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A Descriptive Study to Assess the Prevalence of PEM among Preschool Children in Rishikesh, Uttarakand

Vasantha Kalyani*, S.K. Mohanaasundari**

Author Affiliation
*Associate Professor, College of Nursing, AIIMS, Rishikesh, Uttarakand, India.
**Faculty, College of Nursing, AIIMS, Jodhpur, Rajasthan, India.

Reprint Request
S.K. Mohanasundhari, Faculty, Pediatric Nursing, College of Nursing, AIIMS Jodhpur-342005 Rajasthan, India.
E-mail: roshinikrishitha@gmail.com

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Abstract

A study includes 50 preschool children, a quantitative, descriptive study. Purposive sampling technique were adopted, basic anthropometric were assessed, and it was found 1 child is 3rd degree malnourished, 9 children were 2nd degree malnutrition, and 12 children were 1st degree malnourished, and 28 children were well nourished.

Keywords: Anthropometric; Malnutrition.

Introduction

Nearly one in five children under age five in the developing world is underweight (MDG report, 2012) [1] and it continues to be a primary cause of ill health and mortality among children. The World Health Organization (WHO) has reported hunger and related malnutrition as the greatest single threat to the world's public health. One in every three malnourished children of the world lives in India and under-nutrition is a major cause in more than half of under-five deaths. In India, around 43% of under five children were underweight according to the report of third national family health survey (NFHS- 3) conducted during 2005-06 whereas in rural Uttar Pradesh, it was 44.1% [1]. Malnutrition has shown to be an important concern in children because of rapid growth and development [2]. Pre-school children are most vulnerable to the effect of protein energy malnutrition (PEM) and their nutritional status is considered to be a sensitive indicator of community health, so that the present study was conducted to study the epidemiology of protein energy malnutrition among pre school children (3-6 years) in rishikesh.

PEM results from various factors, including inadequate intake of nutrients, abnormal gastrointestinal assimilation of the diet, and stress response to acute injury or chronic inflammation Studies in developing countries investigating the possible determinants of child growth showed the nutritional status of children has a significant inverse relationship with the household income, immunization status and childhood illness, intestinal parasitic infections and childhood nutrition also have been significantly associated with the nutritional status of children.

Several studies showed that maternal education emerges as a key element of an overall strategy to address malnutrition [3]. The best global indicator of children's well being is growth. Poor growth is attributable to a range of factors closely linked to overall standards of living and the ability of populations to meet their basic needs, such as access to food, housing and health care. Assessment of growth is the single measurement that best defines the nutritional and health status of children, and provides an indirect measurement of the quality of life of the entire population.

Aims & Objectives

- To assess the prevalence of PEM among

preschool children

- To assess the distribution of various degree of PEM according to Gomez classification.
- To associate the prevalence of PEM among pre school children with selected demographic variables

Materials and Methods

A quantitative approach, non experimental descriptive study design was adopted for this current study. A study was carried out in three Anganwadi in Rishikesh, Dehradum dist. The target population was preschool children's. Purposive sampling technique was adopted to select 50 preschool children's. The parents were interviewed to get the necessary information. A structured tool was used to collect the data. The tool contains demographic variables and anthropometric measurement of the child. General information like name of the child, father's name, age and sex of the child, place of living, birth order of the child, number of sibling, parents educational status, type of family, income of the family, food habit of the children, immunization history and current illnesses was collected from the parents. Basic anthropometric measurement was taken from each child includes, weight, height, mid arm circumference. Concern taken from parents Descriptive and inferential statistics where used to analyze the data. The grading of PEM was done as per the Gomez classification.

i. Setting and Participants:

ii. Tools and Techniques:

iii. Description of Intervention:

iv. Ethical Considerations:

v. Statistical Methods:

Results

It was found that there was 44% percentage of children malnourished and 56 % of children were nourished up to their age (Table 1).

It was found that more than half of the children were nourished well and 24 % of preschool children having 1st degree PEM, 18% of preschool children were suffering from 2nd degree PEM and only 2% of preschool children is suffering from 3rd degree PEM (Table 2).

It was found that there [3] is no significant association exit between age, sex, place of living, birth order of the child, educational status of the parents, types of family, economic status of the family, child food habit, and immunization status, but there was significant association exit between the prevalence of PEM and number of siblings, recent or current illness like diarrhoea, URTI. It was tested with X^2 with "p" value of 5% (Table 3).

Table 1: Distribution of PEM

Distribution of PEM	Frequency	Percentage B
Presence of PEM	22	44%
Adequately Nourished	28	56%

Table 2: Distribution of Degree of protein energy malnutrition (Gomez classification)

Degree of Malnutrition	Grading	Frequency	Percentage
Nourished	>90%	28	56%
1st degree PEM	76-90%	12	24%
2nd degree PEM	60-75%	9	18%
3rd degree PEm	<60%	1	2

Table 3: Frequency, percentage distribution and Association of demographic variables

Demographic variables	Frequency	Percentage %	X^2	'P' value
Age				
3-4years	20	40	1.919	5.99
4-5yeqars	18	36		
5-6years	12	24		
Sex				
Male	24	48	1.413	3.84
Female	26	52		
Place of living				
Rural	29	58	0.169	3.84
Urban	21	42		

Birth order				
1	28	56	2.37	7.82
2	14	28		
3	5	10		
4&above	3	6		
Number of siblings				
0	15	30	29.97*	7.82
1	21	42		
2	10	20		
3 & above	4	8		
Educational status of the father				
Educated	49	98	0.397	3.84
Uneducated	1	2		
Educational status of the mother				
Educated	46	92	0.912	3.84
Uneducated	4	8		
Types of family				
Joint	24	48	0.082	3.84
nuclear	26	52		
Economic status of the family				
Low class	12	24	4.60	7.82
Middle class	30	60		
Upper middle	5	10		
Upper class	3	6		
Food habit of the child				
Vegetarian	17	34	0.983	5.99
Non vegetarian	26	52		
Ova vegetarian	7	14		
Immunization history				
Complete	48	96	0.478	3.84
Incomplete	2	4		
Suffering with diarrhoea or URTI etc				
Yes	39	88	4.96*	3.84
No	11	22		

Note: * = significant difference

Discussion

The WHO (2000) has estimated that 182 million children, representing 32.5% of all preschool children fewer than 5 years of age in developing countries are malnourished and over two-thirds of them live in Asia, especially southern Asia. Many studies have been carried out regarding the prevalence and determinant factors of PEM in India.

In present study prevalence of PEM and its relation to various epidemiological factors was assessed in 50 children on the basis of weight for age. Out of total 50, 40% (20) were in 3-4 year, 36% (18) were 4-5years, and 24% (12) were 5-6 years of age. According to sex more than half of the children were female (52%) and 48% (24) were male children. Over all it was found that more than half of the children (56%) were health and nourished, and only 44% of children were malnourished. The incidence of 3rd degree PEM was found to be just 2%, were as 1st degree PEM was 24 %(12) and 2nd degree PEM was 18% (9).

In this study, grade 1 and grade 2 PEM is higher rate than grade 3 PEM. The number of sibling and current health problem was having significant influence on development of various grades of PEM among children of 3-6 age groups.

Conclusion

India stands at a very vulnerable position with one of the highest prevalence of under nutrition in the world in spite of improvement in food availability and poverty alleviation. In addition to it, numerous determinants play a role in its causation. The interplay of these determinants and their complementary effect makes it difficult to isolate one key factor in causing under nutrition [4].

The extent of malnutrition can be countered by educating the parents with respect to basic nutritional requirements of their children and encouraging them to consume locally available low cost nutritious foods [5].

Source of Support

· Books,

- Journals
- WHO guidelines
- Online journals,
- WEB pages,
- Blog posts

Conflict of Interest

Prevalence of anemia can be assessed with clinical observation method rather than invasive method for preschool children with PEM.

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