International Journal of Yoga, Physiotherapy and Physical Education
ISSN: 2456-5067
Impact Factor: RJIF 5.24
www.sportsjournal.in
Volume 3; Issue 1; January 2018; Page No. 49-51

Study on BMI status of rural high school boys among various academic divisions of Karnataka state

Shivakumar S, Vileep KS
Guest Faculty, DOS in Physical Education, Kuvempu University, Shankaraghatta, Shivamogga, Karnataka, India

Abstract
Introduction: Body mass index (BMI) is the simplest acceptable tool for determining relative body fatness in both clinical and epidemiological studies and was recommended as universal criterion of overweight and obesity (Prentice and Jebb, 2001; World Health Organization, 2014). Body mass index (BMI) usually defines body fatness as an index of weight relative to height, and is generally considered a valid index of adiposity (Gundogdu, 2008). It has been reported that a BMI above 27.8 and 27.3 kg/m2 for men and women, respectively, may increase morbidity and mortality (Brown *et al*., 2000).Obesity is known as one of the most important health problem in the world and its prevalence is increasing rapidly in all ages all over the world Flores-Huerta *et al*., 2009; Klein *et al*., 2002; Nesbitt *et al*., 2004). Overweight and obesity represent a rapidly growing threat to the healthy populations in an increasing number of countries (Park *et al*., 2005) and is becoming a global epidemic (WHO, 2000). Overweight and obesity may account for as many as 15-30% of deaths from Coronary Heart Disease (CHD) and 65-75% of new cases of type 2 Diabetes Mellitus (Jousilahti, 1996).
Purpose: The purpose of the study was to compare BMI status of rural high school boys among various academic divisions of Karnataka state
Methodology: The purpose of the study was to compare BMI status of rural high school boys among various academic divisions of Karnataka state. The raw data pertaining to BMI status variable of these rural high school boys of four academic divisions of Karnataka state were selected as subjects on random sampling technique. Totally 200 Subjects were selected, each 50 subjects from Gulbarga, Belgaum, Mysore and Bangalore academic division of Karnataka state. Subjects were selected between 14 to 16 year age. For assessing BMI status height and weight were selected as variables.
Results: To achieve the purpose of the study data collected was subjected to statistical analysis. The collected data was treated with One-Way ANOVA statistical technique to know the BMI status and compare among rural high school boys.
Conclusion: Within the limitations of the present study a, the conclusions were drawn as there was a significant difference found in BMI status among rural high school boys between Gulbarga and Mysore division, Belgaum and Bangalore division and Mysore and Bangalore division.

Keywords: BMI, high school, rural and academic division

1. Introduction

Body mass index (BMI) is the simplest acceptable tool for determining relative body fatness in both clinical and epidemiological studies and was recommended as universal criterion of overweight and obesity (Prentice and Jebb, 2001; World Health Organization, 2014). Body mass index (BMI) usually defines body fatness as an index of weight relative to height, and is generally considered a valid index of adiposity (Gundogdu, 2008). It has been reported that a BMI above 27.8 and 27.3 kg/m2 for men and women, respectively, may increase morbidity and mortality (Brown *et al*., 2000). Obesity is known as one of the most important health problem in the world and its prevalence is increasing rapidly in all ages all over the world Flores-Huerta *et al*., 2009; Klein *et al*., 2002; Nesbitt *et al*., 2004). Overweight and obesity represent a rapidly growing threat to the healthy populations in an increasing number of countries (Park *et al*., 2005) and is becoming a global epidemic (WHO, 2000). Overweight and obesity may account for as many as 15-30% of deaths from Coronary Heart Disease (CHD) and 65-75% of new cases of type 2 Diabetes Mellitus (Jousilahti, 1996).

Overweight and obesity have increased globally among children, adolescents, and adults. The World Health Organization (WHO) designates obesity as one of the most important public health threats because of the significant impact of chronic conditions associated with obesity. Obesity in adults increases the risk of cardiovascular, diabetes, and musculoskeletaldisorders.2,3 Obesity is less prominently associated with morbidity in adolescence4 but is a strong precursor of obesity and related morbidity in adulthood, with 50% to 80% of obese teenagers becoming obese as adults.5,6 During adolescence, overweight and obesity are often a burden that results in psychosocial problems7,8 and a reduced capacity for physical activity.9 Adolescence is a critical period for the onset of obesity10 and for obesity-associated morbidity in later life.11-13 Therefore, from a public health perspective, it is important to monitor overweight in adolescence.

2. Methodology

The purpose of the study was to compare BMI status of high school boys among various academic divisions of Karnataka state. The raw data pertaining to BMI status variable of these

rural high school boys of four academic divisions of Karnataka state were selected as subjects on random sampling technique. Totally 200 Subjects were selected, each 50 subjects from Gulbarga, Belgaum, Mysore and Bangalore academic division of Karnataka state. Subjects were selected between 14 to 16 year age. For assessing BMI status height and weight were selected as variables.

3. Statistical Analysis

The raw data pertaining to BMI status variable of these rural high school boys of four academic divisions of Karnataka state were selected as subjects on random sampling technique. Totally 200 Subjects were selected, each 50 subjects from Gulbarga, Belgaum, Mysore and Bangalore academic division of Karnataka state. To achieve the purpose of the study data collected was subjected to statistical analysis. The collected data was treated with One-Way ANOVA statistical technique to know the BMI status and compare among high school boys.

4. Results and Discussion

Table 1: One Way Anova of Bmi Status of Rural High School Boys among Various Academic Division

	Sum of Squares	Df	Mean Square	F
Between Groups	77.016	3	25.672	6.48*
Within Groups	776.522	196	3.962	
Total	853.537	199		

*Significant at 0.05 level.
F, 0.05 (3,196) = 2.65

It is evident from table.1 that, F-ratio found to be significant in Body Mass Index among rural high school boys, as obtained F value is 6.48. It is more than the table value of 2.65 at 0.05 level of significance.

As the F-ratio was found significant in the Body Mass Index, least significant difference (LSD) post hoc test was carried out to find the significant difference between the paired means and presented in table 2.

Table 2: post hoc analysis of bmi status of rural high school boys among various academic division

Group Means				
Gulbarga	**Belgaum**	**Mysore**	**Bangalore**	**Mean difference**
15.12	15.67			0.55
15.12		16.34		1.22*
15.12			14.68	0.43
	15.67	16.34		0.67
	15.67		14.68	0.99*
		16.34	14.68	1.66*

The mean difference is significant at 0.05 level.

Post hoc test results presented in the table.2 reveals that, there was a significant difference found in Body Mass Index status among rural high school boys**,** between the Gulbarga and Mysore division, Belgaum and Bangalore division and Mysore and Bangalore division. Mean values depicts that there was a steady and linear deference in the Body Mass Index status of rural high school boys with respect to the academic division from Gulbarga, Belgaum, Mysore and Bangalore.

A comparison of mean of Body Mass Index status of rural high school boys is presented in figure.1.

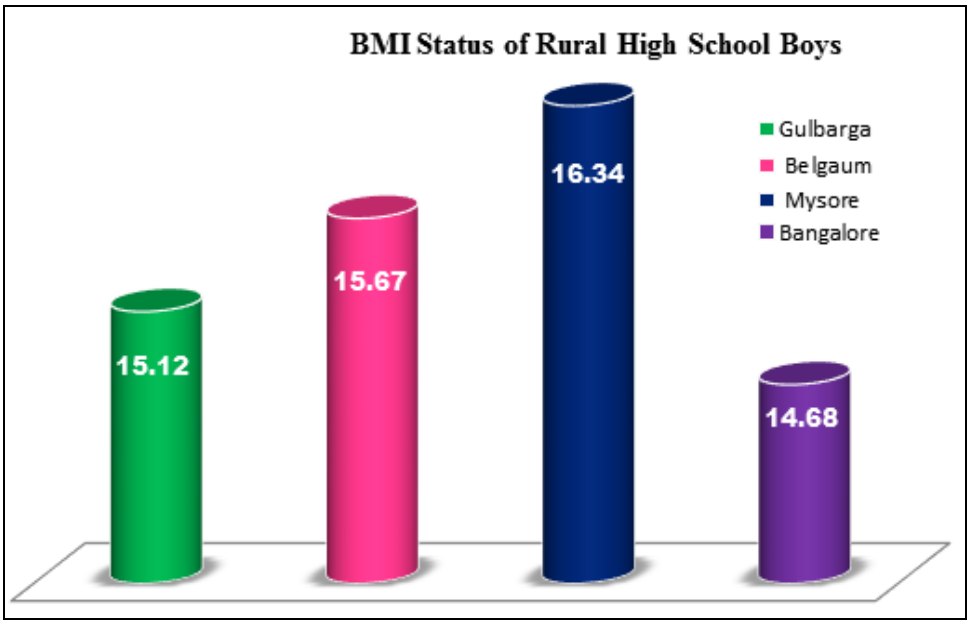

Fig 1: Comparison of Mean Value of BMI status among rural high school boys.

5. Conclusion

Within the limitations of the present study a, the conclusions were drawn as there was a significant difference found in BMI status among rural high school boys between Gulbarga and Mysore division, Belgaum and Bangalore division and Mysore and Bangalore division. But there is no significance between Gulbarga and Belgaum, Gulbarga and Bangalore and Belgaum and Mysore boys. Mean values depicts that there was a steady and linear deference in the BMI status of rural high school boys with respect to the academic division from

Gulbarga, Belgaum, Mysore and Bangalore.

6. Reference

1. WHO Expert Consultation. Appropriate body-mass index for Asian populations and its implications for policy and intervention strategies. Lancet. 2004; 363(9403):157-63.
2. Das A, Dutta M. Correlation between body mass index and handgrip strength and handgrip endurance among young healthy adults. J Evid Based Med Healthc. 2015; 2(27):3995.
3. Häger-Ross C, Rösblad B. Norms for grip strength in children aged 4-16 years. Acta Paediatr. 2002; 91(6):617-25.
4. Koley S, Kaur SP. Correlations of handgrip strength with selected hand-arm-anthropometric variables in Indian inter-university female volleyball players. Asian J Sports Med. 2011; 2(4):220-6.
5. Ministry for health, welfare and family affairs The Sixth Korea National Health and Nutrition Examination Survey. Korea Minis-try for health, welfare and family affairs, 2015.
6. Andreenko E, Mladenova S, Akabaliev V. Anthropometric obesity indices in relation to age, educational level, occupation and physical activity in Bulgarian men. Nutr Hosp. 2014; 31(2):658-65.
7. Fujishiro K, Lawson CC, Hibert EL, *et al*. Job strain and changes in the body mass index among working women: a prospective study. Int J Obes Lond. 2015; 39(9):1395-400.
8. Schneider HJ, Friedrich N, Klotsche J, *et al.* The predictive value of different measures of obesity for incident cardiovascular events and mortality. J Clin Endocrinol Metab. 2010; 95(4):1777-85.