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EFFECTIVENESS OF STRUCTURED NURSING INTERVENTION ON NUTRITIONAL STATUS OF UNDERFIVE CHILDREN, KNOWLEDGE AND PRACTICE OF MOTHERS REGARDING THE PREVENTION AND MANAGEMENT OF PROTEIN ENERGY MALNUTRITION IN SELECTED COASTAL VILLAGES OF KERALA.

Nursing

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ABSTRACT

Malnutrition is not only an important cause of childhood morbidity and mortality, but leads also to permanent impairment of physical and possibly, of mental growth of those who survive. The study was carried out to find out the effectiveness of structured nursing intervention on nutritional status of underfive children, knowledge and practice of mothers regarding prevention and management of malnutrition in selected coastal villages of Kerala. Samples consisted of 122 underfive children who were identified with different degrees of malnutrition and their mothers. Pre experimental study design was used. Anthropometric parameters (Weight, Height, MUAC) were checked. Structured knowledge questionnaire and practice check list were used to measure the knowledge and practice of mothers related to the prevention and management of malnutrition. All the measurements were carried out once before the Structured Nursing Intervention and three times after the intervention. Structured Nursing Intervention was found to be effective in improving the knowledge and practice of mothers related to prevention and management of malnutrition among underfive children ($p < 0.001$). Percentage of grade I malnutrition reduced from 83.6% in pre test to 63.69% in post test III. Z test was carried out and it was concluded that Structured Nursing Intervention had significant influence on the nutritional status of underfive children ($Z = 3.33^{**}$, p value <0.01).

KEYWORDS

Protein Energy Malnutrition, Nutritional status, Structured Nursing Intervention, Knowledge, Practice, Underfive children.

INTRODUCTION

A nation's most important and precious resource is its children who constitute its hope for continuous achievement and productivity. There is no more crucial period of life than the life up to five years. Health status and health behaviour of later life are laid down at this age. Underfive age group is the most vulnerable and special risk group constituting a major portion of total population with high death rate.[1]

A cross sectional survey conducted in some of the selected coastal villages of Kerala showed that 20% of children had grade I PEM, 5% had grade II PEM, 2% had grade III PEM, 46.3% children had stunting, 23.3% of children had wasting, 68% of children had malnutrition based on mid arm circumference, 41.4% had hypo pigmentation on face, 35.4% had pale conjunctiva, 29.8% had sparse hair, 9.2% had dry and scaly skin and 33.2% had white patches on the nails.[2]

A culturally appropriate community based education intervention approach was used to teach suitable feeding and hygiene practices to a group of randomly selected Iranian nomadic families with 406 children aged 0-59 months. The findings suggested that educational interventions involving parents or other family members who might play a role in the care behavior and care resources are important in feeding the children energy and protein enriched, hygienic, simple foods. Such practices could improve child growth even under conditions of poverty. [3]

The commission on the nutrition challenges of the 21st century in its report entitled "Ending Malnutrition by 2020. " suggested requirement of special efforts to reach mothers, since they are the most unreached at present. Education to mothers can generate different types of intra household effects and thereby reducing the risk of nutritional deficiency like PEM.. The effects of which can be brought through mothers education are improved health and nutritional knowledge, psychological changes and improved nutritional behavior.[4]

Statement of The Problem:

A pre experimental study on the effectiveness of structured nursing intervention on nutritional status of children, knowledge and practice of mothers regarding the prevention and management of Protein Energy Malnutrition in selected coastal villages of Kerala.

OBJECTIVES

1. To evaluate the knowledge and practice of mothers before and after the administration of structured nursing intervention.
2. To evaluate the nutritional status of underfive children with malnutrition before and after the administration of structured nursing intervention.

Hypotheses

1.H_1: The mean post test knowledge score of mothers will be significantly higher than the mean pre test knowledge score as measured by a knowledge questionnaire at 0 .05 level of significance.

2 .H_2: The mean post test practice score of mothers will be significantly higher than the mean pre test practice score as measured by practice check list at 0 .05 level of significance.

3.H_3: The percentage of underfive children with different degrees of malnutrition will be significantly lower in post test compared to pre test at 0.05 level of significance.

MATERIALS AND METHODS

The study was conducted in selected coastal villages of Thiruvananthapuram district in Kerala. Two fisheries villages of Thiruvananthapuram district were selected using multi stage cluster sampling technique. Samples consisted of all the 122 underfive children who were identified with different degrees of malnutrition from the two coastal villages and their mothers. Pre experimental research design was used for the study. Anthropometric parameters (Weight, Height and MUAC) were checked and clinical profile of malnutrition was assessed using physical examination checklist. Self administered structured questionnaire was used to assess the knowledge of mothers . Check list and food frequency data sheet were used to assess the practice of mothers related to the prevention and management of malnutrition. Structured Nursing Intervention regarding the prevention and management of malnutrition was administered to mothers at the Anganwadi centers located in the area in three sessions.

Information booklet was given to all mothers at the end of the third session to reinforce learning. Telephonic reminders were given to mothers once in 2 weeks and follow up home visits were done once in a month. Special emphasis was given about prevention and management of diarrhoea, respiratory infections, personal hygiene and environmental hygiene. Post tests were conducted on completion of 6 weeks, 12 weeks and 24 weeks after the Structured Nursing Intervention. Weight and height of children, knowledge and practice of mothers were assessed during post tests. The data were analyzed using descriptive and inferential statistics.

Ethical Consideration

Ethical clearance was obtained from Institutional Ethics Committee, Sree Gokulam Medical College Thiruvananthapuram. Written Informed consents were obtained from the mothers of underfive children.

RESULTS

Based on IAP classification 122 under five children from the two coastal villages were found underweight. Majority (102) children had grade I malnutrition , 17 children were suffering from grade II malnutrition and only 3 children were found to have grade III malnutrition. Study was done among the 122 underfive children and their mothers.

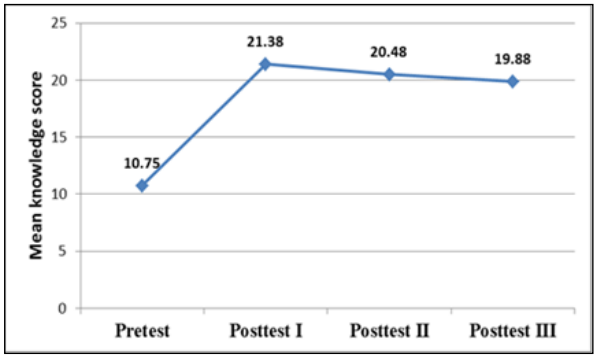

Figure1: Comparison Of Mean Pretest And Posttest Knowledge Scores Of Mothers (n=122).

Figure 1 depicts that the pre test mean knowledge score was 10.75 with SD 5.22 . During post test I the mean knowledge score increased to 21.38 with SD 4.16 , in post test II the mean knowledge score was 20.48 with SD 4.17 and in post test III the mean was 19.88 with SD 4.22.

Table1: Summary of Repeated Measures ANOVA of Knowledge Score of Mothers (n=122)

Source of variance	Sum of squares	df	Mean Square	F	p
Between time	8963	3	2987	857***	< 0.001
Between subject	8384	121	69.29	19.9***	< 0.001
Error	1261	363	3.475		

One-Way Repeated Measures ANOVA of knowledge score was done. The main effect between the period of measurement (F = 875*** p<0.001) was found to be significant. It confirms that structured nursing intervention was effective in improving the knowledge scores of mothers. Hence the null hypothesis (H_{01}) was rejected and the research hypothesis (H_1) was accepted.

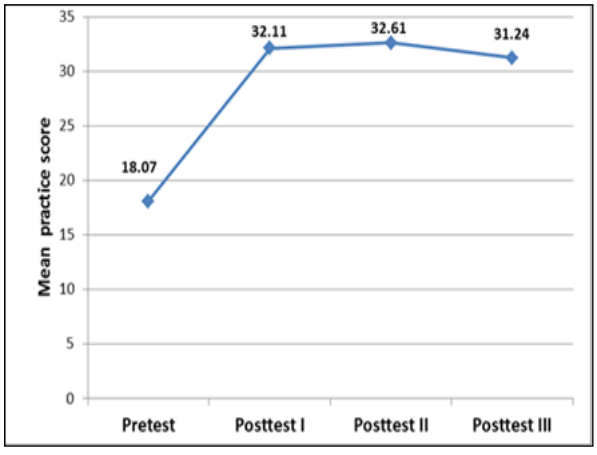

Figure2: Comparison of mean pre test and post test practice scores of mothers (n=122)

Figure 2 shows that the pre test mean practice score was 18.07 with SD 6.86. During post test I the mean practice score increased to 32.11 with SD 6.09. In post test II the mean score was 32.61 with SD 5 and during pot test III the mean score was 31.24 with SD 5.15.

Table 2: Summary of Repeated Measure ANOVA of Practice Score of Mothers (n=122)

Source of variance	Sum of squares	df	Mean Square	F	p
Between time	17857	3	5952	953.5***	< 0.001
Between subject	14146	121	116.9	18.7***	< 0.001
Error	2266	363	6.242		

The main effect between the period of measurement (F = 953.5, *** p <0.001) was found to be significant which indicates that there exists a significant difference in practice scores of mothers of underfive children between different measurement period. Hence the null hypothesis (H_{02}) was rejected and the research hypothesis (H_{02}) was accepted.

Table 3: Effectiveness of Structured Nursing Intervention on Nutritional Status of Children (n=122)

Pair	Z	p-value
Pre test Vs Post test 1	Z = 0.378	p = 0.71
Pre test Vs Post test 2	Z = 1.094	p = 0.27
Pre test Vs Post test 3	Z = 3.33**	p < 0.01

It was observed that the pre test – post test I value (Z=0.378, p value 0.71) and pre test – post test II value (Z = 1.094 , p value 0.27) were not statistically significant . Pre test- post test III value (Z = 3.33**, p value <0.01) was found to be statistically significant. Statistically significant improvement in body weight of children occurred 24 weeks after the structured nursing intervention. Hence the null hypothesis (H_{03}) was rejected and the research hypothesis (H_{03}) was accepted.

DISCUSSION:

The purpose of the study was to the find out effectiveness of structured nursing intervention on nutritional status of underfive children, knowledge and practice of mothers regarding prevention and management of malnutrition in selected coastal villages of Kerala.

The pre test and post test mean knowledge scores of mothers were compared after 6 weeks, 12 weeks and 24 weeks of the structured nursing intervention using paired t test and 't' value was found to be statistically significant (p<0.001). The main effect between the period of measurement (F= 875***, p < 0.001) was found to be significant . The findings are supported by the results of a study conducted to assess the effectiveness of IEC strategy in knowledge on PEM among mothers of underfive children in South India. The mean pre test knowledge score was 6.4 with SD of 2.79 and the mean post test knowledge score was 19.2 with SD of 1.95. The IEC strategy was found to be effective and paired t-value was significant at p<0.001 level. [5]

In the present study pre test and post test mean practice scores were compared using paired t test and 't' value was found to be statistically significant (p<0.001).One way repeated measures ANOVA of practice scores were done and the main effect between the period of measurement (F= 953.5 ***, p < 0.001) was found to be significant . Findings are in accordance with the results of a study to assess the impact of nutrition education on the dietary practices of care givers of malnourished children aged 6 months to 8 years. Significant increase was reported in the intake of high starch food items, vegetables and fruits (p<0.000) and significant improvement observed in the intake of protein rich foods (p<0.01) and dairy foods (p<0.05) [6]

Significant reduction in the percentage of grade I malnutrition was observed in the present study after 24 weeks of structured intervention. In post test III grade I malnutrition has declined to 63.9% from 83.6% in pre test. Percentage of children with grade II and III malnutrition had reduced to 6.5% in post test III compared to 16.4 % during pre test. The difference observed in the pre test- post test III value was found to be statistically significant(Z = 3.33**, p value <0.01).

Findings are supported by the results of an experimental study conducted on the effectiveness of structured intervention on the nutritional status of malnourished children in China. Nutrition education, growth monitoring, demonstration of preparing weaning food, were the interventions. Prevalence of underweight decreased from 20.5% to 13.7% between 6 to 11 months old children, from 39.0% to 26.4% at 12–17 months old children. Adjusted mean changes in weight gain was significantly better in the intervention area than the control area. [7]

CONCLUSION

Malnutrition is not only an important cause of childhood morbidity and mortality, but leads also to permanent impairment of physical and possibly, of mental growth of those who survive. Majority of the children with mild and moderate malnutrition who are the future victims of severe malnutrition are hidden in the community just like an iceberg. This study had definitely shed light on the role of structured nursing intervention in enhancing the nutritional status of

malnourished children and the knowledge and healthy practices of mothers regarding the prevention and management of malnutrition. Development and implementation of community outreach programmes are essential to protect our future generation from the clutches of malnutrition.

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