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# Nutritional status among urban and rural adolescents

**I**ndia is a big country with diverse conditions. It has 5000 year old civilization, 325 spoken languages, 18 official languages, more than one billion people and approximately 243 million adolescents which is more than 20% of the total population.

It is pertinent that we focus on adolescents due to various reasons:

1. They constitute more than 20% of the population.
2. Adolescence is a period of rapid physical growth, sexual and psychological changes.

The adolescents are more conscious about their body image. They have got a, "Dil Mange more" lifestyle. They are attracted to fried foods, tobacco products and alcohol. They are getting into sedentary lifestyle as they spent long hours on gadgets. They indulge in eating energy dense food. Thus the nutritional problems amongst adolescents are on a rise.

## Need for the study

It is seen that the incidence of hypertension, diabetes, myocardial infarction, is on the rise and is detected in early adulthood and not in late adulthood as was seen during the last 10 years. The main reason for these conditions is linked to eating behavior which can be controlled and prevented through modified behavior.

The adolescence is the last phase



of childhood and problems could be prevented by early detection and counseling. The researcher felt that identifying the nutritional status among urban and rural adolescents would help to create solutions and prepare healthy future citizens.

## Statement of the problem

A comparative study to assess the nutritional status among adolescents in selected urban and rural schools.

## Objectives

1. To assess the nutritional status among the urban and rural adolescents
2. To compare the nutritional status among the urban and rural adolescents.

## Operational definitions

**Assess** means to evaluate the nutritional status among urban and rural adolescents.

**Nutritional status** refers to grading of adolescents obtained by calculating the basic metabolic index (BMI) and prevalence anemia.

**Adolescents** refers to the selected children/ students from 7th grade till 9th grade from selected urban and rural schools.

**Urban and rural schools** refers to the randomly selected schools in the state of Maharashtra that are managed or adopted by the select trust and have adolescents/ students studying from 7th grade till 9th grade.

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## Research methodology

**Research approach:** Quantitative non-experimental

**Research design:** Cross sectional comparative, co-relational and exploratory survey design.

**Setting of the study:** The present study was conducted in two urban and one rural schools that were managed and adopted by the selected trust.

**Population:** The target population was all children studying in the 7th to 9th grade from the selected schools. It was 290 for rural and 346 for urban.

**Sample:** 284 urban adolescents and 267 rural adolescents was the sample size.

### Inclusion criteria

1. Parents/ guardians who were willing to allow their wards to participate in the study
2. Adolescents who could read, write and speak in English, Hindi or Marathi.

### Exclusion criteria

Adolescents who had been diagnosed as having any chronic medical illness, physical disability and learning disability.

**Sampling technique:** The researcher used non-probability purposive convenience sampling.

### Tool and technique

**Technique:** Measurement or assessment

**Tool:** Nutritional assessment format. It consisted of following parts:

Section 1: Demographic data: Age, Gender, Monthly family income

Section 2 : Nutritional Assessment format: Height (cms), Weight, BMI, Hemoglobin level.

### Validity of the tool

The content validity of the tool was assessed by giving it to various subject experts for scrutinizing the adequacy and relevance.

## Major findings

### Age group among adolescents

Age (Years)	Urban (N= 284 )		Rural (N= 267 )		Total (N= 551 )	
	No	%	No	%	No	%
12	55	19.4	025	09.4	080	14.5
13	94	33.1	070	26.2	164	29.8
14	85	29.9	060	22.5	145	26.3
15	*50	17.6	112	41.9	162	29.4

By chi square test

P = 0.007, \*Significant

**Reliability:** The reliability was assessed using Kappa Score on 50 children and it was found to be 0.94.

**Pilot study:** A pilot study was conducted on 50 students from English Medium School in urban area. It was conducted on 3rd and 4th February 2017.

**Data analysis:** Approval for the study was taken through the ethical research committee. Later, permission was sought from the randomly selected schools. The children were explained the purpose of the study and then assessment was performed. They were told that a prick by a lancet would be given where they might experience little pain. The height, weight were recorded and hemoglobin was assessed using

digital hemoglobinometer. The researcher shared the findings, discussions and submitted the report for further action.

### Plan for data analysis

- Descriptive analysis of demographic variables
- Inferential statistics using Chi Square.

- Above data reveals that 55.7% of total adolescents were in the age group of 14 -15 years, 29.8% of cases were of age 13 years and 14.5% of cases were 12 years of age.
- 17.6% of the adolescents among urban areas had age 15 years which was less as compared to 41.9% adolescents among rural and the difference was significant.
- The above table states that among total adolescents, 49.1% were male and 50.9% were female.
- According to the above table 47.3% adolescents were male in urban area which was comparable to 51.0% adolescents among rural and the difference was not significant.

### Sex wise distribution among study cases

Gender	Urban #(N= 284 )		Rural #(N= 267 )		Total #(N= 551 )	
	No	%	No	%	No	%
Male	134	47.3	134	51.0	268	49.1
Female	149	52.7	129	49.0	278	50.9

By chi square test

P = 0.400, Not \*Significant

# Data was missing



### Profile of monthly family income among adolescents

Family income	Urban (N= 284 )		Rural (N= 267 )		Total (N= 551 )	
	No	%	No	%	No	%
Rs. >75,000/ month	006	02.1	011	04.0	017	03.1
Rs. 61,000-75,000	002	00.7	001	00.4	00.	00.5
Rs. 46,000-60,000	004	01.4	012	04.5	016	02.6
Rs. 31,000-45,000	016	05.6	017	06.4	033	06.0
Rs. 16,000-30,000	080	28.2	072	27.0	152	27.6
Rs. <15,000	176	62.0	154	57.7	330	59.9

By chi square test

P=0.304, Not Significant

- As per above study, 59.9% of the total study adolescents had monthly family income less than Rs.15,000.
- 62.0% of cases belonged to urban area which was more as compared to 57.7% among rural children but the difference was not significant.

### Comparison of BMI between urban and rural study cases

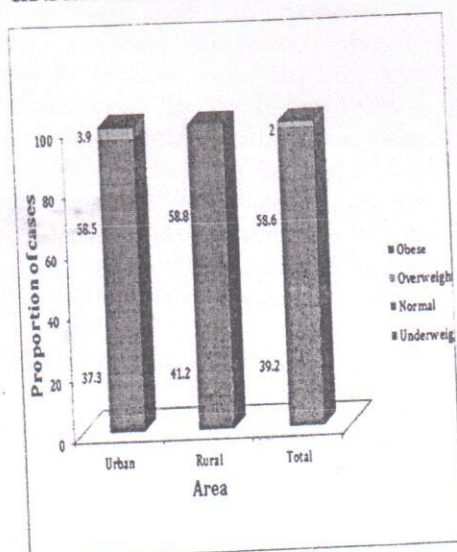
BMI	Urban (N= 284 )		Rural (N= 267 )		Total (N= 551 )	
	No	%	No	%	No	%
Underweight	106	37.3	110	41.2	216	39.2
Normal	166	58.5	157	58.8	323	58.6
Overweight	011	03.6	-	-	011	02.0
Obese	001	00.3	-	-	011	00.2

By chi square test

P = 0.352, Not Significant

- Above table states that 39.2% of the total adolescents were underweight.
- 37.3% of the urban adolescents were underweight which was comparable to 41.2% of the rural adolescents and the difference was insignificant.

### Comparison of BMI between urban and rural study cases



### Comparison of haemoglobin among study cases

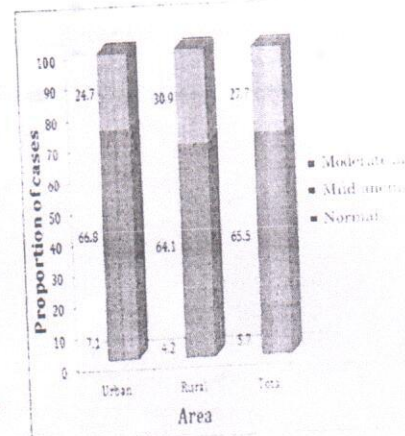
Status	Urban #(N= 283 )		Rural #(N= 262 )		Total #(N= 545 )	
	No	%	No	%	No	%
Normal	020	07.1	011	04.2	031	05.7
Mild anemia	189	66.8	168	64.1	357	65.5
Moderate anemia	070	24.7	081	30.9	151	27.7
Severe anemia	004	01.4	002	00.8	006	01.1

#Data was missing  
By chi square test

P > 0.05, Not Significant

As per this data, 66.8% of the urban adolescents had mild anemia which was comparable with 64.1% of rural adolescents and the difference was not significant.

### Comparison of haemoglobin among study cases



### Implications

The study revealed that the prevalence of underweight and anemia was prevalent among adolescents. It indicates that steps need to be taken to improve the overall nutritional status among the adolescents.

### Limitations of the study

- It was confined to selected samples.
- The measures used for the nutritional assessment were confined to BMI and hemoglobin level.

### Recommendations

- The same study could be followed.

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