

An observation study to assess the nutritional status of preschool children in selected anganwadi centers

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ABSTRACT

Malnutrition is the major health problem in India. Protein Energy Malnutrition (PEM) accounts for death in 7% of cases and is the underlying causes of death in 46% below 5 years of age. Anganwadi is nutritional program to combat child hunger and malnutrition. Malnutrition is defined as a pathological state resulting from a relative or absolute deficiency or excess of one or more essential nutrients. Weight for age, Height for age and Weight for height are usually used to describe the nutritional status of children. The present study was done to compare the anthropometric measurements of children attending urban and rural Anganwadi centers. In this research two Anganwadi centers of Adityapur and Golphadhi area of Jharkhand were selected. Non experimental research approach with descriptive and comparative research design, Random sampling technique was used to select the sample style of 60 preschool children. The present study shows that there are many children who are undernourished and severely malnourished. Awareness of mother regarding nutrition of their children exists but it can be further improved with basic health knowledge awareness and proper counseling by the Anganwadi workers.

Key Words : Malnutrition, Anganwadi, Protein Energy malnutrition

INTRODUCTION

Today's child is father of tomorrow's man. It is the child who will carry the present day's genes to future generation. Preschool children are the most vulnerable groups constituting 36% of the total Population of India. The rate of the growth and development of preschool children depend to a large measure on the adequacy of the diet consumed by them. Growth assessment is the single most useful tool for defining health and nutritional status in children at both the Individual and population levels.

Malnutrition of the preschool children can be a major hurdle to socio economic development of the nation in the future years. Measurement of weight, height and mid upper arm circumferences are reliable means to evaluate the progress of normal child and for early childhood as it affect the mental, physical and emotional development of children and their future productivity.

The nutritional uplift of people especially in India can come about only as part and parcel of a overall socio economic development of rural areas where 80% of people live, the government of India has Initiated several large scale supplementary feeding programs aimed at overcoming specific deficiency diseases through various ministries to combat malnutrition.

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ICDS program is organized through Anganwadi centers in Rural and urban areas hence an attempt was made to assess the growth pattern and nutritional status preschool children attending Anganwadi centers of Urban and Rural areas through anthropometric measurement.

Three Indicators used for classification by comparison with a references population (NCHS/WHO International growth references) are weight for height, weight for age and height for age. A prevalence of wasting or acute malnutrition between 5 – 8 % Indicates a worrying nutritional situation and prevalence greater than 10% corresponds to a serious nutritional situation (SCN, 1995).

A lot of studies reports that there exist problem of malnutrition among preschool children , Hence an attempt was made to assess the nutritional status of preschool children attending Anganwadi centers of urban and rural areas through Anthropometric measurements.

Review of literature :

The literature pertaining to the present study is reviewed under the following subheads:

Studies in India:

The study undertaken to assess the impact of drought on the nutritional status of preschool children aged 0-5 years from a rural population in a desert area facing drought in Western Rajasthan revealed growth retardation and Stunting (malnutrition of long duration) in 53% of children and underweight in 60%. Due to inadequate consumption of daily food the children were suffering from wasting and PEM (Bhandari and Choudhry, 2006).

A cross sectional study conducted on 551 children of both sex aged 4 years in the Bharia – a primitive tribe of Madhya Pradesh . Body weight, height, sitting height, mid upper arm circumference, chest circumference, biceps, triceps, sub scapular and calf skin fold thickness were measured. Body mass index was calculated as weight/height to calculate chronic energy deficiency. The BMI According to the Indian standard was normal, but when the data was compared with the international standard malnutrition in both sexes was noticed in childhood. Boys remained undernourished after adolescence, while girls reached normal growth patterns (Tiwari *et al.*, 2007).

A study was conducted among the Onge tribe of the Andaman and Nicobar Islands with the objectives of assessing their nutritional status. The study Included estimation of Indices of assessment of nutritional status. A mild to moderate degree of malnutrition was found in 85% of children of preschool age and severe malnutrition 10%. The Onge's had low intakes of iron vitamin A and vitamin C. The high prevalence of under nutrition and micro nutrient deficiency disorders could be important factors contributing to the high childhood mortality (Kumari, 2005).

The dietary adequacy (qualitative and quantitative) of preschool children residing in rural areas near Mysore (a district in south India) was assessed by the 'Food frequency method' and '24-hr recall method'. The overall nutrient intake was found to be inadequate. Irrespective of the seasons nutritional status was found to be a factor influencing nutrient intake. Apart from age, nutritional status and food availability, feeding practices may also influence the intake of the preschool children (Lakshmi *et al.*, 2005).

Radhakrishna and Ravi (2004) examines the 'malnutrition in India – trends and determinants' analyses trends in malnutrition over the past two decades and shows that improvements in nutritional status have not kept pace with the reduction in poverty and the current level of malnutrition is unacceptably high. About half of the preschool children are malnourished and are exposed to the risk of functional impairments (Chhabra and Rokx, 2004).

Studies conducted Abroad :

“According to the study conducted by Joure. K. (1995) in Senegal to determine the prevalence of protein, energy malnutrition in a population of children under fives.

The nutritional status of preschool children mean of the daily intake of all nutrients were found lower than their respective Recommended Dietary Intake (RDI). Mean of height and weight of 60 children were found lower in two areas when compared to their reference values (Lakshmi *et al.*, 2005).

METHODOLOGY

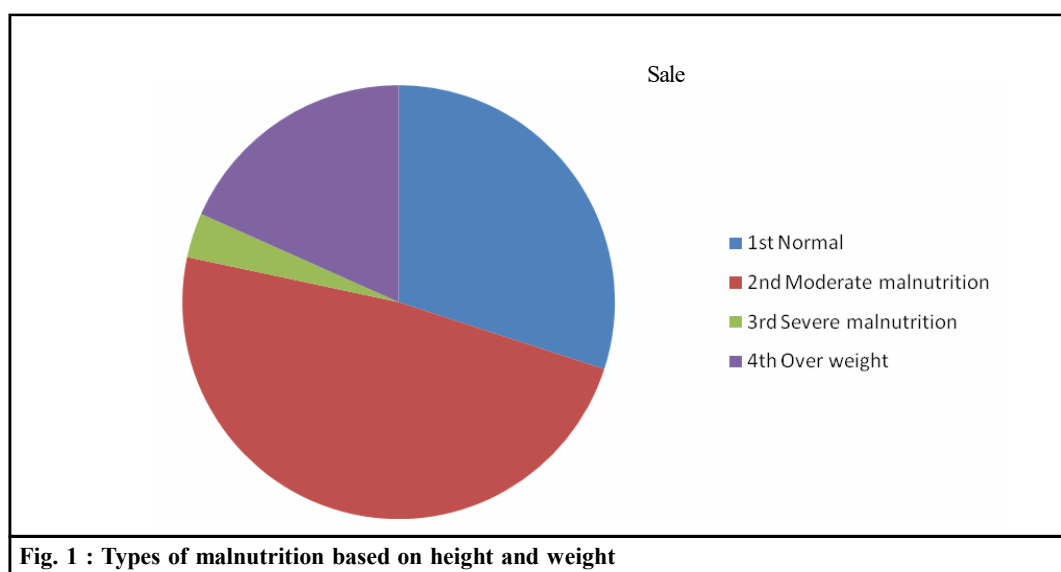
The research work was aimed at studying the nutritional status of pre school children in rural and urban Anganwadi centers. Primary and Secondary data were collected. Several visits were made to Adityapur Indira Basti And Haludbani Kochakuli Golphadhi in Jamshedpur of Jharkhand state.

To compare the nutritional status of preschool children in different Anganwadi centers.

Descriptive analysis of sample :

60% of children in both Anganwadi are in moderate malnutrition (48.33%) were found in normal (30%) are severe malnutrition are (3.33%) and over weight for (18.33%) of children are Anganwadi.

Table 1 : Types of malnutrition based on height and weight			
Range	Description	Frequency	(N = 60)
-2 SD to + 2 SD	Normal	18	30%
-2SD to - 3SD	Moderate Malnutrition	29	48.33%
< -3SD	Severe Malnutrition	02	3.33%
+2SD to + 3SD	Over Weight	11	18.33%



Number of normal girls in Anganwadi 'A' was less (26.66%) and in Anganwadi 'B' it was very high i.e. (80%). The number of normal boys in Anganwadi 'A' and Anganwadi 'B' was equivalent i.e. (6.66%). Number of moderately malnourished girls was (60%) in Anganwadi 'A' where as in Anganwadi 'B' it was only (6.66%) moderately malnourished boys in Anganwadi 'B' was (80%) and (6.66%) in Anganwadi 'B'. No boys or girl was found severely malnourished in Anganwadi 'A'. where as (1) girl and (1) boy was found in severely malnourished in Anganwadi 'B'. (2) boys and (2) girls were found to be over weight in Anganwadi 'A' where as (6) boys were found to be overweight in Anganwadi 'B'.

Table 2 : Types of malnutrition based on height and weight

Range	Description	Anganwadi 'A'				Anganwadi 'B'			
		Girls		Boys		Girls		Boys	
		F	%	F	%	F	%	F	%
-2 SD to + 2 SD	Normal	4	26.6	1	6.66	12	80	1	6.66
-2SD to - 3SD	Moderate Malnutrition	9	60	12	80	1	6.66	7	46.66
< -3SD	Severe Malnutrition	0	0	0	0	1	6.66	1	6.66
+2SD to + 3SD	Over Weight	2	13	2	13.33	1	6.66	6	40

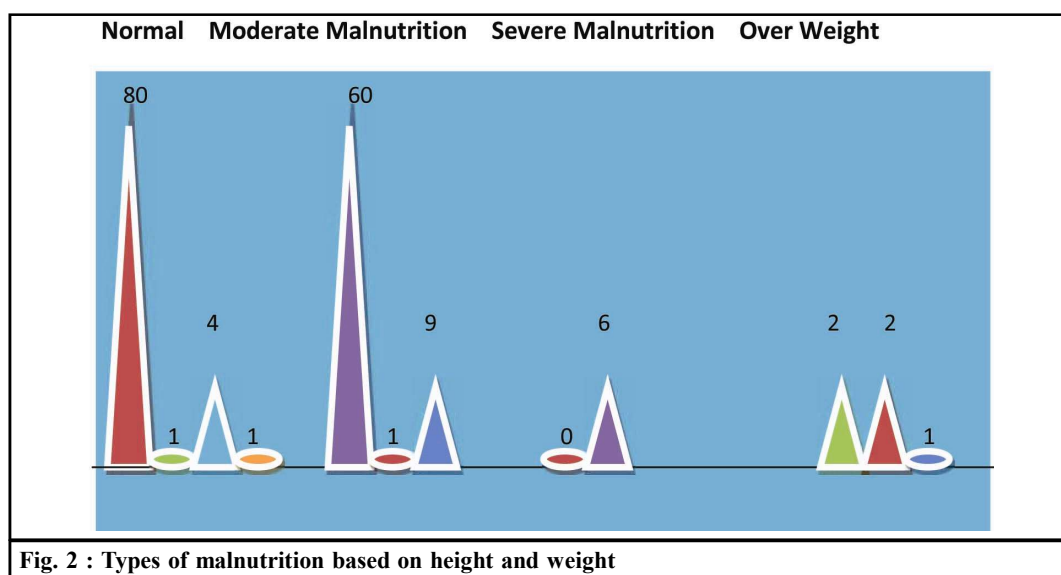
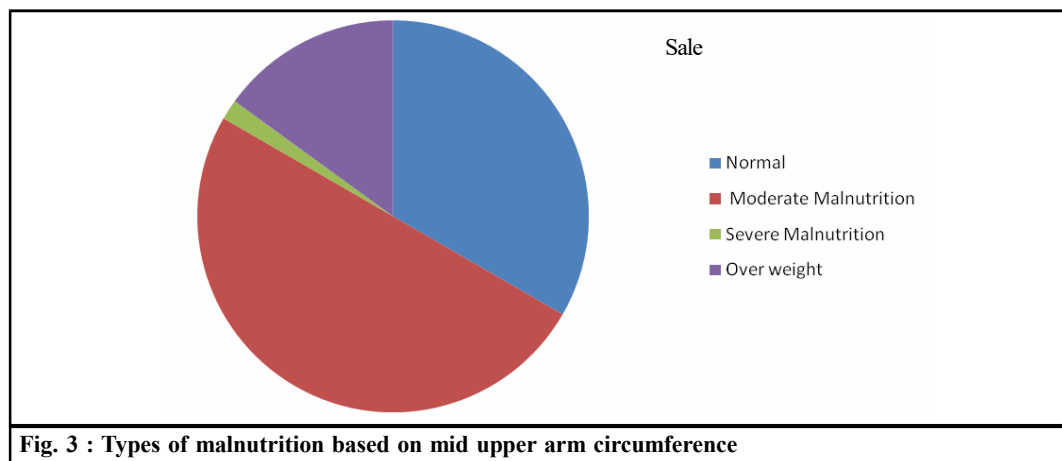


Fig. 2 : Types of malnutrition based on height and weight

60% of children in both Anganwadi centers are in the moderate malnutrition (1%) are in wasted category of children are overweight then (20%) of children are Anganwadi in Normal.

Table 3 : Types of malnutrition based on mid upper arm circumference

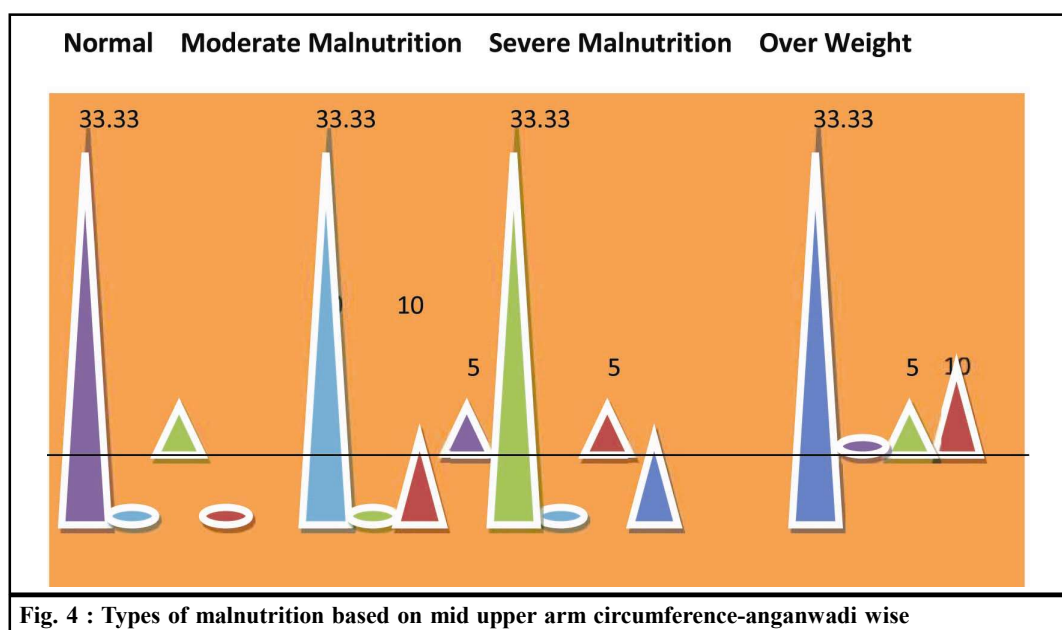
Range	Description	Frequency (N = 60)	
		Frequency	Percentage
-2 SD to + 2 SD	Normal	20	33.33%
-2SD to - 3SD	Moderate Malnutrition	30	50%
< -3SD	Severe Malnutrition	1	1.66%
+2SD to + 3SD	Over Weight	9	15%



The percentage of normal children is slightly higher (33.33%) in Anganwadi 'B' than in 'A' (33.33%). There are (33.33%) Moderate Malnourished and two wasted in Anganwadi 'A' then Anganwadi 'B' has (16.66%) Severe moderate malnutrition and (16.66%) are found in wasted children Overweight.

Table 4 : Types of malnutrition on mid upper arm circumference- anganwadi wise

Range	Description	Anganwadi 'A' (N=30)		Anganwadi 'B' (N=30)	
		Frequency	Percentage	Frequency	Percentage
-2 SD to + 2 SD	Normal	10	33.33%	10	33.33%
-2SD to - 3SD	Moderate Malnutrition	10	33.33%	10	33.33%
< -3SD	Severe Malnutrition	5	16.66%	5	16.66%
+2SD to + 3SD	Over Weight	5	16.66%	5	16.66%



RESULTS AND DISCUSSION

Findings related to frequency distribution of malnutrition (Height and weight):

The distributions of children by height and weight for children (60%) of children in both Anganwadi are in normal level of malnutrition. Anganwadi A 70% are moderate malnutrition and Anganwadi B 8 % are moderate malnutrition. 13.33% overweight for Anganwadi A and 23.33% overweight Anganwadi B. Then 6.66% severe malnourished for Anganwadi B.

Finding related to frequency distribution of malnutrition :

Mid upper arm circumference :

The distribution of children by mid arm for children 50% of children in both the Anganwadi are in normal level of malnutrition. 16.66% are in wasted category 8.33% children are overweight in level of malnutrition.

Recommendation:

1. The anthropometric measurement are an easy techniques to record the data measuring tape is easy to carry and hence, can be done even at for away places. This method can be recommended for assessment of nutritional status.
2. Dietary modifications have to be done to ensure the intake of increased calorie and protein.
3. Uses of non expensive, culturally nutritious recipes with the inclusion of green leaf vegetable and milk should be encouraged.

Summary :

Today's child is father of tomorrow's man. It is the child who will carry the present day's genes to future generation. Preschool children are the most vulnerable groups constituting 36% of the total population of India. The rate of growth and development of preschool children depend to a large measure on the adequacy of the diet assumed by them. Growth assessment is the single most useful tool for defining health and nutritional status in children at both the individual and population levels. Malnutrition of the preschool children can be a major hurdle to socio economic development of the nation in the future years.

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