Vol 3 Issue 2 Nov 2013

Impact Factor : 1.6772 (UIF)

ISSN No : 2249-894X

Monthly Multidisciplinary Research Journal

Review Of Research Journal

Chief Editors

Welcome to Review Of Research

RNI MAHMUL/2011/38595 **ISSN No.2249-894X**

Review Of Research Journal is a multidisciplinary research journal, published monthly in English, Hindi & Marathi Language. All research papers submitted to the journal will be double - blind peer reviewed referred by members of the editorial Board readers will include investigator in universities, research institutes government and industry with research interest in the general subjects.

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Review Of Research
Vol. 3, Issue. 2, Nov. 2013
ISSN:-2249-894X
Available online at www.ror.isrj.net

ORIGINAL ARTICLE

STRUCTURED TEACHING PROGRAM IMPROVES MOTHERS KNOWLEDGE ON ORAL REHYDRATION THERAPY – A QUASI EXPERIMENTAL STUDY

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Abstract:

The main aim of the study was to determine the effectiveness of structured teaching program on knowledge of oral rehydration therapy among mothers of under five children in a community area at Mangalore. Quasi-experimental one group pre-test, post-test design was adopted. Fifty mothers were selected by non-probability convenience sampling technique and the structured teaching program on oral rehydration therapy was administered. Knowledge was assessed before and after structured teaching program by a knowledge questionnaire. The study findings showed that the mean post-test knowledge scores (24.32) of mothers of under five children was higher than that of the mean pre-test knowledge scores (10.18). The calculated t' value (t=34.59) is greater than the table value(t (49) =1.67)at 0.05 level of significance. This indicates that the teaching programme on knowledge of oral rehydration therapy was effective in improving the knowledge of mothers of underfive children.

KEYWORDS:

Effectiveness, Structured teaching programme, Knowledge, Oral Rehydration Therapy

INTRODUCTION

BACKGROUND

"Oral rehydration therapy - A life saving solution" -World Health Organisation [1].
"One good mother is worth a hundred schoolmasters" -George Herbert [2].

Diarrhoea is a major cause of illness and death among under five children in India. The main immediate cause of death from acute diarrhoea is dehydration, which is preventable through Oral Rehydration Therapy (ORT) [3]. An estimated one thousand million episodes occur each year among under five children in the world. In developing countries diarrhoeal episodes result in approximately 4-5 million deaths each year, out of which 7,00,000 deaths are from India [4]. Neonates and young infants may be prone to relatively slow correction of acidosis [5].

Diarrhoea represents a leading cause of under five mortality in developing countries, including Yemen and many other countries of the Eastern Mediterranean. According to World Health report the Overall under 5 mortality was estimated as 113 per 100,000 live births, of which diarrhoea accounted for 17%, while that of Measles represented only 4% and that of Malaria 3% [6]. In 1968, researchers discovered that adding glucose to water and salt in the right proportion help the liquid to be absorbed through the intestinal wall. Anyone suffering from diarrhoea can drink this solution and replace the lost fluids and salt [7]. Early use of ORT at home in children with diarrhoea decreases the number of outpatient visits and hospitalizations, and overall medical costs [8].

Acute diarrheal disease continues to claim the lives of an estimated half a million children annually in India and of nearly two million children worldwide. Widespread utilization of oral rehydration

Title: STRUCTURED TEACHING PROGRAM IMPROVES MOTHERS KNOWLEDGE ON ORAL REHYDRATION THERAPY – A QUASI EXPERIMENTAL STUDY Source: Review of Research [2249-894X] MOHAMMED SIRAJ .P AND UMARANI.J yr:2013 vol:3 iss:2

solution (ORS) results in the global reduction in mortality from approximately 5 million diarrheal deaths annually twenty years ago,. The introduction of ORS is considered as one of the most significant medical advances of the twentieth century, it allowed correction of dehydration and prevention of mortality [9].

All research studies have a frame work of background knowledge that provides the foundation for the study. If a study is based on a conceptual model, the frame work for the study is most often referred to as conceptual frame work. The conceptual frame work of the present study was developed by the Wiedenbach's helping art of clinical nursing theory [10].

A study was carried out with community-based health and nutrition education intervention, focusing on several factors influencing child health with special emphasis on diarrhea, in a slum of Delhi, India. The results showed that health education and nutrition education improved the knowledge and attitude of mothers [11]. A cross-sectional descriptive survey was conducted in Tameka Municipality, Dar Salaam over a 4 month period to investigate on knowledge and perception of care givers of under fives on childhood diarrhoea. Mother's knowledge on predisposing factors of childhood diarrhoea was poor, which was directly correlated with education level [12].

In Nepal, the annual death in less than five years age due to diarrhoea is 45,000. Home management of diarrhoea is considered as an important aspect of control of diarrhoeal diseases program in Nepal, which also aims to increase the correct use of Oral Rehydration Solution (ORS) by mothers, so mothers play a great role in the reducing the morbidity and mortality of children [13]. It was estimated that overall mortality-rate and diarrhea associated death was 51.7 per 100,000 and 6.5per 100,000 respectively in the twelve provinces of twelve regions of Thailand [14].

A study was conducted to determine factors associated with the use of oral rehydration solution (ORS) in West Lombok, Indonesia concluded that demonstrations of preparation of ORS and availability of ORS are necessary to increase the use of ORS for management of acute diarrhea [15]. Another study to assess the ability for preparing oral rehydration solution (ORS)correctly among the recipients of ORS packets from the Government of India service outlets was carried out in Delhi indicate that only 10.8% of mothers prepared the ORS correctly [16].

OBJECTIVES OF THE STUDY

1. Assess the knowledge of Mothers of underfive children on oral rehydration therapy.
2. Determine the effectiveness of structured teaching program on knowledge of oral rehydration therapy among Mothers of under five children.
3. Find association between knowledge of Mothers and selected demographic variables.

MATERIALS AND METHODS

A Quasi-experimental one group pre-test, post-test design was adopted for collection and analysis of data, because this study was intended to ascertain the gain in knowledge of mothers of under five children who were subjected to Structured Teaching Program. Fifty mothers of under five children who fulfilled the inclusion criteria were selected from a rural community by non-probability convenience sampling technique. Baseline Proforma and structured knowledge questionnaire on oral rehydration therapy were used as data collection tool to collect the data.

The tool consisted of Section A: Baseline proforma with 8 items and Section B: Knowledge questionnaire with 28 items with a total score of 28. The questionnaire was categorized in to general concept on oral rehydration therapy, preparation of ORS, administration of ORS, home preparation, quantity of ORS and the effects of oral rehydration therapy. The score interpretation of the questionnaire was divided as, 20-28 - Adequate knowledge; 11-19 - Moderately adequate knowledge; and $\leq$10 - Inadequate knowledge.

In order to obtain the validity of the data collection tool, the draft of the structured knowledge questionnaire along with the lesson plan of structured teaching programme, objectives, blueprint and the criteria checklist designed for validation was submitted to the experts from the field of child health nursing and paediatrics. The experts were selected on the basis of clinical expertise and experience on the problem being studied. They were requested to give their opinion on the accuracy, appropriateness and relevance of items in the tool. Prior to the data collection, the investigator familiarized to the mothers of under five children and explained the purpose of the study to them. The investigator approached the mothers of under five children according to the time that was scheduled and communicated to them. Requested participants full co-operation and assured them of the confidentiality of their response. An informed written consent was also taken from the subjects. After obtaining the formal permission from the institution ethics committee, the validated knowledge questionnaire was administered to the mothers to assess the pre-test knowledge level. Then the structured teaching programme with variety of audio-visual aids was administered soon after the pre-test. On the 7th day post-test was conducted by the investigator using the

same questionnaire at the same place. The data collected was then compiled for data analysis. The data was tabulated, analyzed and interpreted using descriptive and inferential statistical methods.

RESULT AND DISCUSSION

The frequency and percentage distribution of demographic variables among mothers of under five children showed that, majority (64%) were in the age group of 18 to 25 years. Regard to religion, maximum percentage (50%) of them were Muslims, 30% were Hindus and only 20% were Christians. And all(100%) were the residents of rural area. while taking the family type (50%)were from extended family, majority(54%) of the families income was between Rs.6001-12000. Based on type of occupation , most of them are house wife (80%), with regards to the information received about oral rehydration therapy, 86% mothers did not get any information on ORS before. The area wise comparison of pre-test and post-test shows the mean percentage of post-test knowledge scores(6.94% and 5.28%) were highest in the area of administration of oral rehydration solution.

Table 1: Frequency and percentage distribution of pre-test and post-test knowledge scores.

N=50

Level of knowledge	Pretest Frequency	Pretest Percentage	Post test Frequency	Post test Percentage
Adequate	-	-	49	98%
Moderately adequate	20	40	1	2
Inadequate	30	60	-	-

Table 1 described the knowledge level of mothers in terms of frequency and percentage before and after receiving structured teaching program on oral rehydration therapy. Majority (60%) of the mothers had inadequate knowledge and none of them had adequate knowledge prior to the teaching whereas after attending the teaching programme, 98% of mothers acquired adequate knowledge .

Table.2: Mean, Standard deviation and 't' value between pre-test and post-test knowledge scores

N=50

Test	Mean	S.D	Mean Difference	't' value
Pre-test	10.18	5.70	0.89	11.43*
Post-test	24.32	4.81		

$t_{(49)}$=1.67 p<0.05 *Significant

The present study findings(table 2) showed that the mean post-test knowledge scores (24.32) of mothers of under five children was higher than that of the mean pre-test knowledge scores (10.18). The calculated 't' value (t=34.59) is greater than the table value (t (49) =1.67). This indicates that the teaching programme on knowledge on oral rehydration therapy was effective in improving the knowledge of mothers of under five children. The 't' values in'general concept on oral rehydration therapy' (t=19.74), 'preparation of oral rehydration solution'(t=11.93),'administration of oral rehydration solution'(t=14.72), home preparation(t=10.76), quantity of oral rehydration solution (13.71), effect of oral rehydration solution (11.96) was higher than the table value [t(49)=1.67] which indicates that each of the areas were statistically significant and the teaching programme on knowledge of oral rehydration therapy was effective in increasing the knowledge of mothers of under five children in all six areas.

Table 3: Area wise pre-test and post-test knowledge scores of mothers of under five children regarding oral rehydration therapy.

N=50

Sl. No	Areas	Max. score	Mean percentage of knowledge score	
			Pre test	Post test
1	General concept on oral rehydration therapy	8	35%	86.7%
2	Preparation of ORS	3	36.6%	86%
3	Administration of ORS	6	38%	88%
4	Home preparation	3	38.6%	88.6%
5	Quantity of ORS	2	24%	88%
6	Effects of oral rehydration therapy.	6	39%	85%

Table 3 depicts that there was a significant gain in knowledge at all areas regarding oral rehydration therapy in the post-test. The post-test data showed that the highest percentage(88.6%) of knowledge gain was seen in the home preparation of ORS.

The study result also revealed that there was no significant association between pre-test knowledge score of the mothers of underfive children and selected demographic variable.

A household longitudinal study was conducted in Nyando district, Kenya to assess the Perceived causes of childhood diarrhoea, action taken during diarrhea, fluid intake, recognition of signs of dehydration, feeding during convalescence, adherence to treatment and advice.The wheat flour, rice water and selected herbs are perceived as anti-diarrheal agents by the mothers [17].

A cross sectional survey was undertaken in rural area of Wardha District of Maharashtra, to assess the knowledge, attitude and practice of mothers regarding diarrhoea and oral rehydration therapy. The maternal knowledge towards diarrhoea and ORS was inadequate in the population studied and there was a big gap between actual and desired practices [18]. An evaluative study conducted in Iran on knowledge of the mothers of under five children about diarrhea and its management revealed that 28.8% of the mothers had good knowledge about diarrhea, while the 46.5% had medium and 24.7% had low knowledge [19]. ORS is a simple, proven intervention that can be used at the community level to prevent and treat diarrhoeal dehydration and decrease diarrhoea mortality. It is essential that ORS coverage should be increased to achieve reductions in diarrhoea mortality [20].

The study also implies that health personnel have to be properly trained on how to teach the public regarding healthcare. Nursing curriculum should be such that it prepares the prospective nursing students to assist the client and community in aspects of health care. Diarrhoea and dehydration are the main reason for under five mortality rate in developing countries. The death of children due to this can be prevented by providing oral rehydration therapy as early as possible. But the main delay in providing ORT to children during dehydration is the lack of awareness among the mothers and care takers. Hence nurses working in the hospital and community have to realize their responsibility in giving health education to people regarding oral rehydration therapy.

Health department should conduct in service education for the staff regarding this topic to update the knowledge and assign them to conduct health teaching in the community. Mass awareness camp can be organised to motivate the community people. The study was confined to a specific geographical area which is a limitation for generalization and the study findings could be generalized only to the population where in the study was conducted. A similar study can be conducted to determine the effectiveness of a structured teaching programme on oral rehydration therapy on large sample of mothers of under five children to generalize the topic

CONCLUSION

The finding of the study shows that the structured teaching programme was effective in improving the knowledge of oral rehydration therapy among the mothers of under five children in a selected community. One key to successful treatment of diarrhoea is early action in the home. The emphasis now is on educating mothers to increase children's fluid intake as soon as diarrhoea starts and to continue feeding.

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