proportional to the level of their awareness [22]. In another study in Tanzania, similar outcomes were achieved [23]. Several studies in developing countries have found that children of illiterate mothers are at higher risk of diarrheal episodes. Moore et al also established in their studies that low education and early cessation of breastfeeding were significant risk factors in childhood diarrhea [24].

Conclusion

The study showed that knowledge and childcare practices for diarrhea still remains a great challenge among the rural population. The main constraint in this issue is low maternal/caretaker educational status and it only deals with improvement in female literacy rate as long term strategy. The short term strategy could be to develop and implement diarrhea related educational interventions specially designed for illiterate population for significant improvement in knowledge as well as intensify childcare practice during diarrheal episodes.

Relevance of the study

This study shows the latest status of knowledge and practice of caretakers during diarrheal episodes. It also exposed different misconceptions regarding diseases and its treatment in community. This study also indirectly comments on various campaigns and programs success on particular health related issue and their effect on community.

Authors Contribution

The authors' responsibilities were as follows: AC participated in design of the work, analysis of the data and interpretation of the results. He also actively participated in the write-up of the study. SPB conceived the idea of this study, participated in the design of the study, and had the major responsibility of coordinating the data collection. AS conceived the

idea of this study, participated in the design of the research instrument, reviewed related literature, and participated in discussing findings and making conclusions on the basis of the findings of the study. He finalized the manuscript for submission. MS participated in data collection, study subjects management and manuscript writing. All authors have read and approved the final manuscript.

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Tables

TABLE 1 KNOWLEDGE OF MOTHER/CAREGIVER ABOUT FLUID MANAGEMENT DURING DIARRHEAL EPISODE

Knowledge	NO	%
1. Knowledge about preferred oral fluids to be given (n=972)		
Breast Milk	604	62.1
ORS (WHO)	469	48.3
Fresh or powdered milk	396	40.7
Tea	38	3.9
Mashed food (Khichidi/Dalia)	108	11.1
Dal ka Pani (Pulse water)	122	12.6
Plain water	95	9.8
Salt sugar solution	517	53.2
Soda	32	3.3
others	48	4.9
2. Knowledge about place to obtain ORS (n= 469)		
Sub Center	234	49.9
Primary Health Center	292	62.3
Public Hospital/Clinic	312	66.5

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Private Hospital/Clinic	376	80.2
Quack	112	23.9
Pharmacy	342	72.9
Others	98	20.9
Don't Know	86	18.3
<i>Multiple responses</i>		

TABLE 2 KNOWLEDGE ABOUT SIGNALS TO CONTACT DOCTOR DURING DIARRHEAL EPISODES

DANGER SIGNALS	KNOWLEDGE (n= 972)	
	No.	%
Diarrhea Lasting for 3 days or more	452	46.5
Very loose/watery Diarrhea	228	23.5
If it does not stop with anything	392	40.3
All cases from the beginning	82	8.4
Frequency (more than 3 or 4 times/day)	54	5.6
If there is vomiting with Diarrhea	114	11.7
Child has signs of dehydration such as sunken eyes, thirst, skin pinch receding slowly, drowsy child	254	26.1
When it has blood in stool	72	7.4
When the child has fever with Diarrhea	47	4.8
In no case of Diarrhea	27	2.8
Child is too weak (malnourished)	32	3.3
<i>Multiple responses</i>		

TABLE 3 VARIOUS PRACTICES DURING DIARRHEAL EPISODES

PRACTICES (n= 972)	No	%
1. Changes in Feeding Pattern		
a. Offers rating food		
More	273	28.1
Same	214	22.0
Less	485	49.9
b. Offers drinks		
More	412	42.4
Same	362	37.2
Less	198	20.4
2. Availability of ORS packet at home		
Yes	101	10.4
No	871	89.6
3. Treatment advice taken from (n=945)		
Sub center	148	15.7
Primary Health Center	257	27.2
Public Hospital/ Clinic	106	11.2
Private Hospital/Clinic	136	14.4
Quack	202	21.4
Pharmacy	82	8.7
Other	14	1.5

TABLE 4 LEVEL OF KNOWLEDGE REGARDING DIARRHEA AMONG MOTHERS

Variables	Level of Knowledge				p value
	Good	Average	Low	Total	
Education (yrs)					
Illiterate	4 (1.1)	102 (29.3)	242 (69.6)	348 (100.0)	X ² = 479 p value=0.00002 df=4
< 10	102 (22.4)	276 (60.5)	78 (17.1)	456 (100.0)	
≥ 10	113 (67.3)	41 (24.4)	14 (8.3)	168 (100.0)	
Working Status					
Working	121 (33.8)	156 (43.6)	81 (22.6)	358 (100.0)	X ² = 54.7 p value=0.0006 df=2
Nonworking	98 (15.9)	263 (42.8)	253 (41.3)	614 (100.0)	
Total	219 (22.5)	419 (43.1)	334 (34.4)	972 (100.0)	

TABLE 5 LEVEL OF PRACTICE AGAINST DIARRHEA AMONG MOTHERS

Variables	Level of Practice				p value
	Good	Average	Low	Total	
Education (yrs)					
Illiterate	1 (0.3)	94 (27.0)	253 (72.7)	348 (100.0)	<0.05 df=4
< 10	97 (21.3)	270 (59.2)	89 (19.5)	456 (100.0)	
≥ 10	109 (64.9)	44 (26.2)	15 (8.9)	168 (100.0)	
Working Status					
Working	116 (32.4)	158 (44.1)	84 (23.5)	358 (100.0)	<0.05 df=2
Nonworking	91 (14.8)	250 (40.7)	273 (44.5)	614 (100.0)	
Total	207 (21.3)	408 (42.0)	357 (36.7)	972 (100.0)	