Prevalence of malnourished under five children and effectiveness of an awareness program on knowledge and practice of "Prevention and management of Malnutrition" among mothers of under five children

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Abstract
Aim: To assess Nutritional status of under five children and categorize in to grades of malnutrition and evaluate the effectiveness of an Awareness Program on Knowledge and Practice of Prevention and management of malnutrition among the mothers of under five children. Method: An experimental research approach was used for the study to assess effectiveness of Awareness Program on Prevention and Management of Malnutrition. Pre experimental one group pretest and posttest design was used in the study. The study was conducted in Muslim Basti, Nunawala, Doiwala Block, Dehradun. Simple random sampling and consecutive sampling technique was used to select the study subjects. Data was collected from 70 mothers and their 102 under five children by using Structured Knowledge Questionnaire, Self-reported Practice Check list. Results: Out of 102 children who were assessed for nutritional status, 62 (61%) were found to have one or other parameter of malnutrition. 41.17%, 35.29% and 40.19% were underweight, wasting and stunting respectively. This study shows a significantly increase in knowledge and practice of mothers.. It was also found there was significant association between pretest knowledge score and nutritional status of child. Conclusion: Awareness Program regarding Prevention and Management of Malnutrition was found effective in increasing knowledge and practice of mothers of under five children.
Key words: Effectiveness, Awareness Program, Knowledge and Practice, Nutritional status

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I. Introduction

Children are mankind's seeds for the future and God given gift or hope. They deserve the almost care from us.[1] The term malnutrition includes under nutrition, obesity and overweight and micronutrient deficiency (known as 'hidden hunger'). Under nutrition encompasses stunting, wasting, and deficiencies of essential vitamins and minerals (collectively referred to as micronutrients).[2] It occurs when there is a deficiency of certain vital nutrients in a person's diet which fails to meet the demands of the body leading to effects on the growth, physical health, mood, behavior and other functions of the body. It raises the risk of infections with diarrhea, malaria, measles and respiratory tract infections in children. The most common prevalence of malnutrition is protein energy malnutrition in children younger than 5 years .The term "severe malnutrition" is related to protein energy malnutrition. Two forms of Protein energy malnutrition are Kwashiorkor and Marasmus, and they commonly coexist.[3] According to World health organization (WHO), moderate malnutrition includes all children with moderate wasting defined as a weight for height between -3 and -2 z scores with reference to the WHO child growth standards, and those with moderate stunting defined as height for age between -3 and -2 Z score with reference to the WHO child growth standard. Most of these children will be moderately underweight defined as weight for age between -3 and -2 z scores. This will focus on the management includes prevention and treatment of moderate acute malnutrition.[4]

Malnutrition is one of the major public health challenges in developing countries. Worldwide it is found to be the most important cause of illness and death affecting large populations of children and pregnant women. It is directly responsible for 300,000 deaths per year in children younger than 5 years in developing countries and contributes indirectly to over half of all deaths in children worldwide. According to reports from the World Health Organization (WHO) 2005-2006, 35% of global under-five child mortality can be attributable to malnutrition.[5] According to National Family Health Survey-3 (2005-2006), In developing countries under five mortality is largely a result of infectious disease and neonatal death. Nutritional problems are substantial in every State in India. . It estimates the population of children below 6 years is approx.158.8 million in India. Out of these nearly 40 % of these children are undernourished that is more than 63 million children are suffering from malnutrition.[6] In Uttarakhand , Infant mortality is currently estimated at 42 deaths before the age of one

year per 1,000 live births. One in 24 children die within the first year of life, and 1 in 18 dies before reaching age five. Infant mortality is three times higher in rural areas than in urban areas.[7]

II.   Materials And Method

This is an experimental study which was conducted in Muslim basti, Naunawala at Doiwala Block, Dehradun in 2014. The target population was under five children and their mothers. A simple random sampling was used to select villages from sampling frame of village of Doiwala. A house to house survey was conducted in selected two villages and a total of 102 under five children and their 70 mothers were selected by using consecutive sampling. A written approved informed consent was taken from mothers of child before the children and their mothers could be included in the study. All under five children and their mother were selected who were not mentally and physically handicapped and their mothers were selected who knows Hindi language. In first phase, On the first day after making rapport with mothers and family member, Anthropometric measurements of child was carried out following standard methods. The data included weight, length (for children less than 24 months of age) and height (for children more than 24 months of age) and WHO Classification of malnutrition (Z score) was used to assess the nutritional status of malnutrition. Based on the age, body weight and height a number of indices such height for age, weight for age and weight for height were used. The children were classified using three categories under weight (low weight for age), stunting (low height for age) and wasting (low weight for height). After that socio-demographic Performa were filled, mothers were interviewed for assessing pretest knowledge by administrating knowledge questionnaire then assessed pre practice of mothers by administrating self reported practice check list. On the same day awareness program was conducted. Group Awareness program was given on prevention and management of malnutrition among under five children. Each group consisted about 5-7 mothers. Time taken for awareness program was one hour. After seven days posttest was conducted on the same subjects using same structured knowledge questionnaire and self reported checklist.

III.   Result

The mean age of mother was 25.71 years (SD± 3.350), only 14.3% mothers were graduated, 62.8% were primary educated and had no formal education. Most (67.1%) of the mothers were not exposed to pervious teaching. Most (91.4%) of the mothers were housewife, 91.4% were non-vegetarian. More than half (51.4%) were living in joint family. Most (87.2%) of families had monthly income less than Rs 8000. Nearly less than one third of mothers had three or more than three children in their family

Table no 1: Frequency and Percentage distribution of parameter of malnutrition among under five children

Type of malnourishment	Mild		Moderate		Severe		Total	
	f	%	f	%	f	%	f	%
Underweight	29	46.77	09	14.51	04	6.45	42	41.17
Wasting	26	41.93	06	9.67	04	6.45	36	35.29
Stunting	23	37.09	16	25.80	02	3.22	41	40.19

Out of 102 children who were assessed for nutritional status, 62 (61%) were found to have one or other parameter of malnutrition. Among these children, 41.17% of children were underweight, 35.29% of wasting and 40.19% of stunting. Most of children were mildly undernourished in term of underweight (29), wasting (26) and stunting (23).

Table No 2: Comparison of means of Pretest, posttest knowledge score and pretest, post test practice score of mothers regarding prevention and management of malnutrition

N= 70

Score	Mean ±SD		Mean difference ± SD	t value	Difference of 95% confidence interval		P value
	Pretest	Posttest			Lower	Upper	
Knowledge score	18.03 ±5.170	23.00 ±3.464	4.971 ± 2.803	14.842	4.303	5.640	<0.001*

Practice score	23.41 ±3.356	23.99 ± 3.390	0.571 ± 0.941	5.079	0.347	0.796	<0.001 *

**t $_{tab}$=1.98 at df= 69**   ***significant at 0.05 level**

The mean of post test knowledge score (23.00±3.464) of mothers was higher than mean pre test knowledge score (18.03±5.170). The mean difference was 4.971± 2.80. It was found there was significant difference in pre test and post test knowledge score (p< 0.001). The mean post test practice score (23.99± 3.390) of mothers was higher than mean pre test practice score (23.41±3.356). The mean difference was 0.571± 0.941. It was found there was significant difference in pre test and post test practice score (p< 0.001).

It was also found that there was significantly association of knowledge score with family income (0.019), educational status (p=<0.001) and exposure to previous teaching (p=0.009) but there was no statistical significant association of knowledge score with type of family (p=0.198) and number of children in their family (p=0.474), dietary habits of family (p=1.00), occupation of mother (p=0.891).

There was statistical significant association of practice score with educational status (p=0.001) and exposure to previous teaching (p=0.006) but there was no statistical significant association of practice score with type of family (p=0.568), family income (p=0.225), and number of children in their family (p=0.335), dietary habit of family (p=0.908), occupation of mother (p=0.337).

Figure 1: Correlation between pretest knowledge score and pretest practice score
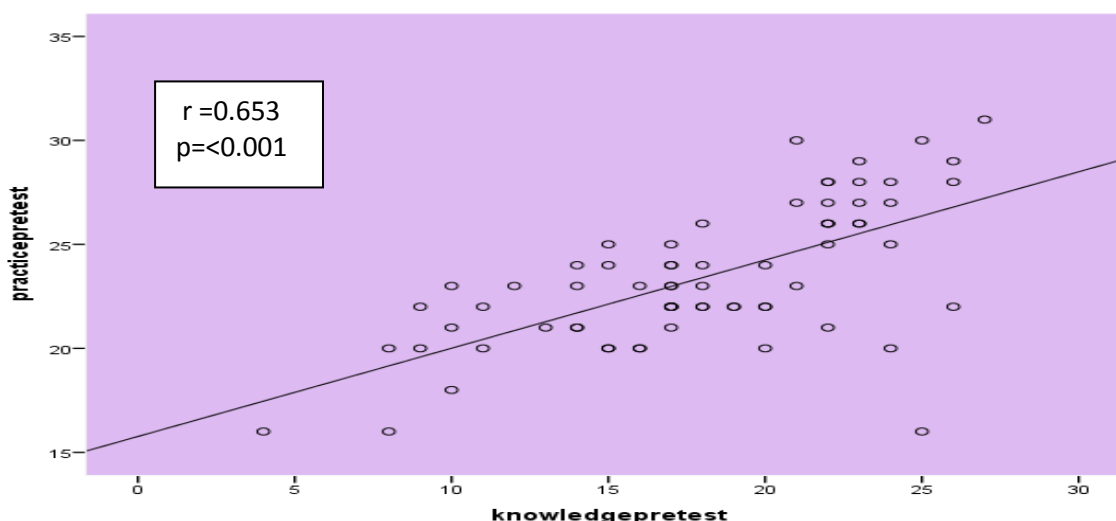
Karl Pearson correlation test was used to find correlation between pre test knowledge and pre test practice score of mother and it was found that there is moderate positive correlation between pretest knowledge score and pretest practice score

Table No 3: Association of nutritional status of under five children with selected demographic variables N=102

Selected variables	Normal	Malnourished	Df	χ^2	P-value
Educational status of mother					
• No formal education	10	17			
• Primary	11	29	3	6.671	0.083
• Secondary	10	11			
• Graduation	09	05			
Family income					
• Less thaRs4500	14	30			
• Rs. 4501-8000	19	28	2	3.791	0.150
• More than Rs 8000	07	04			
Previous exposure of teaching					
• No	23	47	1	3.785	0.05*
• Yes	17	15			

Type of family					
• Nuclear	18	29	1	0.031	0.861
• Joint	22	33			
No of children					
• 1	9	17			
• 2	20	29	3	1.722	0.632
• 3	8	8			
• More than 3	3	8			
Occupation					
• housewife	37	56	----	----	0.501^{ϕ}
• working	3	06			
Dietary habit					
• Vegetarian	04	06	-----	-----	0.605^{ϕ}
• Non Vegetarian	36	56			

$\chi 2_{tab}$ = 3.84 df=1 $\chi 2_{tab}$ = 5.99 at df=2 $\chi 2_{tab}$ = 7.82 at df=3   *** Significant at 0.05 level**
ϕ Fischer exact test

Table No 3 shows that there was significant association between nutritional status of children and previous exposure of teaching to mother and there was no statistical significant association between nutritional status of children and number of children, family income, educational status of mother, type of family, occupation and dietary habits

Table No 4: Association between pretest knowledge score with nutritional status of children.
N=102

Selected variables	N	Mean± SD	t Value	p value
Nutritional status				
• Normal	40	19.20±4.077	2.289	0.024*
• Malnourished	62	16.90±5.431		

Independent t test   df= 100   t $_{tab}$= 1.98   *significant at 0.05 level

There was statistically significant association between pre knowledge score of mother and nutritional status of child.

IV.   Discussion

Prevalence of malnutrition in present study was 61%. Among these malnourished children, 41.17% were underweight, 35.29% were wasting and 40.19% were stunted. These three categories of malnutrition are categorized in to mild, moderate and severe. In present study, knowledge and practice of mothers of under five children were less regarding prevention and management of malnutrition among under five children and during the study period awareness program was conducted to increase knowledge and modify the practice of mothers to maintain the health of child and to prevent from malnutrition and this awareness program was found effective in increasing knowledge and practice. In this study, it was found that there was significantly association of knowledge score with family income, educational status and exposure to previous teaching. There was statistical significant association of practice score with educational status and exposure to previous teaching and also found correlation between pre test knowledge and pre test practice score of mother. There was significant association between nutritional status of children and previous exposure of teaching to mother and significant association between pre knowledge score of mother and nutritional status of child.

V.   Conclusion

Malnutrition in under five children is still a major problem in our country. This study indicated that majority of children were malnourished and majority of their mothers were having less knowledge and practice regarding prevention of malnutrition and awareness program was found to be effective as increase in knowledge and change in practices was found in the posttest. Even though mothers know about malnutrition and their prevention, diet and complication. It becomes necessary to emphasize on positive and good Practices for prevention of malnutrition which helps children to grow in a healthier way.

Reference

[1]. Shashidhar HR, Bhatia J .Medscape :Malnutrition. 2013 Feburary 11, [cited on 2014 April 14] .Available from http://emedicine.medscape.com/article/985140-overview
[2]. Malnutrition [cited 2013 Dec 5].Available at http://en.wikipedia.org/wiki/Malnutrition
[3]. Dr. Mandal A. News Medical. Malnutrition.2014 April 14 [cited on April 18]. Available from http://www.news-medical.net/health/Malnutrition-What-is-malnutrition.aspx

[4].   World Health Organisation: Global Data base on child growth and Malnutrition. Available   from http://www.who.int/nutgrowthdb/about/introduction/en/index5.html
[5].   Unicef :Nutrition . Available from http://www.unicef.org/india/children_2356.html
[6].   Arnold F , Parasuraman S , Arokiasamy P , Kothari M .Nutrition in India :National family health survey-3 report (2005-2006). Aug 2009[cited on 2014 Jan 16]; vol II Available from http://dhsprogram.com/pubs/pdf/FRIND3/FRIND3-VOL2.pdf
[7].   Gupta K, Reinis KI , Vaidehi Y , Agrahari K. National family health survey-3 Uttarakhand report (2005-2006).May 2008[cited on 2014 Jan 16].Available from http://www.rchiips.org/nfhs/Uttarakhand_report.pdf