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A comparative study to assess the nutritional status by measuring the selected anthropometric measurements of urban and rural primary school children in selected primary schools of Gokak, Belgaum district

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Abstract

A Child is precious to his parents, to his family, community, and nation and to the world at large. In fact child is a citizen of the world and thus it becomes the responsibility of the wide population of the whole universe to look after the interests of the children all over. The young children need love for growth but also adequate nutrition and health facilities, so that he can grow at his optimum level. The concept of the importance of a child to society greatly emerged as each group settled in an area of fertile land. Instead of being a liability, the children slowly became an asset to the family and to the society.

Children between 6-12 years of age are generally called primary school children. Today more than ever before the primary school children have become a focus for organized medical-social welfare activities. So their healthy growth is essential. One of the common methods to identify nutritional status in children is anthropometric measurements. Primary school children represent about 1/5th of the general population in India, and majority of the population lives in rural areas. Therefore it is apparent to study the growth of children in both areas.

This study was undertaken to assess the nutritional status by measuring the selected anthropometric measurements of urban and rural primary school children in selected primary schools of Gokak, Belgaum district.

Keywords: Nutritional status, school children (rural and urban) anthropometric measurements

Introduction

Developmental transition in India has been taking place over the last 50 years since independence. We have moved from the famine situations of the 1940s to the one of self-sufficiency in food productions, at the prevailing level of purchasing power, due to major initiatives like the Green revolutions. However studies of the diets and state of nutrition of people in India showed that poorer population continued to suffer from malnutrition despite increased food production.

A Child is precious to his parents, to his family, community, and nation and to the world at large. In fact child is a citizen of the world and thus it becomes the responsibility of the wide population of the whole universe to look after the interests of the children all over. The young children need love for growth but also adequate nutrition and health facilities, so that he can grow to complete his optimum level of growth.

The concept of the importance of a child to society greatly emerged as each group settled in an area of fertile land. Instead of being a liability, the child slowly became an asset to the family and to the society.

Children between 6-12 years of age are generally called primary school children. Today more than ever before the primary school children have become a focus for organized medical-social welfare activities. Primary school children represent about 1/5th general population in India (Khader 97).

The W.H.O. Constitution states that "The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, region, and political, economic and social conditions". Health and Nutrition are the most important contributory factors for Human Resource Development in the country. Child nutrition begins in the intrauterine life of the child. The consequences arising out of malnutrition are not at the child's will or making but a result of the accident of birth in a socioeconomic and cultural environment.

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Objectives

- To assess the nutritional status of urban primary school children.
- To assess the nutritional status of rural primary school children.
- To compare the nutritional status of rural primary school children with urban primary school children.
- To find out association between the nutritional status of rural and urban primary school children with the selected demographic variables.

Materials and methods

Research Approach and Research Design: A cross sectional Descriptive survey design

Setting: Belagum district, Gokak taluk, Karnataka

Population: Primary school children who were in the age group of 6-12 years in selected rural and urban primary schools of Gokak taluk, Belagum district.

Sample and Sample Technique: - Samples of 100 primary school children were selected by simple random technique from urban and rural schools.

Criteria for sample selection

Inclusion criteria

- Children between 6-12 years of age studying in selected primary schools.
- The children who are available at the time of data collection.

Exclusion criteria

- Children who are suffering with illness or disease.

Development and Description of the tool

The following data collection instruments were constructed in two sections. Structured interview schedule to collect the

demographic variables, and performed the anthropometric measurements to assess the nutritional status of the primary school children in rural and urban areas.

The assessment tool consists of 2 parts namely Section-A & B.

Section A

It comprises of 14 items regarding the demographic data of the subjects. Such as locality of school, age, sex, religion, type of family, birth order of child, family size, Education of parents, occupation of parents, and monthly income of the family and food habits of children.

Section B

This part dealt with the anthropometric measurement of primary school children such as height, weight and Body mass index.

Data analysis: Polit states that data analysis is the systematic organization and synthesis of research data and testing of research hypothesis using those data. The plans of data analysis were as follows.

Descriptive statistics

- Frequency, percentage distribution was used to analyze the demographic variables.
- Frequency, percentage distribution, means, standard deviation was used to analyze anthropometric measurements of school children.

Inferential statistics

Chi-square, t-test was to find the association between nutritional statuses of children with selected demographic variables.

Results

Section I: Frequency and Percentage distribution of primary school children based on demographic variables.

Table 1: Distribution of children according to age, sex, area of living, birth order, type of family and family size, N=100(50+50)

Demographic Variables		Rural Children		Urban children	
		Frequency	Percentage	Frequency	Percentage
1. Age	6-7 years	7	14	13	26
	8-9 years	19	38	05	10
	10-12 years	24	48	32	64
2. Sex	Male	26	52	18	36
	Female	24	48	32	64
3. Religion	Hindu	48	96	38	76
	Muslim	02	04	11	22
	Christian	--	--	01	2
4. Birth Order	First	11	22	17	34
	Second	18	36	19	38
	3 and above	21	42	14	28
5. Type of Family	Nuclear	27	54	34	68
	Joint	20	40	12	24
	Single parent	3	6	4	8
6. Family Size	Below 3	21	42	11	22
	4-5	18	36	20	40
	6-8	11	22	17	34
	8 and above	--	--	2	4

Data Presented in table that 14% and 26% of the children were in the age group (6-7) years, 38% and 10% of them were between the age group (8-9) years, and remaining 48%

and 64% were in the age group (10-12) years in the rural and urban area respectively.

Data presented in table that 52% of male children were from

rural area and 36% of them were from Urban. Among female children 48% of them were from rural area and 64% were from Urban.

Section II:-Mean Standard deviation and significant difference of Anthropometric measurements among primary school children between urban and rural schools.

Table 2: Distribution of Mean, Standard deviation of children according to Height for age, Weight for age, Weight for Height and BMI, N=100(50+50)

Sl. No.	Anthropometric parameters	Children					
		Rural		Urban		't' value	
		Mean	SD	Mean	SD		
1	Height for age	88.60	03.89	93.73	04.39	6.198*	
2	Weight for age	94.11	01.60	73.01	02.51	50.20*	
3	Weight for Height	89.08	08.17	85.95	09.73	1.742*	
4	BMI(kg/m ²)	14.31	00.93	13.92	01.65	3.864*	
	Overall	286.1	14.59	266.61	18.28		

* Significant difference at 5% level of significance

Table 2 depicts that the mean height for age of children of urban primary school children was more than (93.73±4.39) the male children of rural primary school children (88.60±3.89). The mean weight for age of rural children was more than (94.11±1.60) the urban school children (73.01±2.51). The mean weight for height of rural children was more than (89.08±8.17) the urban school children (85.95±9.73). The mean BMI of rural children was more than (14.31±0.93) the urban school children (13.92±1.65).

The table 2 depicts that the significant difference was found between height for age ($t_{98}=6.198$, $p<0.05$), weight for age ($t_{98}=50.20$, $p<0.05$), weight for height ($t_{98}=1.742$, $p<0.05$), and BMI ($t_{98}=3.864$, $p<0.05$), of rural and urban primary school children. Hence it can be said that there is significant difference among nutritional status of rural and urban areas children.

Section – III

Nutritional status of urban and rural primary school children Based on anthropometric measurements

Table 3: Nutritional status of primary school children based on the height for age, N=100(50+50)

Nutritional Status	Rural		Urban	
	F	%	F	%
Normal (>95%)	16	32%	20	40%
Ist Degree malnutrition or Short (90-95%)	27	54%	17	34%
II nd Degree Malnutrition or Stunting (85-90%)	06	12%	09	18%
IIIrd Degree or Dwarf (<85%)	01	02%	04	8%

(Waterlow's classification)

The above table revealed that in rural area 32% children were of normal nutritional status, 54% of children had 1st degree malnutrition (short), 12% of children had 2nd degree malnutrition (stunting) and 2% of children were of 3rd degree malnutrition (dwarf). Whereas in urban area 40% were of normal nutritional status, 34% of children have 1st degree malnutrition (short), 18% of children have 2nd degree malnutrition (stunting) and 8% of children were of 3rd degree malnutrition.

Conclusion

The present study assessed the nutritional status of the rural and urban primary school children. The result revealed that

- Majority of children belongs to 10-12 years and While

considering in sex 52 % were males in rural, whereas in urban 64 % were females.

- Irrespective of the areas majority of the children (rural 96% and urban 76%) belongs to Hindu religion.
- In both areas of study majority of the children were of 3rd and above birth order (42% rural), and second birth order (38% urban).
- Majority of sample belongs to nuclear family in urban and joint family in rural areas.
- Majority of primary school children's father were studied up to primary in rural (44%) and urban (36%) area. Among mother's education two extremes were observed i.e. 60% (30) were illiterate in rural and 40% (20) were studied up to primary in urban area.
- With respect to the occupation of parents 66% of primary school children's father was of occupation agriculture in rural .whereas 36% of occupation labor in urban area. Among mothers occupation majority of them are housewives in both areas.
- Majority of family dietary habits were 76% mixed in rural whereas 52% were vegetarian in urban. And considering the number of meals taking per day of children found that most of them were having 3 times (80% urban, 76% rural).
- The nutritional status score are almost equal in rural and urban primary school children.
- There was significant difference between anthropometric measurements of rural and urban children and almost equal.
- The association found with the age, birth order, family size, occupation of mother, and no. of meals taking per day.

Summary

Based on the above findings of the study, recommendations were drawn for nursing service, administration, education and research. The study concludes that the nutritional status of rural primary school children was significantly different from urban primary school children.

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