

A Study to Assess the Knowledge and Attitude Regarding Prevention of Protein Energy Malnutrition Among the Mothers of Under Five Years of Children in Selected Rural Area

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ABSTRACT

Protein Energy Malnutrition (PEM) remains a major public health concern, particularly among children under five in rural areas. This study aimed to assess the knowledge and attitude of mothers regarding the prevention of PEM in selected rural communities. A Non-experimental Descriptive survey design was employed, involving mothers of under-five children selected through purposive sampling. Data were collected using a structured questionnaire and Likert scale-based attitude assessment tool. The findings revealed varying levels of knowledge among participants, with a significant proportion lacking awareness about the causes, signs, and preventive measures of PEM. Attitudes towards nutritional practices and child health care were found to be moderately positive but influenced by socio-economic and educational factors. The study highlights the need for targeted health education and community-based nutrition programs to enhance maternal understanding and promote effective PEM prevention strategies.

Keywords: Attitude, Prevention, Protein energy malnutrition, Mother, Under five year of children, Rural area.

INTRODUCTION

Malnutrition is a manmade disease that often begins in the womb and can last throughout life. It remains a major global problem, especially in developing countries and underprivileged communities of developed nations. In these regions, uncontrolled population growth and limited resources worsen the issue. According to UNICEF (2005), around 150 million children worldwide are malnourished, with millions in India lacking access to proper nutrition, healthcare, education, and clean water. Protein energy malnutrition (PEM) is widespread in tropical and subtropical regions and is caused by diets low in protein and calories. Kwashiorkor typically affects children aged 4 months to 5 years, while marasmus occurs in infants under one year. Mild to moderate undernutrition often goes undetected due to vague clinical signs. Malnutrition severely impacts children's growth, cognitive development, and increases the risk of illness and death. In Asia, 70% of the world's 182 million

stunted children live. India reports high underweight prevalence among children, especially those aged 12–23 months. In Karnataka, 4 out of 10 children are stunted and 70% are anaemic. Despite interventions like ICDS, malnutrition remains widespread. Therefore, this study aims to assess the knowledge, attitude, and practices of rural mothers of under-five children regarding the prevention of protein energy malnutrition.

OBJECTIVES

- 1) To assess the knowledge regarding prevention of protein energy malnutrition among the mothers of under 5 years of children.
- 2) To assess the attitude regarding prevention of protein energy malnutrition among the mothers of under 5 years of children
- 3) To find out the association between the knowledge regarding prevention of protein energy malnutrition with their selected demographic variables.
- 4) To find out the association between the attitude regarding prevention of protein energy malnutrition with their selected demographic variables.
- 5) To find out the correlation between the knowledge and attitude regarding prevention of protein energy malnutrition among the mothers of under 5 years of children.

HYPOTHESIS

H₀: There is no significance difference between the knowledge and attitude regarding prevention of protein energy malnutrition among the mothers of under 5 years of children.

H₁: There is a significance difference between the knowledge and attitude regarding prevention of protein energy malnutrition among the mothers of under 5 years of children

H₂: There is significant association between knowledge score with their selected demographic variables among the mothers of under 5 years of children

H₃: There is significant association between attitudes with their selected demographic variables among the mothers of under 5 years of children

MATERIALS & METHODS

Design: Non experimental Descriptive survey design

Target population: Mothers of under 5 years of children

Accessible Population: The mothers of under 5 years of children in selected rural area who are available at the time of data collection.

Sampling technique: convenient sampling technique

STATISTICAL ANALYSIS

DATA INTERPRETATION, ORGANIZATION OF DATA: TABLES, FIGURES AND GRAPHS

The data collected of the study was classified, organized and analyzed under following sections:

SECTION I

Deals with analysis of demographic data of the mothers of under five years of children in selected rural area in terms of frequency and percentage.

SECTION II

Deals with analysis of data related to assessment of level of knowledge and attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children in selected rural area in terms of frequency and percentage.

SECTION III

Deals with analysis of data related to the association between knowledge and attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children with their selected demographic variables.

SECTION I

Deals with analysis of demographic data of the mothers of under five years of children

in selected rural area in terms of frequency and percentage.

Table 1: Frequency & percentage distribution of mothers of under five years of children in selected rural area

Sr. No.	Variable	Groups	Frequency	Percentage
1	Age of mother (in years)	20-25	35	29.17
		25-30	40	33.33
		30-35	34	28.33
		above 35	11	9.17
2	Education	Primary	13	10.83
		Secondary	63	52.50
		Graduate/diploma	38	31.67
		Postgraduate and above	6	5.00
3	Occupation of mother	Housewife	19	15.83
		Private job	61	50.83
		Government job	25	20.83
		Hand business	15	12.50
4	Types of family	Joint family	40	33.33
		Nuclear family	61	50.83
		Extended family	19	15.83
5	Number of children	1	34	28.33
		2	61	50.83
		3	18	15.00
		4 & above	7	5.83

Table 2: Frequency & percentage distribution of mothers of under five years of children in selected rural area

Sr. No.	Variable	Groups	Frequency	Percentage
6	Religion	Hindu	81	67.50
		Muslim	11	9.17
		Christian	5	4.17
		Other	23	19.17
7	Types of Motherhood	Widow	12	10.00
		Divorce	5	4.17
		Step mother	9	7.50
		None of above	91	75.83
8	Knowledge deficiency of PEM	Yes	118	98.33
		No	2	1.67
9	Source of information	Family / friends	18	15.25
		Television	50	42.37
		Health professionals	18	15.25
		Others	32	27.12

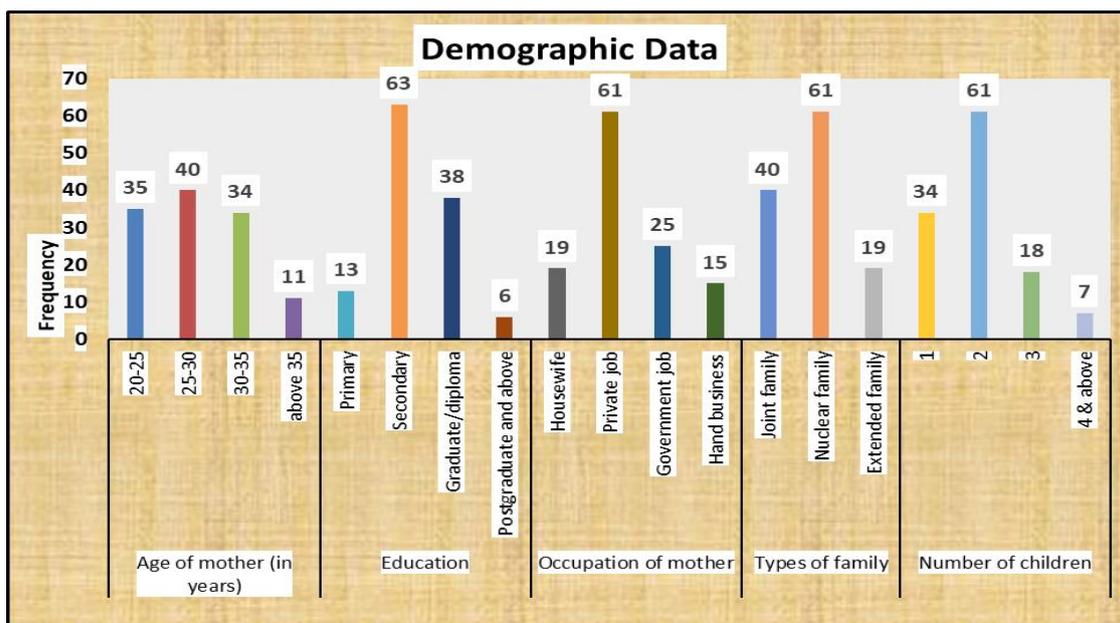


Figure No-1: Distribution of mothers of under five years of children in selected rural area

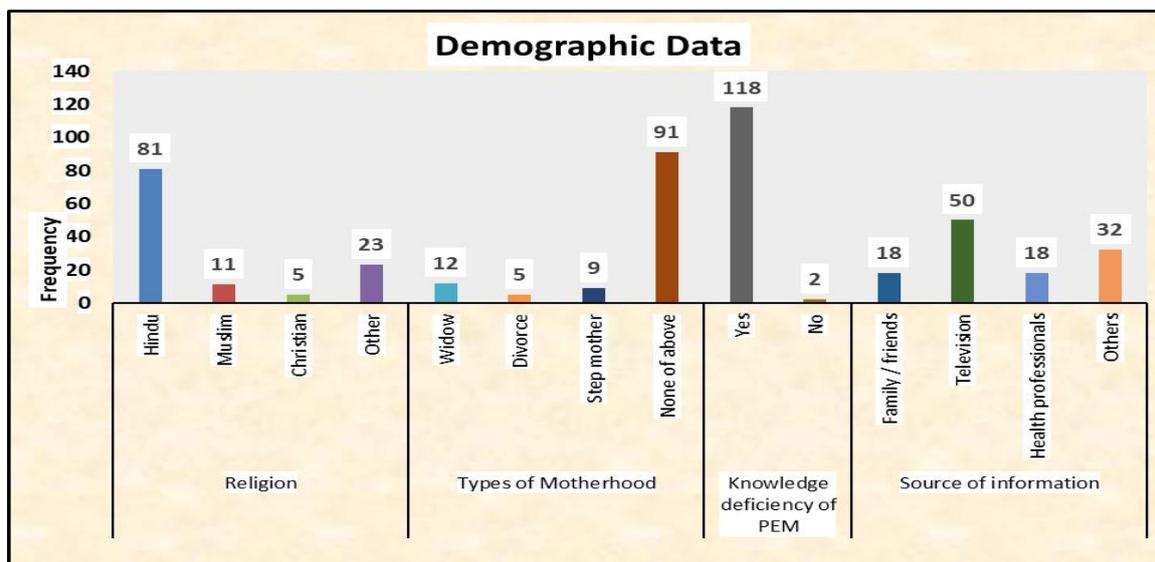


Figure No-2: Distribution of mothers of under five years of children in selected rural area

SECTION II

Deals with analysis of data related to assessment of level of knowledge regarding prevention of protein energy malnutrition

among the mothers of under five years of children in selected rural area in terms of frequency and percentage.

Table 3: General assessments of Knowledge regarding prevention of protein energy malnutrition among the mothers of under five years of children

Variable	Groups	Score	Frequency	Percentage
KNOWLEDGE	Poor	0-14	41	34.17
	Average	15-22	75	62.50
	Good	23-30	4	3.33
KNOWLEDGE	Minimum		8	
	Maximum		27	
	Average (SD)		15.37 (3.82)	

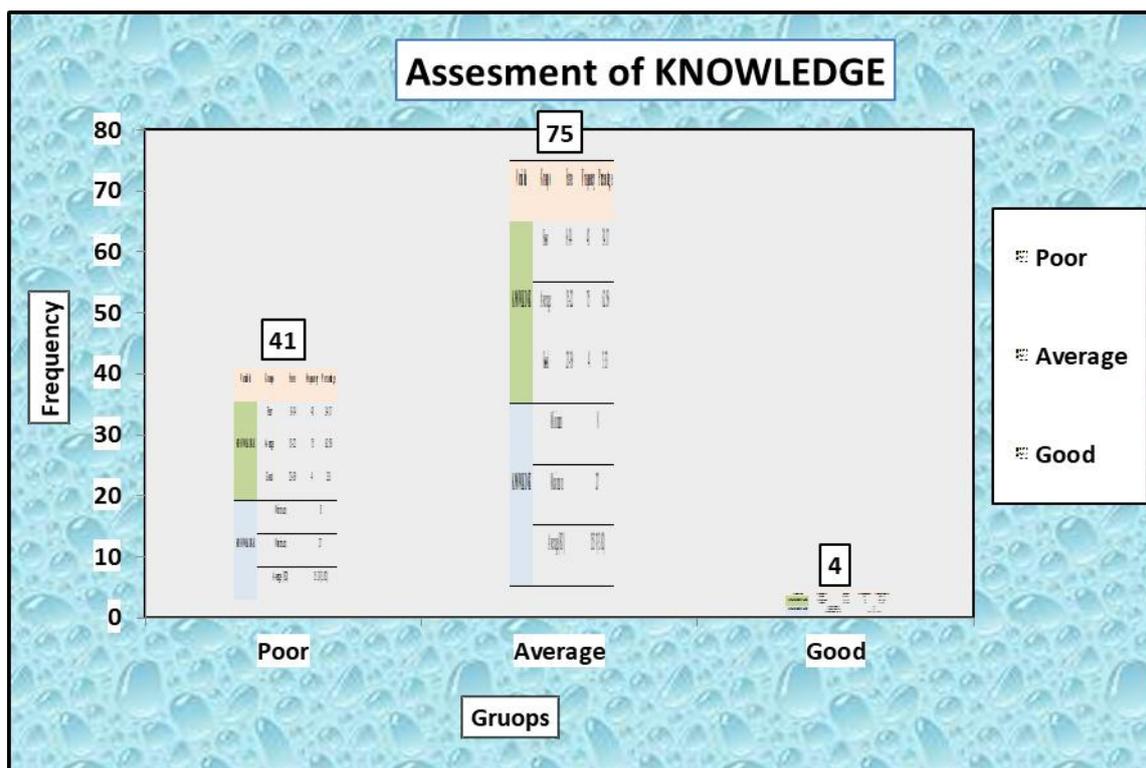


Figure No-3: General assessments of Knowledge regarding prevention of protein energy malnutrition among the mothers

GENERAL ASSESSMENTS OF KNOWLEDGE REGARDING PREVENTION OF PROTEIN ENERGY MALNUTRITION AMONG MOTHERS

For assessment purpose the total score of knowledge regarding prevention of protein energy malnutrition among the mothers of under five years of children was divided in to three groups like poor (0-14 score), average (15-22 score) and good (23-30 score).

Assessment of knowledge regarding prevention of protein energy malnutrition among the mothers of under five years of

children shows that, 34.17% of mothers had poor, 62.50% average knowledge and 3.33% of them had good knowledge.

Average knowledge score was 15.37 with standard deviation of 3.82. The minimum score of knowledge was 8 with maximum score of 27.

Deals with analysis of data related to assessment of level of attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children in selected rural area in terms of frequency and percentage.

Table 4: General assessments of Attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children

Variable	Groups	Score	Frequency	Percentage
ATTITUDE	Negative	5-14	64	53.33
	Neutral / Moderately Positive	15-20	39	32.50
	Positive	21-25	17	14.17
ATTITUDE	Minimum		6	
	Maximum		24	
	Average (SD)		14.58 (5.07)	

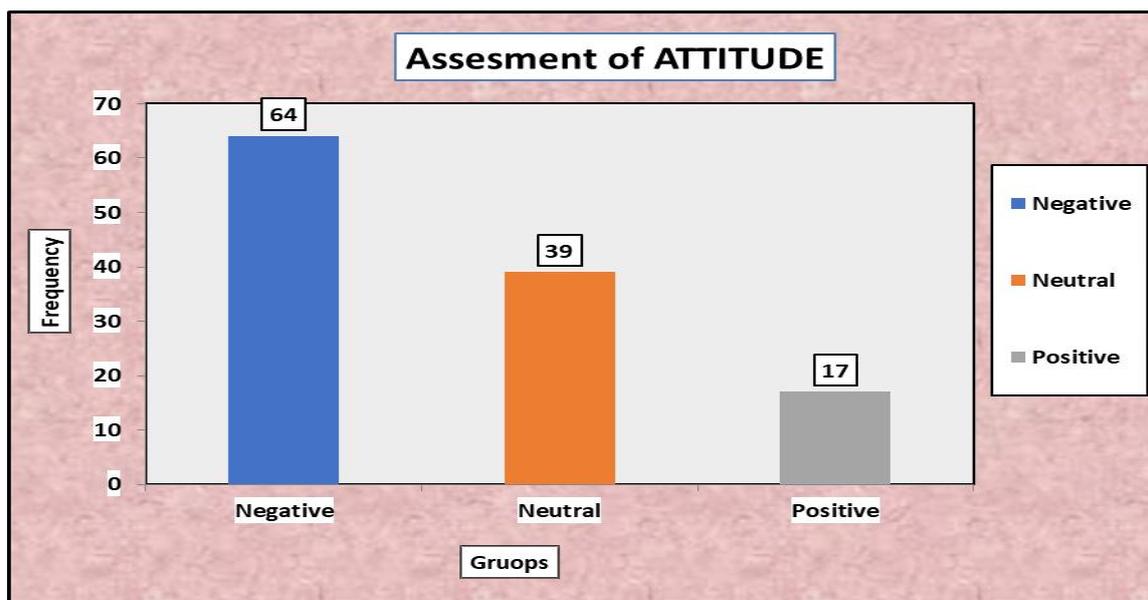


Figure No-4: General assessments of Attitude regarding prevention of protein energy malnutrition among the mothers

GENERAL ASSESSMENTS OF ATTITUDE REGARDING PREVENTION OF PROTEIN ENERGY MALNUTRITION AMONG MOTHERS

For assessment purpose the total score of attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children was divided in to three groups like negative (5-14 score), neutral / moderately positive (15-20 score) and positive (21-25 score).

Assessment of attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children shows that, 53.33% of mothers had negative attitude, 32.50% neutral/ moderately

positive attitude and 14.17% of them had good attitude.

Average attitude score was 14.58 with standard deviation of 5.07. The minimum score of attitudes was 6 with maximum score of 24.

SECTION III

Deals with analysis of data related to the association between knowledge regarding prevention of protein energy malnutrition among the mothers of under five years of children with their selected demographic variables.

ASSOCIATION OF KNOWLEDGE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES

Table 5: Association of Knowledge with demographic variables

Variable	Groups	KNOWLEDGE		Chi Square	d.f.	p value	Significance
		below Md	Above Md				
Age of mother (in years)	20-25	17	18	1.36	3	0.71	Not Significant
	25-30	24	16				
	30-35	19	15				
	above 35	5	6				
Education	Primary	3	10	7.68	3	0.053	Not Significant
	Secondary	37	26				
	Graduate/diploma	20	18				
	Postgraduate and above	5	1				
Occupation of mother	Housewife	9	10	0.45	3	0.93	Not Significant
	Private job	34	27				
	Government job	14	11				

	Hand business	8	7				
Types of family	Joint family	24	16	2.24	2	0.33	Not Significant
	Nuclear family	29	32				
	Extended family	12	7				
Number of children	1	15	19	4.65	3	0.20	Not Significant
	2	32	29				
	3	13	5				
	4 & above	5	2				

Table 6: Association of Knowledge with demographic variables

C	Groups	KNOWLEDGE		Chi Square	d.f.	p value	Significance
		below Md	Above Md				
Religion	Hindu	41	40	11.51	3	0.009	Significant
	Muslim	3	8				
	Christian	2	3				
	Other	19	4				
Types of Motherhood	Widow	11	1	13.62	3	0.003	Significant
	Divorce	2	3				
	Step mother	8	1				
	None of above	44	47				
Knowledge deficiency of PEM	Yes	64	54	0.01	1	0.91	Not Significant
	No	1	1				
Source of information	Family / friends	14	4	9.90	3	0.019	Significant
	Television	20	30				
	Health professionals	9	9				
	Others	21	11				

ASSOCIATION OF KNOWLEDGE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES

The chi square test was used to see association between knowledge regarding prevention of protein energy malnutrition among the mothers of under five years of children with their selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For demographic variables, religion, types of motherhood and source of information, p value of the association test with knowledge was less than 0.05. That means, the knowledge regarding prevention of protein energy malnutrition among the mothers of under five years of children was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the knowledge.

No Significant Association:

For demographic variables, age, education, occupation of mother etc., p value of the association test with knowledge was more than 0.05. That means, the knowledge regarding prevention of protein energy malnutrition among the mothers of under five years of children was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the knowledge.

Deals with analysis of data related to the association between attitudes regarding prevention of protein energy malnutrition among the mothers of under five years of children with their selected demographic variables.

ASSOCIATION OF ATTITUDE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES

Table 7: Association of Attitude with demographic variables

Variable	Groups	ATTITUDE		Chi Square	d.f.	p value	Significance
		below Md	Above Md				
Age of mother (in years)	20-25	25	10	8.32	3	0.040	Significant
	25-30	20	20				
	30-35	16	18				
	above 35	3	8				
Education	Primary	6	7	0.78	3	0.86	Not Significant
	Secondary	33	30				
	Graduate/diploma	21	17				
	Postgraduate and above	4	2				
Occupation of mother	Housewife	10	9	0.61	3	0.90	Not Significant
	Private job	31	30				
	Government job	15	10				
	Hand business	8	7				
Types of family	Joint family	22	18	0.61	3	0.90	Not Significant
	Nuclear family	33	28				
	Extended family	9	10				
Number of children	1	16	18	0.76	3	0.86	Not Significant
	2	34	27				
	3	10	8				
	4 & above	4	3				

Table 8: Association of Attitude with demographic variables

Variable	Groups	ATTITUDE		Chi Square	d.f.	p value	Significance
		below Md	Above Md				
Religion	Hindu	45	36	0.81	3	0.85	Not Significant
	Muslim	5	6				
	Christian	2	3				
	Other	13	10				
Types of Motherhood	Widow	6	6	7.96	3	0.047	Significant
	Divorce	0	5				
	Step mother	7	2				
	None of above	51	40				
Knowledge deficiency of PEM	Yes	63	55	0.01	1	0.92	Not Significant
	No	1	1				
Source of information	Family / friends	9	9	4.29	3	0.23	Not Significant
	Television	23	27				
	Health professionals	9	9				
	Others	22	10				

ASSOCIATION OF ATTITUDE SCORE IN RELATION TO DEMOGRAPHIC VARIABLES

The chi square test was used to see association between attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children with their selected demographic variables.

The test was conducted at 5% level of significance.

Significant Association:

For demographic variables, age of mother and types of motherhood, p value of the association test with attitude was less than 0.05. That means, the attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children was associated with these demographic variables.

Concludes that, there was significant association of these demographic variables with the attitude.

No Significant Association:

For demographic variables, education, occupation of mother, types of family etc., p value of the association test with attitude was more than 0.05. That means, the attitude regarding prevention of protein energy malnutrition among the mothers of under five years of children was not associated with these demographic variables.

Concludes that, there was no significant association of these demographic variables with the attitude.

DISCUSSION

The findings of the study have been discussed with reference to the objectives and hypothesis. As per the findings of the study it provides the description related to demographic variable, which shows majority of mothers were between the age of 25-30 years, with secondary education qualification and doing private job. As well as majority of mothers in this study belongs to nuclear family and they having two children's and belongs to the Hindu religion. Majority of mother having the good knowledge regarding Deficiency of Protein Energy Malnutrition and source of information is television.

CONCLUSION

The study concludes that the knowledge and attitude of mothers regarding the prevention of Protein Energy Malnutrition (PEM) among under-five children in the selected rural area are generally inadequate and influenced by factors such as education and access to health information. Although some mothers demonstrated a positive attitude, gaps in knowledge highlight the need for focused health education and awareness programs. Strengthening community-based interventions and empowering mothers with accurate nutritional knowledge can play a vital role in the effective prevention of PEM and the promotion of child health.

Declaration by Authors

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Conflict of Interest: The authors declare no conflict of interest.

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