



TEACHING PROGRAMME IS EFFECTIVE IN INCREASING KNOWLEDGE TO PREVENT MALNUTRITION IN CHILDREN

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ABSTRACT

Introduction: In developing countries, malnutrition among children is a major public-health issue. It is one of the most serious global risk factor for illness and death. Malnutrition during children has an impact later in life as it is associated with significant functional impairment, reduced work capacity and decreased economic productivity. Malnourished children are more likely to suffer from delayed psychological development, poor school performance and lower intellectual achievements.

Aim: Effectiveness of Teaching Programme on Malnutrition and its Prevention in under-five children.

Methods: Fifty children for the were enrolled through simple randomization method in this study.

Results: After administration of teaching program, 92% subjects had adequate knowledge and 8% had moderate knowledge. None of the subjects had inadequate level of knowledge showing effectiveness of teaching program. Post-test overall knowledge score was significantly higher in comparison to pre-test overall knowledge score (32.20 ± 8.77 vs. 8.14 ± 10.99 ; $P=0.01$). Age, gender, nationality, family income, fathers' occupation, mothers' education, religion, students' status, previous knowledge, and source of information were significantly associated with the post-test level of knowledge on malnutrition and its prevention.

Conclusion: Teaching programme is effective in increasing knowledge of adolescent regarding malnutrition and its prevention in under-five children.

KEYWORDS :

INTRODUCTION

Malnutrition in preschool children is a significant problem and has been identified by the World Health Organization (WHO) as the most lethal form of disease which indirectly causes an annual death of at least 5 million children worldwide.¹ Malnutrition is widely recognized as a major health problem in developing countries. It is wide spread in rural, tribal and urban slum areas. Growing children are most vulnerable to its consequences. Anthropometry is a simple field technique for evaluating physical growth and nutritional status of the children.²

The United Nations Food and Agriculture Organization (FAO), estimates that nearly 870 million people of the 7.1 billion people in the world, or one in eight, were suffering from chronic undernourishment in 2010-2012. Almost all the hungry people, 852 million, live in developing countries, representing 15 percent of the population of developing countries.

At present 2/3rd of the deaths of the children around the world are directly or indirectly associated with nutritional in deficiencies. Nearly half of India's children- approximately 60 million - are underweight, 45% have stunted growth (too short for their age), 20% are wasted (too thin for their height, indicating acute malnutrition), 75% are anaemic, and 57% are deficient in Vitamin A.³

The findings of the third National Family Health Survey (NFHS-3) revealed an unacceptable prevalence of malnutrition in our children: 42.5% of our children under the age of five years are *underweight* (low weight for age), 48 % of our children are *stunted* (low height for age - chronically malnourished), 19.8 % of our children are *wasted* (low weight for height - acutely malnourished) and in poorer states the situation is even worse with over 50 % of children underweight.⁴

Malnutrition is both a cause and consequence of disease and illness and there can be many contributing factors. Whilst some causes of malnutrition might be the result of underlying ill health, disease or the body's inability to absorb nutrients, malnutrition can also be linked to other experiences or factors in a person's life.⁵

The costs of malnutrition runs into billions of pounds in spite of proven interventions that can prevent identify and manage the problem and risks promptly and thereby reduce the human suffering and the astronomical associated costs.⁵

Studies have revealed that severe degree of malnutrition can be reduced by practice of exclusive breast feeding, introduction of timely complementary feeding, education for maintaining personal hygiene, proper implementation of UIP immunization, periodic de-worming, standard case management of diarrhea and ARI as well as continuation of feeding during illness among under-five children.

With reference to the above studies malnutrition is quite prevalent in our state and the major cause is lack of knowledge among caretakers which needs to be addressed. Hence, the study was aimed to evaluate effectiveness of Teaching Programme (CATP) on malnutrition and its prevention in under five children.

Subjects And Methods

Fifty children were enrolled through simple randomization method in this study. The students were included in the study if ready for consent to participate in the study.

Data Collection Tool

A structured knowledge questionnaire was developed through extensive study of literature and discussion with experts. Content validity of the tool was confirmed through nine experts. The tool consisted of two sections, and had a total of 36 questions.

Section I contained questions related to demographic variables of the study population. Demographic variables include age, sex, religion, income of family (father), educational status of parents (father and mother), occupation of parents (father and mother), student's status, previous knowledge and its source, and source of information.

Section II contained items related to knowledge regarding malnutrition and its prevention.

Scoring Procedure

For knowledge items, each correct answer was given a score of

'one' and incorrect answer a score of 'zero'. The knowledge questionnaire has 36 item regarding Malnutrition and its Prevention for the correct answer given score of "one" So, the total score was 36 for the knowledge questionnaire.

Statistical Analysis

Data were presented as frequency, percentage, mean, and standard deviation. Categorical variables were compared using Chi square test. Paired t-test was used to compare pre-test and post-test knowledge score. P value <0.05 was considered significant. Statistical analysis was performed using SPSS v21.

RESULTS

General Characteristics

Table 1 shows general characteristics according to age, sex, family income of parents, occupation of parents, educational status of parents, religion, student's place of residence, and previous knowledge on malnutrition and source of information of the subjects. Among 50 subjects, majority 52.0% of subjects belong to 16 years, 48.0% belongs to 17 years. Majority 66% of subjects were male subjects and 34 % were female subjects. 98% of subjects were Indian.

Table 1. Demographic Characteristics

Characteristics	Category	Subjects	
		Frequency	Percent
Age (in years)	16	26	52
	17	24	48
Gender	Male	17	34
	Female	27	90
Nationality	Indian	49	98
	Foreigner	1	2.0
Family income (KSES) father (in rupees)	> 32,050	12	24
	16,020 - 32,049	12	24
	12,020 - 16,019	12	24
	8,010 - 12,019	9	18
	4,810 - 8,009	2	4
	1,601 - 4,809	2	4
	< 1,600	1	2
Occupation of Family (KSES) Father	Profession	20	40
	Semi- Profession	5	10
	Clerical, shop-owner	15	30
	Skilled worker	5	10
	Semi-skilled worker	0	0
	Unskilled worker	2	4
	Unemployed	3	6
Occupation of Family (KSES) Mother	Profession	6	12
	Semi- Profession	4	8
	Clerical, shop-owner	10	20
	Skilled worker	11	22
	Semi-skilled worker	0	0
	Unskilled worker	0	0
	Unemployed	19	38
Education status(KSES) Father	Profession	7	14
	Graduate or post graduate	12	24
	Intermediate or post high school	9	18
	High school certificate	18	26
	Middle school certificate	2	4
	Primary school certificate	1	2
	Illiterate	1	2
Education status (KSES) mother	Profession	2	4
	Graduate or post graduate	16	32

	Intermediate or post high school	7	14
	High school certificate	17	34
	Middle school certificate	2	4
	Primary school certificate	2	4
Religion	Illiterate	4	8
	Hinduism	50	100
	Islam	0	0
	Christianity	0	0
	Others	0	100
Students place of Residence	Day Scholar	45	90
	Paying guest	2	4
	Hosteller	3	6
Previous Knowledge	Yes	13	26
	No	37	74
Source of information	Magazines/Books/ Posters	16	32
	TV/Radio/Internet	32	64
	Friends/Neighbor/ Health Personnel	2	4

24.0% of subject's father had income Rs. ≥32050, 24.0% had Rs. 16020 – 32049, 24.0% had Rs. 12020 – 16019 and 18.0% had 8010 – 12019, 4% had Rs. 4810 – 8009 income, 4% had 1601 – 4809 and 2% had Rs. < 1,600 income respectively. 40% fathers were professional, 30.0% were as clerical, shop-owner farmer, 10% were semi-professions, 10% were skilled worker and 6% were unemployed and 4% were unskilled worker and none were semi skilled worker respectively. 38% mothers were unemployed, 22% were skilled worker, 20% clerical, shop-owner farmer, 12% were professional, 8% semi- professional and none were semi- skilled worker and unskilled worker respectively.

26.0% father had completed high school certificate, 24.0% had completed graduate or post graduate, 18.0% had completed Intermediate or post high school diploma, 14.0% were Profession, 4.0% had completed middle school certificate, 2.0% had completed primary school certificate and 2.0% were illiterate respectively. 34% mothers had completed high school certificate, 32% had completed graduate or post graduate, 14 % had completed intermediate or post high school diploma, 8% were illiterate, and 4.0% had completed profession, middle school certificate and primary school certificates respectively.

All of the subjects were Hindu. 90% were day scholar, 6.0% were hosteller and 4% were paying guest. 74% of the subjects were not exposed to knowledge on malnutrition and its prevention and 26% of the subjects were exposed to knowledge on malnutrition and its prevention. 64% of subjects had information from TV/Radio/Internet, 32% had information from magazines/books/posters and 4% of subjects had information from Friends /Neighbors/Health personnel.

Comparison Of Knowledge Level

We classified knowledge level on the basis of total score. Subjects who scored ≥65% were considered to have adequate knowledge. Scores with 41% to 65% were considered moderate knowledge and scoring <40% was considered inadequate knowledge.

We observed that 90% of the subjects had inadequate knowledge in pre-test. While only 8% and 2% subjects had moderate and adequate level of knowledge respectively. After administration of teaching program, 92% subjects had adequate knowledge and 8% had moderate knowledge. None of the subjects had inadequate level of knowledge showing effectiveness of teaching program (fig 1).

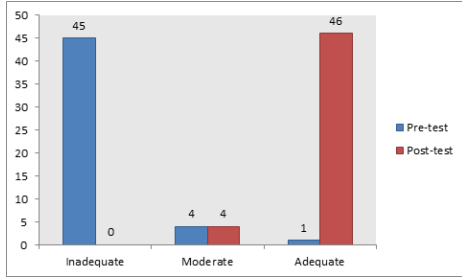


Fig 1. Distribution Of Subjects On The Basis Of Level Of Knowledge In Pre-test And Post-test; X-axis Shows Number Of Subjects. Y-axis Shows Level Of Knowledge In Pre- And Post-test

Comparison Of Knowledge Score

We also evaluated effectiveness of total knowledge score following administration of teaching program. We observed that post-test overall knowledge score was significantly higher in comparison to pre-test overall knowledge score (32.20 ± 8.77 vs. 8.14 ± 10.99; P=0.01).

We also evaluated knowledge of individual aspects on knowledge scores related to malnutrition and its prevention.

We observed that all the aspects of the knowledge were significantly higher following administration of the teaching program (table 2).

Table 2: Comparison Of Individual Aspects Of Knowledge

Aspect	Pre-test		Post-test		P value
	Mean	SD	Mean	SD	
Introduction, definition and incidence	1.20	± 1.78	5.20	± 1.32	<0.05
Classification and Causes	2.53	±3.65	8.98	±2.72	<0.01
Diagnosis and sign and symptoms	1.43	± 1.92	5.10	± 1.75	<0.001
Management and prevention	2.98	± 3.64	12.92	± 2.98	<0.01

Association Of Demographic Variables With Knowledge Level

We also evaluated relation of the demographic variables with post-test knowledge level. We observed that age, gender, nationality, family income, fathers' occupation, mothers' education, religion, students' status, previous knowledge, and source of information were significantly associated with the post-test level of knowledge on malnutrition and its prevention (P<0.05) (table 3).

Table 20: Association Of Post-test Knowledge Level Of Subjects With Demographic Variable

N=50

Aspect wise comparison		Knowledge Score						Pearson Chi-square test
		Inadequate		Moderate		Adequate		
		n	%	n	%	n	%	
Age in year	16 Yrs old	0	0	2	50	24	51.17	$\chi^2=2.52$ P=.01 Df2 ,significant
	17 Yrs ole	0	0	2	50	22	47.82	
Gender	Male	0	0	3	75	30	65.21	$\chi^2=3.29$ P=0.02 Df2, significant
	Female	0	0	1	25	16	34.0	
Nationality	Indian	0	0	4	100	45	97.82	$\chi^2=1.03$, P=0.0220 Df2, significant
	Foreigner	0	0	0	0	1	2.17	
Family Income	Rs. 32,050	0	0	1	20	11	23.9	$\chi^2=6.43$ P=0.0290 Df 6, significant
	Rs.16020-32039	0	0	1	20	11	23.9	
	Rs. 12020-16019	0	0	2	50	10	21.7	
	Rs.8010-12019	0	0	0	0	9	19.5	
	Rs.4810-8009	0	0	0	0	2	4.3	
	Rs.1601-4809	0	0	0	0	2	4.3	
	Rs. <1600	0	0	0	0	1	2.1	
Occupation of (Father)	Profession	0	0	2	50	18	39.13	$\chi^2=3.32$ P=0.0390 Df6, significant
	Semi-Profession	0	0	0	0	5	10.8	
	Clerical	0	0	1	25	14	30.43	
	Skilled worker	0	0	1	25	4	8.69	
	Semi-Skilled	0	0	0	0	0	0	
	Unskilled	0	0	0	0	2	4.3	
	Unemployed	0	0	0	0	3	6.5	
Occupation of (Mother)	Profession	0	0	0	0	6	13.04	$\chi^2=6.47$ P=0.65 df6, Non-significant
	Semi-Profession	0	0	1	25	3	6.5	
	Clerical	0	0	1	25	9	19.56	
	Skilled worker	0	0	1	25	10	21.73	
	Semi-Skilled	0	0	0	0	0	0	
	Unskilled	0	0	0	0	0	0	
	Unemployed	0	0	1	25	18	39.13	
Education (Father)	Profession	0	0	1	25	6	13.04	$\chi^2=5.42$ P=0.719 df6,Non significant
	Graduate	0	0	1	25	11	23.91	
	Intermediate	0	0	0	0	9	19.56	
	High school	0	0	2	50	17	36.95	
	Middle school	0	0	0	0	2	4.3	
	Primary school	0	0	0	0	1	2.1	
	Illiterate	0	0	0	0	1	2.1	
Education (Mother)	Profession	0	0	0	0	2	4.3	$\chi^2=3.23$ P=0.0390 Df6, significant
	Graduate	0	0	2	50	5	10.8	
	Intermediate	0	0	1	25	6	13.04	
	High school	0	0	1	25	16	34.78	
	Middle school	0	0	0	0	2	4.3	
	Primary school	0	0	0	0	2	4.3	

	Illiterate	0	0	0	0	4	8.69	
Religion	Hinduism	0	0	4	100	46	100	$\chi^2=1.58$ P=0.01 Df1, significant
Students status	Day scholar	0	0	3	75	42	91.30	$\chi^2=2.28$ P=0.046 df2, significant
	Paying guest	0	0	1	25	1	2.1	
	Hosteller	0	0	0	0	3	6.5	
Previous Knowledge	Yes	0	0	2	50	11	23.91	$\chi^2=1.59$ P=.0492 df2, significant
	No	0	0	2	50	35	76.08	
Source of Information	Magazine	0	0	3	75	13	28.26	$\chi^2=3.310$ P=0.0220 df2, significant
	TV	0	0	1	25	31	67.39	
	Friends	0	0	0	0	2	4.3	

DISCUSSION

The links between nutrition and health are well known, with good nutrition accepted as one of the primary determinants of optimal growth, good health and well-being.⁶ Accordingly, an unhealthy diet has been identified as a major risk factor for the global increase in chronic non-communicable diseases, such as coronary artery disease, cardiovascular disease, cancer, diabetes and obesity.⁷⁻⁸ A large proportion of these diseases can be avoided as they are either initiated or accelerated by unhealthy nutrition in addition to other etiologies. In recent years, there has been a growing worldwide concern about the dietary and nutritional needs of children.⁹

Our study observed that CATP was significantly effective in increasing knowledge on malnutrition and its prevention. Similar findings have also been reported in previous studies. Betageri and Tata compared the Effectiveness of structures teaching programme on knowledge regarding Integrated Child Development Services Programme among mothers of under five children. They concluded that structured teaching programme regarding ICDS programme was an effective method for providing adequate knowledge and helped mothers to enhance their knowledge and utilization of services provided under ICDS programme. Similarly, Isarannavar and Sannashivannanavar et al shows that effectiveness of structured teaching programme help to gain the knowledge score on malnutrition and the preparation of Hydrabadi and Davanagere mix recipe.

It is essential for community health nurse to develop knowledge regarding malnutrition, its management and prevention in order to avoid life threatening complications among under-five children.

CONCLUSION

Computer-assisted teaching programme (CATP) is effective in increasing knowledge of adolescent regarding malnutrition and its prevention in under-five children.

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