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## Assessment of Nutritional Status of the Government Primary School Children In Slum Area Of Bengaluru, Karnataka

Chethan Kumar P\*<sup>1</sup>, Sowmya Reddy<sup>1</sup>, Geetha K M<sup>1</sup>, Ankita Chatterjee<sup>1</sup>, Vishnupriya<sup>1</sup>

*1. Department of Pharmacy Practice, Sagar Hospitals, School of Pharmaceutical Sciences,  
Dayananda Sagar University, Bengaluru.<sup>1</sup>*

### ABSTRACT

Malnutrition is defined to be the condition resulting from relative or absolute deficiency of one or more essential nutrients. The school age period is nutritionally the prime time to build up the body stores of nutrients in preparation for rapid growth in adolescents. The nutritional state is therefore critical to the development and wellbeing of the nation. The physical growth of the child is thus reflected by different Anthropometric measurements especially height and weight. This study was done to evaluate the level of malnutrition in government (govt.) higher primary school in Bengaluru. Cross sectional descriptive survey was done using a structured questionnaire, the dependent variables for this study were the anthropometric measurable like height for age and independent variables for the study were occupation of parents, family income, maternal education, gender and type of residence (kacha or pucca). A total of 404 children were included from the govt. primary school in the study. It was seen that maximum children belongs to the 13+ age group most of them being boys. Their family monthly income being in the range of Rs.5000 to 6000. Most of their family members are daily laborer's and housewives by profession. Therefore it can be concluded that the Mother's Education is directly proportional to the child health. Hence development in fields on family employment, mother's education will result in improved child health.

**Keywords:** Malnutrition, Nutritional State, Physical State, Income, Anthropometric Measurements.

\*Corresponding Author Email: [chethanp418@gmail.com](mailto:chethanp418@gmail.com)

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## INTRODUCTION

Malnutrition is defined to be the condition resulting from relative or absolute deficiency of one or more essential nutrients<sup>1</sup>. The school age period is nutritionally the prime time to build up the body stores of nutrients in preparation for rapid growth in adolescents<sup>2</sup>.

Malnutrition remains the world's most serious health problem and one of the largest contributors of child mortality. Nearly 1/3 of the children in the world are nearly underweight or stunted and about 30% of the developing world's population suffer from micronutrient deficiencies. Broadly speaking malnutrition in INDIA is in the state of 'SILENT EMERGENCY' and thereby demands greater priority. The nutritional state is therefore critical to the development and wellbeing of the nation<sup>3</sup>. The physical growth of the child is thus reflected by different Anthropometric measurements especially height and weight<sup>4</sup>.

To evaluate the level of malnutrition in government primary schools in Bengaluru. These includes the socio- economic parameters like child's family income, maternal education, parental occupation, type of housing, age and gender.

## MATERIALS AND METHOD

### **Study population:**

Primary school children between the ages of 5-14 years in two urban slums of Bengaluru.

### **Study Design:**

Cross sectional descriptive survey using a structured questionnaire which includes data on demographic details, family history, socio- cultural, economic factors and anthropometric data.

### **Study Variables:**

The dependent variables for this study were the anthropometric measurable like height for age, which indicates level of stunting and weight for age, which indicates level of underweight.

### **Independent variables:**

Occupation of parents, family income, maternal education, gender and type of residence (kacha or pucca). 2007 WHO Reference Growth Charts were used as reference standards.

### **Statistical analysis:**

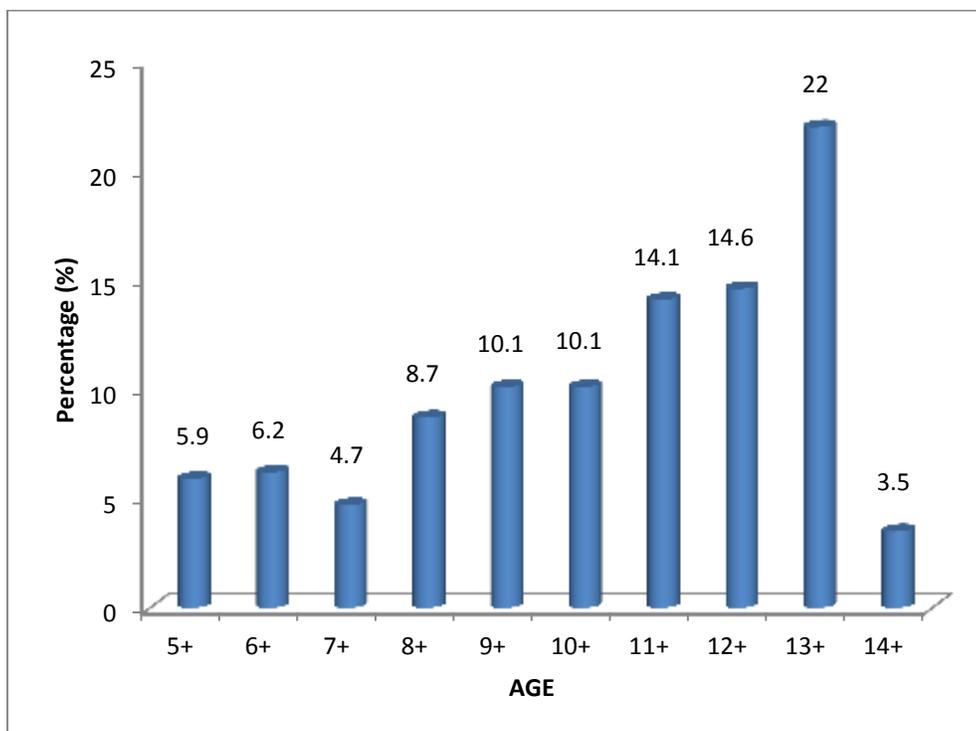
The collected data were entered and then analysed with MS excel software 2010 and SPSS v.19. All the tests were considered significant at  $P < 0.05$ .

## RESULTS AND DISCUSSION

A total of 404 children were included from the govt. Higher primary school. They were belonging

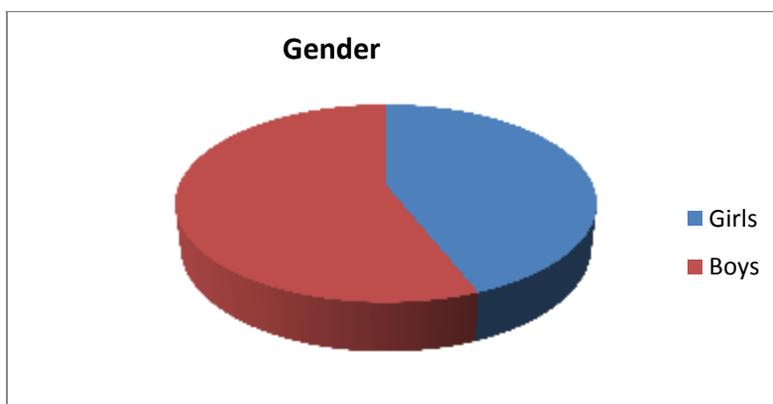
to 5-14 age group in our study majority of the children were from the age group of 13(22%) followed by 12(14.6%). Results are summarized in Table 1 and Figure 1

In the present study both boys and girls were included in the study. Out of total 404 children 178(44%) were girls and 226(56%) were boys. The number of boys was more than the number of girls. The difference may be due to the more inclination of parents towards boys education the report of Directorate of Economics and Statistics, Bangalore(2000-2001) revealed less literacy rate in females as compared to males in Bangalore(77% in females vs.88%) in males<sup>5</sup>. The data is summarized in Table 2 and Figure: 2



**Figure:1 Distribution of School Children According to Age**

#### PERCENTAGE OF CHILDREN ACCORDING TO GENDER



**Figure 2: Distribution of Children According to Gender.**

**Table 1: Distribution of school children according to age**

S No.	Age Group	No. Of Children	Percentages of children (%)
1.	5+	24	5.9
2.	6+	25	6.2
3.	7+	19	4.7
4.	8+	35	8.7
5.	9+	41	10.1
6.	10+	41	10.1
7.	11+	57	14.1
8.	12+	59	14.6
9.	13+	89	22.0
10.	14+	14	3.5

**Table 2: Distribution of children according to gender**

Sl no.	Sex	No of children	Percentages
1.	Girls	178	44
2.	Boys	226	56

In the present study it was seen that more than half(53%) of the households studied, has a monthly income of Rs 5000-6000, which was the average or low income range and puts them among poorer sectors in the society. The data in tabulated in table 3.

A higher percentage of the parents(46.8%) participating in the study was found to be daily labourers and housewives i.e. father works as daily labourer and mothers were non-working. Data is represented in table 4.

**Table 3: Depicts the income range of the families**

Sl. no	Income range	No of family's earning	Percentage (%)
1	2000	26	6.4
2	3000-4000	87	21.5
3	5000-6000	214	53.0
4	>6000	77	19.1

**Table 4: Depicts the occupation of the families**

Sl no	Parents	Occupation	Number	Percentage (%)
1	BOTH	Farmer and housewife	15	3.7
2	BOTH	Daily laborer's	120	29.7
3	BOTH	Worker and housewife	80	19.8
4	BOTH	Daily laborer's and housewife	189	46.8

The data in the table 5 also shows that a higher proportion (66.37%) of the mothers had no education. Mothers having secondary education were very less (12.8%).

The data tabulated in table no 6 shows that most of the families live in pucca houses (68.32%) and others live in the kacha house (32.18%).

**Table 5: Education level of mother**

Sl no	Education	Number	Percentage (%)
1	None	256	63.37
2	Primary	96	23.76
3	secondary	52	12.87

**Table 6: Type of housing adapted**

Sl no	Type of housing	Number of family living	Percentage (%)
1	Pucca	276	68.32
2	kacha	130	32.18

The level of malnutrition based on dependent variables like height for age (H/A) and weight for age (W/A) are shown in table no 7. The results showed that the level of malnutrition for underweight among male and female children were almost the same (< 3<sup>rd</sup> percentile) whereas stunting also showed both children under same level of percentile. The study reveals that malnutrition is a problem that affected stunting and underweight of school children. The lower anthropometric measurements of the rural school children can attribute to frequent illness due to lack of hygiene, which is reflected by the poor economic status. A similar study also reported lower weights of children<sup>6</sup>.

**Table 7: Malnutrition among school children**

Sl. No		97 <sup>th</sup> percentile	85-97 <sup>th</sup> percentile	50 <sup>th</sup> -85 <sup>th</sup> percentile	15 <sup>th</sup> -50 <sup>th</sup> percentile	3 <sup>rd</sup> -5 <sup>th</sup> percentile	<3 <sup>rd</sup> percentile
1	Total boys						
	W/A	-	4	2	14	52	154
	H/A	-	6	4	20	51	145
2	Total Girls						
	W/A	-	12	14	15	32	105
	H/A	-	0	18	10	52	98

In studying the correlates of underweight in children, our finding revealed that a negative relationship between the number of children in the family, the family income, maternal education and nutritional status (underweight) of children exists in the population. Observations from other studies suggest that the economic engagements of parents, especially maternal income is protective against child malnutrition<sup>6,7</sup>.

It is found that women with higher status in the society have the ability to make decisions that improve the nutritional status of children while those with low status do not<sup>7</sup>.

## CONCLUSION

From the study, it can be concluded that the higher the level of the mother's education, the lower the level of child's underweight as observed. Also, growing children by and large are deprived of

good nutrition on account of their prior socio-economic status, ignorance and lack of health promotional facilities. The study findings imply that efforts for redressing child under nutrition issues in urban areas should focus on factors associated with development outcomes such as family income, maternal education and the creation of employment.

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