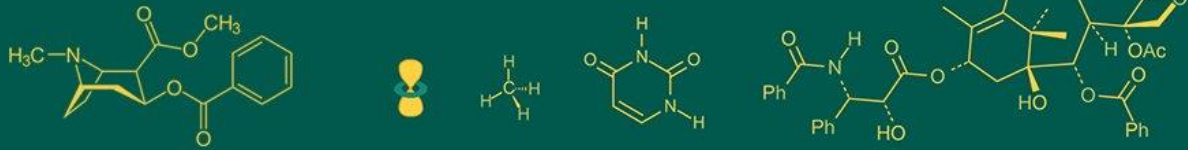


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## Assessment of nutritional status of infants and young children in Khodawanpur block, Begusarai district, Bihar

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### Abstract

**Introduction:** Tackling malnutrition poses a significant public health concern in India, notably affecting infants and young children, resulting in serious health implications. Therefore, our emphasis has been on identifying malnourished children within the research region as part of our efforts to address this issue.

**Methods:** A study was carried out on 30 infants and young children of age group 6-24 months from Khodawanpur block, Begusarai District, Bihar. A structured questionnaire was used to gather general information such as age, gender, family size and economic status. The nutritional status of infants and young children was determined by processing the data on excel sheet, using descriptive statistics.

**Results:** The prevalence of severe acute malnutrition was about 46.67 percent were severely wasting, 76.67 percent were severely stunting, and 66.67 percent were severely underweight. There are also significant numbers of children facing moderate malnutrition i.e. 36.67 percent, 27 percent, and 20 percent for moderate wasting, stunting, and underweight, respectively. Additionally, 3.66 percent, 26.33 percent and 13.33 percent of children experience milder forms of wasting, stunting, and underweight conditions.

**Conclusions:** Considering the high prevalence of malnutrition in the study area, it was recommended that appropriate preventive actions be implemented as soon as feasible.

**Keywords:** Malnutrition, stunting, wasting, underweight infants and young children

### Introduction

The early stage of life, known as infancy, is crucial for proper growth and development, especially when it comes to getting the right nutrition. The term "infant" originates from the Latin word "infans," which means "unable to speak." In simpler terms, infancy refers to the time from birth to around two years of age.

Malnutrition happens when the body doesn't get the right amount of energy, protein, and essential nutrients, leading to harmful effects on the body's tissues, shape, function, and overall health (Stratton *et al.*, 2003) [2]. It's a big problem worldwide, causing a lot of sickness and death, especially among children under five years old. In many poor countries, malnutrition in infants is a serious public health issue, causing not only physical and mental suffering but also slowing down the country's economic growth. Having a healthy diet is crucial for infants' growth, and various factors like social, economic as well as lifestyle (Singh *et al.*, 2020) [3]

A global hunger index helps to see if countries are meeting goals to fight hunger. In 2022, India is ranked 107th out of 121 countries in this index (Black *et al.*, 2013). India faces both overnutrition and undernutrition. Undernutrition includes issues like not getting enough nutrients and being too short, too thin, or too light for one's age. This study aims to identify the health of children aged 12 to 23 months who are affected by malnutrition in the study areas (Narayan *et al.*, 2019) [5]

### Materials and Methods

The study was conducted on 30 infants and young children aged 6 to 23 months from the 8 anganwadi centres in Khodawanpur block, Begusarai District, Bihar, to assess their

nutritional status. The questionnaire on general information, including age, gender, family size, and economic condition was observed and recorded. Anthropometric measurements include height and weight, which were then compared with WHO Growth Standards.

## Results and Discussion

### General information of infants and young children

Out of the total 30 babies and young kids, the information showed that most (36.67%) were in the 19-24 months age range. About 40 percent were between 13-18 months, and 23.33 percent were in the 6-12 months age group. In terms of gender, the majority (66.67%) were girls, and the remaining 33.33 percent were boys. According to caste, 53.33 percent were from the general category, 6.67 percent from OBC, and 40 percent from SC/ST. It was also showed that all participants identified as Hindu, and there were no individuals from the Muslim community.

**Table 1:** Personal Information of Infants and Young Children

Particulars	Subjects (N=30)	
	Frequency	%
<b>Age (months)</b>		
6-12	7	23.33
13-18	12	40
19-24	11	36.67
<b>Gender</b>		
Male	10	33.33
Female	20	66.67
<b>Caste</b>		
General	16	53.33
OBC	2	6.67
SC/ST	12	40
<b>Religion Code</b>		
Hindu	30	100
Muslim	0	0

### Socio-economic information of Infants and Young Children

Among all 30 infants and young children, most families (56.67%) had a lot of members, between 8 to 10 people.

Medium-sized families (5-7 members) made up 23.33 percent, and small families (1-4 members) were 20 percent. In terms of family structure, 30 percent had nuclear families, while 70 percent lived in joint families in the studied area. The average monthly income for all participants was below 10,000, showing that everyone in the study had a similar economic background.

Fathers of all children were on labour work as their primary source of income, constituting 100 percent in each category. No individuals reported income from business, agriculture, government jobs, or any other sources. Additionally, when considering the occupation of mothers, the entirety identified as homemakers, with 100 percent reporting this role. No mothers were engaged in labour or any other occupation.

On the other hand, 53.33 percent of infants were primarily cared by mother, followed by 30 percent by paternal/maternal grandmother and 16.67 percent by the aunt. When it comes to the education of the mothers, half of them (50%) could only write their names, 33.33% were unable to read (illiterate), and 16.67% had completed primary school.

### Assessment of nutritional status of infants and young children

The information in table 3 shows high levels of malnutrition among the studied children. About 46.67 percent were severely wasting, 76.67 percent were severely stunting, and 66.67 percent were severely underweight. There are also significant numbers of children facing moderate malnutrition i.e. 36.67 percent, 27 percent, and 20 percent for moderate wasting, stunting, and underweight, respectively. Additionally, 3.66 percent, 26.33 percent and 13.33 percent of children experience milder forms of wasting, stunting, and underweight conditions. A study conducted by Hien and Kam (2008) [7] reported the prevalence of severe stunting, underweight and wasting to be 44.30, 31.80, and 11.90 percent respectively in Nghean, Vietnam.

**Table 2:** Details of Family Information of Infants and Young Children

Particulars	Subjects (N=30)	
	Frequency	%
<b>Family size</b>		
Small (1-4)	6	20
Medium (5-7)	7	23.33
Large (8-10)	17	56.67
<b>Types of family</b>		
Nuclear family	9	30
Joint	21	70
<b>Monthly family income</b>		
< 10,000	30	100
10,000- 20,000	0	0
>20,000	0	0
<b>Income sources</b>		
Labour work	30	100
Business	0	0
Agriculture	0	0
Govt. job	0	0
Other	0	0
<b>Mother's occupation</b>		
Homemaker	30	100
Labor	0	0
<b>The first caregiver of Severely Malnourished infant/ young</b>		
Paternal/Maternal grandmother	9	30

Aunt	5	16.67
Mother	16	53.33
other sibling (brother/ sister)	0	0
<b>Educational qualification of the first care-giver</b>		
Illiterate	10	33.33
Only can write name	15	50
Primary level	5	16.67
Middle level	0	0
Secondary level	0	0

**Table 3:** Anthropometric information of infants and young children

Anthropometric index	Nutritional status	Z-score (WHO, 2008, 2019)	%
W/H	Severe wasting	< -3	46.67
	Moderate wasting	-3 to -2	36.67
	wasting	-2 to -1	3.66
W/A	Severe underweight	< -3	66.67
	Moderate underweight	-3 to -2	20
	underweight	-2 to -1	13.33
H/A	Severe stunting	< -3	76.67
	Moderate stunting	-3 to -2	27
	stunting	-2 to -1	26.33

**Conclusion**

From the study, it was found that the majority of the families were large size families as well as lower income (< 10,000) and majority of mothers of selected subjects were illiterate which are more prone to undernutrition. Also, it was found that About 66.67 percent were severely wasting, 76.67 percent were severely stunting, and 46.67 percent were severely underweight. There are also significant numbers of children facing moderate malnutrition i.e. 36.67 percent, 27 percent, and 20 percent for moderate wasting, stunting, and underweight, respectively. Additionally, 3.66 percent, 26.33 percent and 13.33 percent of children experience milder forms of wasting, stunting, and underweight conditions. Given the high prevalence of malnutrition, it's suggested that steps be taken quickly to prevent and address these issues in the community.

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