International Multispeciality Journal of Health

ISSN: 2395-6291

www.imjhealth.org

Volume-10, Issue-6, June 2024

Preface

We would like to present, with great pleasure, the inaugural volume-10, Issue-6, June 2024, of a scholarly journal, *International Multispeciality Journal of Health*. This journal is part of the AD Publications series *in the field of Medical, Health and Pharmaceutical Research Development*, and is devoted to the gamut of Medical, Health and Pharmaceutical issues, from theoretical aspects to application-dependent studies and the validation of emerging technologies.

This journal was envisioned and founded to represent the growing needs of Medical, Health and Pharmaceutical as an emerging and increasingly vital field, now widely recognized as an integral part of scientific and technical statistics investigations. Its mission is to become a voice of the Medical, Health and Pharmaceutical community, addressing researchers and practitioners in below areas

Clinical Specialty and Super-specialty Medical Science:

It includes articles related to General Medicine, General Surgery, Gynecology & Obstetrics, Pediatrics, Anesthesia, Ophthalmology, Orthopedics, Otorhinolaryngology (ENT), Physical Medicine & Rehabilitation, Dermatology & Venereology, Psychiatry, Radio Diagnosis, Cardiology Medicine, Cardiothoracic Surgery, Neurology Medicine, Neurosurgery, Pediatric Surgery, Plastic Surgery, Gastroentrology, Gastrointestinal Surgery, Pulmonary Medicine, Immunology & Immunogenetics, Transfusion Medicine (Blood Bank), Hematology, Biomedical Engineering, Biophysics, Biostatistics, Biotechnology, Health Administration, Health Planning and Management, Hospital Management, Nephrology, Urology, Endocrinology, Reproductive Biology, Radiotherapy, Oncology and Geriatric Medicine.

Para-clinical Medical Science:

It includes articles related to Pathology, Microbiology, Forensic Medicine and Toxicology, Community Medicine and Pharmacology.

Basic Medical Science:

It includes articles related to Anatomy, Physiology and Biochemistry.

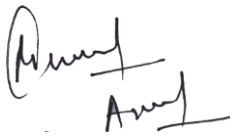
Spiritual Health Science:

It includes articles related to Yoga, Meditation, Pranayam and Chakra-healing.

Each article in this issue provides an example of a concrete industrial application or a case study of the presented methodology to amplify the impact of the contribution. We are very thankful to everybody within

that community who supported the idea of creating a new Research with *IMJ Health*. We are certain that this issue will be followed by many others, reporting new developments in the Medical, Health and Pharmaceutical Research Science field. This issue would not have been possible without the great support of the Reviewer, Editorial Board members and also with our Advisory Board Members, and we would like to express our sincere thanks to all of them. We would also like to express our gratitude to the editorial staff of AD Publications, who supported us at every stage of the project. It is our hope that this fine collection of articles will be a valuable resource for *IMJ Health* readers and will stimulate further research into the vibrant area of Medical, Health and Pharmaceutical Research.

Dr. Kusum Gaur
(Chief Editor)



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(Managing Editor)

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Dr. Kusum Gaur working as professor Community Medicine and member of Research Review Board of Sawai Man Singh Medical College, Jaipur (Raj) India.

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Dr. Praveen Mathur is working as Professor- Pediatric Surgery and is recipient of Commonwealth Fellowship in Pediatric Laparoscopy from Uk and fellowship award in minimal access Surgery (FMAS). He has done Clinical observer ship in the Department of Pediatric Surgery, Johns Hopkins University, Baltimore, USA. (2008). He has presented and published a number of research articles at national and international level. He is reviewer of prestigious Journal of Pediatric Surgery (JPS) and World Journal of Gastroenterology, Journal of neonatal Surgery (JNS).

Research Area: Pediatric Surgery & Laparoscopy.

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He is working as Professor, Department of Surgery, Government Medical College, Chandigarh, India. He has done FMAS, FIMSA and FCLS along with MS (Gen Surgery).

He has about 50 international and national publications to his credit. He has held various positions in the Association of Minimal Access Surgeons of India (AMASI) from time to time. He has also acted as instructor of various AMASI skill courses held at different places in India. He has established Surgical Technique learning centre at GMCH Chandigarh for imparting training to the budding surgeons in the field of minimal access surgery. He is also the reviewer in the subject in various journals.

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Research Area: Congenital Malformation, Developmental Anatomy.

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Dr. Virendra Singh worked as Supernatant and head of department of Pulmonary Medicine, SMS Medical College, Jaipur (Rajsthan) India.

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Dr. Mahesh Sharma

Dr. Mahesh Sharma is a Principle specialist General Surgery in Rajasthan State Government, India. He has been PMO of district hospitals for more than 15 years. He has gone abroad as observer of many of training related to his speciality. He has published and present many research paper in India as well as abroad.
He has developed Spiritual Health Assessment Scale (SHAS) with Dr. Kusum Gaur.

Research Area: General Surgery, Health and Hospital management and Spiritual Health.

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Dr. Praveen Mathur

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Research Area: Pediatric Surgery & Laparoscopy.

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Maternal Knowledge of Protein-Energy Malnutrition in Bandikui, Dausa: Basis for Booklet Development

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Received:- 6 June 2024/ Revised:- 17 June 2024/ Accepted: 24 June 2024/ Published: 30-06-2024
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Abstract— *To assess the effectiveness of nutritional education for improving the feeding patterns of malnourished children in university hospital, Nigeria a descriptive study was conducted by investigator. They had selected 115 mothers by simple random sampling and used questionnaire to collect the data significant difference was indicated in pre test mean score (t = 11.79) and post test mean score (t = 20.50). This indicated that nutritional education was effective to improve feeding patterns of mothers.*

To assess the community based nutritional intervention for reducing Protein-Energy Malnutrition among under- five children in rural areas of Iran a longitudinal study was conducted. The selected mothers by simple random sampling technique and instruction was given on feeding method, worming, environment sanitation and growth monitoring program as a routes of intervention. Indices were assessed after one year. Results indicated that nutritional awareness had grown among mothers and the incidence of malnutrition had dropped to 6.5% to 1.8%.

Keywords— Nutritional Education, Malnutrition, Child Nutrition, Feeding Practices, Maternal Knowledge, Under-Five Children.

I. INTRODUCTION

For centuries, India has been a country which faced a number of natural calamities and epidemics that manifested into a series of health problems for the country. While the British ruled India, a number of draughts and famines plagued the country side, which resulted in giving us a history of poverty and malnutrition particularly of women and children

1.1 Statement of Problem:

A descriptive study to assess the knowledge regarding protein energy malnutrition among mothers of under five children in selected areas of Bandikui, District - Dausa(with a view to develop an information booklet.)

1.2 Objectives:

- To assess the knowledge regarding protein energy malnutrition among mothers of under five children.
- To identify the association between the knowledge regarding protein energy malnutrition among mothers of under five children with selected demographical variables.
- To prepare an information booklet to enhance the knowledge regarding control and prevention of malnutrition among mothers of under five children.

II. MATERIALS AND METHODS

1. **Assess:** - It is the statistical score achieved by mother regarding protein energy malnutrition.
2. **Knowledge:-** The information regarding protein energy malnutrition which are given by respondent through structured questionnaire.

3. **Protein energy malnutrition:-** It refers to a form of malnutrition where there is inadequate nutrition intake in terms of protein and calories.
4. **Mothers of Under Five Children:-** It include the mothers who are having child up to 5 year of age.

2.1 Hypotheses:

H_0 – There will be no significant association between the knowledge regarding protein energy malnutrition among mothers of under five children with selected demographical variables.

1) Selected Variables:

- **Dependent variables: -**knowledge of mothers regarding protein energy malnutrition.
- **Independently variables: -**selected demographical variables age of mother, education of mother, occupation, income of family, no. of children.

2) Assumptions

- Mothers may have some knowledge regarding protein energy malnutrition.

3) Limitation

- The study was limited to the mothers of under five children of selected areas.

2.2 Research Approach:

Research approach is an umbrella that covers basic procedure to conduct research.

A research approach tells us so as to what data to collect and how to analyze it. It also suggests possible conclusions to be drawn from the data.

It involves the generation of data in questionnaire form, which can be subjected to rigorous quantitative analysis in formal and rigid fashion.

Hence the survey approach conducted to be appropriate.

Descriptive survey approach describes situations as they exist in the world and provides an accurate data of the characteristics of particular individuals, situations, or groups in life situations for the purpose of discovering new meaning, describing what exists, determining the frequency with which something occurring and categorizing information. The outcome of descriptive research provides a basis for future quantitative research.

2.3 Research Design:

Research design facilitates the smooth sailing of various research operations thereby making research as efficient as possible yielding maximal information with minimal expenditure.[43]

The research design adopted for the present study was descriptive (non-experimental) design because it describes the relationship which exists between the selected socio demographic variables and knowledge of mothers' of under-five children regarding Protein-Energy Malnutrition.

2.3.1 Setting of Study:

Bandikui town area.

2.3.2 Population:

Mothers of under-five children

2.3.3 Sample:

The sample of the present study includes married women who fulfill the inclusion criteria.

2.3.4 Sample Size:

The sample of 100 mothers of under five children who met the inclusion criteria was selected for the study.

2.3.5 Sample Criteria

Inclusion criteria: The study included the mothers who -

- had children up to 5 year of age
- live in selected areas.
- available at time of data collection
- willing to participate in the study
- able to read and write Hindi

Exclusion criteria: The study excludes the mothers who were uneducated.

2.3.6 Sample Technique:

Purposive sampling technique

2.4 Data Collection Technique:

Sampling is process of selecting a portion of the population to obtain data regarding a problem. In this study, purposive sampling technique was used to select the sample, the total wards in Bandikui were listed out (25) and ward No. 01, 02, 12 were selected to select the subjects.

A sample is a portion of the population that has been selected to represent the population of the interest. House to house survey was conducted and mothers of under-five children were identified and listed by purposive sampling technique and by selection criteria 100 mothers of under-five children were selected for the present study.

2.5 Methods of Data Collection:

The consent was obtained from respondent. The technique used for collecting the information was questionnaire technique. Questionnaire technique provides greater opportunity to probe and clarify questions and it results in completing the data from all subjects. The researcher also felt that his presence would encourage the mothers' of under-five children to give free and frank information about their knowledge. It allows for uniformity in asking questions and objectivity in recording the response.

2.5.1 Tool and Technique:

A structured knowledge questionnaire was used to assess the knowledge of mothers of under five children regarding protein energy malnutrition.

2.5.2 Development of the Tool:

The following steps was undertaken to prepare the research tool-

- A review of literature on the relevant topic.
- Discussed with expert and guide.
- Preparation of the blueprint.
- Preparation of rough draft.
- Preparation of final draft of the tool.

2.5.3 Description of Tool:

The format of the structured questionnaire schedule comprises of two sections or parts.

- **Part - I:** It consists of items describing sample characteristics such as age, education, occupation, family monthly income and No. of children.
- **Part - II:** It consists of items related to knowledge of mothers' regarding Protein-Energy Malnutrition. The contents included were: meaning, types, causes, signs and symptoms, diagnosis, management and prevention of protein-energy malnutrition.

Each item had one correct response and each correct response is coded with one mark.

2.6 Presentation of Data:

- **Section I:** description of demographic variables.
- **Section II:** findings related to knowledge score of mothers of under five children.
- **Section III:** Association between knowledge score and selected demographic variables.

2.6.1 Section 1:

1) Description of demographic characteristics:

This section deals with distribution of participants according to the demographic characteristics.

The obtained data on sample characteristics were described under the sub headings which include age, education, occupation, income, and no. of children. Data was analysed using descriptive statistics and summarised in terms of frequency and percentages.

TABLE 1
DISTRIBUTION OF PARTICIPANTS ACCORDING TO THE DEMOGRAPHIC VARIABLES

N = 100

S. N.	Variables	Frequency	Percentage %
1	**Age in years:**		
	a. 18-21 years	15	15
	b. 22-25 years	35	35
	c. 26-29 years	39	39
	d. Above 30 years	11	11
2	**Educational status:**		
	a. Primary school	35	35
	b. Middle	35	35
	c. secondary	15	15
	d. Senior secondary or above	15	15
3	**Occupation:**		
	a. Housewife	44	44
	b. Labour work	11	11
	c. Animal husbandry	32	32
	d. Employee or other	13	13
4	**Income of family:**		
	a. <5000	20	20
	b. 5001-10,000	36	36
	c. 10,001-15,000	29	29
	d. >15,000	15	15
5	**No. of children**		
	a. One	35	35
	b. Two	50	50
	c. Three	15	15

Table 1 shows the frequency and percentage distribution of demographic variables among the mothers of under five children.

2.6.2 Section II:

This section deals with distribution of knowledge score of mothers under five children regarding protein energy malnutrition in terms of mean, median, range, standard deviation and mean percentage.

TABLE 2

AREA WISE ANALYSIS OF KNOWLEDGE SCORE OF MOTHERS OF UNDER FIVE CHILDREN REGARDING PROTEIN ENERGY MALNUTRITION

N = 100

SN	Area	No of items	Max score	Range of score	Mean	Median	S.D.	Mean %
1	Introduction of nutrition	10	10	3-9	5.17	5	1.43	51.7
2	Causes, sign & symptoms of PEM	12	12	3-9	6.32	6	1.33	52.67
3	Prevention & Management of PEM	8	8	2-8	4.73	4	1.35	59.13

Table 2 indicates that mothers of under five children having more knowledge 59.13% in the area of Prevention & Management of PEM, 52.67% in the area of Causes, sign & symptoms of PEM, 51.7% in the area of Introduction of nutrition.

TABLE: 3

DISTRIBUTION OF OVERALL KNOWLEDGE SCORE OF MOTHERS OF UNDER FIVE CHILDREN REGARDING PROTEIN ENERGY MALNUTRITION

No of items	Maximum Score	Range of score	Mean score	Median score	S.D.	Mean %
30	30	11-24	16.22	15	3.14	54.07

Table-3: represents the overall mean knowledge score obtained by the mothers of under five children was 16.22 and median was 15 with standard deviation 3.14 and the mean percentage was 54.07%. So this indicates that mothers have average knowledge regarding protein energy malnutrition.

TABLE: 4

ITEM WISE ANALYSIS OF KNOWLEDGE OF MOTHERS' REGARDING PROTEIN-ENERGY MALNUTRITION

Area: 1 - Introduction of nutrition

S.N.	Items	Correct responses frequency	Percentage
1	Meaning of good nutrition	57	57%
2	Importance of good nutrition	53	53%
3	Meaning of "Balanced Diet"	52	52%
4	Why is normal nutrition necessary for the children	51	51%
5	Good nutrients are found in	55	55%
6	What should be the first feed for the baby	64	64%
7	What do you mean by colostrums	44	44%
8	How does colostrums benefit to the child	52	52%
9	How long should the child should be on exclusive breast feeding	43	43%
10	At what age should solid food should be introduced	46	46%

Area: 2 - Causes, sign & symptoms of PEM

11	What is Malnutrition	56	56%
12	What is Protein-energy malnutrition	46	46%
13	Which age group of children are more prone for protein-energy malnutrition	59	59%
14	What are the types of protein-energy malnutrition	42	42%
15	Which are the following factors that influences PEM in under five children	52	52%
16	Which is the main cause for PEM in under five children	55	55%
17	What is the major cause of protein-energy malnutrition	58	58%
18	What are the prime indicators of malnutrition	59	59%
19	How does the child with marasmus look like	48	48%
20	What is the common symptoms of the child with protein-energy malnutrition	61	61%
21	How can identify energy (Carbohydrate) deficiency in Children	47	47%
22	How can identify Protein deficiency in Children	49	49%

Area: 3 - Prevention & Management of PEM

23	Where can give the best treatment for the child with Protein-energy malnutrition	53	53%
24	When will take child to the hospital with Protein-energy malnutrition	54	54%
25	How will manage the child with Protein-energy malnutrition	51	51%
26	When start weaning along with breast-feeding to prevent protein-energy malnutrition	61	61%
27	What are the low cost components served to prevent protein energy malnutrition	65	65%
28	What are the main sources of protein (body building food)	57	57%
29	What precautions will you take while preparing supplementary food	69	69%
30	Protein diet is necessary for	63	63%

TABLE: 5

PERCENTAGE DISTRIBUTION OF OVERALL KNOWLEDGE AND AREA WISE KNOWLEDGE OF MOTHERS OF UNDER FIVE CHILDREN REGARDING PEM

N=100

Knowledge in specific areas	Score	< 50%		50-75%		>75%	
		Low knowledge		Average knowledge		High Knowledge	
		F	%	F	%	F	%
Introduction	**10**	**34**	**34**	**59**	**59**	**7**	**7**
Causes, sign & symptoms of PEM	**12**	**25**	**25**	**70**	**70**	**5**	**5**
Prevention & Management	**8**	**20**	**20**	**70**	**70**	**10**	**10**
Total	**30**	**55**	**55**	**40**	**40**	**5**	**5**

Table 5 represents the percentage distribution of knowledge levels of mothers of under five children regarding PEM. The specific areas were as follows: introduction, Causes, sign & symptoms of PEM, Prevention & Management.

In introduction, it was observed that 34% mothers had low knowledge, followed by average knowledge 59% and very few of the samples had high knowledge 7%.

Knowledge on Causes, sign & symptoms of PEM clearly indicated that 25% had low knowledge, followed by average knowledge 70%and very few of the samples had high knowledge 5%.

In Prevention & Management 20% of mothers had low knowledge, 70% followed by average knowledge and 10% mothers had high knowledge.

2.6.3 Section III:

This section deals with the association between knowledge score and selected demographic variables by using inferential statistics.

TABLE: 6

ASSOCIATION BETWEEN AGE AND KNOWLEDGE SCORE OF PARTICIPANTS

N = 100

S.N.	Age	Participants knowledge score		Total	Calculated value of x^2	d_f	Level of significance	Tabulated value of x^2 at given d_f and level of significance
		Median & below median	Above median					
1	18- 21 years	10	5	15				
2	22-25 years	18	17	35				
3	26-29 years	22	17	39	1.42	3	5%	7.82
4	30 years above	5	6	11				
	Total	55	45	100				

The above table shows that the calculated value is less than the tabulated value, so there is no significant association between the knowledge scores and the age at the 5% level of significance. Hence the null hypothesis is accepted.

TABLE: 7

ASSOCIATION BETWEEN EDUCATION AND KNOWLEDGE SCORE OF PARTICIPANTS

N = 100

S.N.	Educational status	Participants knowledge score		Total	Calculated value of x^2	d_f	Level of significance	Tabulated value of x^2 at given d_f and level of significance
		Median & below median	Above median					
1	Primary (5^{th})	30	5	35				
2	Middle (8^{th})	15	20	35				
3	Secondary (10^{th})	5	10	15				
4	Senior secondary or above (12^{th} or above)	5	10	15	21.08	3	5%	7.82

The above table shows that the calculated value is greater than the table value, so there is a significant association between the knowledge scores and the education at the 05% level of significance. Hence the null hypothesis is rejected.

TABLE: 8

ASSOCIATION BETWEEN OCCUPATION AND KNOWLEDGE SCORE OF PARTICIPANTS

N = 100

S.N.	Occupation	Participants knowledge score		Total	Calculated value of x^2	d_f	Level of significance	Tabulated value of x^2 at given d_f and level of significance
		Median & below median	Above median					
1	Housewife	17	27	44	19.29	3	5%	7.82
2	Labour work	7	4	11				
3	Animal husbandry	27	5	32				
4	Service or Other	4	9	13				
	Total	55	45	100				

The above table shows that the calculated value is greater than the table value, so there is a significant association between the knowledge scores and the occupation at 5% level of significance. Hence the null hypothesis is rejected.

TABLE: 9

ASSOCIATION BETWEEN INCOME AND KNOWLEDGE SCORE OF PARTICIPANTS

N = 100

S.N.	Income	Participants knowledge score		Total	Calculated value of x^2	d_f	Level of significance	Tabulated value of x^2at given d_f and level of significance
		Median & below median	Above median					
1	Less than Rs.5000	14	6	20	20.29	3	5%	7.82
2	Rs. 5001-10,000	27	9	36				
3	Rs. 10,001-15,000	12	17	29				
4	Above Rs.15,000	2	13	15				
	Total	55	45	100				

The above table shows that the calculated value is greater than the tabulated value, so there is a significant association between the knowledge scores and the income at 5% level of significance. Hence the null hypothesis is rejected.

TABLE: 10

ASSOCIATION BETWEEN NO. OF CHILDREN AND KNOWLEDGE SCORE OF PARTICIPANTS

N = 100

S.N.	Income	Participants knowledge score		Total	Calculated value of x^2	d_f	Level of significance	Tabulated value of x^2at given d_f and level of significance
		Median & below median	Above median					
1	One	24	11	35	5.18	2	5%	5.99
2	Two	22	28	50				
3	Three	9	6	15				
	Total	55	45	100				

The above table shows that the calculated value is less than the table value, so there is no significant association between the knowledge scores and no. of children at 5% level of significance. Hence the null hypothesis is accepted.

III. RESULT

The findings of the study are discussed following 3 main categories:

- Sample characteristics
- Knowledge scores of participants on Protein-Energy Malnutrition.
- Association of knowledge with selected demographic variables.

3.1 Sample characteristics:

- Findings revealed that the highest percentage 39% were in the age group of 26-29 years, 35% were in 22-25 years, 15% between 18-21 years and 11% was 30 years above.
    - This finding is supported by a study conducted by Samanthika Ekanayake, Jeevika Weerahewa and Anoma Ariyawardana on Role of Mothers in Alleviating Child Malnutrition. According to this supporting study all the mothers in the sample are between 20-43 years of age. 56 per cent of mothers are in 31-40 of age category and 42 and 2 per cent of mothers are in 20-30 and above 41 age groups respectively. Age of the mother shows a significant positive relationship indicating that the children of younger mothers have lesser chance to get malnourished than that of the older mothers. It indicates that the delay in marriage, which delays fertility too, is closely related with their children's malnutrition.[59]
- Distribution of the mothers of under-five children according to their educational status reveals that 35% were holding primary education, 35% were holding middle school education, 15% of them were secondary education, 15% of them were senior secondary or above.
    - This finding is supported by a study conducted by Shettigar D, Ansila M, George M, Chacko J, Thomas RJ, Shukoor S on Assessment of Knowledge of Mothers of Under five Children on Nutritional Problems. This cross sectional descriptive study was conducted to assess mothers of under-five children residing at rural community area. 50 mothers were selected through Non probability convenient sampling. The data was collected using a pretested structured questionnaire. Nearly 24(48%) of mothers had completed their secondary education, 12(24%) and 6(12%) have completed their graduation.[60]
- Distribution of the mothers of under-five children according to their occupation reveals that majority of mothers 44% were housewife, 11% from labour work, 32% have animal husbandry and 13% were service or other.
- Findings of this study are correlated to a cross-sectional and descriptive study was carried out in low-income earners in malyapur, the head quarter of malyapur local government area of Maharashtra state, India. The study was carried out in 2010.The socioeconomic status of the mothers revealed that majority of these low income mothers of the Under-5 children under study, were petty traders (46.23%), 31.3% were engaged in subsistence farming, 10.67% were either low cadre civil servants or primary school teachers, 4.7% were artisans (hair dressers, tailors) while 7.1% were unemployed. It was also observed that over 6 members were present in many of the households (55.56%) while about 47.1% of the mothers of these children earned a monthly income of between N3, 600 - N5, 900.[61]
- Percentage distribution of the mothers of under-five children according to the income per month revealed that most of the participants 36% belong to Rs 5001-10,000 income group, 29% of them belong to Rs, 10,001-15,000 income groups, 20% of them belong to Rs, less than 5000 income groups and only 15% of the samples have income above Rs. 15,000 per month.
    - In a survey focusing on low-income areas of the United States, 22-35% of children aged 2-6 years were below the 15th percentile for weight. Another survey showed that 11% of children in low-income areas had height-for-age measurements below the 5th percentile. Poor growth is seen in 10% of children in rural populations.[62]
    - Above findings are related to a study conducted by Shettigar D, Ansila M, George M, Chacko J, Thomas RJ, Shukoor S on Assessment of Knowledge of Mothers of Under five Children on Nutritional Problems.

This cross sectional descriptive study was conducted to assess mothers of under-five children residing at rural community area. 50 mothers were selected through Non probability convenient sampling. The data was collected using a pretested structured questionnaire. Based on family 30(60%) of them belong to nuclear family. 24(48%) have their monthly income of Rs 3000-5000 and 5(10%) had more than Rs 10000.[63]

- The analyzed data regarding no. of children reveals that highest percentage 50% mothers have two children, 35% mothers have one child and 15% mothers have three children.
    - Above findings are related toa case-controlled study conducted in a rural area in Tamil Nadu, India. Thirty-four cases and 34 controls were selected from the population of approximately 97,000 by using the local hospital's list of young children. A case was defined as a mother of a severely malnourished child under four years of age. Severe malnutrition was defined as having less than 60 percent of expected median weight-for-age. Poor nutritional knowledge was associated with birth order and no. of children.[64]

3.2 Knowledge scores of participants on Protein-Energy Malnutrition:

The overall mean knowledge score obtained by mothers of under-five children was 16.22 and median score is 15 with standard deviation 3.14 and the knowledge score were in the range of 11-24.

- The fact was supported by a study done at Kota (2004) on protein energy malnutrition among mothers of under-five children and found that 43% mothers not had adequate knowledge during pre test.
- Area wise analysis of knowledge score of mothers of under-five children indicated that maximum knowledge score was 59.13% in the area of prevention and management of PEM, 52.67% in the area of causes, sign & symptoms of PEM, 51.7% in the area of Introduction of nutrition.

The data showed that majority of mothers of under-five children had knowledge regarding protein energy malnutrition.

3.3 Association of knowledge scores and selected demographic variables:

- There is a significant association between the knowledge score of mothers and selected demographic variables like **education** of participantsx^2= 21.08, **occupation** of the participants x^2 = 19.29 and **Income of family** of participants x^2= 20.29 Hence the null hypothesis is rejected at the 0.05 level of significance.
    - Above findings are related toa cross-sectional descriptive study of 300 children aged less than 5 years and their mothers/caregivers was conducted, using a multistage sampling technique. Out of the 300 children studied, 87 (29%) were found to have under weight, 21 (7%) were wasted, and 93 (31%) were stunted. The majority (65%) of the mothers/caregivers have no form of formal education. There was a significant statistical association between maternal literacy status and occurrence of malnutrition among the children studied.[65]
    - Above findings are related toa study conducted on 212 children with PEM who were admitted during the period, under review comprising of 127 (59.9%) males and 85(40.1%) females. The most common age groups with PEM were 6 to 60 months. Marasmus (34.9%) was the most common form of PEM noted in this review. Majority (64.9%) of the patients were from the lower socio-economic class. The overall case fatality rate was 40.1% which was slightly higher lower income class. The study revealed significant association between knowledge of mothers of children and family income.[68]
    - Above findings are related toa study conducted by Rathnayake and Weerahewa (2003) who have conducted a study on role of mothers income in alleviating calorie malnutrition in Sri Lanka. They have used a sample of 183 from urban, rural and estate sectors. They have found, when the mother is an income earner, the total household income is increased and there may be a higher chance of getting better quality foods in sufficient quantities. In addition, when mother is an income earner she has a higher bargaining power and could decide independently on expenses. Nevertheless, there is a possibility of reduction in frequency of breastfeeding and time spent with her children when mothers become income earners. Hence, depending on the degree of these two factors there may be either a positive or a negative effect on the malnutrition of the children.[61]

- There is no significant association between the knowledge level of mothers and selected demographic variables like **Age**x^2= 1.42, **No. of children**x^2 = 5.18 Hence the null hypothesis is accepted at the 0.05 level of significance.
    - Odisha is one of the backward States in India and the district Koraput, where majority of the population is below poverty line with high infant mortality and under nutrition. A total of 600 households having below 5 year children from 30 randomly selected villages in the district were covered for study. The study revealed significant association between knowledge of mothers of infants and age of mother.[69]
    - A case control study was carried out among children aged one to five years attending the paediatric outpatient department in six rural health care centres in Udupi taluk of Karnataka. A total of 162 children were included in the study, of which 56 were cases. The nutritional status was graded according to the Indian Academy of Paediatrics (IAP) grading of protein-energy malnutrition. Under-nutrition was associated with having more than two children with a birth interval ≤2 years.[70]

IV. DISCUSSION

This chapter discusses the major findings of the study and reviews that in relation to findings from the result of the previous study. The Present study is an effort to assess the knowledge among the Mothers of under-five children regarding Protein-Energy Malnutrition in selected Area at Bandikui, Dausa.

The discussion of the findings is much more subjective section of a research report than presentation of findings. The discussion of findings section of a study allows the researcher to make interpretation of the findings.[45]

The nature of the study was descriptive. This study was conducted in selected area of Bandikui. It was designed to assess the knowledge of the mothers' of under-five children regarding Protein-Energy Malnutrition. The data was collected to find out the knowledge of 100 mothers in selected area by using socio demographic data and structured questionnaire prepared by the investigator.

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