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Research Article

Impact of educational intervention regarding oral rehydration solution and zinc for management of diarrhoea among mothers of urban slums of Ahmedabad city, Gujarat, India: an interventional study

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ABSTRACT

Background: Diarrhoea is one of the leading causes of morbidity and mortality among under-five children. Timely management of the children with oral rehydration solution (ORS) has substantially declined the mortality and morbidity from acute infectious diarrhea. The use of ORS largely depends on the level of knowledge and attitude of mothers. Mothers' knowledge about diarrhoea can be improved through educational interventions. The objective of the study was to assess knowledge of mothers of urban slums of Ahmedabad city of Gujarat regarding ORS and Zinc for management of diarrhoea before and after training.
Methods: This Interventional study was conducted among purposively selected 100 mothers of under five children of urban slums of Ahmedabad city of Gujarat, India during June to August 2011. After taking verbal consent, baseline knowledge of mothers regarding ORS and Zinc for management of diarrhoea was assessed by pre-designed, pre-tested and semi structured questionnaire. Single educational interventional training for 45 minutes was given to selected mothers Pre and post training assessment was done by scoring method and also mean, standard deviation, Wilcoxon sign rank test were applied.
Results: Almost 83% of the mothers could define diarrhoea as the passage of watery stools three or more times a day, this knowledge was significantly increased to 100% after the training. Baseline knowledge of the mothers regarding causes of diarrhoea in children, signs and symptoms of dehydration in children, Correct method of preparation of ORS and importance of zinc therapy along with ORS was 4%, 22%, 39% and 26% respectively which was significantly increased to 73%, 90%, 89% and 76% respectively after the intervention.
Conclusions: Knowledge of the mothers of under-five children regarding causes of diarrhoea, signs and symptoms of diarrhoea, correct method of preparation of ORS and importance of zinc therapy along with ORS has been significantly increased after intervention.

Keywords: Diarrhoea, ORS, Zinc, Under-five Children, Knowledge of the mothers

INTRODUCTION

Diarrhoea is one of the leading causes of morbidity and mortality among under-five children. Globally, acute diarrhoea claims around 1.5 million lives of under- five children.[1] Moreover, in the South-East Asian region diarrhoea has been estimated to account for 31.3% of under-five mortality. Diarrhoea accounts for 760,000 deaths in children under- five years of age worldwide.[2] On an average, children below three years of age in

developing countries like India, experience about three episodes of diarrhoea each year.[3]

Strategies known to be effective in prevention of most diarrhoea cases are point of use water treatment, hand-washing with soap, and exclusive breastfeeding for first 6 months; rotavirus vaccine helps preventing agent specific diarrhea. Practices such as use of latrines and proper disposal of excreta are helpful in prevention of diarrhoea and therefore measures aiming at promotion of sanitation and good hygiene practices are also pertinent. Timely management of the children with ORS (oral rehydration solution) has substantially declined the mortality and morbidity from acute infectious diarrhea.[4]

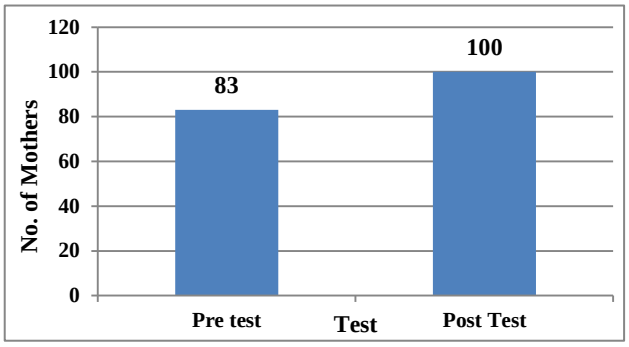
ORS is the non-propriety name for a balanced glucose-electrolyte mixture, approved, recommended and distributed by WHO and UNICEF as a drug for the treatment of clinical dehydration throughout the world. The use of ORS largely depends on the level of knowledge and attitude of mothers. Misconceptions are prevalent that prevent the use of ORS during diarrhea.[5] Mothers' knowledge about diarrhoea can be improved through educational interventions but written information only is not enough. It is more effective if pictorials and demonstrations are included along with written material.[6] Thus, this study was a humble effort to assess knowledge of mothers of urban slums of Ahmedabad city of Gujarat about ORS and Zinc for management of diarrhoea before and after training.

METHODS

This Interventional study was conducted among purposively selected 100 mothers of under five children of urban slums of Vadaj area of Ahmedabad city of Gujarat, India during June to August 2011. After taking verbal consent, baseline knowledge of mothers regarding ORS and Zinc for management of diarrhoea was assessed by pre-designed, pre-tested and semi structured questionnaire. Questionnaire was converted in vernacular language for assessment. Single educational interventional training for 45 minutes was given to selected mothers with lecture, charts, demonstration and discussion. Post– intervention knowledge of mothers for the same was assessed after training by same questionnaire. Pre and post training assessment was done by scoring method and also mean, standard deviation, Wilcoxon sign rank test were applied.

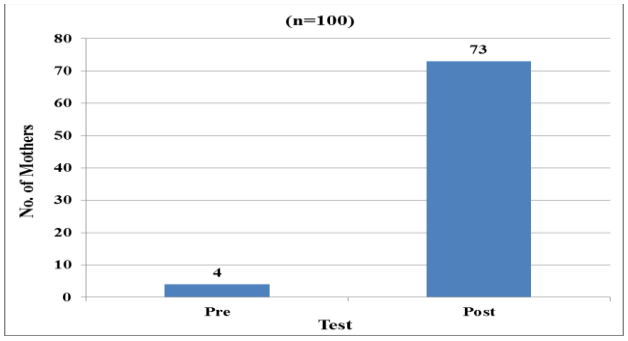
RESULTS

The mean age of the mothers was 25.7±3.18 years. The 98 % of the mothers were literate. 12 % mothers had completed their graduation. Almost 83% of the mothers could define diarrhoea as the passage of watery stools three or more times a day, this knowledge was significantly increased to 100 % after the training (Figure 1). Baseline knowledge of the mothers regarding causes of diarrhoea in children was 4% which was significantly increased to 73% after the intervention (Figure 2). Baseline knowledge of the mothers regarding signs and symptoms of dehydration in children was 22% which was significantly increased to 90% after the intervention (Figure 3). Baseline knowledge of the mothers regarding correct method of preparation of ORS was 39% which was significantly increased to 89% after the intervention (Figure 4). Baseline knowledge of the mothers regarding importance of zinc therapy along with ORS was 26% and which was significantly increased to 76% after the intervention (Figure 5).



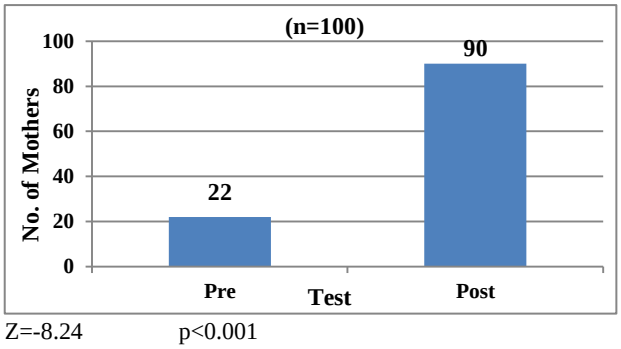
Z= -3.758 p<0.001

Figure 1: Knowledge of mothers regarding concept (definition) of diarrhoea in children before and after training.



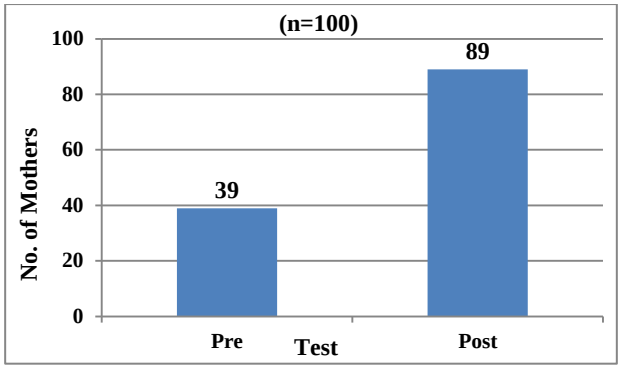
Z= -8.06 p<0.001

Figure 2: Knowledge of mothers regarding causes of diarrhoea in children before and after training.



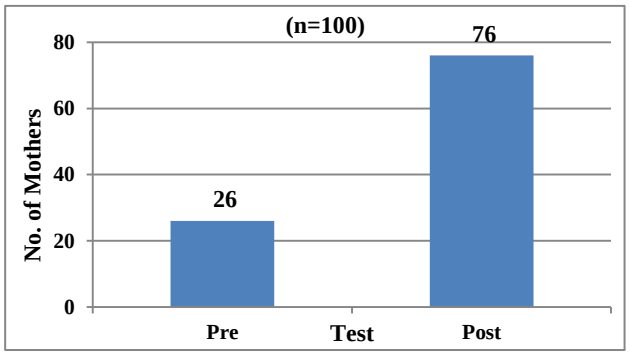
Z=-8.24 p<0.001

Figure 3: Knowledge of mothers regarding signs and symptoms of dehydration in children before and after training.



Z= -6.594 p<0.001

Figure 4: Knowledge of mothers regarding correct method of preparation of ORS before and after training.



Z=-6.35; p<0.001.

Figure 5: Knowledge of mothers regarding importance of zinc therapy along with ORS for management of diarrhoea in children before and after training.

DISCUSSION

Generally, socio-demographic factors such as mothers' education and occupation, husbands' employment status, family income and family size are linked with mothers' knowledge about diarrhoea and its management apart from mothers' personal attitude and behavior. Although mothers were aware of diarrhoea and its home management, the level of awareness was insufficient. The study suggested that mothers had a fair understanding of diarrhoeal disease as defined by World Health Organization. The proportion of mothers defining diarrhoea properly has been reported as 50% and 68% in studies from Rewa, Madhya Pradesh and Wardha, Maharashtra respectively. In Asian and African studies, this has been reported as 35% and 79% in studies from Sudan and Nepal respectively.[7-10]

In our study baseline knowledge of the mothers regarding causes of diarrhoea in children was 4% which was significantly increased to 73% after the intervention. Other study done by Kapoor P et al had reported just 15% and 6% mothers knowing that dirty water and dirty environment could cause diarrhoea.[7] While Khalili et al in a study from south-east province of Iran reported 81% and 58% mothers acknowledging unsafe water and unclean hands respectively as causes of diarrhoeal illness.[11]

In our study baseline knowledge of the mothers regarding signs and symptoms of dehydration in children was 22% which was significantly increased to 90% after the intervention. The study conducted in Tanzania by Kaatano GM et al and Indonesia by MacDonald SE also found similar results.[12,13]

In our study baseline knowledge of the mothers regarding correct method of preparation of ORS was 39% which was significantly increased to 89% after the intervention. In fact, people adopt a wait and watch approach as it is believed the consumption of food and water increases the bulk of stools and does not provide rest to the intestine which is necessary for recovery from diarrhoea. Even some of the educated people do the same thing. In a study done by Sultana A et al 60% mothers were found to have adequate knowledge regarding the method of ORS preparation.[14]

In our study knowledge of the mothers of under five children regarding causes of diarrhoea, signs and symptoms of diarrhoea, correct method of preparation of ORS and importance of zinc therapy along with ORS has been significantly increased after intervention. Similar results were also obtained by Mukhtar Ansari et al that Educational interventions brought about significant improvement in knowledge, attitude and practice at 1st, 2nd and 3rd follow-up. The median scores of knowledge, attitude and practice increased from 14, 7, 6 to 26, 9, 13, respectively, due to repeated interventions. Furthermore, interventions strengthened the correlation between knowledge, attitude and practice.[15]

CONCLUSION

There was significant improvement in the knowledge of the mothers of under five children regarding causes of diarrhoea, signs and symptoms of diarrhoea, correct method of preparation of ORS and importance of zinc therapy along with ORS has been significantly increased after intervention. Such education interventions are to be done on a regular basis to improve knowledge of the mothers for better control of diarrhoea in under five children.

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

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