

A Study of Body Mass Index, Percentage of Body Fat and Blood Pressure Between Boarding and Non-Boarding School Boy of Junagadh



Physical Education

KEYWORDS:

Mr. MIRABEN J PADVI

M.PED. M.PHIL. (Phy. Education), (Ph.D. Reining). CMJ University

DR. M. M. MAHIDA

Research Guide CMJ University

INTRODUCTION:

In children and adolescent the degree of body mass depends upon ethnic background, gender, developmental stages, and ages. Waist circumference, skin fold thickness and body mass index are the most useful non invasive clinical measures to define obesity. Body mass index is considered one of the most important indexes of growth through which obesity can be predicted. It is an artistic way for expressing body weight in relation to height. The human body is composed of three main component; muscles, fats, and bones, fats can be divided into essentials fats and stored fats. Recently, it has been proposed that the adult body mass index (BMI) cut-off points (25 and 30 kg/m²) should be related to BMI percentile in children and adolescents to provide for cutoff points at younger ages. Obesity and hypertension are both major public health problems in society. Cardiac output and systematic vascular resistance determines the level of arterial BP. In children, high cardiac output plays a part in the early pathogenesis of hypertension. Several factors have been suggested to be related to the BP level in children. These include genetic factors, maturation, obesity and low physical activity; body size, endocrine and renal factors, dietary factors (particularly high sodium intake), environmental cardiac exposure, oral contraceptives, noise and psychological and social influences.

MATERIALS AND METHODS

The subjects selected for the present study were 50 boarding school boys from Jawahar Navodaya Vidyalaya, Junagadh and 50 non-boarding school boys from Kendriya Vidyalaya, Junagadh. The age of the subjects were ranged between 14-17 years. In order to examine the hypothesis of the present study mean, SD and t-test were employed to compare the mean scores of boarding and non-boarding school boys on the variables of body mass index, body fat percentage and blood pressure (Systolic and Diastolic). Level of significance was set at .05.

RESULTS AND DISCUSSION

The comparison between boarding and non-boarding school boys on selected variables: body mass index (BMI), percentage of body fat and blood pressure were statistically analysed using 'T' test. The data pertaining to the same is presented in table 1.

TABLE-1

Comparison of Scores on Body Mass Index (BMI), Percentage of Body Fat and Blood Pressure (Systolic and Diastolic) Between Boarding (B) and Non-Boarding (NB) School Boy

Variable	Group	N	Mean	S. D.	M. D.	S. E.	T-Ration
BMI	B	50	19.45	2.21	.222	.540	.522
	NB	50	19.17	3.11			
Percentage of Body Fat	B	50	12.96	3.73	.62	.72	.852
	NB	50	13.58	3.35			
Systolic Blood Pressure	B	50	120.80	7.51	.600	1.69	.355
	NB	50	120.20	9.36			
Diastolic Blood Pressure	B	50	73.70	7.41	.600	1.41	.425
	NB	50	73.10	6.76			

It has been depicted from the mentioned table-1 that there were no significant differences between boarding and non-boarding school boys on the variables of body mass index, percentage of body fat and blood pressure. From the above table that the calculated 't' value in case of boarding and non boarding school boys on body mass index, percentage of body fat, systolic blood pres-

sure and diastolic blood pressure were not found to be statistically significant as the value obtained were .522, .852, .355 and .425 whereas, the tabulated value was 1.64 which 98 degrees of freedom at .05 level of significance.



Fig-1: Blood Pressure Measurement



Fig-2: Triceps Skinfold Measurement



Fig-3: Biceps Skinfold Measurement

Mean scores of body mass index (BMI), percentage of body fat, systolic blood pressure and diastolic blood pressure between boarding and non-boarding school boys of Chandigarh are depicted graphically in figures. From the above table, it has been observed that there were no significant differences obtained on body mass index (BMI), percentage of body fat and blood pressure (systolic and diastolic) between boarding and non-boarding school boys of Chandigarh. The probable reason could be that the subjects for this study were during growth period. Henceforth, the variable like body mass index (BMI), percentage of body fat and blood pressure of boarding and non-boarding school boys of Chandigarh could not be differentiated.

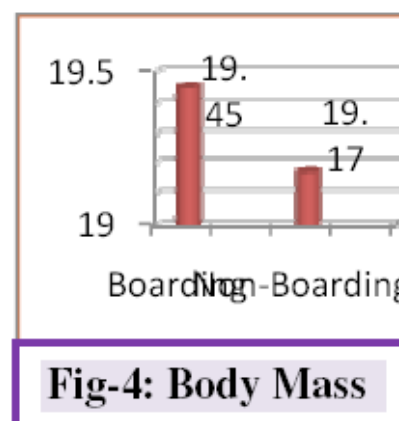
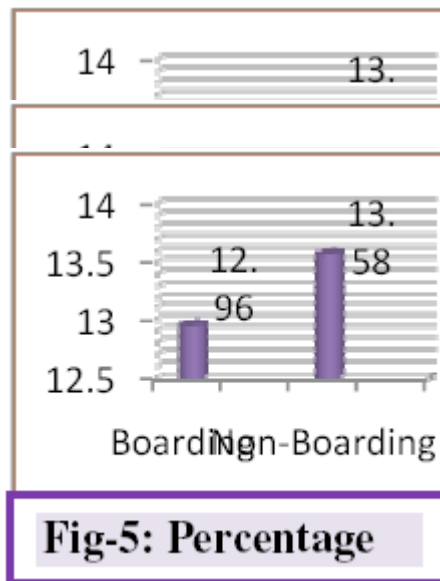


Fig-4: Body Mass



CONCLUSION

On the basis of the obtained results from the present analysis it may be concluded that boarding and non-boarding school boys of Chandigarh did not significantly differ on the variables of body mass index, percentage of body fat, systolic blood pressure and diastolic blood pressure. However, percentage of body fat boarding school boys are better score in comparison to non-boarding school boys.

REFERENCE

1. Cabollero, B., Himes, J. H., Lohman, T., Davis, S. M., Stevens, J., Evans, M., Going, S., Pablo, J. (2003). Body Composition and Overweight Prevalence in 1704 School Children from 7 American Indian Communities. *American Journal of Clinical Nutrition*, 78(2), 308- 321.
2. Durrani, A. M., Fatima, W. (2011). Determinants of Blood Pressure Distribution in School Children. *European Journal of Public Health*, 10, 1-4.
3. Drozd, D., Kwinta, P., Korohoda, P., Pietrzyk, J. A., Drozd, M., Sancewicz-Pach, K. (2009). Correlation between Fat Mass and Blood Pressure in Healthy Children. *International Journal of Hypertension*, 24, 1735- 1740.
4. De-Assis, M. A., Releand- Cachela, M. F., Grossmens de Vasconcelos, F. A., Luna, M. E., Calvo, M. C., Barros, M. V., Piresmm, Bellisle, F. (2005). Obesity, Overweight and thinness in Schoolchildren of the City of Florianopolis, Southern Brazil. *European Journal of Clinical Nutrition*, 59(9), 1015- 1021.
5. Etchison, W. C., Bloodgood, E. A., Minton, C.P., Thompson, N. J., Collins, M. A., Hunter, S. C., Dai-Hongying. (2011). Body Mass Index and Percentage of Body Fat as Indicators for Obesity in an Adolescent Athletic Population. *Journal of Sports Health*, 3 (3), 249-252.