

Investigation of physical fitness and fat percentage of intervarsity male players

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Abstract

The purpose of the study was to find out the relationship between Body Fat % with physical fitness performance among the male basketball players. For the purpose of this study 30 male basketball players were selected randomly from GGV, Bilaspur (CG). The age of the subjects range between 19-25 years. For measure the physical fitness selected the AAHPER Test. For measure body fat percentage used percentage body fat prediction equation reported by Jackson & Pollock, 1978. To determine the significant relationship between the Body Fat percentage with physical fitness performance, Pearson's product moment correlation was employed. The level of significance was chosen at 0.05. The analysis of data revealed that there is a significant relationship between body fat percentage and physical fitness performance.

Key words: Body fat percentage, physical fitness, AAHPER test

1. Introduction

There are so many factors which are responsible for the fitness of the players. The physique and body composition, including the size, shape and form are to known to play significant role in this regard. At present player for superior performance in any sports is selected on the basis of physical structure and body type, which has proved to be appropriate for high performance in the given sports. Fitness is currently viewed as a series of components, each of which is specific in terms of its development and maintains. Typically, fitness components are divided into two basic categories: those essentially related to health and those related to motor skill performance. An additional category, cosmetic fitness, will also be considered because of its importance in the culture. The importance of recognizing the distinction between these two categories of fitness is that the health components have their foundation in the prevention and remediation of disease and illness, whereas the motor performance components are related to areas such as improved sports performance. The most common way to refer to fitness currently is to use the phrases health fitness and motor-performance fitness. The components of health fitness are general in the sense that they apply to everybody and that each person should achieve and maintain certain levels of health fitness in order to stay as healthy as possible throughout a life time and to improve the quality of life. Motor performance fitness, on the other hand, is more functional and specific. Measurement of body in objective units is possible with such tools as scales, tape measure, calipers and stadiometer. Sheldon classified physique, or body type, as endomorphic, mesomorphic or ectomorphic body builds are advantageous to certain activities.

Body composition makes an important contribution to an individual's level of physical fitness. There is an inverse relationship between body fat levels and physical performance.

This inverse association indicated that when the degree of body fatness increased physical performance start to decline (Shangold and Mirkin). Many other studies investigated that the higher the percentage of body fat the poorer the person's performances. This is true for all activities in which the body weight must be moved through space, such as in sprinting and long jumping. It is less important for stationary activities, such as archery and shooting. Relative body fat is a major concern for athletes too (Wilmore and Costill).

2. Methodology

2.1 Sample

30 Male basketball players who had participate in Intervarsity basketball competition. The age of the students were ranging from 19-25 years & studying in GGV, Bilaspur (CG).

2.2 Procedure

The body fat percentage measured with skin-fold calliper. Hold the skin-fold calliper between the thumb and forefingers of hand. Fit the jaws of the skin-fold calliper on selected body parts of the skin fold. Allow the skin and calliper to settle for a few minutes. Take a reading, note the thickness of the skin fold. This measured in millimetres.

Body fat Percentage (BF%) of the subjects were determined and computed using the equations described by Jackson A.S. and Pollock M.L,(1978). To find out physical fitness performance of selected basketball players AAHPER fitness test was administered in which, shuttle-run for agility, standing broad jump for explosive strength, sit-ups abdominal strength, pull-ups for arm strength, 600 meters run-walk for endurance, 50 meters dash for speed.

The relationship of body fat % and physical fitness was calculated by using Pearson's product movement correlation coefficient. For testing the hypothesis, the level of significance was set at 0.05.

3. Results and Findings of the study

In order to find out the relationship of the physical fitness and body fat %, Pearson's product moment correlation was used

Table - 1
Table 1: Relationship between Physical Fitness and Body Fat % among intervarsity male players

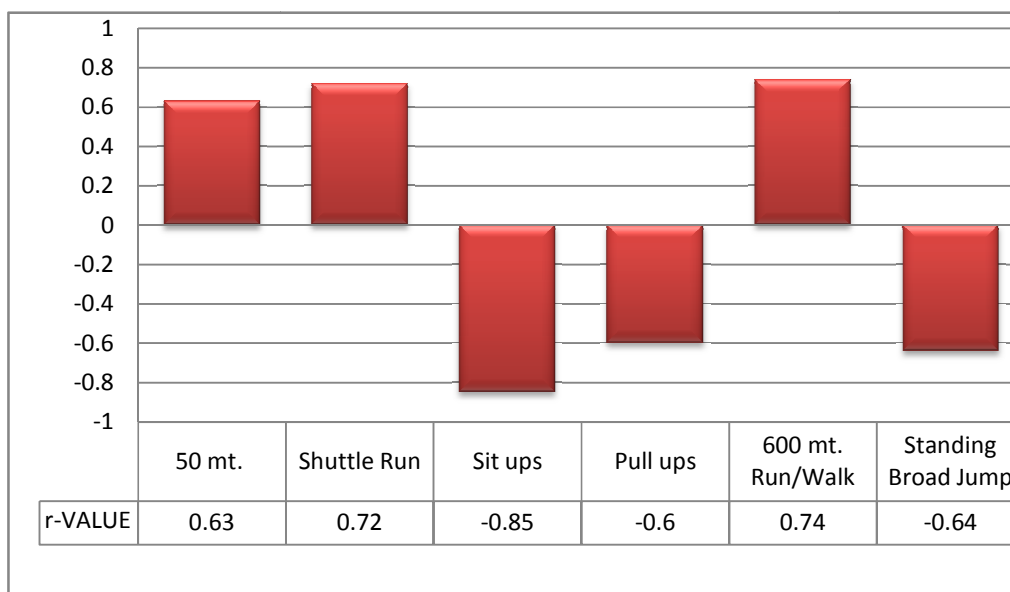
Anthropometric Variable	Physical Fitness Variables	Coefficient of Correlation (r)
BODY FAT %	50 meter	0.63*
	Shuttle Run	0.72*
	Sit ups	-0.85*
	Pull ups	-0.60*
	600 meter Run/Walk	0.74*
	Standing Broad Jump	-0.60*

*Significant at 0.05 level.

Table 1 reveals that the relationship of body fat percentage with physical fitness variables; 50 meter dash, shuttle run, shit ups, pull ups, 600 meter run/walk, and standing broad jump. The coefficient of correlation values are 0.63, 0.72, -0.85, -0.60, 0.74, and -0.60, respectively.

Table shows that the body fat percentage has significant relationship with all the physical fitness performance; 50 meter dash, shuttle run, shit ups, pull ups, 600 meter run/walk, and standing broad jump, the coefficient of correlation value of sit-ups is 0.85 which is greater than others at 0.05 level of confidence.

Figure 1: Graphic Representation of the Relationship between Physical Fitness and body fat % among the intervarsity male players



4. Discussion and Conclusions

The values of all educational domains such as cognitive, affective and psychomotor have equal importance to shape young adults. Total fitness is indispensable in every aspect of life, only excel in academic achievement may not be guaranty to be a whole person and to lead a better way of life. From the above mentioned results and discussion, it can therefore be concluded that physical fitness performances such as in running and jumping activities, and also in sit-ups and pull-ups performances which need body weight movement through space were influenced by body fatness.

On the basis of the available data and statistical calculations done for this study the conclusions are drawn.

The body fat percentage has shown negative relationship with sit-ups, pull-ups, and standing broad jump, because fat increase the body weight and heavy weight is always a restraining factor while going for pull-ups, sit-ups and jump. While shuttle run, 50mt. Dash and 600 mt. Run/walk test score showed a positive association with the degree of body fatness. Even though the determinants of physical performances are many and complex, the degree of percentage body fat level which was possessed among participants can serve as a good indicator of physical performance achievement.

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