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## Relationship between selected strength and coordinative ability variables of school level basketball players

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### Abstract

The purpose of the study was to find the relationship between different strength variables such as leg Strength, Abdominal Strength and Shoulder Strength and only one coordinative ability such as Hand eye coordination of the basketball players. The sample was taken from the 26 Male basketball players of Haryana State in the age group of 17 to 19 in Haryana school state tournament.

Physical Fitness tests were conducted named Standing Broad Jump, Front Sit-ups test, Shot Put Test for the study of Leg Strength, Abdominal Strength and Shoulder Strength respectively. Wall pass test with basketball was conducted for hand eye coordination. Pearson's Co-efficient of correlation was used to find out the relationship between Leg strength Abdominal Strength Shoulder Strength and Hand eye coordination.

**Keywords:** Strength, Coordination, Leg strength, Abdominal Strength, Shoulder Strength and Hand eye coordination.

### Introduction

Strength and coordination are the key factors in ball games. In ball games such as basketball, handball, volleyball and netball, we performed various strength and combine actions and movements as fast as possible. We know that during game, we do some skills with the help of selective strength and other conditional variables. These variables work together for achieve the desire goal or skill. So the main motive for study these variables to find out the relationship between these selected variables.

Coordinative abilities are very significant in games and sports. As a matter of fact, the beautiful and graceful movements are a product of well-developed technical skills and coordinative abilities. Strength- Strength is a factor that influences the performance efficiency of an individual in different areas of sports. It is the ability of an individual to exert force. In different games, some amount of resistance has to be overcome, depending upon the magnitude and type of resistance to be tackled in various games. The players of different games develop different levels of strength. Strength is one of the most important factors of physical fitness. Different sports need the different types of strength. In wrestling and weight lifting, we need maximum strength but on the other hand, long jump and throwing events or explosive sports like basketball and handball need the explosive strength. Strength endurance is also required in football, hockey and basketball many other sports events.

Coordination-It deals with two or more muscle groups of the body in a community or union. Different games depend on the combination of two or more coordinative qualities performed by the different muscles i.e. hand-eye, eye-foot and arm-shoulder coordination. Coordination is moving with seamless precision in your desired movements.

### Objectives of the Study

1. To find out the relationship between the Leg-Strength variable of basketball players with their abdominal strength, Shoulder strength and Hand eye coordination.
2. To find out the relationship between the abdominal strength variable of basketball players with their Shoulder strength and Hand eye coordination.
3. To find out the relationship between the Shoulder strength variable of basketball players

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their hand eye coordination.

**Methodology**

The study was conducted on only senior secondary school level basketball players of various three distt. Of Haryana in school state tournament, between the age group of 17 to 19 years. Tests were conducted on the given time and very clean administration and instruction given by the administrator regarding the tests. Sufficient time was given to every subject for proper warming up. Pearson’s Co-efficient of correlation was used to find out the relationship between Leg strength Abdominal Strength Shoulder Strength and Hand eye coordination.

**Variables and Tools to Be Used**

Physical Fitness variables and Tests:-

- Leg Strength- Standing Broad Jump Test
  - Abdominal Strength - Front Situps Test
  - Shoulder Strength- Shot Put Test
- Coordinative Ability**
- Hand Eye Coordination- Wall Pass Test

**Interpretation and Finding of Study**

The findings of the data after its statistical analysis by the application of correlation equation are tabulated below. The co-efficient of correlations for various relationships between one variable and other variables are tabulated below. After each table, the interpretation of the correlations is given and each relationship is being discussed after each table as given below:-

**Table 1:** correlation between leg strength vs abdominal strength, shoulder strength variables and hand eye coordination of basketball players.

S. No.	Fix Variables	Others Variables	Correlation Co-Efficient	Status Of Correlation
1.	Leg Strength	Abdominal Strength	.85	High
2.	Leg Strength	Shoulder Strength	.54	Moderate
3.	Leg Strength	Hand Eye Coordination	.77	High

Table 1 gives the coefficient of correlation of the Leg Strength variable with the Abdominal Strength, Shoulder Strength and hand eye coordination. The coefficient of correlation between Leg Strength and Abdominal Strength is .85, Leg-Strength and Shoulder Strength is .54 and Leg-Strength and is hand eye coordination .77.

The table indicated that the Leg-Strength of the BASKETBALL players is highly correlated with the Abdominal Strength and hand eye coordination of the basketball players, and is moderately correlated with the Shoulder Strength.

The reason may be explained on the basis of the contributing factors of the basketball players to achieve goal in the game situation. The strength of the Leg is one of the factors whereas the other factors are the ball to be thrown, the acceleration zone is increased by making arc of the Back after a jump. To develop forces on the ball the body from the arc position is to be forcibly hooked in the air. This skill requires lot of Abdominal Strength. To develop momentum and force on the ball the strengths of the Shoulder extension is another contribution factor. In running mode, catch the ball, throw the ball and dribbling the ball are the basic necessity of this game.

**Table 2:** correlation between abdominal strength vs shoulder strength variable and hand eye coordination of basketball players.

S. No.	Fix Variables	Others Variables	Correlation Co-Efficient	Status Of Correlation
1.	Abdominal Strength	Shoulder Strength	.88	High
2.	Abdominal Strength	Hand Eye Coordination	.65	Moderate

Table 2 gives the coefficient of correlation of the abdominal strength variable with Shoulder Strength and hand eye coordination. The coefficient of correlation between Abdominal Strength and hand eye coordination is .88 and Abdominal Strength and Shoulder Strength is .65.

The table 2 showed a direct but highly significant correlation between the abdominal strength and shoulder strength of the basketball players. It is obvious that in any specific training programme of development of strengths of the trunk, the programme is designed that equal load, repetition and herys

are given for the abdomen muscle of the trunk and anterior muscles of the trunk i.e. abdominal muscles of the trunk, so as to make the body balanced and free from any postural deformities.

Although the strength of the Shoulder essentially required in the game situation of basketball players, it is independently developed irrespective of the training programme for abdominal muscles. Banding movements with a low dribbling and side stepping with ball develops the abdomen and coordination relation.

**Table 3:** correlation between shoulder strength vs hand eye coordination of basketball players.

S. No.	Fix Variables	Others variables	Correlation Co-efficient	Status of Correlation
1.	Shoulder Strength	Hand Eye Coordination	.69	Moderate

Table 3 gives the coefficient of correlation of the Shoulder Strength with the hand eye coordination. The coefficient of correlation between Shoulder Strength and hand eye coordination is .69.

The Shoulder Strength and hand eye coordination of the basketball players are essentially the requirements for achieving better in the competitive area of the basketball game and are the parts of the strength training programme with ball or without ball, do have certain relationship such

other.

**Conclusion**

1. There is a high correlation ship between Leg-Strength variable and Abdominal Strength variable, Leg Strength variable and Hand eye coordination variable and abdominal strength and shoulder strength of basketball players.
2. The finding of the study also concluded that there is

significant and moderate correlation ship between Leg-Strength and Shoulder Strength, abdominal strength and shoulder strength Shoulder Strength and hand eye coordination of basketball players.

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