

Prevalence of Diarrhoea among Under-Five children and Health Seeking Behavior of their Mothers in an Urban Slum of Delhi

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Research Article

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ABSTRACT :

Background: Diarrhoea forms major public health problem in children under 5 years of age, especially in developing countries. In Indian slums nearly 100,000 babies die every year before their fifth birthday as a result of dehydration, weakened immunity or malnutrition associated with diarrhea.

Aim: To find out the prevalence of Diarrhoea among under five age group in past two weeks and to assess the health seeking behavior of their mothers.

Material & Methods: Community based cross-sectional study was carried out from 25th to 31st May, 2007 in an urban slum of Delhi. Considering frequency of 3 episodes of diarrhoea/child/year and taking accepted margin of error as 20%, sample size of 695 was calculated. Data was collected in a pre-designed pre-tested Performa by interviewing the mothers of under five children. Data analysis was done by simple statistical tools like percentage.

Results: Prevalence of Diarrhoea in last two weeks was about 14.8%. Prevalence of Diarrhoea among under five females 18.4% was highest compared to 12.2% males. 65% mothers knew about use of ORS in Diarrhoea through Private Doctors. (60.2%) cases were given Oral Rehydration Solution (ORS) during diarrhea. 31% mothers knew about ORS but did not know the correct method of preparation and its usage. Breast-feeding was stopped in 43.6% cases.

Conclusion: Awareness regarding safe drinking water, excreta disposal and personal hygiene needs to be improved among slum dwellers. Improvement of poor literacy status of mothers is an urgent need to improve their health seeking behaviour and thus the health of their children.

Keywords: Diarrhoea, Under five children, slums, health seeking behavior

BACKGROUND

Diarrhoea forms major public health problem in children under 5 years of age, especially in developing countries. India alone is responsible for more than half a million diarrheal deaths¹. Among all child deaths each year, seven in ten of these deaths are due to diarrhoea, acute respiratory infections, malnutrition or combination of these conditions².

Diarrhoeal deaths represent approximately 15% of mortality among the under-fives in developing countries. With an annual diarrhoea incidence of 2-4 episodes per child, a substantive part of childhood in the developing countries is spent combating diarrhea³.

In Indian slums nearly 100,000 babies die every year before their fifth birthday (NFHS-3 India, 2005-06), as a result of dehydration, weakened immunity or malnutrition associated with diarrhea⁴. Poor environmental sanitation and

lack of safe drinking water result into high rate of infections and protein energy malnutrition⁵. Besides these other determinants such as Mother's literacy, family income and feeding practices play a very crucial role in growth and health status of under five children.

Although the occurrence and transmission of Diarrhoeal diseases among under five all over India have been extensively studied, most of the available data are institution-based and there is still a paucity of community-based studies⁶.

The present study was undertaken to find out the prevalence of Diarrhoea among under five age group in past two weeks and to assess the health seeking behavior of the mothers for Diarrhoea of their children in an urban slum of Delhi.

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MATERIAL AND METHODS

A community based cross-sectional study was carried out from 25th to 31st May, 2007 in the urban slum of Delhi with total population of 20,634 with approximately 3,095(15%) under 5 children. Considering an expected frequency of 3 episodes of diarrhoea/child/year, and taking the accepted margin of error as 20% the sample size was calculated using the formula $n = 4 pq / L^2$. This yielded a required sample size of 695. The selection of the houses in the slum was done by picking up a random starting number and then every house was visited until the required sample in each slum area was obtained.

The data was collected in a pre-designed, pre-tested proforma by interviewing the mothers of under five children after taking informed consent from them. Wherever mothers were not available a responsible member of the family was interviewed instead. The responses were recorded immediately in the structured questionnaire.

Diarrhoea within the last two weeks was considered using the following case definitions: (1) "An acute diarrhea was defined as "an attack or sudden onset and passage of loose/watery stools within the last 14 days." (2) "Under five child were those who did not reach his/her fifth birthday on the date of survey." (3) "Mother or any other responsible person who was looking after the child was considered as a caretaker". Data analysis was done by simple statistical tools like percentage.

RESULTS:

Total 695 under five children were included in the study, out of which total number of cases who suffered from Diarrhoea in last two weeks was about 103(14.8%). The prevalence of diarrhoea among under five females 54(18.4%) was higher compared to 49(12.2%) males (Table-1).

Sex	Number of children	Percentage (%)
Male (n=402)	49	12.2%
Female (n=293)	54	18.4%
Total (n=695)	103	14.8%

Table 1: Prevalence of Diarrhoea among the study subjects

402 (57.8%) were male and 293 (42.1 %) were female. Majority of 318 (45.7%) belongs to age group 24- 36 months. The maximum number of study subjects 312 (44.8%) belongs to socio-economic class IV followed by class V 203(29.2%). 354 (50.9%) of mothers of the study subjects were literate i.e. attended primary school/middle school/high school but 313(45.1%) were non-literate i.e. literate but did not attend school (Table-2).It was also observed that the water supply is not very regular and people store water for drinking purposes. There were several uncovered drains observed during the study.

Socio-economic status	Number (n=695)	Percentage (%)
Class I	0	0
Class II	83	12
Class III	97	14
Class IV	312	44.8
Class V	203	29.2
Literacy status of mothers		
Graduate and above	1	0.14
Intermediate / HSSLC	27	3.8
High School	88	12.6
Middle School	114	16.4
Primary School	152	22
Non-literate	313	45

Table 2: Distribution of the study subjects according to Socio-demographic variables

The prevalence of diarrhea was highest in the 6-12 month age group (24.3%) followed by 24-36 month age group(20.3%).The mothers of 103 under five children who suffered from Diarrhoea in last two weeks were interviewed. The awareness about use of ORS in Diarrhoea was imparted to the mothers mainly by Private Doctors 67 (65%) followed by Government Doctors 36(35%).It was also found that for treatment of Diarrhoea, 63(61.1%)Private doctors were contacted by the mothers followed by 34(33%)Government doctors. The 6 remaining mothers did not contact anyone.

It was found that (60.2%) cases was given Oral Rehydration Solution (ORS) during diarrhea followed by lemon sherbet(14.6%), sugar salt solution(10.7%), fruit juice(6.8%),lassi(3.9%) & plain water(2.9%).

Out of the 103 mothers, only 71(68.9%) knew the correct method of ORS preparation and its use whereas remaining 32(31%) mothers knew about ORS but did not know the correct method of preparation and its usage.

The breastfeeding during diarrhea was continued in 58(56.3%) cases whereas breastfeeding was stopped in 45(43.6%) cases by mothers.

Danger symptoms	Number	Percentage (%)
Passes many stools	89	86
Very Thirsty	25	24.3
Fever	8	7.8
Blood in stools	2	1.9
Persistent vomiting	9	8.7
Does not eat or drink	14	13.6
Others(non-specific)	0	0
Do not know	0	0

*(Multiple response)

Table 3- Knowledge of Mothers regarding recognition of danger signs of Diarrhea.

Majority of mothers who were literate as well as non-literate i.e literate but did not attend school knew the danger signs of Diarrhoea (Table 5). The most common danger symptoms was passing many stools said by majority of mothers. No mortality was reported from the area since last one year.

DISCUSSION:

The findings in this study document the prevalence of Diarrhoea among the under five population of urban slum of Delhi and the health-seeking behaviour of mothers. However, the interpretation of the findings might be limited by recall bias and the interviewer bias ⁶.

The prevalence of diarrhea in last two weeks was 14.8% in our study. Studies done in India and abroad have also reported varied prevalence of diarrhea which might be due to difference in study methodology, nature of population, geographic, seasonal variation and socio-economic condition of the community selected ⁷.

The study demonstrated a higher prevalence of Diarrhoea in infants in the 6 to 12 months age group followed by 24-36 months age group. This could be linked with several factors including poor food and personal hygiene of the caregiver, contaminated water, and poor sanitary conditions. In addition, this is also the period when the antibody transmitted through breast milk starts to decline and the child starts a variety of fluids such as plain water, ORS, fresh milk etc were reportedly used during diarrheal episodes. This finding is consistent with many studies conducted in developing countries ⁶.

It was found that diarrhea affected children belonged mainly to socio-economic class IV and class V. Most of the Diarrhoea cases were due to poor personal hygiene and compromised environmental condition of the slums. They did understand the importance of the personal hygiene and sanitary conditions required for the prevention of occurrence of diarrhea illness but during the study it was found to be unsatisfactory. The water is generally not boiled before consumption unless someone was sick. This could be a major contributing factor for the diarrhea.

The awareness regarding ORS is quite interesting in the present study as 65% mothers knew about ORS to be given during diarrhea from Private doctors. This finding is in agreement with study conducted by Rasanias SK *et al* in few urban slums of Delhi which reported 69.8% mothers awareness for ORS. Similarly a study conducted by Borah H *et al* in slums of Dibrugarh found the 50% women are aware about ORS^{7,9}.

Only 35% mothers were aware about the ORS through Government doctors which is alarming as slum is located near the Government Dispensary. The study findings revealed that mothers and care givers of the under-fives do not generally seek medical advice from Government doctors and health workers but from private doctors. This is consistent with the findings of the study conducted in the urban slums of Alwar town by Jain SK *et al*⁶.

It was found that only 60.2% used ORS during diarrhea followed by lemon sherbet (14.6%), sugar salt solution

(10.7%), fruit juice(6.8%),lassi (3.9%) & plain water(2.9%). Similar finding was highlighted by Jain SK *et al* in a study conducted in Alwar district, Rajasthan where 30% diarrhea cases were given ORS followed by various other fluids such as plain water, fresh milk, sugar salt solution⁶.

In our study 68.9% knew the correct method of ORS preparation and it use where as 31% mothers did not know about ORS correct method of preparation. It is evident that the knowledge level was better among the ORS users and literate women. Similar finding were reported by Rasanias SK *et al* which reported majority of mothers who used ORS had the correct knowledge regarding the preparation of ORS. Studies conducted elsewhere have reported varied results. In a study conducted by Raghu MB *et al* in Madras 69% of mothers were aware of ORS but only 66% of them ever used it. Similarly in a study conducted by Bhatia V *et al* in Chandigarh reported awareness among the mother about ORS was 86.7% but only 18.7 % could tell about correct method of preparation. Jain SK *et al* in their study conducted at Alwar states that most of the care givers were unable to demonstrate the correct method of preparation. Inaccurately prepared solutions can exacerbate the state of dehydration, thereby doing more harm than good. Appropriate preparation of ORS is more effective in prevention of severe dehydration. In our study though majority of them knew to prepare ORS correctly and its use still there is concern for the 31% mothers who had improper knowledge about preparation and intake of ORS which would hamper the prevention and treatment of diarrhea and contribute to morbidity and mortality. This also throws light on poor literacy status of mother's inability to utilize ORS for preventing diarrhea. This clearly shows the need for extensive IEC activities and ORS preparation demonstration to raise the level of knowledge among mothers. ^{6,7,10,11}.

58(56.3%) mothers continued breastfeeding during diarrhea as compared to 45(43.6%) who stopped breastfeeding. Different studies have shown varied results. There is need to sensitize not only 43.65% mothers who stopped breastfeeding but the whole slum community the importance of breastfeeding which acts as a preventive measure in reducing childhood morbidity from diarrhoeal diseases. However, the benefits are less pronounced if this is not combined with improvement of personal hygiene of the caretaker such as hand washing before feeding and after defecation by the infant. Studies have suggested that a combined approach could enhance the benefits of exclusive breast-feeding⁶.

The study demonstrated that the passage of several loose stools was recognized as a serious symptom for seeking treatment. A mother's definition of diarrhoea has been claimed to be useful in some local situations as they make major decisions regarding health of the children in the developing world. KAP studies conducted in rural Malaysia have successfully used local definition of diarrhoea to record incidences of diarrhoea in communities, although standard case definitions are most useful for surveillance purposes ^{6,8}.

CONCLUSION:

Since most of the mothers knew about ORS and used it at times of need, many had inadequate knowledge on the importance and appropriate use of ORS. The health care workers should therefore spend more time to emphasize on the need of ORS for the prevention of dehydration due to diarrhea and undertake; IEC activities for correct preparation of ORS solution. Demonstration activities should also focus as to why and when it is used and how correctly it can be used. The above activities along with IEC for safe drinking water, excreta disposal and personal hygiene needs to be done regularly and continuously so that morbidity and mortality due to diarrhoeal disease are effectively prevented slums.

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