

# A Study to Assess the Effectiveness of Self-Instructional Module on Home Management of Diarrhea among Mothers of Under Five Children in Selected Hospital at Bangalore

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## ABSTRACT

**Background:** Diarrhea is a symptom of a variety of conditions and it constitutes one of the main causes of morbidity and mortality among infants and children throughout the world. In India 15% of total population under five children. 50% of all deaths occur below 5 years of age in India. In India alone, nearly 1.5 million children die due to acute diarrhea every year.

**Aim:** To assess the effectiveness of Self- instructional module on home management of diarrhea among mothers of under five children in selected hospital, at Bangalore

**Materials and Methods:** Pre experimental one group pre-test post -test design used to measure the knowledge of the mothers of underfive children regarding home management of the diarrhea with application of the Self-Instructional Module.

**Results:** The overall mean knowledge score of pre- test and post- test, which reveals the post- test mean knowledge score was higher (72.6%) with standard deviation  $\pm$  10.2% when compared with pre- test mean knowledge score value which was (46.8%) with standard deviation  $\pm$  17.3%.

The statistical paired't' test implies that the difference in the pre- test and post- test knowledge score found statistically significant at 5% level. The post-test mean knowledge difference was 25.8% with a paired't' value of 15.69.

**Conclusion:** Diarrhea is a preventable disease. Mother's knowledge regarding home management of diarrhea is most important preventable aspect of diarrhea. Lack of knowledge of mother on diarrhea management is a major hindrance to prevent and control of diarrhea in children.

**KEY WORDS:** Diarrhea, Mother of under five children, Home management, Self-Instructional Module.

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## BACKGROUND

Worldwide, particularly in developing countries, diarrheal diseases still constitute significant causes of mortality and morbidity [1]. WHO reported, 5.9 million children under age five died in 2015, 16000 everyday [2]. The WHO estimates that between 90,000 and 153,000 children die from rotavirus infection in India each year.

According to UNICEF, diarrhea is a leading killer of children, accounting for 9 percent of all deaths among children under age 5 worldwide in 2015 [3]. In India 15% of total population under five children. 50% of all deaths occur below 5 years of age in India.

It is estimated that 20% of all hospitalization of

children due to diarrheal diseases. In India alone, nearly 1.5 million children die due to acute diarrhea every year [4]. Diarrhea is the third leading cause of childhood mortality in India, and is responsible for 13% of all deaths/year in children under 5 years of age [5]. In 2011 UNICEF under-five mortality rate for India is 61 per 1000 live births. The MDS (Million Death Study) estimates the proportionate mortality rate in India due to diarrhea in <5 years children to be 13.2% [6]. In Karnataka, A survey study was reported that mortality due to diarrhea was 1.8 per 100 episodes [7]. In the Kaveri basin of Karnataka state, diarrhea associated deaths were 31.9%, accounting for nearly one-third of total deaths among under five [8].

A study, conducted in Ahmedabad was reported diarrhea disease were responsible for 7.69% deaths in under five children [9]. Diarrhea is a major cause of malnutrition in children. Lack of clean water, crowding, poor hygiene, nutritional deficiency and poor sanitation are major risk factors [10]. Dehydration is the most common life threatening consequence of diarrhea. Severe dehydration can cause death [11]. A study reported that dehydration causes over 1.5 million deaths a year [12]. Hand washing is the major preventive measure of diarrhea [13].

The major factor associated with adequate home treatment was the mother's knowledge about the causes and treatment of diarrhea [14]. Educational status of mother showed a positive correlation with the incidence of diarrheal diseases [15]. Improved feeding and practices and improved personal and domestic hygiene should be considered important intervention in reducing the high incidence of diarrhea [16]. The main objective of ORS therapy programme is to prevent diarrhea associated deaths in children due to dehydration [17]. One of the best methods of controlling diarrhea is home management and mothers are the chief caregivers for under fives. Hence their knowledge is essential for appropriate action related to home management of diarrhea.

## MATERIALS AND METHODS

A pre-experimental and evaluative research approach was used with one group pre-test post-test design to evaluate the effectiveness

of the SIM. The study was conducted in under five clinic of K.C General Hospital at Bangalore. The sample composed of 40 mothers of under five children. A purposive sampling technique was used. A structured questionnaire on home management of diarrhea was used for data collection. The questionnaire consisted of two sections: Section A-Demographic variables with 10 items. Section B-Knowledge questionnaires consist of 41 objective type questions covering the following area.

Ethical clearance from Institutional ethical committee was obtained. The written permission was obtained from the authority prior to the data collection. The purpose of the subject was explained to them and informed consent was obtained from the respondents. A pre-test with the structured questionnaire was given on the first day, following which a copy of the SIM was given to the respondents with instruction to retain and read the SIM thoroughly and come prepared for the post -test on the 7 day. Post-test was administered by using the same questionnaire. The data collection process was terminated by thanking the respondent for their patience and cooperation.

### Schematic presentation of study design.

Group	Pre-test	Intervention	Post-test
Mothers of under five children (40)	Day-1 O1 (Dependent variable)	Day-1 X (Independent variable)	Day-7 O2 (Dependent variable)

O<sub>1</sub> : Knowledge assessment on the first day by using structured questionnaire.

O<sub>2</sub> : Knowledge assessment on the 7<sup>th</sup> day by using structured questionnaire.

X : Administration of prepared SIM on the first day

## RESULTS

Results were presented in form of number, proportions and percentages. The data obtained would be analyzed by both descriptive and inferential statistics. The descriptive statistics would be used to describe the sample characteristic in terms of frequency and percentage. Paired 't' test is used to test the significance difference in the knowledge score between pre-test and post-test performance. Association measured by X<sup>2</sup> test (Chi – square test) between pre-test and post-test with selected demographic variables.

The study shows that majority of mothers (19)

47% were in the age group of 27-30. Majority of mothers (20) 65% were Hindu by religion. Maximum numbers of mothers 70% belong to joint family. Maximum numbers of mothers 50% were having high school level of education. Maximum numbers of mothers 42.5% had two children. Maximum numbers of mothers 55% were housewife. Maximum numbers of mothers 30% had monthly income of 3,001-4,000 and equal number of mothers (30%) had 4,001-6.000. Maximum numbers of mothers 70% were from rural place. Maximum numbers of mothers 97.5% had exposure to source of information from health personnel. Maximum numbers of mothers 65% had no history of diarrhea.

Aspect wise pre-test (Table-1) and post- test (Table-2) mean knowledge scores, regarding definition, types and causes of diarrhea, the knowledge score were 38.2%, and 66.8%, in the

aspect of sign-symptoms and complication, the knowledge score were 45.4% and 78.6%, in home management of diarrhea, the knowledge score were 51.1% and 72.5%, in preventive measures, the knowledge score were 52.5% and 77.5%. The total mean pre-test knowledge score was 46.8% with standard deviation  $\pm 17.3$  and the total mean post-test knowledge score was 72.6% with standard deviation  $\pm 10.2$ .

On frequency and percentage of pre test and post test knowledge level of mothers, it shows that the majority of mothers 70.0% had inadequate level, 30% of mothers had moderate level in the pre -test knowledge. In the post- test knowledge level, majority of mothers 57.5% had moderate and 42.5% of mothers had adequate knowledge. The  $X^2$  values is 48.46 at the 5% level of significant. (Table 3)

**Table 1:** Aspect wise Pre test Mean knowledge score of mothers.

N o.	Aspects	Stateme nts	Max . scor e	Range Score	Knowledge aspect		
					Mean	Mean (%)	SD (%)
I	Definition, types and causes	11	11	1-10	4.20	38.2	27.3
II	Signs & symptoms and complications	7	7	0-7	3.18	45.4	26.7
II I	Home management	18	18	3-14	9.20	51.1	14.7
I V	Preventive measures	5	5	1-5	2.63	52.5	19.0
	Combined	41	41	9-33	19.50	46.8	17.3

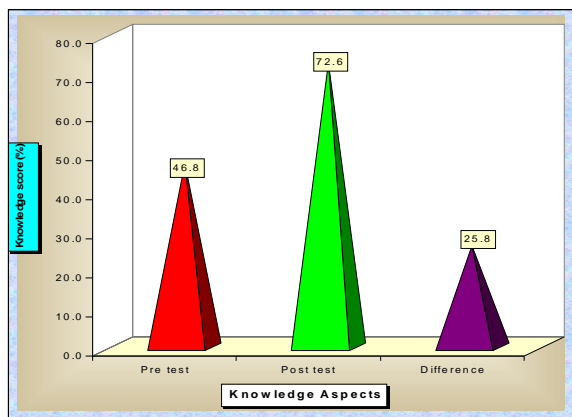
**Table 2:** Aspect wise Post- test Mean knowledge score of mothers.

N o.	Aspects	Statemen ts	Max. score	Range Score	Knowledge aspect		
					Mean	Mean (%)	SD (%)
I	Definition, types and causes	11	11	4-11	7.35	66.8	18.7
II	Signs & symptoms and complicatio	7	7	4-7	5.50	78.6	14.8
II I	Home managemen t	18	18	9-16	13.05	72.5	11.0
I V	Preventive measures	5	5	2-5	3.88	77.5	14.5
	Combined	41	41	25-34	29.78	72.6	10.2

\*Significant at 5% Level



**Fig.1:** Pre test and post- test mean knowledge score on home management of diarrhea.



**Table 3:** Frequency and percentage of pre test and post test knowledge level of mothers. n=40.

Knowledge Level	Classification of Respondents				$\chi^2$ Value
	Pre test		Post test		
	Number	Percent	Number	Percent	
Adequate (<50 %)	28	70	0	0	48.46*
Moderate (51-75%)	12	30	23	57.5	
Inadequate (> 75%)	0	0	17	42.5	
Total	40	100	40	100	

\* Significant at 5 % Level,  $\chi^2$  (0.05, 1df) = 3.841

**Table 4:** Mean knowledge score of Pre- test and Post -test of mothers.

Aspect	Statements	Max score	Knowledge aspect			Paired t-Test
			Mean	Mean (%)	SD (%)	
Pre test	41	41	19.50	46.8	17.3	15.69*
Post test	41	41	29.78	72.6	10.2	
Difference	41	41	10.58	25.8	10.4	

\*Significant at 5% Level

Regarding effectiveness of SIM on knowledge of mothers regarding home management of diarrhea, the study reveals that the post- test mean knowledge score was higher (72.6%) with standard deviation  $\pm$  10.2% when compared with pre- test mean knowledge score value which was (46.8%) with standard deviation  $\pm$  17.3%.

The statistical paired 't' test implies that the difference in the pre- test and post- test knowledge score found statistically significant at 5% level .The post-test mean knowledge difference was 25.8% with a paired 't' value of 15.69. (Table 4)

On analyzing the association of knowledge, in

pre-test with selected demographic variables, it was found that there was no significant association between the knowledge scores with selected demographic variables and in post-test with same selected demographic variables, it was found that educational status of mother ( $X^2=6.70$ ,  $p>0.05$ , 2df) and place of residence is statistically significant ( $X^2=4.68$ ,  $p>0.05$ , 1df) with knowledge score.

## DISCUSSION

The present study was aimed to assess the effectiveness of the self-instructional module on knowledge of mothers regarding home management of diarrhea.

The study was conducted in the under five clinic of K.C general Hospital at Bangalore. A structured self-administered questionnaire selected on the basis of the objective of the study was considered to be most appropriate instrument for assessing the level of knowledge regarding home management of diarrhea. A self-instructional module was administered to the subjects after the pre test before which the post-test was conducted. Purposive sampling technique was used to select 40 mothers of under five children.

The study revealed that the majority of mothers 70.0% had inadequate level, 30% of mothers had moderate level in the pre -test knowledge. In the post- test knowledge level, majority of mothers 57.5% had moderate and 42.5% of mothers had adequate knowledge. The  $X^2$  values is 48.46 at the 5% level of significant. These findings are consistent with the findings of Soosamma PV(1999) [18], Valsa(20001) [19], who reported that SIM was effective teaching strategy in terms of increasing the knowledge of the subject under study.

Aspect wise the pre-test and post –test score in definition, types and causes of diarrhea were 38.2% and 66.8% respectively, in the aspect of sign-symptoms and complication were 45.4% and 78.6%, in home management of diarrhea were 51.1% and 72.5%, in preventive measures were 52.5% and 77.5%. The post –test mean knowledge enhancement was 28.6% with a paired't' value of 12.14 in the aspect of definition, types and causes of diarrhea. The post-test mean knowledge enhancement was 33.2% with a paired't' value of 9.05 in the aspect

of sign-symptoms and complication. The post – test mean knowledge enhancement was 21.4% with a paired't' value of 11.77 in the aspect of in home management of diarrhea. The post – test mean knowledge enhancement was 25% with a paired't' value of 9.41 in the aspect of preventive measures of diarrhea. In present study, existing knowledge of mothers in different aspect of diarrhea is inadequate. In similar study, by Kour A et al found only 30% provide home remedies and 25% are aware of ORT [20]. Geeta Parwanda et al found inadequate knowledge (9.38) and practice (8.98) of mothers regarding home management of diarrhea [21]. In a study by Priti Chaudhury et al found only 42% of mothers have knowledge regarding ORS preparation [22]. Manijeh et al, reported only 3.7% of good knowledge and 2.3% of good practice regarding diarrhea [23].

An association of selected demographic variables in relation to their knowledge was studied using Chi-square test. There was no significant association between variables like age, religion, and type of family, educational status, occupation, and number of children, family income, with pre-test knowledge scores except educational status of mother and residence of place in post test.

## CONCLUSION

The present study was aimed to assess the effectiveness of the self-instructional module on knowledge of mothers regarding home management of diarrhea. There was a lack of knowledge among mothers in aspect of home management of diarrhea. The self-instructional module on "home management of diarrhea" was found to be effective in terms of increasing knowledge. There was no significant association between variables like age, religion, and type of family, educational status, occupation, and number of children, family income, with pre-test knowledge scores.

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