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Relationship of selected blood variables to health related physical fitness of college tribal men

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Abstract

The purpose of the study is investigate the relationship of selected blood variables to health related fitness of college tribal men. Hundred tribal male students of Seva Bharati Mahavidyalaya, Kapgari, Dist-Jhargram, West Bengal, were randomly selected as the subjects for this study. The average age of the subjects was ranging from 18 years to 25 years. The variables selected for the study were Hemoglobin, Eosinophil, R.B.C count, Platelet count, clotting time in case of selected blood variables and variable for health related physical fitness Grip strength, leg strength, back strength, muscular endurance, Cardio Respiratory Endurance, Body Fat percentage & flexibility. And To find out the relation the relationship of selected blood variables and health related physical fitness the mean and standard deviation were calculated. To find out the relationship person;s product moment correlation were applied at 0.05 level of significance. However, the relationship of Hemoglobin with muscular endurance and cardio respiratory endurance and R.B.C count with cardio respiratory endurance was only found to be significant at 0.05 level of significant.

Keywords: Blood variables, muscular endurance RBC count, Physical fitness BMI, flexibility etc

Introduction

Physical education is basically concerned with the human movement, which is imparted through the 'physical'. It is human body, which has stood the catastrophic changes of the environment and it is imperative that it should be trained in such a way as to cope up with the still changing environment biologically.

In addition to the behavior of physical activity, specific components of health-related fitness are important to improve health and wellbeing in youth. Health-related fitness consists of five domains including body composition, cardio respiratory endurance (aerobic fitness), muscular strength and endurance, and flexibility; however, body composition and cardio respiratory endurance are the two domains that tend to have the strongest relationships with health outcomes in the pediatric population. Because of the established relationships between body composition, cardio respiratory endurance, and various health markers, improving these components health-related fitness has become a priority to improve wellbeing and attenuate risk of developing chronic disease

In games and sports systematic and scientific training of sports men plays a vital role. Health related fitness also plays a major role to attain the optimum level of performance in games and sports. Therefore specialized training with high level of health related fitness in games and sports has become a necessity to produce superior performance. Today sports have become a farm of mass participation. It attracts the mass either for recreation for physical fitness or a profession. The development of any games and sports accompanied by inviting of several fitness tests or none training methods.

Statement of the problem

The main purpose of the study is investigate the relationship of selected blood variables to health related fitness of college tribal men.

Procedure

Hundred male students of Seva Bharati Mahavidyalaya, Kapgari, Dist-Jhargram, West Bengal, were randomly selected as the subjects for this study.

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The average age of the subjects was ranging from 18 years to 25 years.

All the subjects were medically fit for going through the test of the study. The requirement of the study was explain to all the subjects in the presence of teacher regarding the tests and all were agree to undergo for the testing.

The variables selected for the study were Hemoglobin, Eosinophil, R.B.C count, Platelet count Clotting time in case of selected blood variables, the necessary data on selected blood variables was collected at the Pathology lab of Jhargram. Hemoglobin measured by using Drabkin's method. Eosinophil, R.B.C count, Platelet Count measured by slide method and used country cheater. Clotting time was measured by Lee and white method. Hemoglobin was recorded in gm/dl, Eosinophil was recorded in mm, R.B.C count was recorded in mm, Platelet count was recorded in second and the variable for health related physical fitness were Grip strength, leg strength, back strength, muscular endurance, Cardio respiratory endurance, body fat percentage, flexibility. Grip strength was measured by Handgrip dynamometer and was recorded in kg, leg strength was measured by strength dynamometer and was recorded in kg, back strength was measured by back dynamometer and was recorded in kg, muscular endurance was measured by knee bend sit ups and was recorded in number of correct sit ups. Cardio respiratory was measured by Copper 12 minutes run/walk test and was recorded in mts., Body fat percentage was measured by the skin fold caliper and was recorded in percentage, flexibility was measured by sit and reach test and the score will recorded in cm. To find out the relationship of selected blood variables with health related physical fitness, the men and standard

deviation were calculated as well as Pearson's product moment correlation were applied at 0.05 level of significance.

Results of the study

The statistical analysis of data collected on one hundred subjects of Seva Bharati Mahavidyalaya, Kaggari for analyzing the relationship of selected blood variables to health related physical fitness of college tribal men. To established the relationship of selected blood variables to health related physical fitness of college youth men, the level of significance was set at 0.05 level which was considered adequate enough for this study.

The descriptive statistics and correlation coefficient of the selected blood variables to health related physical fitness of college tribal men are presented in Table-1 and 2

Table 1: Descriptive statistics of selected blood variables and health relate physical fitness variables

Variables	Mean	Std. Deviation	N
Hemoglobin	14.8912	1.4987	100
Eosinophil	279.86	76.98210	100
R.B.C Count	5.1024	0.8401	100
Platelet Count	2.8247	.6541	100
Clotting Time	524.5412	123.2543	100
Right Grip Strength	47.5210	7.6587	100
Left Grip Strength	44.6412	8.2368	100
Leg Grip Strength	126.9672	21.0254	100
Muscular Strength	52.354	17.1891	100
Cardio Respiratory End	2612.40	4.6534	100
Variables	Mean	Std. Deviation	N
Body Fat Percentage	12.0124	2.3541	100
Flexibility	6.768	2.5478	100

Table 2: Coefficient of Correlation of selected Blood Variables with Health Related Physica Fitness Variables.

Variables	Right Grip Strength	Leg Grip Strength	Leg Grip Strength	Back Strength	Muscular Enduranc	Cardio respiratory End.	Body Fat Percentage	Flexibility
Hemoglobin	0.049	-0.024	-0.191	-0.138	0.205*	0.221*	0.074	0.019
Eosinophil	0.187	0.197	0.045	0.491	0.321	0.003	0.0101	0.055
R.B.C Count	-0.147	-0.091	0.141	-0.015	0.083	0.226*	0.043	0.094
Platelet Count	0.067	0.002	0.034	-0.079	0.084	-0.027	-0.083	0.009
Clotting Time	0.084	0.069	0.075	-0.195	-0.046	-0.025	0.071	0.079

*Significant at 0.05 level: 'r' needed for significant at 0.05 level with 98 df = 0.197

It is evident from table 2 that the relationship of Clotting time and flexibility was found insignificant at 0.05 level of significance. However, the relationship of hemoglobin with muscular endurance and cardio respiratory endurance and R.B.C count with cardio respiratory endurance was only found to be significant at 0.05 level of significance.

Discussion of Findings

From the finding of this study it was found that there is no significant relationship between selected blood variables and health related physical fitness except hemoglobin with muscular endurance and cardio respiratory endurance and R.B.C count with cardio respiratory endurance.

During muscular endurance activity and cardio respiratory endurance activity, the diffusion of oxygen and carbon dioxide across the alveolar capillary and tissue-capillary membranes increases. Oxygen and carbon dioxide are transported by blood, mainly in chemical combination with diffuses into plasma does not undergo any chemical reactions; rather, It is dissolved in plasma and is carried in physical solution. The amount carried in this way is, under normal conditions, very small. On the other hand, oxygen that

diffuses into the red blood cells combines chemically with hemoglobin (Hb) to form what is call oxyhemoglobin (HbO₂), this binding process increases the oxygen carrying capacity of blood by about 65 times.

Amount of hemoglobin if increase then the oxygen carrying capacity also increase so that's why muscular endurance and cardio respiratory endurance also increase so, for this reason the relationship between hemoglobin with muscular endurance and cardio respiratory endurance which may be significantly shown in the result of the study.

It was found hemoglobin in red blood cell. Oxygen that diffuses into the red cells combines chemically with hemoglobin (Hb) to form what is call Oxyhemoglobin (HbO₂), the main function of red blood cell is to carry oxygen and carbon dioxide and on this way R.B.C help in respiration R.B.C, if increased then the oxygen and carbon dioxide carrying or this reason the relationship between R.B.C count with cardio respiratory endurance is significantly shown in this result of the study. (Edward L. Fox, Richard W. Bowers, Merie L. Foss, "The Physiological Basis of Physical Education and Athletics", Fourth Edition, p.224-232).

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