REVIEW OF RESEARCH

ISSN: 2249-894X
IMPACT FACTOR : 3.8014(UIF)
VOLUME - 6 | ISSUE - 5 | FEBRUARY - 2017

ASSESSMENT OF BODY COMPOSITION AND BLOOD PRESSURE AMONGEST PUBLIC SCHOOL AND GOVERNMENT SCHOOL STUDENTS

Ms. Bharati Sharma[1] and Dr. Deepak Sharma[2]
[1]Lecturer, Rajkiya Mahavidyalaya, Nanota, Sharanpur.
[2]Assistant Professor , LNIPE, Gwalior (M.P.)

ABSTRACT

The purpose of the study was to assess the body composition and blood pressure among public school and government school students ages 9 through 11 years. 390 school students (195 from public school and 195 from government school of west Delhi) were selected randomly for the purpose of the study. The body composition was measured by measuring skin folds from two sites i.e. triceps and sub scapular. Blood pressure (systolic and diastolic) was also measured. Two way analysis of variance (ANOVA) was employed. Results were revealed statistically significant differences were found in body composition and blood pressure among public school and government school students ages 9 through 11 years.

KEYWORDS:*blood pressure , Physical growth and development , psychological development .*

INTRODUCTION

Physical growth and development has great influence on the kind of personal and social adjustments which children's make in their life. It has been found that children who are constitutionally weak or overweight. They generally do not succeed to keep pace with other normally healthy active children and many a times negative feelings have quite detrimental effect in their later psychological development of the child as well as the physical development in the child. But the ugliest phase/part of this process is when the parents are not aware of all they are unknowingly part of that ill condition of the child.

Body composition is a key component of an individual's health and physical fitness profile. As an exercise scientist, it is important to realize that your clients may be over fat even though they do not appear to be overweight. This may caused by a lack of physical activity. Thus, the body composition assessment should be an integral part of each individual's physical fitness profile regardless of body weight. The cardiovascular complications of obesity pose the greatest risk and concern. To prevalence of hypertension and hyperlipidema is significantly increased among obese children. The hyperlipidemic profile includes serum elevations in total cholesterol and low density lipoprotein (LDL) cholesterol and a reduction in high density lipoprotein (HDL) cholesterol. This lipoprotein pattern poses a sigtnificant risk for cardiovascular disease and may be associated with fatty streaks of the aorta in children and adolescents. Abnormal glucose tolerance may be a precursos for type II diabetes mellitus, which also increases the risk for cardiovascular disease. It is still not clear whether obesity acts as and whether the association of obesity and cardiovascular disease is mediated by its effects on blood pressure, serum lipids, and glucose metabolism. Nonetheless, the prevalence of obesity in the pediatric population suggests that obesity may

represent the most important cardiovascular risk factor in the group. According to Pate (1989), among children aged 6 to 17 years, the sum of triceps and sub scapular skin folds was inversely related to performance in health related test items (i.e. distance run, sit-ups and sit and reach exercises) but skin fold thickness accounted for only a small proportion of the variance. The relationship between skin fold linear in girls but curvilinear in boys. The relationship between fatness and fitness is more complex than is often realized. Gilliam (1977), in which 47 boys and girls ages 7 to 12 were tested found that 65% of the children had at least one coronary heart disease risk factor; 11% were obese; 18% and 11% had elevated triglycerides and cholesterol, respectively; and another 11% had low physical work capacity as measured by maximal oxygen uptake.

METHODOLOGY

390 female students (195 from public school and 195 from government school of west Delhi) ages 9, 10 and 11 years (65 students in each age category) were randomly selected for the purpose of the study. With the help of skin folds (triceps and subscapular) body composition was assessed in three components i.e. fat percentage, fat weight and lean body weight. Fat percentage assessment through fat%/100X body weight and the LBW was assessment through LBW = body weight - fat weight. The blood pressure (systolic and diastolic) was measured with the help of auscultatory method using syphgmomanometer and stethoscope. To compare the selected physical and physiological parameters between students of public school and government aging 9 though 11 years two way analysis of variance was employed. The level of significance was set at 0.05 level of confidence.

RESULTS AND DISCUSSION

Two way analysis of variance (anova) between public and government schools of different age groups on the various (physical and physiological parameter) body composition and blood pressure

variable	Source of variable	Df	Sum of squares	Mean sum of squares	Cal. F	Tab.F
Fat Percentage	School	1	458.79	458.79	8.78*	3.86
	Age Groups	2	102.86	51.43	0.98**	3.02
	Interaction	2	112.4	56.2	1.08**	3.02
	Error	384	20108.19			
Fat Weight	School	1	462.42	462.42	32.86*	3.86
	Age Groups	2	223.23	116.62	8.29*	3.02
	Interaction	2	92.72	46.36	3.29*	3.02
	Error	384	5417.12	14.07		
Lean Body Mass	School	1	906.47	906.47	25.99*	3.86
	Age Groups	2	924.75	462.37	13.26*	3.02
	Interaction	2	107.79	83.90	2.41**	3.02
	Error	384	13394.46	34.88		
Systolic Blood Pressure	School	1	186.92	186.92	0.85**	3.86
	Age Groups	2	1452.52	726.26	3.32*	3.02
	Interaction	2	501.02	250.51	1.15**	3.02
	Error	384	84196.54	218.69		
Diastolic Blood Pressure	School	1	1556	1556	29.25*	3.86
	Age Groups	2	1090.28	545.15	10.25*	3.02
	Interaction	2	1008.07	504.04	9.47*	3.02
	Error	384	20427.66	53.20		

*Significant at. 05 level $F_{.05}(1,384) = 3.86$

**insignificant at. 05 level $F_{.05}(2,384) = 3.02$

The data (fat percentage, fat weight, lean body weight, systolic blood pressure and diastolic blood pressure) was collected on 390 female students (195 from public school and 195 from government school) is statistically processed and collected here. The given table illustrates the two way analysis of variance (ANOVA) for

the data collected to assess the comparison between public school students and government school students and also the comparison amongst the ages 9 through 11 years. The post hoc test was also applied to test the significance of the result.

The table depicts that there is a significant difference between public and government schools on fat percentage as the cal. F was found 8.78 and the tab.F ratio was 3.86, since the calculated ratio was higher then the table value it was significant at 0.05 level of confidence. There is insignificant difference between age groups and interaction on fat percentage as the calculated F was found 0.98 and 1.08 respectively, which is less than the tabulated F 3.02 at the 0.05 level of confidence.

There is a significant difference between public school and government school students on fat weight. The calculated F was found to be 32.86 against the tabulated F ratio 3.86. The Cal. F was higher than the Tab. F value, it is found significant. There is also significant difference was found on fat weight between the age groups and interaction values. The Cal. F was found 8.29 and 3.29 respectively against the Tab. F value 3.02. The Cal F value was found higher than the Tab F value at the 0.05 level of confidence.

Table reveals that there is significant difference was found between the public school and government school and also among the age groups. The Cal f for schools was found 25.99 against the Tab F value 3.86, which is found higher than the Tab F value and hence significant at 0.05 level of confidence. The Cal F value for age groups was found 13.26, which is greater than the Tab F value 3.02 to be significant at 0.05 level of confidence.

The interaction among school and age groups were found insignificant. The Cal F was found to be 2.41 less than the Tab F 3.02 value, insignificant at 0.05 level of confidence.

Table demonstrates the insignificant difference were on Systolic blood pressure found between the public school and government school and also among the interaction of schools was 0.85 against the Tab F 3.86, Cal F found less than the Tab F, so found insignificant and the Cal F for interaction among schools and age groups as found 1.15 against the Tab F 3.02. The Tab F 3.02 is higher than the Cal F required to be insignificant. There is significant difference was found among age groups as the Cal F value was 3.32 higher than the Tab F 3.02 required for being significant.

There was significant difference was found on Diastolic blood pressure between the public school and government school, among the age groups and also among the interaction of schools and age groups. The Cal F values for the above were found 29.25, 10.25 and 9.47 against the Tab F 3.86, 3.02 and 3.02 respectively. The Cal F values were found higher than the tabulated F values. Hence, there is significant difference was found at 0.05 level f confidence.

CONCLUSION

1. There is a significant difference between the public school and government school on fat percentage.
2. The significant difference was also found on fat weight between the different age groups as well as in the public school and government school.
3. In lean weight the significant difference was also found among the different age groups and between the public school and government school.
4. The significant difference was found between the different age groups on systolic blood pressure.
5. The significant difference was found in diastolic blood pressure among different age groups and between public school and government school.