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ENHANCING MOTHERS' KNOWLEDGE ON PROTEIN-ENERGYNUTRITION PREVENTION: EVALUATING THE EFFECTIVENESS OF IEC PACKAGE

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ABSTRACT

Background of the Study: Children play a crucial role in personal development, with their early years serving as the foundation for lifelong learning and human growth. This study aims to assess the effectiveness of an IEC package in improving mothers' knowledge about the prevention of protein-energy malnutrition (PEM) in children under the age of five.**Methodology:**In this evaluative study, we utilized a pre-experimental, one- group pre and post-test design. Purposive sampling technique was employed to select a total of 60 mothers with children under the age of five.**Results:**The results revealed a higher post-test knowledge score as compared to the pre-test knowledge score, indicating the positive impact of the IEC Package in enhancing mothers' knowledge about PEM prevention. Additionally, demographic factors such as mothers' qualifications showed a significant association with pre-test knowledge scores.**Conclusion:**This study highlights the limited knowledge prevailing among mothers regarding protein-energy malnutrition and its prevention. The IEC Package effectively improved knowledge about PEM and its prevention. Increased awareness among mothers can contribute significantly to mitigating this prevalent issue.

Keywords: Protein-energy malnutrition, Mothers, effectiveness, IEC Package

INTRODUCTION:

Background of the Study

Children's fitness can be significantly enhanced through a well-balanced and nutritious food plan. Unfortunately, Protein Energy Malnutrition (PEM) poses a severe health problem among children in India.(1)Insufficient and incorrect nutrition contributes to PEM, which can have long-term adverse effects on children's development. The aim of this study is to bring attention to the alarming prevalence of PEM, its detrimental consequences, and the importance of providing adequate nutrition to children during their critical developmental stages.(2)Protein Energy Malnutrition (PEM), as defined by the World Health Organization (WHO), refers to an imbalance between essential nutrients, mainly energy and protein, required for optimal growth and bodily functions. In India, PEM has emerged as a significant public health concern, particularly among preschool-aged children. This condition impedes physical and cognitive growth, increases susceptibility to infections, and even leads to lifelong disabilities later in life.(3,4)To gauge the prevalence of PEM, three key metrics are employed: underweight (low weight for age), stunting (low height for age), and wasting (low weight for height). Shockingly, India reports the highest occurrence of stunting among children below the age of five, with a severe incidence at 20% and moderate severity at 43%. Regrettably, a large portion of children (80%) suffering from undernourishment falls into the mild to moderate range, often going undetected.(5) According to recent

research conducted by UNICEF, India witnesses 5,000 preventable deaths of children under the age of five every day. Among the children who succumb to such tragedies, the highest percentage (96%) comes from Scheduled Tribes, followed by Scheduled Castes (88%), and the general population (59%). Malnutrition rates in India are alarmingly high, and although there has been a slight reduction in malnourished children under the age of three, from 52% to 46%, it remains significantly below the Millennium Development Goal.[6] Mothers play a crucial role in safeguarding their children against various disorders, including PEM. By equipping mothers with the necessary knowledge and resources, we can empower them to provide their children with balanced and nutritious diets. Improving maternal knowledge about proper nutrition can have a substantial positive impact on children's overall health and well-being.

Need for the Study:

Protein Energy Malnutrition is a pressing issue affecting children in India, resulting from inadequate and incorrect nutrition. The detrimental consequences of PEM are significant, ranging from stunted physical and cognitive growth to increased susceptibility to infections. It is essential that society focuses on raising awareness and providing education to combat malnutrition effectively. By empowering mothers with knowledge and support, we can make a substantial difference in improving the health and future of our children.[7]The prevalence of protein-energy malnutrition in children in South Asia surpasses that of any other region worldwide, with double the occurrence compared to sub-Saharan Africa. South Asia, home to a large population, accounts for over half of all malnourished children globally, comprising approximately 101 million out of 184 million affected children. While there has been a slight decrease in the prevalence of underweight children in South Asia over the past fifteen years, this decline remains smaller than the growth in the infant population.[8]India, in particular, grapples with a significant malnutrition crisis, underscoring one of the most pressing health issues faced by our community today. Reports indicate that 60-70% of young children in India suffer from nutritional deficiencies. The Indian population is known to consume diets lacking in essential proteins and adequate energy. Insufficient food intake, exacerbated by illness, contributes to childhood malnutrition. This grave issue is responsible for over 6 million child deaths annually, with 55% of these deaths attributed to factors related to socioeconomic and ethical challenges. The vulnerable age group of 4-6 years exhibits inadequate dietary intake, with only 40% of children consuming a sufficient diet.[9] It is estimated that our country is host to approximately 45 million undernourished children, leading to various nutritional deficiencies such as dietary anaemia.A study conducted by Dr.Anushka D L et al in Kanchipuram assessed the prevalence of protein-energy malnutrition among children aged 1-5 years. The results showed that 41.8% of the urban children and 34.2% of the rural children fell under Grade I malnutrition. Grade II malnutrition was observed in 23.6% and 30.1% among urban and rural children, respectively. Grade III malnutrition affected 20% of the urban population and 21.9% of the rural population. Grade IV malnutrition was found in 14.5% of urban children and 13.6% of rural children.[10]

Considering the gravity of this situation, the present study intends to evaluate mothers' knowledge and provide appropriate education to prevent protein-energy malnutrition among children under the age of five. By empowering mothers with essential knowledge, we can take significant strides towards overcoming this significant health challenge.

Problem Statement

To evaluate the effectiveness of an Information, Education, and Communication (IEC) package in enhancing knowledge related to the prevention of protein energy malnutrition (PEM) among mothers of under-five children.

Objectives

1. To assess the expertise concerning prevention of protein energy malnutrition among mothers of under-five kids.
2. To evaluate the effectiveness of IEC package on knowledge regarding prevention of protein energy malnutrition among mothers of under-five kids.
3. To find out the association between pre-test knowledge and their selected socio-demographic variables.

Hypothesis

H0: There is no significant difference between pre-test and post-test knowledge concerning prevention of protein energy malnutrition.

H1: There is a considerable difference between pre-test and post-test knowledge concerning prevention of protein energy malnutrition.

H2: There is association among pre-test knowledge score with their selected socio-demographic variables.

RESEARCH METHODOLOGY:

For this evaluative research, a pre-experimental one group pre and post-test design was employed. The study was conducted in selected rural regions of Perambalur District and included mothers with under-five children. A sample size of 60 mothers was chosen using non-probability purposive sampling technique, based on inclusion criteria. The research tool comprised two sections: Section A focused on demographic variables and Section B included a self-structured questionnaire consisting of 20 questions related to PEM.

Description of The Tool

The established questionnaire consists of following sections:-

Section A:

It dealt with demographic variables including age, religion, diet, mother’s qualification, type of family, family income, immunization status, previous knowledge on PEM, source of information.

Section B

A self-structured questionnaire which consists of 20 questions regarding protein electricity malnutrition. The questionnaire was translated in Tamil. One mark was given for right answer. The overall possible score turned into 20. The full score of each problem was calculated and converted in to percentage and interpreted as followed: 0-50% - Inadequate Knowledge, 51-75% - Moderately Adequate and 76 - 100% - Adequate Knowledge.

Reliabilty of The Tool:

The tool was tested to make certain the reliability. It's been administered on five mothers of under-five kids at some stage in pilot study. Reliability of the tool was tested by test re-test method the reliability r=0.8. Hence the tool was reliable.

Data Collection Procedure:

Written permission was obtained from the higher authority in the rural area of Perambalur. All participants provided written consent. On the first day, demographic data was collected and a pre-test was conducted using a structured questionnaire to assess knowledge levels. Following the pre-test on the same day, a 20-minute PowerPoint presentation was delivered. A total of 60 samples were taken in two shifts.

On 1st day the basic information and pre-test questionnaire was collected from the mothers. After that IEC Package was given. After 21 days, the post-test assessed knowledge using the same questionnaire.

Data Analysis:

Descriptive statistical analysis was utilized for categorical data. The effectiveness of the planned teaching program was evaluated using a "t" test. To determine the relationship between-test knowledge and selected demographic variables, a chi-square test of significance was conducted.

RESULTS

Table 1: Frequency and percentage distribution of demographic variables (N=60)

S.NO	Demographic variables	Frequency	Percentage (%)
1.	**Age**		
	a) 21 - 25 years	16	26.7
	b) 26 – 30 years	34	56.7
	c) 31 – 35 years	10	16.6
2.	**Religion**		
	a) Hindu	20	33.3
	b) Christian	28	46.7
	c) Muslim	12	20.0
3.	**Mother's Diet Pattern**		
	a) Vegetarian	10	16.6
	b) Non-vegetarian	12	20.0
	c) Mixed	38	63.4
4.	**Type of Family**		
	a) Joint Family	15	25.0
	b) Nuclear Family	35	58.4
	c) Extended Family	10	16.6
5.	**Mother's Qualification**		
	a) Illiterate	05	08.3
	b) Primary education	22	36.7
	c) Higher education	01	01.7
	d) Graduate / PG	32	53.3
6.	**Family monthly income**		
	a) < 5000Rs	04	06.6
	b) 5000 to10000 Rs	18	30.0
	c) 10000 to 15000 Rs	28	46.6
	d) More than 15000 Rs	10	16.6
7.	**No of Under-five Children**		
	a) 1	12	20.0

	b) 2 c) 3 Above	30 18	40.0 30.0
8.	**Immunization Status of the Child** a) Not immunized b) Partially Immunized c) Completely Immunized	 0 20 40	 0 33.3 66.7
9.	**Previous Knowledge about PEM** a) Yes b) No	 24 36	 0.0 40.0
10.	**Source of Information on PEM** a) Family Members b) Health Care Personnel c) Newspaper / Media	 14 20 26	 23.3 33.3 43.4

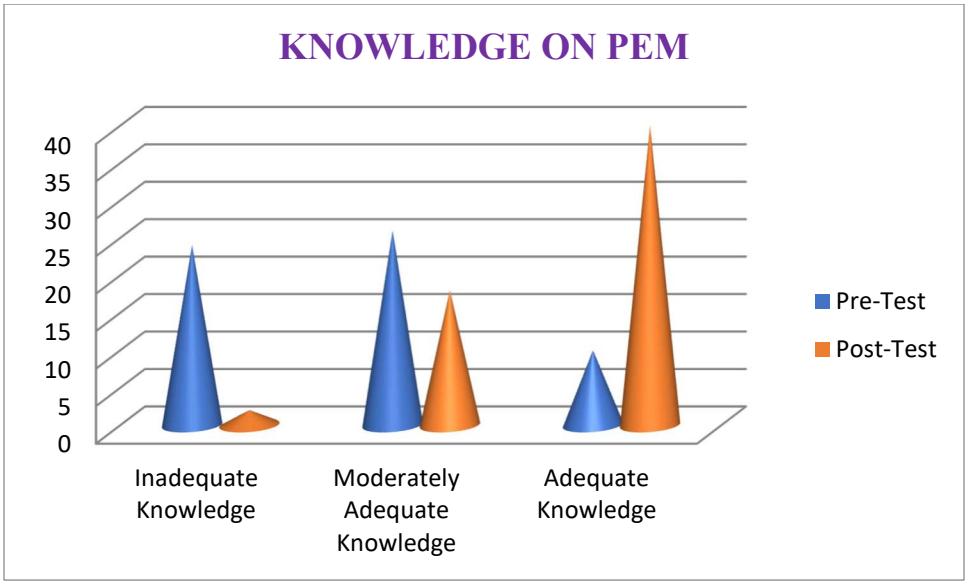

Figure 1:Frequencyand percentage distribution oflevelofknowledge before and after IEC package

Figure1 represented the level of knowledge regarding prevention of Protein Energy Malnutrition emergencies before and after IEC Package. In pre-test among 60 samples24(40%)werehavinginadequateknowledge,26(43.3%)werehavingmoderately adequate knowledge and 10(16.7%)werehavingadequateknowledge. In post-test, 2 (3.3%) were having inadequate, 18(30%)werehaving moderatelyadequate knowledge, 40(66.7%)werehavingadequateknowledgeregardingmanagementofcardiacemergencies.

Table2:Associationoflevelofknowledgeandselecteddemographicvariables(n=60)

S. No	Demographicvariables	Inadequate	Moderately Adequate	Adequate	Total	Chi Square	P Value
1.	**Age**						
	a) 21 - 25 years	04	10	02	16	3.465	0.4831 (NS)
	b) 26 – 30 years	16	12	06	34		
	c) 31 – 35 years	04	04	02	10		
2.	**Religion**						
	a) Hindu	10	07	03	20	9.346	0.0529 (NS)
	b) Christian	06	17	05	28		
	c) Muslim	08	02	02	12		
3.	**Mother's Diet Pattern**						
	a) Vegetarian	04	04	02	10	0.9243	0.9211 (NS)
	b) Non-vegetarian	06	04	02	12		
	c) Mixed	14	18	06	38		
4.	a)						
		05	06	04	15	5.8123	0.2136 (NS)
		12	18	05	35		
		07	02	01	10		
5.	**Mother's Qualification**						
	a) Illiterate	01	03	01	05	17.73	**0.0069 ***
	b) Primary education	19	01	02	22		
		01	01	01	03		
	c) Higher education	11	15	04	20		
	d) Graduate / PG						
6.	**Family monthly income**	01	02	01	04	6.986	0.3221 (NS)
	a) < 5000Rs	07	06	05	18		
	b) Rs 5000 to10000	13	14	01	28		
		03	04	03	10		
	c) Rs.10000 to 15000						
	d) More than 15000 Rs						
7.	**No of Under-five Children**	04	05	03	12	3.755	0.4401 (NS)
	d) 1	10	14	06	30		
	e) 2	10	07	01	18		
	f) 3 Above						

8.	**Immunization Status of the Child** d) Not immunized e) Partially Immunized f) Completely Immunized	0 10 14	0 06 20	0 04 06	0 20 40	2.1808	0.3361 (NS)
9.	**Previous Knowledge about PEM** d) Yes e) No	14 10	08 18	02 08	24 36	5.951	0.0516 (NS)
10.	**Source of Information on PEM** d) Family Members e) HealthCare Personnel f) Newspaper / Media	06 08 10	07 08 11	01 04 05	14 20 26	1.243	0.8701 (NS)

*** 0.05levelSignificanceNS= NotSignificant**

Table 2 indicates that there is a relationship between the pre-test knowledge score and demographic variables. The association between the demographic variables and pre-test knowledge was assessed using the chi-square test. However, the p-value for the association test with knowledge was higher than 0.05 for all demographic variables. Only the qualification of the mother showed a significant association with the pre-test knowledge score (p=0.0069). This finding aligns with a study conducted by Michael JebaArasi et al, which examined the impact of an educational program on the knowledge of under-five mothers in urban slum areas in Bangalore. The study also found a significant association between knowledge score and mother's qualification at a significance level below 0.05.[(11)]

CONCLUSION

This study aimed to evaluate the effectiveness of an IEC Package in improving knowledge about the prevention of malnutrition among under-five mothers. The results demonstrate that the IEC Package successfully increased the level of knowledge regarding the prevention of protein-energy malnutrition among mothers. Such studies can be implemented in community settings, including for Anganwadi workers. It is crucial for mothers to possess knowledge about malnutrition to enhance the overall status of the country.

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