

Knowledge on home management of childhood diarrhoea among the mothers of children under 5

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Abstract

Diarrhoea is one of the major killer diseases of children below 5 yrs of age. Management of Diarrhoeal disease is still a major challenge in Bangladesh because of inadequate safe water supply, poor sanitation and living conditions. A descriptive cross sectional study has been carried out in Bangladesh Medical College Hospital in order to assess the existing level of knowledge on home management of childhood diarrhoea among the mothers of under 5 yrs children. Target population of this study was the purposively selected mothers of children under 5 years attending ORT corner of Bangladesh Medical College Hospital. The study revealed that mothers have satisfactory level of knowledge regarding home management of childhood diarrhoea. Majority (93.3%) of the mothers thought that childhood diarrhoea is a water and food borne disease. They knew that child contacts diarrhoea by drinking unsafe drinking water and poor sanitation and hygiene. 99.3% mothers knew dehydration and dry mouth as complications of diarrhoea. 42% mothers thought that ORS is the best fluid for oral rehydration therapy at home followed by sugar-salt solution (22%) and rice water (14.7%). They agreed that child should be taken to a health facility if the Diarrhoea does not get better or if signs of dehydration or another serious illness develop. About fifty percent mothers thought that normal diet should be continued during diarrhoeal episode. Most of the respondents (95.3%) knew the method of ORS preparation at home. They feed ORS after passing of each loose stool. 55.3% mothers knew that excessive thirst as one of the symptoms of dehydration whereas 36% mothers thought that reduced urine formation during diarrhoea is the most common symptom of dehydration. Further intervention studies are needed in the socio-cultural context to find out the mother's existing level of knowledge regarding the home management of childhood diarrhoea at broad scale to implement social and public health interventions.

Keywords: Knowledge, Home Management, Childhood Diarrhoea

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Background and Justification

Children can have acute or chronic forms of diarrhea. Infection with the rotavirus is the most common cause of acute childhood diarrhea. Rotavirus diarrhea usually resolves in 3 to 9 days. . Diarrhea can be dangerous in newborns and infants. In small children, severe diarrhea lasting just a day or two can lead to dehydration. Because a child can die from dehydration within a few days, the main treatment for diarrhea in children is rehydration (Medico, 2008).

Globally diarrheal diseases account for almost a fifth of all deaths of children under 5 (Zulfiqar, 2006) and are responsible for 4000 million episodes with an estimated 2.4 million deaths annually (Harmeet, 2003). Children are more likely than adults to die from diarrhea because they become dehydrated more quickly (Facts for Life, 2008) and undernourished through lack of food About 1 in every 200 children who contract diarrhea will die from it. They are so widespread in developing countries that parents often fail to recognize the danger signs. Diarrheal diseases impose a heavy burden on developing countries - accounting for 1.5 billion bouts of illness a year in children under five. The burden is highest in deprived areas where there is poor sanitation, inadequate hygiene and unsafe drinking water. In certain developing countries, epidemics of diarrheal diseases such as cholera and dysentery strike down adults and children alike. Other major diarrheal diseases include typhoid fever and rotavirus which is the main cause of severe dehydrating diarrhea among children (WHO, 2008).

The primary intervention chosen to reduce diarrheal mortality was promotion of oral rehydration therapy (ORT) with a solution containing glucose, sodium, potassium and a chemical base such as sodium bicarbonate. It was estimated that about two-thirds of all deaths caused by diarrhea in children were attributable to acute watery diarrhea and hence could be prevented with ORT. Global guidelines for diarrhea management and programme implementation were developed by WHO, in close collaboration with other international organizations, such as the United Nations Children's Fund (WHO,2007).

Although over use of antimicrobial agents have reported for the management of the diarrhea Community health education is of utmost importance for effective case management, since it has been potential to establish productive contact between the health services and the community to increase capability of families to recognize the danger signs of diarrhea in children and to encourage appropriate and early care seeking behaviors. Effective health education can only be provided on the basis of an accurate understanding of prevailing knowledge, attitude and practices (KAP) of the community. Therefore, it is necessary to have relevant information concerning KAP of mothers about diarrhea for successful implementation of control activities (Harmeet, 2003).

Due to the use of different methods and sources of information, each successive review of the diarrhea burden over the past three decades has demonstrated declining mortality but relatively stable morbidity. The decline in global diarrhea mortality is confirmed by detailed information from monitoring in certain countries over time. Increased use of oral rehydration therapy, improved nutrition, increased breastfeeding; better supplemental feeding, female education, measles immunization, and improvements in hygiene and sanitation are believed to have contributed to this decline (WHO, 2003).

Despite considerable advances in the understanding and management of diarrheal disorders in childhood, globally these still account for a large proportion (20%) of childhood deaths, with an estimated 2.2 million deaths. In a global estimate of the burden of diarrheal disorders in 1980 the World Health Organization calculated that there were over 700 million episodes of diarrhea annually in children under 5 years of age in developing countries (excluding China), with approximately 4.6 million deaths (Zulfiqar, 2006).

In recognition of this significant burden of illness, the World Health Organization (WHO) initiated a special programme for Control of Diarrheal Diseases (CDD) in children in 1980. The programme set reduction of mortality caused by diarrhea in children as an immediate objective, and a decrease in morbidity caused by diarrhea as a longer-term objective. Global guidelines for diarrhea management and programme implementation were developed by WHO, in close collaboration with other international organizations, such as the United Nations Children's Fund (WHO, 2008).

The high mortality associated with diarrhea has led to its management being a major priority in primary health care. Improvement in economic status, water supply and environmental sanitation would ultimately reduce the significance of acute infective diarrhea as a major public health problem in tropical countries. In the interim, strategies to educate mothers and grandmothers in the appropriateness of oral rehydration and the use of home available fluids, especially cereal based fluids, for maintenance of hydration is essential. An understanding of the social and cultural background of communities is necessary to devise strategies for this. Health care workers have to be also educated in the proper use of oral rehydration and to recognize patients who would need to be referred to well equipped hospitals early. Oral rehydration powder packets should not only be widely available, people should be prepared to use them (British Medical Bulletin, 2008).

Overall trends and most recent data from 1999–2003 suggest that use rates have developed much less quickly than expected and that achievements are far below the targets set by WHO and UNICEF at the beginning of the 1990s. The mean coverage of ORT in low- and middle income countries in the year 2000 was 20%, ranging from 4% to 50%, depending on country. To evaluate global progress of control of diarrheal diseases, the study suggested that the annual number of deaths attributable to diarrhea among children aged less than 5 years fell from an estimated 4.6 million in 1980 to about 1.5 million in the year 2000. The main reason for the decline was considered to be the adoption of ORT (WHO, 2008).

98% of Egyptian mothers know about ORT, 73% knew how to mix it properly, 64% had used it at some time in the past, 58% had used it in the child's last diarrheal episode, and 83% of those currently breastfeeding had continued during the most recent episode. There were moderately low ORT rates through 1983, rapid increases in 1984 and 1985, and stable rates since then. ORS was used for 1/3 to 1/5 of all diarrhea episodes during the late 1980s (Miller PC, 2002).

In late 1985, a survey on Mothers' attitudes to diarrhea was carried out in the rural and urban areas of Haiti. Survey in urban areas shows that, mothers had already heard of ORT, knew about mixing a home-made solution of sugar and salt, believed strongly in continuing breastfeeding, giving liquids (boiled and carefully handled), and spoke of reducing heavy, fat

foods but not eliminating food altogether. They were also aware of the danger of dehydration from diarrhea and knew they were dealing with a potentially serious health problem.

In rural areas, all the women interviewed recognized diarrhea by the presence of liquid stools in great quantity and most saw it as a life-threatening disease. The majority said that food intake should not be stopped during diarrhea, and generally had reasonable ideas of the type and quantity of food to provide. The general consensus was that breastfeeding should continue in order to give the child strength and that liquids (tea, juice, rice water, cow's milk) should continue as well. Half of the respondents had already heard of ORT. The causes of diarrhea mentioned included teething and 'spoiled' mother's milk as well as some modern beliefs related to poor hygiene. Treatment of diarrhea begins at home but many of the mothers mentioned the need to seek medical assistance (Bukeny, 2008).

In a nationwide study in rural India," among 3590 mothers who were breast feeding their children at the time of the last episode of diarrhea, 17% of the mothers stated that breast feeding should be stopped during diarrhea; interestingly only 1% of them actually stopped breast feeding during the diarrheal episode. An analysis of respondents who believed that breast feeding should be stopped during diarrhea revealed that literate mothers formed a significantly higher proportion holding attitudes that breast feeding should stop compared with illiterate mothers (25% v 17%). In some areas of India as many as 58% of mothers stated that breast feeding should be stopped during diarrhea in a child (Faruque *et al.*, 2008).

The literature does suggest that administration of certain foods and fluids is the commonest form of treatment of diarrhea, but the choice of these is based upon the hot-cold principle. Both diarrhea and dysentery were reported to be caused by both 'hot' and 'cold' influences in this study. In addition, 'hot' and 'cold' foods and fluids were reported to be both useful and harmful in their treatment. Thus, while treatment by giving foods or fluids is suitable, neither 'hot' nor 'cold' types will be universally acceptable. The promotion of oral rehydration solution consequently needs to be flexibly manipulated in terms of the hot-cold principle. The current recommendation of its preparation using cold water may be unacceptable in a proportion of cases. A wide variety of nutritious foods and fluids were reported to be considered beneficial and it is concluded that these traditionally accepted feeding practices should be reinforced, especially at the onset of diarrhoea in infants and children (Stapleton, 2002).

In a case-control study, from August 1988 to September 1989 in (ICDDR, B) Dhaka, Which was conducted to evaluate the role of maternal behavior, as reflected in maintenance of breast feeding and the use of oral rehydration therapy (ORT) at home during acute diarrhea, in preventing dehydration in infants and young children shows that children aged 1-35 months presenting with watery diarrhea for six days or less and evaluated clinically as 'cases', having moderate to severe dehydration, or as 'controls' with no signs of dehydration attending the treatment centre of the International Centre for Diarrheal Disease Research, Bangladesh. Withdrawal of breast feeding was more common in cases than in controls. Absence of ORT at home was more common among cases but did not reach statistical significance. Mothers of the children in the cases were more illiterate than those of controls .A history of vomiting and high frequency of stool were more frequently reported by the cases than controls group.

Concerning the attitude on an important dangerous sign i.e. reduction in urine formation did not alarm any mother. Regarding care seeking practice of mothers for diarrhea, self-medication was found to be common (57.4%). When the type of system of medicine used were analyzed, western medicine was found to be the top priority (64.5%), followed by indigenous (19.6%) and traditional (10.1%) system of medicine. One-fourth of the mothers (25.1%) preferred to visit private practitioners was followed by government health facilities (14.5%). Home care practices of mothers regarding management of diarrhea were focused in this survey, where it was found that 140 (42.4%) mothers gave a usual amount of food, water and / or breast feed, 138 (41.8%) of the mothers reduced or stopped the usual food, water and / or breast feed and only 52 (15.7%) of mothers gave increase amount of fluid to children with diarrhea. Of the total mothers, 120 (36.3 %) knew oral rehydration fluid (Jiwan Jal). Seventy mothers had knowledge of salt, sugar solution, but only 20 mothers knew complete procedure for its preparation. Sixty (18.2%) mothers' preferred pulses soup and rice water as home remedy (Harmeet, 2003).

Objective of the study

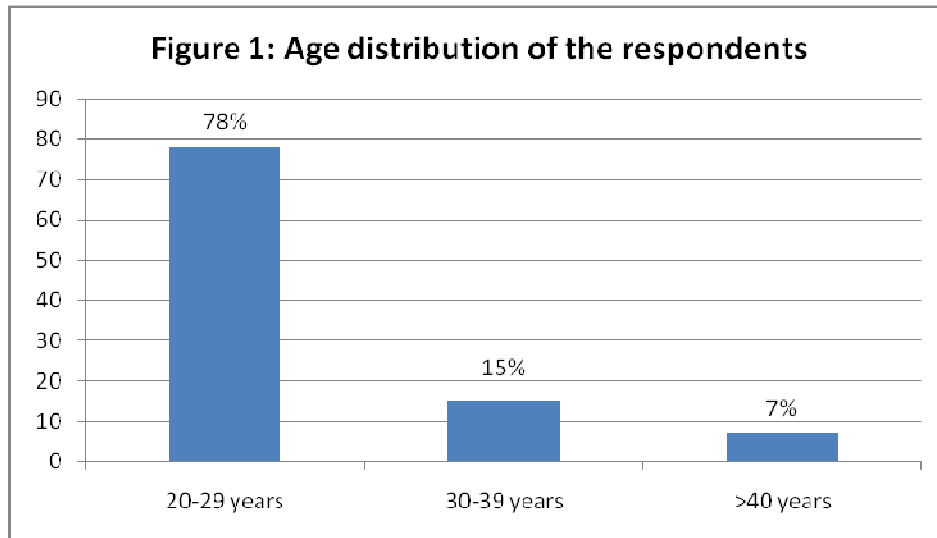
To assess the existing level of knowledge on home management of childhood diarrhea among the mothers of under 5 years children in a selected hospital of Dhaka City.

Materials and Methods

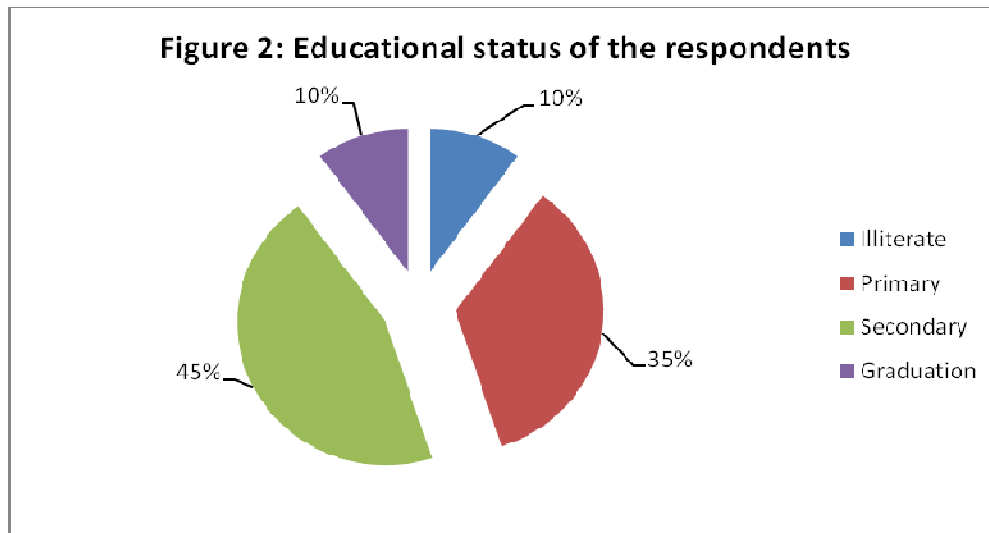
This study was descriptive in nature. It was carried out in Bangladesh Medical College & Hospital. In total, 150 mothers of children under 5 attending the ORT Corner of Bangladesh Medical College Hospital were selected purposively. The study was based on the basis of primary data. A pre-tested semi structured questionnaire was used to accomplish the task. Voluntary participation of the respondents as well as the confidentiality of their information was strictly maintained. Informal oral consent from each respondent was obtained. Data were analyzed by statistical package programme (SPSS 17 version). Findings were presented in narrative form with tables and graphs.

Results:

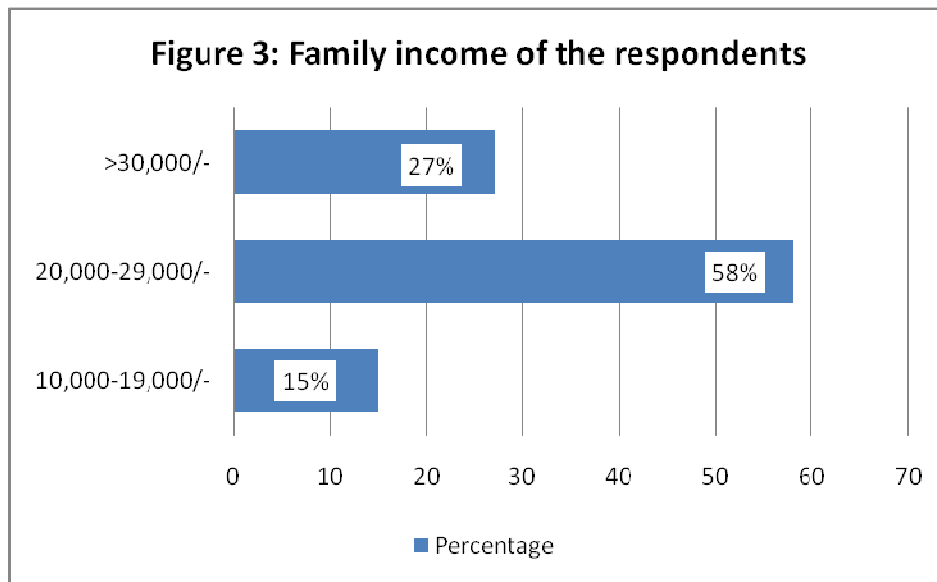
Majority (78%) of the mothers were 20-29 years age group , 15% were 30-39 years age group, where only 7% were above 40 years age group.



Among all the respondents 10% were illiterate, 35% had primary level education, 45% had secondary level education and 10% completed graduation.



63 % mothers were housewife whereas 37% were involved in the service. 15% mother's family income was between 10,000/-19,000/-, 58% had high family income between 20,000/-29,000/- and 27% of the mother's family income was between > 30,000/-



Most of the respondents (76.7%) were Muslim and 18.7% were Hindu. Regarding husband’s occupation 44.7% were involved in business and 51.3% were service holder. According to type of family, 52% respondents were from nuclear family, 45.3% were from joint family and remaining 2.7% were from extended family.

Table 1-Distribution of the respondent by their socio-demographic characteristic

Socio demographic characteristics	Frequency	Percentage
Religion of the respondents		
Islam	115	76.7
Hinduism	28	18.7
Christianity	7	4.6
Types of family		
Nuclear	78	52.0
Joint	68	45.3
Extended	4	2.7
Occupation of the husband		
Business	67	44.7
Service	77	51.3
Unemployed	6	4.0

Majority (93.3%) of the mothers thought that childhood diarrhea is a water and food borne disease. About 92% and 88% mother wrongly thought that childhood diarrhea is air borne

disease and mosquito borne disease respectively where remaining 8% and 12% of mother didn't think that it occurs by air or mosquito. 98.7% and 84.7% mothers knew that child gets diarrhea by unsafe drinking water and poor sanitation and hygiene respectively. Majority of the mothers were knowledgeable about the sign and symptoms of Diarrhea. Loose stool > than 3 episodes a day (98.7%), pain abdomen (86.7%) and loose stool with vomiting (82.7%) were most common symptoms. Only 58.7% thought that there might be presence of blood in stool during Diarrhea. 99.3% mothers knew dehydration and dry mouth as complications of diarrhea.

Table 2-Distribution of the respondents by their knowledge about childhood diarrhea

Knowledge related variables	Frequency	Percentage
Concept of childhood diarrhea		
Water and food borne disease		
Yes	140	93.3
No	10	6.7
Air borne disease		
Yes	12	92
No	138	8
Mosquito borne disease		
Yes	132	88
No	18	12
Routes of getting diarrhea		
Unsafe drinking water		
Yes	148	98.7
No	2	1.3
Poor sanitation and hygiene		
Yes	127	84.7
No	23	15.3
Symptoms of Diarrhea		
Loose stool > than 3 episodes a day		
Yes	148	98.7
No	2	1.3
Pain abdomen		
Yes	130	86.7
No	20	13.3

Loose stool with vomiting		
Yes	124	82.7
No	26	17.3
Blood in a stool		
Yes	88	58.7
No	62	41.3
Complications of Diarrhea		
Dehydration		
Yes	149	99.3
No	1	0.7
Sunken eyes		
Yes	34	77.3
No	116	22.7
Dry mouth		
Yes	149	99.3
No	1	0.7

54% mothers knew the importance of giving more fluids during diarrhea. About 25% mothers agreed that child should be taken to a health facility if the diarrhea does not get better or if signs of dehydration or another serious illness develop. 42% mothers thought that ORS is the best fluid for oral rehydration therapy at home followed by sugar-salt solution (22%) and rice water (14.7%). Majority of the mothers (48%) thought that normal diet should be continued during diarrhea and small frequent feedings (46%) should be given. 55.3% mothers knew that excessive thirst as one of the symptoms of dehydration. 36% mothers thought that reduce urine formation during diarrhea is the most common symptom of dehydration.

Table 3.1-Distribution of the respondents by knowledge on home management of Diarrhoe

Basic rules of home therapy	Frequency	Percentage
Give the child more fluids than usual to prevent dehydration	81	54.0
Give the child plenty of food to prevent under nutrition	32	21.3
Take the child to a health facility if the diarrhea does not get better or if signs of dehydration or another serious illness develop	37	24.7

Fluids suitable for oral rehydration therapy at home		
Cow's milk or formula milk	14	9.3
Rice water	22	14.7
Commercial fruit drink	5	3.3
Food-based fluids	13	8.7
Salt-sugar solution (SSS)	33	22.0
ORS solution	63	42.0
Foods to give during diarrhea		
Normal diet	72	48.0
Breast-feeding	43	28.7
Formula or cow's milk	35	23.3
Foods should be given		
As much food as the baby wants	29	19.3
Offer food every 3-4 hours	17	11.4
Small, frequent feedings	69	46.0
Large feedings given less frequently	35	23.3
Symptoms of dehydration		
Irritability and fussy behavior	13	8.7
Thirst	83	55.3
Reduce urine formation	54	36.0

Most of the respondents (95.3%) knew the method of ORS preparation at home. 89.3% mothers add 1 liter water in a packet of ORS only 10.7% add less than 1 liter water. Similarly 90% mother used prepared ORS for only 12 hrs but 10 % mother used it within 24 hours. Regarding sugar salt solution only 33.3% mothers knew how to prepare it but 62.7% mothers didn't know the method to prepare it. 82% mothers feed ORS after passing of each loose stool.

Table 3.2-Distribution of the respondents by knowledge on home management of Diarrhoea

Method of ORS preparation	Frequency	Percentage
Yes	143	95.3
No	7	4.7

Amount of water need to prepare ORS		
1 liter	134	89.3
<1 liter	16	10.7
Duration of prepared ORS use		
Within 12 hrs	135	90
Within 24hrs	15	10
Frequency to feed ORS		
After each loose stool	123	82
When baby wants	27	18
Method of sugar-salt solution preparation		
Yes	56	33.3
No	94	62.7

58% mothers told that fluid should be given a teaspoonful every 1-2 minutes during diarrhea. 42% mothers thought that during vomiting fluid should be stopped and then start again, but slowly. Majority of the mothers agreed that breastfeeding should be continued during diarrhea (57.3%) similarly 77.3% mother told that solid food should not be stopped during diarrhea. 38% mothers took their child to health worker during passage of frequent watery stools followed by repeated vomiting (16%) and blood in the stool (13.3%).

Table 3.3-Distribution of the respondents by knowledge on home management of diarrhea

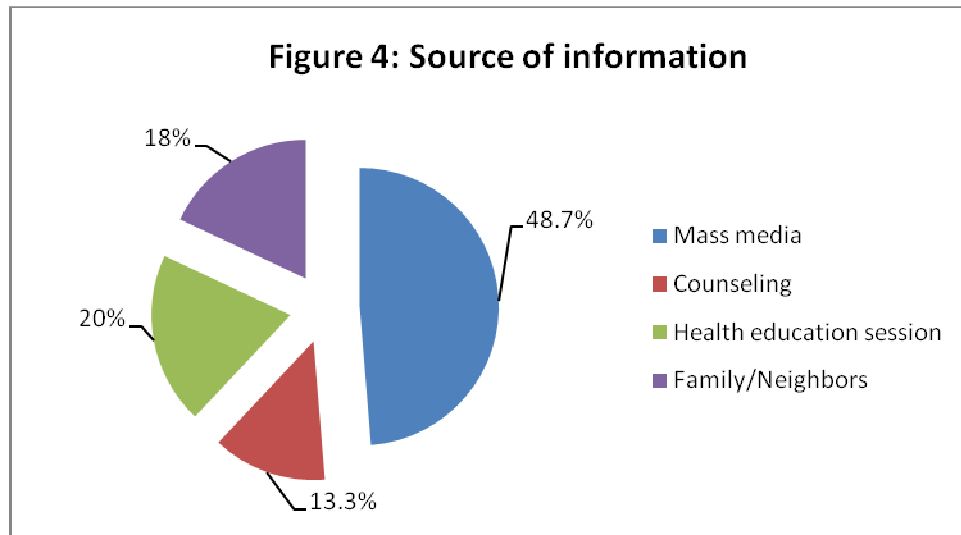
Fluid should be given a teaspoonful every 1-2 minutes	Frequency	Percentage
Yes	87	58.0
No	63	42.0
During vomiting fluid should be stopped and then start again, but slowly		
Yes	63	42.0
No	87	58.0
Feeding bottles should not be used		
Yes	93	62.0
No	57	38.0
Breast feeding should be continued		
Yes	86	57.3
No	64	42.7

Solid food should be stopped		
Yes	34	22.7
No	116	77.3
Place to visit during complications		
Visit at health center	147	98
Visit to traditional healer	3	2
Passage of frequent watery stools	57	38.0
Repeated vomiting	24	16.0
Increased thirst	13	8.7
Failure to eat or drink normally	24	16.0
Fever	12	8.0
Blood in the stool	20	13.3

Around thirty percent mothers told that posters on the clinic walls about ORT was the most effective method in teaching mothers how to give ORT. 48.7% mother's source of information was mass media.

Table 4-Distribution of the respondents by source of information about diarrhea

Most effective methods in teaching mothers how to give ORT	Frequency	Percentage
The doctor explains how it is done	27	18.0
Posters on the clinic walls show how ORT is given	43	28.7
Health worker demonstrates ORT	21	14.0
Mother is given an illustrated pamphlet that explains how ORT is carried out	29	19.3
Mass media	30	20.0
Source of information		
Mass media	73	48.7
Counseling	20	13.3
Health education session	30	20
Family/Neighbors	27	18



Conclusion and recommendation

For the better management of the diarrhea Community health education is of utmost importance for effective case management, since it has potential to establish productive contact between the health services and the community to increase capability of families to recognize the danger signs of diarrhea in children and to encourage appropriate and early care seeking behaviors. Effective health education can only be provided on the basis of an accurate understanding of prevailing knowledge, attitude and practices (KAP) of the community. Therefore, it is necessary to have relevant information concerning KAP of mothers about diarrhea for successful implementation of control activities.

Although the knowledge of the mother regarding home management is appreciated, more emphasis should be laid on putting this knowledge into practice. This can be achieved by more aggressive health education campaigns in the community through the health workers. Program should be implemented to train mother about the assessment of danger signs of diarrhea in a home setting so they can manage easily or take to hospital. Mass media should be widely used to increase the level of knowledge of mothers on home management of childhood diarrhea.

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