

## **A Study on Physiological Factors Among Rural And Urban School Boys**

**Dr. Rajkumar G. Malkappagol\* & Dr. M.S. Pasodi \*\***

*\*Guest Lect., Deptt. of Physical Education, Gulbarga University, Kalaburagi. &*

*\*\*Director of Physical Education, Gulbarga University, Kalaburagi.*

### **Abstract**

This experimental study is conducted on Two hindered six (206) boys studying in schools located in Rural area and three hundred ninety seven (397) boys studying in schools located in posh area or Urban area of Kalaburagi District (Karnataka State) age ranged from 11 to 18 years, were selected as subjects for the study. The cardio-respiratory fitness of the subjects was evaluated by conducting 6 minute and 9 minute run and walk tests and body mass index was determined by dividing weight in Kilogram by the square of body height in meters, t-test was applied to determined the significance of mean differences between Rural and Urban schools boys on body mass index and cardio-respiratory fitness.

The findings have indicated that, Urban school boys were heavier and greater body mass index (BMI) than Rural school boys. Rural school Boys were better in cardio-respiratory fitness than Urban school Boys of Kalaburagi.

Reference to this paper should be made as follows:

**Dr. Rajkumar G.  
Malkappagol\* &  
Dr. M.S. Pasodi \*\*,**

*A Study on  
Physiological Factors  
Among Rural And Urban  
School Boys,*

RJPSSs 2017, Vol. 43,  
No.2, pp.126-131,  
Article No. 16 (RJ1932)

Online available at :  
[http://anubooks.com/  
?page\\_id=2012](http://anubooks.com/?page_id=2012)

## **INTRODUCTION**

In today's hi-tech era people enjoy all wonders of the technology which have provided comforts in every walk of life. Domestic work is done with scientific devices in a short span of time with little physical effort. Walking and bicycling used to be the mode of transportation from home to workplace during all times, which has been replaced by automobiles in modern times. In agriculture and industry, machines have outclassed manual labour. Advances in technology, have made life more convenient, and less oriented in the modern society. Leisure time has been occupied by electronic media which attract the people to sit in front of the television and computer. This has resulted in high incidence of obesity, high rate of heart diseases and diabetes. These factors are very harmful to the human beings and their impact is visible not only on the elderly people but also on the younger generation in the form of NCDs.

In context of the Indian scenario the picture is much more bleak, hospitals are unable to tackle the inflow of patients suffering from non-communicable diseases. Due to globalization the junk food has traveled to India and elite families are relishing it and in turn becoming obese day by day. Due to global market competition, companies are displaying thrilling advertisements in the electronic media and projecting these brands as Hercules's diet, which not only attract the younger generation, but also is effecting their eating habits that results in the upper middle class and upper class children putting on lot of weight which leads to many diseases.

Socio economic status influence one's way of living, eating habits and physical involvement in domestic functions. High socio economic status people have means to eat as per their desire and normally tend to lead a sedentary life as compared to poors. These two classes differ drastically in their physical process as well. It is observed that rich people reside in posh areas and have all facilities and better amenities in their residential area. But poor who reside in gray areas and do not have basic amenities for their living. Hence, an attempt was made in this study to find whether the location of schools have some impact on Body Mass Index (BMI) and cardio-respiratory fitness of their students.

Two hundred six (206) boys studying in schools located in Rural area and three hundred ninety seven (397) boys studying in schools located in posh area or Urban area of Kalaburagi District (Karnataka State) age ranged from 11 to 18 years, were selected as subjects for the study. The cardio-respiratory fitness of the subjects was evaluated by conducting 6 minute and 9 minute run and walk tests and body mass index was determined by dividing weight in Kilogram by the square of body height in meters, t-test was applied to determined the significance of mean

differences between Rural and Urban schools boys on body mass index and cardio-respiratory fitness.

### **FINDINGS**

The significance of mean difference of body mass index (BMI) of Rural and Urban school boys belonging to 6th, 7th, 8th, 9th and 10th classes has been given in table 4.1.

**Table 1**  
**Significance of mean difference of Body Mass Index (BMI) between Rural and Urban school boys**

Class	Mean $\pm$ S.D.		t
	Rural	Urban	
6th	14.80 $\pm$ 1.89 (N=43)	17.38 $\pm$ 3.38 (N=99)	3.12*
7th	15.51 $\pm$ 2.06 (N=49)	18.47 $\pm$ 3.28 (N=92)	5.73*
8th	15.38 $\pm$ 1.93 (N=34)	19.87 $\pm$ 3.59 (N= 105)	6.93*
9th	16.15 $\pm$ 2.16 (N=38)	17.76 $\pm$ 2.52 (N=49)	3.26*
10th	17.29 $\pm$ 2.02 (N=42)	18.05 $\pm$ 2.65 (N=52)	1.53

\*Significant at .05 level

may be observed from table 1 that class 6th, 7th , 8th and 9th boys of Rural and Urban schools were significantly differed in body mass index (BMI) as their respective calculated 't' ratios of 3.12, 5.73, 6.93 and 3.26 were found to be statistically significant at 0.5 level. Whereas class 10th boys of Rural and Urban schools did not show any significant mean differences on body mass Index. Table also indicated that class 6th, 7th, 8th, 9th and 10th students of Urban schools had higher Body Mass Index as compared to their counterparts of Rural schools.

The significance of mean difference of cardio respiratory fitness as measured by 6 minutes and 9 minutes run test between Rural and Urban school boys has been given in table 2 and 3 respectively and their means have also seen shown in figure 1 and 2

**Table 2**  
**Significance of mean difference of Cardio Respiratory Endurance (6 minutes run test) of Rural and Urban school boys**

Class	Mean $\pm$ S.D.		t
	Rural	Urban	
6th	1156.27 $\pm$ 235.14 (N=43)	904.41 $\pm$ 242.73 (N=99)	5.73*
7th	1097.95 $\pm$ 175.36 (N=49)	963.71 $\pm$ 240.33 (N=92)	3.44*
8th	990.00 $\pm$ 261.33 (N=34)	864.57 $\pm$ 205.71 (N=105)	2.88*
9th	1154.21 $\pm$ 309.45 (N=38)	1254.33 $\pm$ 315.07 (N=49)	1.55
10th	1348.80 $\pm$ 306.42 (N=42)	1306.64 $\pm$ 20.50 (N=52)	0.78

\*Significant at .05 level

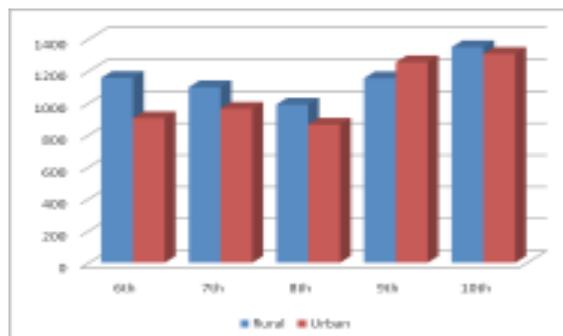


Fig.1: Cardio Respiratory Endurance of Rural & Urban School Boys

Table 2 indicated that class 6th, 7th and 8th boys of Rural and Urban schools differed significantly in the cardio respiratory fitness as measured by 6 minute run test by producing statistically significant “f ratios of 5.73, 3.44 and 2.88 respectively. Whereas class 9th and 10th students did not show any significant mean differences as their calculated ‘t’ ratio of 1.55 and 0.78 were found to be insignificant. Table, further revealed that boys of all classes of Rural schools except 9th class, performed better than their counterparts of Urban schools.

**Table 3**

**Significance of mean Difference of Cardio Respiratory Endurance (9 minutes run test) of Rural and Urban school boys**

Class	Mean ± S.D.		t	
	Rural	Urban	6th	
	1364.65 ± 311.36 (N=99)		1648.60 ± 344.63 (N=43)	4.83*
7th	1620.00 ± 262.99 (N=49)		1437.33 ± 313.03 (N=92)	3.48*
8th	1524.11 ± 304.66 (N=34)		1365.21 ± 245.20 (N=105)	3.08*
9th	1662.63 ± 411.14 (N=38)		1426.32 ± 298.55 (N=49)	3.10*
10th	1879.52 ± 307.80 (N=42)		1481.23 ± 300.96 (N=52)	6.31*

\*Significant at .05 level

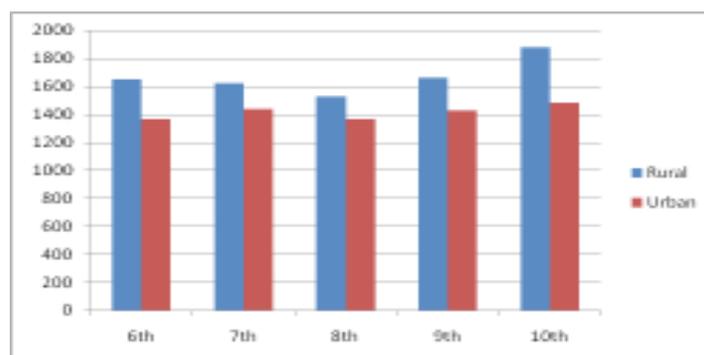


Fig.2 Cardio Respiratory Endurance of Rural & Non-Rural School Boys

It may be observed from table 3 that boys of all classes namely 6th, 7th, 8th, 9th and 10th of Rural and Urban schools significantly differed in cardio respiratory fitness measured by 9 minute run test as their respective 'f ratios of 4.83, 3.48, 3.08, 3.10 and 6.31 were found to be statistically significant at 0.5 level . These results further, indicated that Rural school boys had greater cardio respiratory fitness than their counterparts of Urban schools.

### **DISCUSSION**

The results of this study indicated that Urban school boys shown higher body mass index (BMI) as compared to Rural school boys. The body mass index is proportionally related to height and weight of the individual. Hence, Urban school boys might have higher body mass index which may be due to unhealthy eating habits and physical inactivity and comfortable life style.

In cardio respiratory fitness students of all classes (6th to 10th) of Rural schools outperformed the students of Urban schools which indicated higher level of cardio respiratory fitness among students of Rural schools. These trends may be attributed to the fact that normally students of Rural schools being of lower strata, had to work hard out of school hours to help their parents in different house hold chore and workplace jobs. Whereas, students of Urban schools were higher from socio economic status which provided them all comforts leading to physical inactive lifestyle of school hours and out of school hours. Hence, the hypotheses with regard to physical parameter was partially accepted and rejected in case of cardio respiratory fitness. The results of this study were in line with the conclusions of Sander (1965) and Thompson (1975).

## CONCLUSIONS

On the basis of analysis of data of the study the following conclusions were drawn: Urban school boys were heavier than Rural school boys of Kalaburagi.

Urban school boys were having greater body mass index (BMI) as compared to Urban school Boys.

Rural school Boys were better in cardio-respiratory fitness than Urban school Boys of Kalaburagi.

## RECOMMENDATIONS

Similar study may be conducted at national level as regular features for more valid results.

Similar study may be conducted for different age groups in both sexes at different levels.

As the schools have the mandate and responsibility for enhancing all aspects of growth and development for students. Thus, the schools should preset unique opportunity to provide time, facilities and guidance of physical education and sports for their students to improve their fitness level.

## REFERENCES

HPER. Presidents conference on fitness of American youth, Journal of health physical education and recreation, **Vol.: 27 No-6, P.9 Sept, 1956.**

Gabbard, Carl; LeBlanc, Betty "*Health-Related Fitness and Young Children*", Accession No. ED08371, www.library.puchd.ac.in, **1980.**

Hockey, Robert V. "*Physical Fitness: The Pathway to Healthful Living*", **1983.**

Jenkins, David, "*Cardiovascular Fitness Education for Elementary students*", Accession Number, EJ187830, www.library.puchd.ac.in, **1978.**

Narinder Ginga, "Study of cardiovascular fitness 2006 unpublished Master thesis Panjab University Chandigarh.

Sander, Allan N. "*Florida's Fit to Achieve Program*", Accession No.: EJ471851, www.library.puchd.ac.in, **1993.**

Schmidt, Sharon "*Selected Activities to Improve Cardiovascular Endurance and Strength and Muscular Endurance*" Accession No. EJ476851, www.library.puchd.ac.in, **1966.**

Thompson, Patricia, "North York Fall Norms for Boys and Girls Age 12-14 for: CAHPER Tests; Measures of Aerobic Fitness; Perak Flow; Muscle Strength; Percent Body Fat, Accession No. ED 127326, www.library.puchd.ac.in, **1975.**

Tucker Larry, "*Television Viewing and Physical Fitness in Adults*" Accession Number EJ425107 (Eric) **1990.**