

# Prevalence of malnutrition among pre-school children of Khagaria district of Bihar

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The present study was conducted on randomly selected 100 pre-school children of Pansalwa village of Beldaur block of Khagaria district of Bihar. Gomez as well as Waterlow's classification and MUAC value were used as tools to assess per cent prevalence of malnutrition among children. An equal per cent (33%) of children had been assessed as 'normal' according to Gomez as well as Waterlow's classification. A major per cent (55%) of children was categorized under 'Mild Malnutrition' grade, whereas, 12 per cent children were moderately malnourished according to Gomez classification. According to Waterlow's classification 77 per cent children were assessed as stunted. MUAC value put on records 37 per children under normal, 56 per cent under moderate and 7 per cent under severe malnutrition category.

**Key Words :** Prevalence, Malnutrition, Gomez classification, Waterlow's classification, Mid Upper Arm Circumference (MUAC).

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## INTRODUCTION

Malnutrition is one of the major public health problems in most of the developing countries including India. Nearly two out of three pre-school children in India are malnourished (Shri Laksmi, 2000).

India is a developing country, accounts for less than 20% of the world's child population but it has 40% of the malnourished children. Malnutrition varies widely across regions, states, age, genders and social groups, with children under 5 years being the worst hit. In Kerela, 29% of children under four years age are moderately or severely underweight, while the corresponding figures for Bihar and Uttar Pradesh are 63% and 59%, respectively.

Assessment of nutritional status of community is one of

the first steps in the formulation of any public health strategy to combat malnutrition. The principal aim of such an assessment is to determine the type, magnitude and distribution of malnutrition in different geographic areas to identify the at-risk group and to determine the contributory factors. In addition, factual evidence of the exact magnitude of malnutrition is essential to sensitize administrators and politicians to obtain allocation of material and resources, and to plan appropriate intervention strategies (Jelliffe, 1966).

Assessment of prevalence of malnutrition in any community is the urgent necessity, and provides the basis for formulation of intervention strategies to combat malnutrition. Therefore, the present study aimed to assess prevalence of malnutrition among pre-school children of Khagaria district of Bihar.

## METHODOLOGY

Hundred preschool children were selected randomly from village Pansalwa of Beldour block of Khagaria district for the present study.

Gomez classification, Waterlow classification and MUAC value were used as assessment tools. These tools are described here under in Table A-C.

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**Table A. Gomez classification**

Indicator	Cut-off level as % of NCHS median	Type/ degree of malnutrition	Usefulness
Weight/age	< 60	Severe	Index of current & past nutritional status
	60-76	Moderate	
	76-90	Mild	
	>90	Normal	

**Table B. Waterlow classification**

Indicator		Type/degree of malnutrition	Usefulness
% weight/Age cut-off level as % of NCHS median	% weight /Ht cut-off level as % of NCHS median		
> 90	> 80	Normal	Identified type and duration of malnutrition
> 90	< 80 wasted	short duration malnutrition	
< 90	> 80 stunted	long duration malnutrition (nutritional dwarf)	
< 90	< 80 stunted and water	current and long duration malnutrition	

**Table C. MUAC based classification**

MUAC value (cms)	Type/degree of malnutrition
>13.5	Normal
12.5 - 13.5	Moderate
< 12.5	Severe

**OBSERVATIONS AND ASSESSMENT**

It is evident from Table 1 that according to Gomez classification a major percentage (55%) of children had been assessed under mild malnutrition grade followed by normal children (33%) and moderately malnourished children (12%), respectively.

**Table 1.** Per cent prevalence of malnutrition among preschool children (Gomez classification)

Sl. No.	Grade of malnutrition cut-off level as % of NCHS median	Pre-school children (n=100)
1	Normal >90 %	33
2	Mild malnutrition 76 – 90 %	55
3	Moderate malnutrition 60 – 76 %	12
4	Severe malnutrition < 60 %	0

**Table 2.** Per cent prevalence of malnutrition among children (Waterlow’s classification)

Sl. No.	Grade of malnutrition cut-off level as % of NCHS median	Pre-school children (n=100)
<b>Normal</b>		
1	% Wt/Age > 90 % % Wt/Ht > 80%	33
<b>Wasted</b>		
2	% Wt/Age > 90 % % Wt/Ht < 80%	0
<b>Stunted</b>		
3	% Wt/Age < 90 % % Wt/Ht > 80%	77
<b>Wasted and stunted</b>		
4	% Wt/Age < 90 % % Wt/Ht < 80%	0

**Table 3.** Per cent prevalence of malnutrition among children (MUAC value)

Sl. No.	Grade of malnutrition MUAC value (cms)	Pre-school children
1	Normal >13.5	37
2	Moderate 12.5 – 13.5	56
3	Severe <12.5	7

Table 2 clearly depicts that 77 per cent children were assessed as stunted, whereas, 33 per cent children were assessed as normal according to Waterlow's classification.

It is evident from the data presented in Table 3 that a major percentage of children had been assessed as moderately malnourished (56 %) on the basis of MUAC value followed by normal children (37%). MUAC value also put on records 7 per cent severely malnourished children.

From the above findings we might conclude that mild malnutrition and moderate malnutrition were the most prevalent form of malnutrition, the former being assessed according to Gomez classification and the later being assessed on the basis of MUAC value.

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