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Effectiveness of information booklet on knowledge of mothers regarding use of zinc supplementation with ORS in managing diarrhoea among under five children

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Abstract
Introduction: diarrhoeal disease is the second leading cause of malnutrition and death in children under five years old. Effective home management of acute childhood diarrhoea with oral rehydration solution (ORS) and zinc is the immediate and best applicable step under the local circumstances to minimise the morbidity and mortality.
Objective: To determine the pre-test knowledge level of mothers regarding use of Zinc supplementation with ORS in managing diarrhoea among under five children.
To determine the effectiveness' of information booklet on Zinc supplementation with ORS in managing diarrhea.To find the association between mean pre-test knowledge score with demographic variables.
Methodology: Study was undertaken on purposively selected 40 mothers having at least one under five Child. Pre experimental one group pre-test post-test design and evaluator approach was used. Tool for data collection included demographic Performa and structured knowledge questionnaire.
Results: Mean Post-test knowledge score (20.33) was higher than the mean pre-test knowledge score (11.95).The computed't' value (13.60) was higher than the table value (t_{39}=1.64, p< 0.05).there was association between knowledge level and education at 0.05 level of significance.
Conclusion: this study indicates that information booklet is an effective strategy for providing information and improving knowledge of mothers.

Keywords: effectiveness, information booklet, knowledge, zinc supplementation and ORS

Introduction
The national policy for children recognizes children as the nation's supremely important asset. It states that it shall be the policy of the state to provide adequate services to children throughout their period of growth and development. Child's health has been given greatest priority over the years and many health programmes have been implemented aimed at reducing child mortality and morbidity [1].
In India 39% of population are children. According to the National policy, children have been considered as an integral part of national development. Globally children are loved as they have a special place in the lives of the people but a large number of children become a cause of sorrow because of illness and untimely death [2]. Diarrhoea is the third leading cause of childhood mortality in India. Over 2 million children die as a result of diarrhoea and dehydration every year [3].
The use of zinc in the management of childhood diarrhoea is recommended by WHO/UNICEF because zinc has been found to reduce the duration and severity of diarrhoea and prevent subsequent episodes [4]. Zinc treatment is a simple inexpensive and new tool for treating diarrhoeal episodes among children in the developing world [5]. Zinc is believed to improve the absorption of water and electrolytes by the intestine, faster regeneration of gut epithelium, increased level of enterocyte brush border enzymes and an enhanced immune response, leading to increased clearance of the pathogen from the gut in an episode of diarrhoea. [6]. the effect of zinc supplementation on diarrhoeal diseases found a preventive and long lasting impact.
Although the Government of India has initiated the provision of zinc in addition to low osmolarity ORS through the public health system, under the NRHM a survey conducted by UNICEF in India document less than 1% prescription of zinc [7].
The present study was aimed to improve the knowledge of mothers of under five children regarding the use of zinc supplementation with ORS in managing diarrhoea.

Objectives
1. To determine the pre-test knowledge level of mothers regarding use of zinc supplementation with ORS in managing diarrhoea among under five children by using a structured knowledge questionnaire.
2. To determine the effectiveness of information booklet on zinc supplementation with ORS in managing diarrhoea in terms of gain in post-test knowledge score.
3. To find the association between mean pre-test knowledge score with selected demographic variables (i.e., age, number of children, education, occupation, family income and religion).

Methodology
Evaluative research approach and pre experimental one group pre – test post- test design was adopted for the study. The study was conducted in a selected rural area of Mangaluru. Sample size of the study comprised of 40 mothers of under five children selected by purposive sampling technique. Permission was obtained from

concerned primary Health Centre authorities and 40 mothers were selected. The data collection instruments included a performa of baseline variables of mothers, structured knowledge questionnaire with 26 items. Content validity of the tool was checked by the experts. Reliability of the knowledge questionnaire was established using split – half technique. (Karl Pearson's correlation method r=0.99). The pilot study was conducted and study was found to be feasible and practicable. Formal permission was taken from the District Health Officer. Informed consent was obtained from the mothers prior to the data collection.

Results

1. Description of the demographic variables

Of the total 40 mothers, majority (52.5%) of the mothers were in the age group of 24-29 years and only few (5%) were in the age group of 18-23 years of age. With regard to number of children, 50% of mothers had one child, 40% of mothers had two children and only few (2.5%) had more than three children. 30% of mothers had primary education. Only (27.5%) were graduate and above, and others had either high school (22.5%) or pre university education (20%). Only few (5%) were unskilled workers and majority 72.5% of samples were homemakers. More than half of the sample (65%) had an income Rs. 5000-10000 per month and only few (5%) had income Rs. 10001-15000 per month.Half of the sample (50%) were Hindus, 40% mothers were Muslims and only few (10%) were Christians.

2. Assessment of knowledge among mothers of under five children regarding use of zinc supplements with ORS in managing diarrhoea.

Finding showed that in the pre-test very few (17.5%) had adequate knowledge, 27.5% had inadequate knowledge and 55% had moderate knowledge.

In the post-test most of them (82.5%) had adequate knowledge and none of them had inadequate knowledge (figure 1).

The pre-test score ranged from 3-22 and the mean score was 11.95 with SD 5.01. In the post-test the score ranged from 11-25 and the mean score was 20.33 with SD 3.05. The mean gain in score was 8.38(Table 1).

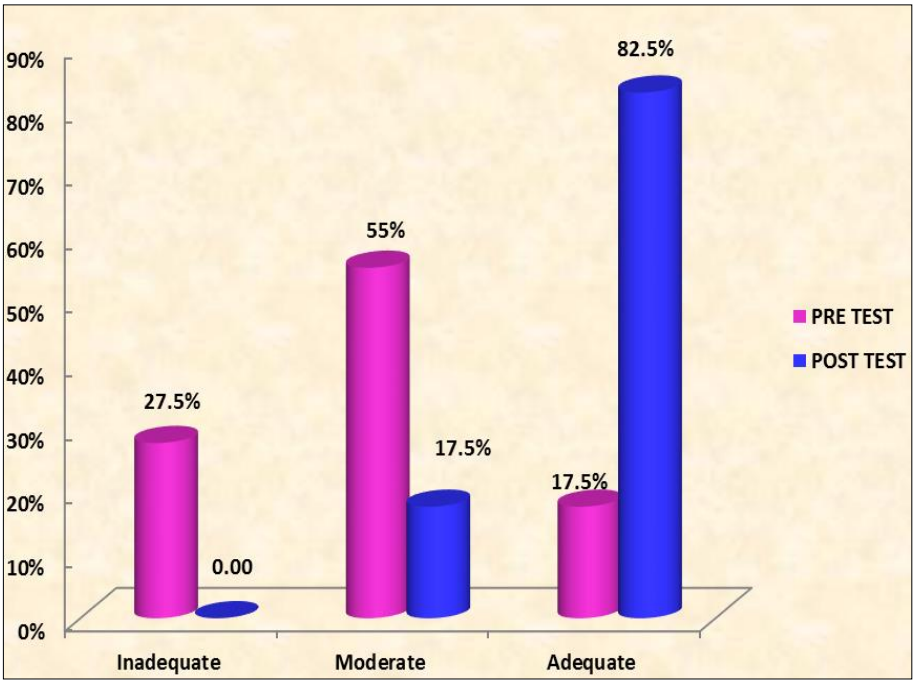

Fig 1: Bar diagram showing pre-test post-test level of knowledge of the sample

Table 1: Range, mean, S D and mean percentage of pre and post-test knowledge scores n=40

Area	Range	Mean	SD	Mean percentage	Mean difference
Pre-test	3-22	11.95	5.01	45.96	8.38
Post-test	11-25	20.33	3.05	78.2	

Maximum score=26

3. Areawise assessment of knowledge among mothers of under five children regarding use of zinc supplements with ORS in managing diarrhoea

With regard to general information on diarrhoea**,** the mean pre-test percentage score was 55% with SD 1.06 and in post- test mean percentage was 80.5% with SD 1.17 and the percentage gain was 25.42%.In risk factors, signs and symptoms, complication the mean percentage in the pre-test was 45% with SD 1.018 and in the post test the mean percentage was 75% with SD 0.961 and the percentage gain was 35.31%.In management of diarrhoea with zinc and ORS, the mean percentage in the pre-test was 42.81% with SD 3.512 and in the post test mean percentage was 78.1% with SD 1.739 and the percentage gain was 31.33%.The statistical paired 't' test indicates the enhancement in the mean knowledge scores in all the areas and the findings are statistically significant at 0.05 level.

4. Effectiveness of information booklet on knowledge regarding use of zinc supplements with ORS in managing diarrhoea in terms of gain in mean post-test knowledge.

There was a significant difference between the mean pre-test (11.95±5.01) and post-test (20.33±3.05) knowledge scores of mothers regarding zinc supplements with ORS in managing diarrhoea. The obtained value (t=13.60) is higher than the table value (t_{39}=1.68, $p < 0.05$). Table 2.

Table 2: Paired‘t’ test to test the significance difference between mean per and post-test knowledge score n=40

	Mean score	SD	Mean difference in score	SD Difference	Percentage gain	t value
Pre-test	11.95	5.01	8.38	3.89	32.21	13.60*
Post-test	20.33	3.05				

t_{39}=1.68, p<0.05*Significant

5. Association between mean pre-test knowledge score with selected demographic variables

There is no significant association between selected baseline variables like age, number of children, occupation, family income, religion. The obtained values in all these areas (0.15, 0.948, 1.69, 0.757, 2.437, and 0.522) were lower than the table value (3.84, p< 0.05).Significant association was found between education and mean knowledge score. The obtained value (9.95) was significantly higher than the table value (3.84, p<0.05).

Discussion

The present study finding showed that the mean post-test knowledge score (x_2=20.33) was higher than the mean pre-test knowledge score (x_1=11.95). The computed‘t’ value (13.60) was higher than the table value (t_{39}=1.64, p<0.05). These findings are consistent with the finding of other studies.The finding is consistent with the finding of other study conducted to evaluate the effectiveness of information booklet on knowledge of mothers regarding home management of selected common illness in children and find out the association between the post test scores with selected demographic variables. The study was conducted among 60 mothers conveniently selected from amodar village at Vadodara. The results of the study showed that in pre-test, mothers were having on average 44.26% knowledge regarding selected common illness of children and mean score was 15.05±5.19, in post-test mothers had 75.88% knowledge and means score was 25.8±3.96 . The post-test mean knowledge score was significantly greater than the pre-test mean knowledge score and was statistically significant [t_{59}=1.67, p<0.05]. This study concluded that information booklet was highly effective in improving knowledge of mothers [9].

There is no significant association between knowledge level and selected variables such as age, number of children, occupation, family income, religion and previous knowledge except education status .This confirms that information booklet was effective in enhancing the knowledge of mother regarding use of zinc supplements with ORS.

Conclusion

Zinc and low osmolarity ORS have been shown to be acceptable to both children and caregivers. Low osmolarity ORS and zinc are inexpensive, safe and easy to use and have the potential to dramatically lower diarrhoea morbidity and mortality. Nurses have a unique opportunity to help the mothers to examine their children, recognize the risk and potential areas of change, advice on a focused individualized plan and facilitate the accomplishment

Conflict of Interest

None

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