Research Paper Physical Education

Analysis of Bmi Among Adolescent School Boys of North-Eastern States of India

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ABSTRACT

In the present electronics era most of the adolescent are not participating in physical activities and concentrate are on studies. Regular physical activity would be important for life's quality even if it had no relationship to disease and longevity. Physical activity is a significant ingredient in the quality of life, because it increases energy and promotes, physical and mental well being in addition to conferring health benefits. Boys from various schools of [Tripura (TR), Meghalaya (ML), Assam (AS), Mizoram (MZ), Manipur (MN), Nagaland (NL) and Arunachal Pradesh (A.R.)] (N=21000) North-Eastern states of India were selected as subjects at random. Their age ranged from 13, 14 & 15 years (studying from 7th to 10th standard). BMI was measured by (Body weight in Kg. / Height in meter2). The collected data were analyzed by using one-way ANOVA. Among the groups if any significant difference, scheffe's post hoc test was used to find out the paired mean difference ($P \leq 0.05$).

KEYWORDS North-Eastern state, Adolescent, BMI, ANOVA.

INTRODUCTION

Life styles affect people's health with eating habits and regular physical activity being the two most influential factors [1], irrespective of sex, age or country of residence [2]. Body composition that relates to the relative amount of muscle, fat, bone and other vital parts of the body. Sports and games provide an ideal time to introduce the concept of wellness to young children. A healthy body produce effective performance and allows the child to get maximum enjoyment. Physically fit children's generally have better memory concentration and energy level. They tend to be healthier and more inclined to carry their healthy life style in adulthood [3]. Obesity has become a healthy hazard of epidemic proportion in most developed countries around the world. Obesity by itself has been associated with several serious health problems and mortality rate. Obesity has long been recognized as measure risk factors for diseases of the cardiovascular system, including coronary heart disease, hypertension, congestive heart failure, elevated blood lipids, atherosclerosis, strokes, thromoboembolitic disease, varicose veins and intermittent claudication [4]. Current study focuses school going adolescents are facing health hazard problems that leads to physical, physiological and psychological problems. Basic data among adolescent's shows, they are not receiving adequate physical activities and capacity building to equip them for the future. Studies need to conduct in India to high light various areas of concern with respect to adolescent life style [5].

METHODOLOGY

Excess body fat lowers aerobic fitness and reduces the ability to perform many activities requiring jumping or moving quickly. However being too thin is not desirable either. Suitable body composition is important for general health and appearance for maximizing athletic performance.

To achieve this purpose (n= 3000) boys from various schools of each state of Tripura (TR), Meghalaya (ML), Assam (AS), Mizoram (MZ), Manipur (MN), Nagaland (NL) and Arunachal Pradesh (A.R.) N=21000 adolescent boys from North-Eastern states of India were selected as subjects at random. Their age ranged from 13, 14 & 15 years (studying from 7th to 10th standard). BMI was measured with whinge machine & Measuring Tap (Body weight in Kg. / Height in meter^2). The collected data were analyzed by using one-way ANOVA. Among the group if any significant difference, sceffe's post hoc test used to find out the paired mean difference. The confidence level to test the significance was fixed at 0.05 ($P \leq 0.05$).

RESULT

TABLE - 1 ANOVA of North-Eastern States of India Adolescent on BMI

Age		Sum of squares	df	Mean square	'F'
13 Years	B	4336.886	6	722.84	486.010*
	W	6236.000	4193	1.487	
14 Years	B	1395.487	6	232.581	191.309*
	W	5097.571	4193	1.216	
15 Years	B	962.427	6	160.405	155.257*
	W	4332.081	4193	1.033	

P ≤ 0.05 / table value = 2.09/df 6 & 4193

TABLE - 2 Scheffe's Post hoc test on BMI for North-Eastern States Adolescent Boys

AGE	TR vs ML	TR vs AS	TR vs MZ	TR vs MN	TR vs NL	TR vs A.R.	ML vs AS	ML vs MZ	ML vs MN	ML vs NL	ML vs A.R.	AS vs MZ	AS vs MN	AS vs NL	AS vs A.R.	MZ vs MN	MZ vs NL	MZ vs A.R.	MN vs NL	MN vs A.R.	NL vs A.R.	C.I.
13	.94*	1.79*	2.43*	3.22*	1.55*	2.66*	.85*	1.49*	2.28*	.61*	1.72*	.64*	1.43*	.23*	.86*	.78*	.88*	.22	1.66*	.56*	1.10*	.23
14	.73*	.12	1.00*	.12	.94*	.52*	.86*	1.74*	.61*	1.68*	1.26*	.87*	.24*	.82*	.40*	1.12*	.05	.47*	1.07*	.65*	.42*	.21
15	.49	.28	1.36*	.15	.42	1.18*	.20	.87*	.33	.06	.69*	1.07*	.12	.14	.89*	1.20*	.93*	.17	.26	1.02*	.75*	.68

TR: Tripura, ML: Meghalaya, AS: Assam, MZ: Mizoram, MN: Manipur, NL: Nagaland, A.R.: Arunachal Pradesh.

The result of the study shows that, 13, 14 and 15 years adolescent boys of North-Eastern states were significantly differ on BMI. The post hoc results indicate that, in 13 years, except MZ and A.R., all others are having significant differences on BMI. Among the 14 years except TR vs. AS, TR vs. MN and MZ vs. NL all others are having significant difference. Among 15 years, TR, ML, AS and MZ states adolescent boys are having significant differences for two paired means and MN and NL having one paired means only.

DISCUSION

With growing supply of literature supporting the value of regular physical activity for health and fitness, the evaluation of body composition has become an important aspect of adult fitness and medically supervised rehabilitation programme. Body composition is a primary component of health related fitness. Physical fitness represents a complex assortment of components that may be grouped as either motor skill related or health related. Health related fitness includes muscular strength and endurance, flexibility and body compositions [6].

Body composition is considered to be an important measure of health fitness. A high percentage of body fat relative to bone and muscle has been shown repeatedly to be predictor of wide range of degenerative diseases. Body composition of their body changes as the fat percentage decreases and percentage of muscle increases with weight staying level or reducing only slightly [7]. The classification of body into fat weight and lean body weight [8]. Body mass is primary muscle and bone tissue [6]. Body Composition is the ratio of fat-to-fat free mass [9].

The determination of percent body fat prior to and following a conditioning and weight training provides a convenient means to evaluate alternations in body composition that often are independent of changes in body mass. For young adults approximately one and half of the body's total fat is subcutaneous fat and the remaining are internal or organ fat. With advancing age, a proportionately greater quantity of fat is deposited internally in comparison to subcutaneous fat. Thus the same fat fold scores reflect a greater total percent fat, as one gets older. For this reason, age adjusted or generalized equations should be used when predicting the body fat from fat folds or girths [10].

In general body fatness negatively influences performances both mechanically and metabolically in most physical tasks that require translocation of body weight. Fat free weight on the other hand, tends to have a positive relation with physical performance. Body composition may be influenced by number of factors such as age, sex, diet and exercise. Age effects are significant during development years. Diet can effect body composition over short period such as in the acute water restriction and starvation but its main effects are seen aver long period [6]. From the results of study it was clear that, when age advances the BMI also increased during adolescent years. Among the states MZ and A.R. state boys of 13, 14 and 15 years are having better BMI than the rest of the states of North-Eastern states.

CONCLUTION

1. BMI is directly proportional to the age of adolescent periods.
2. Among the states MN, A.R. and MZ boys of 13 years, MZ, NL and A.R. boys of 14 years and MZ, A.R. and ML boys of 15 years shows better BMI.
3. The life style, food habits, curriculum design and health awareness of MZ and A.R. states adolescent boys were better than the rest of the North-Eastern states.

IMPLICATION:

Curriculum and health awareness will be reformed for the adolescent boys of North-Eastern states. The role of BMI may be inculcated in the needs of parents, pupils and teachers. The state government and M.H.R.D. may give importance for health of the adolescents.

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