



ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE OF PREVENTION OF MALNUTRITION AMONG MOTHERS WITH UNDER FIVE CHILDREN IN SELECTED URBAN SLUM AREA AT BANGALORE

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ABSTRACT

Background and Objectives

Malnutrition is a major health problem in India. Hunger and malnutrition are the biggest cause of child mortality in developing countries. In India 54%, Karnataka 50% and also in Bangalore 46% of children's are suffering from malnutrition due to poverty, maternal illiteracy and lack of knowledge regarding breast feeding and weaning food. The Community Health Nurse acts as an educator and advocate for mothers with under five children regarding importance of breast feeding, complementary feeding practices and introduction of complementary foods rich in vitamins and minerals at appropriate ages to prevent malnutrition in young children and promote healthy children.

Objectives of the study

- » To assess the knowledge of mothers with under five children regarding prevention of malnutrition.
- » To evaluate the effectiveness of structured teaching programme on knowledge of prevention of malnutrition among mothers with under five children.
- » To determine the association between the knowledge of prevention of malnutrition among mothers with under five children with their demographic variables.

Methods

A quasi experimental approach was adopted with one group pre and post test design without control group, with non-probability sampling technique in which purposive sampling method was used.

Results

Regarding demographic variables, majority (62%) of them in the age group of 21 to 30 years. 33% of them are literates out of whom 39% of them have a primary level of education. 54% of the respondents were working women. Majority of respondents (50%) were Hindus. 44% of the respondents have a per capita family income of below Rs.1,000 and 73% of them were from nuclear family. 62% of the

respondents have mixed diet, 58% of the respondents children's are completely immunized and 64% of the respondents got the information regarding prevention of malnutrition through mass media.

Regarding effectiveness of STP, the overall pre-test mean knowledge score is 46.82%, whereas in post-test 82.08 %. There was significant association between the gain in knowledge scores and selected demographic variables with age, education, occupation, number of under five children, Immunization status of the children at 1% level ($p < 0.05$) and per capita income was highly significant ($p < 0.001$).

Interpretation and Conclusion

The overall findings of the study clearly showed that the Structured Teaching Programme was significantly effective in improving the knowledge scores of mothers with under five children regarding prevention of malnutrition. The statement is given by Liaquat et.al., (2007) mothers educational status significantly associated with nutritional status of the children.

Keywords:

Malnutrition; Protein Energy Malnutrition; Marasmus; Kwashiorkor; Stunting.

INTRODUCTION

"PREVENTION IS BETTER THAN CURE"

Children are the future pillars of a nation. Today's children are tomorrow's citizen and leaders. Child health care is the most crucial factor to determine growth of the child, especially in the first two years of life¹.

Malnutrition is a major health problem in India. The report says 170 million children mainly in the developed world, are now considered 22 million under the age of five, *i.e.* 30% of the children's are malnourished children belongs to Asia. 56% of the deaths in under five children in developing countries and 47% of below 3 years of age are undernourished. More than "10 million of the world's children die each year before reaching the age of five". Sadly to say two of every three of these children die from easily preventable, treatable diseases such as diarrhoea, pneumonia, malaria, measles and tetanus and from the conditions like malnutrition. "Ten children die every minute as a result of malnutrition"^{2,3}

Nearly 50% of the children in Karnataka suffer from malnutrition and majority of deaths among infants and mothers occurs due to nutritional deficiencies⁴. Malnutrition main victims are children under the age of 5 years. On a global scale the five principal nutritional deficiency diseases that are being accorded the highest priority actions are kwashiorkor, marasmus, xerophthalmia, nutritional anemia and endemic goiter. These diseases represent the tip of the "ICE BERG" of malnutrition. The primary cause of malnutrition is inadequate and faulty diet. Apart from poverty and other socio-economic factors and environmental factors also play an important role in aggravating the dietary deficiency diseases.^{5,6}

According to NFHS in Karnataka four out of every 10 children in the state are undernourished, born stunted or too short their age and consumption of green leafy vegetables, roots and tubers, milk and milk products, fats and oils are low in Karnataka. In Bangalore also 46% of children suffer from nutritional deficiencies, and most deaths amongst the infants and mothers are due to malnutrition.⁷

REVIEW OF LITERATURE

Literature related to Incidence and prevalence of malnutrition

A comparative study was conducted between nutritional status of the children and educational level of their mothers in a colony of predominantly Muslim urban slum dwellers of low economic status in New Delhi. The study revealed that 55.27% of children are severely malnourished. The study revealed that maternal education is significantly and independently associated with children's nutritional status. The study found that nutritional requirements of children, poor nutritional value of foods, lack of immunization, poor environmental hygiene and diarrhoea is influence the malnutrition.⁸

Recently UNICEF reported that, 5,000 children under the age of five die in India everyday due to preventable causes, within the under five mortality rate, the maximum 96% of children who die belong to the Scheduled Tribes, 88% to Scheduled Castes and 59% to general population. The report says malnutrition rates in India continue to be very high. Though the percentage of malnourished children below the age of three has decreased from 52 per cent to 46 per cent, it is still way below the Millennium Development Goals.⁹

The study was conducted in Karnataka to identify the prevalence of malnutrition among children at Karnataka, 256 children are participated who attended the anganwadies. The children aged 12-60 months, came from villages located at the outskirts of Bangalore city. The prevalence of wasting and stunting was 31.2% and 29.2% respectively. Wasting was more predominant among the younger age groups.¹⁰

Literature related to causes of malnutrition

FAO stated that Karnataka was among the most badly affected States in India where the prevalence of underweight children was above 60 per cent. Karnataka, Gujarat, Orissa, Arunachal Pradesh, Maharashtra, Madhya Pradesh, and Andhra Pradesh showed extremely poor nutritional status.

A cross-sectional study was conducted in four selected slum of Addis Ababa in which nutritional status of 758 children aged 6 to 36 months was examined and stratified into malnourished and well-nourished groups. The study established six variables to predict childhood malnutrition in the slum section are presence of child waste inside house, diarrhoea treatment at the home, prolonged storage of cooked foods, feeding without washed hands and poor handling of drinking water and foods.¹¹

The nutritional status of slum children is worst amongst all urban groups, due to faulty infant feeding practices, impaired utilization of nutrients due to infection, inadequate food and health security, poor environmental conditions and lack of proper child care practices. High prevalence of malnutrition among under five children is also due to lack of awareness and knowledge regarding their food requirements and absence of a responsible adult care giver.^{12,13}

Women's lack of empowerment is believed to be an important factor in the persistent prevalence of malnutrition. In Karnataka degree of malnutrition was seen in 83.5% of children and 72.4% of mothers. Maternal experience of psychological abuse and sexual coercion increased the risk of malnutrition in mothers and children. To reduce malnutrition, improving women's nutrition, promoting gender equality, empowering women, and ending violence against women could further reduce the prevalence of malnutrition.¹⁴

A study revealed with the objective of the relationship between malnutrition and different roles played by mothers were assessed using the probit analysis. The result revealed that incidence, depth and severity of malnutrition are 47.30% and 31% respectively. According to probit analysis, birth weight of the children, age, nutritional awareness of mothers their interest in the media and household income significantly affected the child nutritional condition.¹⁵

Literature related to knowledge of mothers on prevention of malnutrition

A comparative study was conducted regarding breast feeding practices and type of family in urban slum. The study shows that 100 mothers have breast feed their infants. 83.59% have feed colostrum. 75.58% of mothers feed pre-lacteals out of this 85.15% of mothers were following near exclusive breast feeding up to 4-6 months, indicating high sustainability of breast feeding practice. 50% had correct knowledge of weaning foods. Hence, nutrition education to the mothers and caretaker should be emphasized so that to improve their awareness of the importance of good nutrition practice and guide them to feed weaning children reasonably.¹⁶

World Health Organization recommended that educating mothers regarding appropriate feeding practices include both exclusive breast feeding until age 6 months and introduction of complementary foods rich in vitamins and minerals at appropriate ages is critical to preventing anemia and malnutrition in young children. Exclusive breast feeding until age 6 months is nutritionally adequate, protects children against infection.¹⁷

A study conducted for 55 mothers with under five children age between 0-4 years find that knowledge of mothers regarding proper time of initiation of breast feeding and correct age of weaning. The study found that the mothers have less knowledge. The study educate mothers regarding importance

of colostrum feeding, and advised mothers regarding initiation of breast feeding within one hour of delivery, importance of exclusive breast feeding for the first 6 months of baby life and weaning food, after the education the mother's knowledge is increased from 26.96% to 96.36%.¹⁸

A study conducted on 105 mothers with under five children regarding malnutrition in slum area. It reveals that maximum 76.6% of the mothers are illiterate and found mothers had lack of knowledge and also lack of awareness regarding nutrition of the children. But the mothers knowledge is improved from 26.96% to 79.86% with basic health education programmes and counselling by the health workers.¹⁹

OBJECTIVES OF THE STUDY

- » To assess the knowledge of mothers with under five children regarding prevention of malnutrition.
- » To evaluate the effectiveness of structured teaching program on knowledge of prevention of malnutrition among mothers with under five children.
- » To determine the association between the knowledge of prevention of malnutrition among mothers with under five children with their demographic variables.

HYPOTHESIS

H₁: The mean post-test knowledge level score of mother with under five children was significantly higher than the mean pre-test knowledge level.

H₂: There was significant difference between the selected demographic variables with knowledge level scores of mother with under five children.

MATERIALS AND METHODS

A Quasi experimental approach was adopted for this study with one group pre-test, post-test design without control group.

Population

Mothers having under five children who were residing in urban slum area at Kanteervarnagar, Bangalore, were the population for the present study.

Sample and Sample Size

The sample for the present study comprised of 100 mothers with under five children.

Sampling Technique

Purposive sampling technique was used for the present study to select the samples.

Research Variables

Independent Variable

Structured Teaching Programme

Dependent Variable

Performance on Pre-test

Performance on Post-test

Extraneous Variable

Age, education, occupation, per capita income, religion, type of family, type of diet, no. of under five children, Immunization status of the children and sources of information.

Criteria for selection of sample

The following criteria were set for selection of the sample:-

Inclusion criteria:

Mothers with under five children

- Who are willing to participate in the study
- Who are available during data collection
- Who can able to speak and understand Kannada and English
- Who are residing in selected urban slum area

Exclusion criteria:

Mothers with under five children

- Who are not willing to participate in the study
- Who are not available during data collection
- Who cannot able to speak and understand Kannada and English
- Who are not residing in selected urban slum area

Development of the Tool**Preparation of the Tool**

A Structured Interview Schedule was prepared by referring related literature, research studies and other available documents. Further, guide was consulted for preparing the tool.

Description of the Tool

The Structured Interview Schedule comprised of two sections.

Section A: It deals with demographic variables which include age, education, occupation, per capita income of family, religion, type of family, type of diet, number of under five children, immunization status of the children, sources of information. It does not have any score.

Section B: This part consists of 45 items of objective type related to knowledge of prevention of malnutrition. It contains 4 Areas.

Section C: It consists of STP on prevention of malnutrition.

Reliability

The reliability of the tool was tested by implementing the tool on 10 samples of urban slum area at Kamalanagara subdivisions of Mahalakshmi layout which was not included in the main study. Split half method was used to test the reliability of the tool and found the tool was reliable. ($r' = 0.91$)

Pilot Study

Pilot study was conducted during the month of November in urban slum area at Kamalanagara. 10 samples were selected from Kamalanagara. The pilot study participants were excluded from the main study. The pilot study was done to check the clarity of items in the tool and feasibility in conducting the study. The investigator did not face any significant problem and the study was found feasible. The mean post-test scores (80.56%) was higher than the mean pre-test scores (45.8%) with t value (12.68) being significant at 0.01 level. The findings of the data indicate that this study is feasible and effective.

Methods of Data Collection

Prior permission was obtained from the Mr. N.L. Narendra Babu MLA, Mahalakshmi layout constituency, Bangalore.

The investigator visited each house and interviewed personally. The study was conducted to mothers with under five children from 01.11.09 to 30.11.09. Data collection was carried out in two phases. In the first phase, the knowledge of mothers with under five children regarding prevention of malnutrition was assessed. After assessing the knowledge, the STP was administered and in the second phase, data was collected in order to test the effectiveness of the Structured Teaching programme.

Plan for Data Analysis

The data analysed by using descriptive statistics such as percentage, mean, standard deviation, median and percentile.

Appropriate inferential statistics will be used for data analysis and presented in the form of tables, graphs and figures etc.

The effectiveness of pre and post test knowledge scores will be analysed by paired 't' test.

The significance of relationships between the selected demographic variables and knowledge score will be analysed by using chi-square test.

RESULTS

Demographic characteristics of the sample

Percentage wise distribution of mothers with under five children according to their age shows that highest percentage (32%) of them were in the age group of 21-25 years and 30% of them were in the age group of 26-30 years, whereas 17% and 12% were in the age group of 31-35 years and below 20 years respectively. Only 7% were in the age group of above 36 years.

According to their educational status shows that around 39% of them had primary education, 28% of the mothers had no formal education and 22% of the mothers had higher secondary education, whereas only 1% had Post graduation respectively.

According to their occupation shows that highest percentage (46%) were belongs to house wife, whereas 36% and 12% were Daily wages/coolie and Self-employed/ Business respectively. Only (6%) were private employee.

According to their Per capita income shows that highest percentage (44%) of mothers were belonged to the income group of Rs. below 1,000 and higher percentage 31% of them were from income of Rs. 1,001-1,500 whereas, 15% and 10% of the mothers were from income of Rs. 1,501-2,000 and above 2,001 respectively.

According to their religion reveals that most of the mothers (50%) were belongs to Hindu Religion whereas 29% and 21% were belongs to Christian and Muslim religion respectively.

According to their type of family shows that majority of them (73%) were belongs to nuclear family and 20% were belongs to Joint family. Only 7% were belongs to Extended family.

According to their types of diet shows that highest 62% were belongs to mixed diet (Both veg and non-veg) whereas 29% and 9% of them belongs to non-vegetarian and vegetarian.

According to their number of under five children shows that highest 49% of them were having two children and 43% of mothers having one child. However only 8% of mothers were having three or more than three children.

According to their Immunization status of the children shows that 58% of the children were completely immunized, whereas 42% of the children were partially immunized.

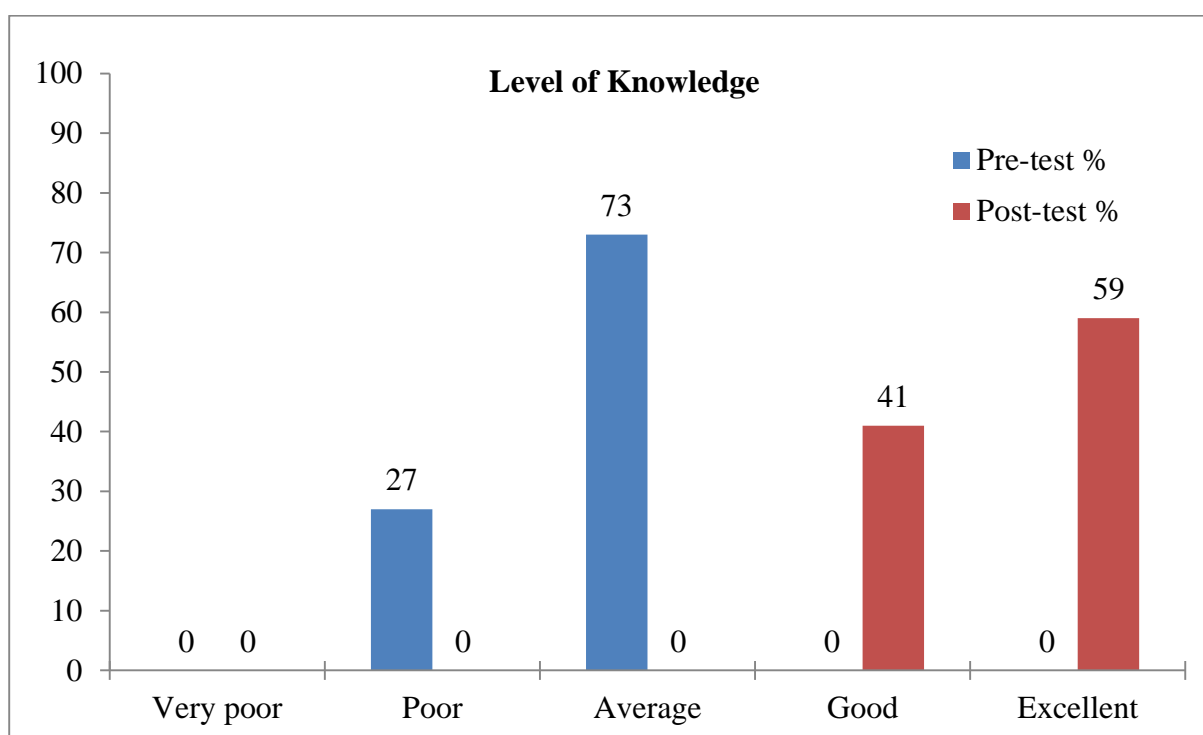
According to their source of information shows that highest percentage (65%) of the mothers with under five children acquired information through Television, whereas 15% and 14% of them got information through Health personal and Newspaper/ Magazine respectively. Only 6% were obtained information from Relatives.

Comparison or knowledge of mothers with under five children regarding prevention of malnutrition after implementation of Structured Teaching Programme

Level of pre and post test knowledge scores on prevention of malnutrition

Table 1. Level of pre and post test knowledge scores

Level of Knowledge				
Scores		%	Pre-test%	Post-test %
Very poor	0-9	0-20	-	-
Poor	10-18	21-40	27	-
Average	19-27	41-60	73	-
Good	28-36	61-80	-	41
Excellent	37-45	81-100	-	59



Percentage distribution of pre and post test knowledge among 100 mothers with under five children shows that, in pre-test majority of them (73%) had average knowledge and only (27%) had poor knowledge. After implementation of STP in post-test 59% mothers had excellent knowledge and 41% had good knowledge.

Hence it can be interrupted that through STP mothers were gained more knowledge.

Significant difference between pre and post test knowledge scores of the mother regarding prevention of malnutrition. (Through paired t test)

Table 2. Paired t test between pre and post test knowledge scores

N=100

Areas	t-value	P-value
Normal nutrition & its components	7.15	Significant
Importance of nutrients	9.34	Significant
Sources of nutrients	9.99	Significant
Meaning, causes of malnutrition	9.71	Significant
Signs and symptoms of malnutrition	10.13	Significant
Prevention of nutritional deficiency	16.4	Significant
Diarrheal management and prevention of worm infestation	12.48	Significant
Breast feeding	15.47	Significant
Complementary feeding practices	16.22	Significant
Immunization	16.98	Significant
Overall	38.51	Significant

df=99, significant at $p < 0.01$

Table value = 2.62

Paired t test was calculated to analyse the difference in pre and post test knowledge scores of different areas on prevention of malnutrition show highly significant difference between the overall score values and area wise score value of pre and post test.

Hence null hypothesis is accepted and it can be interpreted that the difference observed in the mean score value of the pre and post test score were true difference.

Association between post-test knowledge scores of the mothers with their demographic variables (Through chi-square test)

Table 3. Association between post-test knowledge scores of the mothers with their demographic variables

N=100

Demographic variables	df	Chi-Square	Table value	Level of Significance	
Age	2	6.93	5.99	$P < 0.05$	Significant
Education	2	10.98	9.21	$P < 0.01$	Significant
Occupation	1	5.32	3.84	$P < 0.05$	Significant
Income	2	13.93	13.82	$P < 0.001$	Highly Significant
Religion	2	1.63	5.99	$P > 0.05$	Not significant
Type of family	1	0.27	3.84	$P > 0.05$	Not significant
Type of Diet	1	1.53	3.84	$P > 0.05$	Not significant
No. of under five children	1	4.93	3.84	$P < 0.05$	Significant
Immunization status	1	5.51	3.84	$P < 0.05$	Significant
Source of information	2	0.80	5.99	$P > 0.05$	Not significant

Chi-square values depict that there was significant association between age of the mother, educational status of the mother, occupation of the mother, per capita income of family, number of under five children, Immunization status of the children. Hence, the difference observed in the mean score values of the pre and post test were true difference. However no significant observation was found between religion, type of family, type of diet and sources of information. Thus, it seems that the differences in the mean scores values were by chance and not true differences.

Thus it may be interpreted that the STP was effective to all mothers with under five children with their demographic variables.

Conclusion:

The study findings it can be concluded that:-

- * Before implementation of STP mothers with under five children had average knowledge overall pre-test mean percentage (46.88%) regarding prevention of malnutrition.
- * After implementation of STP mothers with under five children had excellent knowledge overall post-test mean percentage (82.08%) and difference in mean percentage was 35.26% shows the effectiveness of STP.
- * Highly significant difference was found between pre-test and post-test knowledge scores of mothers with under five children in all the areas.
- * However, significant association was found between age of the mother, educational status of the mother, occupation, per capita income, number of under five children, immunization status of the children.

Recommendations:

- * An experimental study can be conducted with the control group for effective comparison.
- * Similar study can be replicated on a large sample to generalise the findings.
- * A study can be conducted by including additional Socio-demographic variable.
- * A comparative study can be conducted between rural and urban settings.
- * A similar study can be conducted by using other educational methods like demonstration, role play, SIM and information booklet etc.

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