



## A SCIENTIFIC APPROACH TO STUDYING PHYSICAL FITNESS VARIABLES THAT REGULATE PERFORMANCE OF MALE BASKETBALL PLAYERS

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### **ABSTRACT**

The purpose of the study was to find out the relationship of selected physical fitness variables and basketball performance of state level male basketball players. To achieve the purpose of the study, twenty male (n=20) were selected as subjects who had participated in Punjab state basketball championship as subjects. The age of the subjects was ranged between 18 to 25 years. The subject's performance was measured for their physical fitness variables which included Fifty meter dash for speed, agility run (4 X 10m), Cooper's 12 minutes run/walk test were assessed. Statistical analysis of data comprised of Pearson's product movement correlation to assess the relationship between playing ability variable and physical fitness variables. The obtained coefficients were compared at .05 level of significance. The Result of this study indicates that their significant relationship was found between selected physical fitness variables with basketball performance. Findings of this study concluded that physical fitness variables make a huge impact upon the performance of a player and improvement in the fitness can make difference in the performance of a player as well as the results.

**KEYWORDS:** Physical Fitness, Basketball performance, impact, state level..

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## INTRODUCTION

Performance of a sports person in some sports also depends on his/her physical fitness. Physical fitness is the total of five motor abilities namely cardiovascular endurance, power, agility, speed, and muscular strength. For that reason, the sports performance in all sports depends to great extent on these abilities. Enhancement and preservation of physical fitness is the most important mean of sports training (Uppal, 1980). Often referred to as explosive power, Muscular power, is a combination of speed and strength which is important in vigorous performance since it determines how hard a person can hit, jump and push, etc. Suppleness is the Quickness to adjust the direction of body or its parts rapidly which is dependent relative on potency, rejoiner time, speed of movement, and muscular coordination. Speedy start and stops and speedy changes in course are elementary for good performance in athletics.

Fitness cannot be sacrificed in favour of skill and technique. In modern days, an athlete has to be physically “extra word,” to withstand the tough competition. Regarding different systems of physical culture, physical education, yogic Asana, the Athenians and Scandinavians all believed in one, ideal, ‘fitness.’ Physical fitness is an important component of total fitness. The expression ‘physical fitness’ means more than muscular strength and stamina. It implies efficient performance in exercise or work at a reasonable measure of skill in the performance of selected physical activity. The performances at higher level or outstanding programmes are based upon the foundation of the sportsmen which should also be strong and potential.

Basketball has been called international sports. There is hardly a corner on the earth where people of all ages and both gender have not been attracted by this game of fast movement, amazing accuracy and sometimes thrilling extra ordinary finishes. Basketball game is a combination of

masterful skills and aesthetic body movement. The experts in the field believe that marked changes and advancement in the game’s technique and tactics as well as multivariate strategies is the outcome of scientific approach. They suggest that the game should be segregated into different components for individualized training and then combined together to give peak performance. Basketball players have an essential need, skilfulness, change of speed, sense and direction, passing ability, rebounding ability and shot must be carried out with the ball, a tool which is not easy to handle. For that a high degree of motor abilities like, strength, anaerobic and aerobic endurance, agility, speed of movement, reaction time, explosive power, flexibility etc. are the essential qualities required to be developed by the basketball players.

The effectiveness of many physical performances is related to various basic traits found in boys and girls including their maturation, body size, and physique type. Many of these traits are related to heredity; others, such as body weight have hereditary implications may also be affected environmental influences, including the nature and amount of exercises, nutritional practices and health habits. Competitive Basketball makes a tremendous demand on the physical condition, vitally endurance and mental power of the participant. Only athlete or sportsmen in the finest condition may withstand the wear and tear of a competitive season. Only the fittest are able to play to the best of their ability. In this modern age of scientific knowledge, scientific methods of training enabled the coaches and physical educationists to develop the best type of conditioning programme suitable for all.

The importance of motor fitness is described in these words that “motor fitness and competitive performance go hand in hand with athleticism”. Superb fitness level is a pre requisite in training for competitive basketball. Apart from the above motor

fitness evaluations, motor skill is also very important factor in basketball playing ability. Each phase of skill development is related to the fulfillment of concrete tactical tasks that can arise in the game. Performance in basketball requires high degree of skill proficiency in passing, shooting, dribbling, rebounding etc. So, we can say that the skills are the soul of the game from technical, tactical and strategically point of view. As the nature of the game somebody once said " when the going got tough, the tough get going" to avoid a breakdown of skill like missing an easy shot, throwing a bad pass or losing your opposing player in defence etc. under the pressure of a competition game situation, require intensive training and experience in realistic and game conditions.

### OBJECTIVES OF THE STUDY

To analyze the relationship of selected physical fitness variables and performance of state level male basketball players.

### HYPOTHESIS

There would be significant relationship of selected physical fitness variables with basketball performance of state level male basketball players.

### METHODOLOGY AND PROCEDURE

Twenty (20) state level male basketball players from Punjab state were selected as subjects for the purpose of this study. Those players who had at least represented their district team in the Punjab State Basketball Championship and were still playing competitive basketball were selected as

subjects for the study. On the basis of discussions with experts, feasibility criteria, availability of instruments and the relevance of the variable to the present study, the following variables were selected.

### Selected Physical Fitness Variables

1. Fifty meter dash for speed
2. Agility run for agility (4 X 10m)
3. Cooper's 12 minutes run/walk test for cardio-vascular endurance.

### Test Administration

The subjects were tested for the physical fitness variables such as speed were measured by 50 meter dash test and the score was measured in seconds, agility measured by 10x4 meter shuttle run test and the score was measured in seconds and cardiovascular endurance measured by 12 mint run and walk test in minutes and seconds.

### Statistical Analysis

Pearson product- moment correlation was applied to check whether relationship among the selected variables exists or not. The data was computed on the statistical package for the social sciences (SPSS).

### ANALYSIS OF DATA AND RESULTS

Data were presented in tables and graphs. The researchers presented and discussed the data solicited from the result of the study. The data is presented in the following table 1 and graph 1:

TABLE 1. Correlation between physical fitness variables in relation with basketball performance

S. No	Variables	'r' Value
1.	Speed	0.482*
2.	Agility	0.493*

<b>3.</b>	<b>Cardiovascular Endurance</b>	0.525*
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Significant at 0.05 level = 0.433

It is observed from table 1 statistics that the selected variable i.e. speed, agility and cardiovascular endurance showed

significant relationship with the basketball performance as the calculated value of 'r' is higher than the tabulated value.

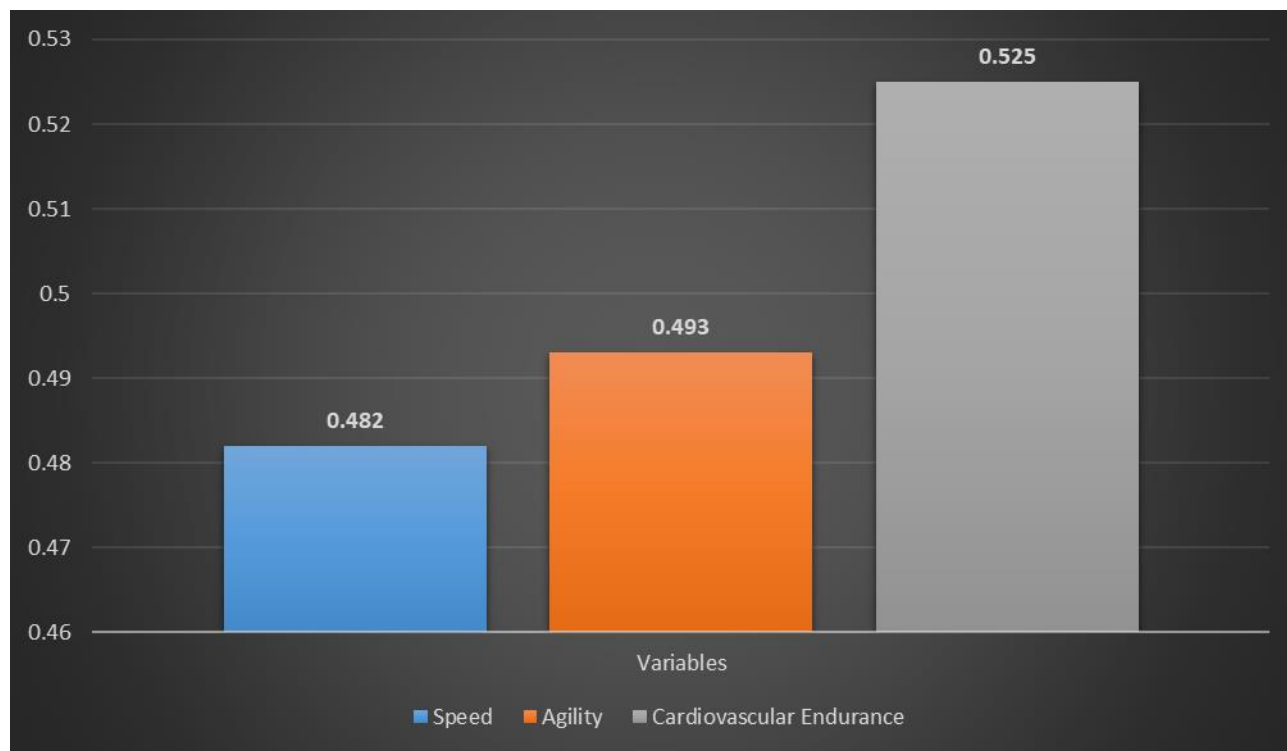


Figure 1. – Correlation between physical fitness variables in relation with basketball performance

## CONCLUSION

On the basis of findings of the study, the following conclusions were drawn. There were significant relationship found between the selected physical fitness variables such as speed, agility and cardiovascular endurance and basketball performance of state level male basketball players.

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