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Relationship among physical fitness component between Punjab and Haryana badminton male players

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Abstract
The purpose of the study was to analyze the relationship among physical fitness component between Punjab and Haryana male badminton players. A total of 300 district level male badminton players 150 (Punjab) and 150 (Haryana.)Their ages are ranged between 15 to 17 years. To measure the muscular strength (pull-up test), abdominal strength (sit-up test), agility (shuttle-run test), speed (50 mt. dash test), and coordination (alternative hand eye coordination test) was used to measure these physical fitness components. To determine the statistically significant relationship between Punjab and Haryana male badminton players were established by computing coefficient of correlation. For testing the hypothesis, the level of significance was set at 0.05 level.

Keywords: Muscular strength, abdominal strength, Coordination, Male, Badminton.

1. Introduction
Physical fitness is one of the main factors in an athlete's success. It has been shown that a high level of the elements of physical fitness such as cardiovascular endurance, muscular strength, endurance, flexibility and speed are useful and effective in achieving success in a different sport. Nowadays before sending to competitions, teams are given a test for the evaluation of the physical status of their members (Zarl *et al*., 2008) [14]
According to Thomas Kirt Cureton, Jr. Said, "Above the years, I have come to look upon Physical Fitness as a trunk of a tree that supports the many branches which represent all the activities and make life worth living: intellectual life, spiritual life, occupation, love life and social activities".
According to Charles A. Bucher and Williams, E. Prentice, Fitness for College and Life, Fitness is a broad term denoting dynamic qualities that allow a person to satisfy his or her own needs as mental and emotional stability, social consciousness and adaptability, spiritual and moral figures and organic health consistence with person heredity. Fitness is that state which characterizes the degree to which a person is able to function efficiently. Fitness is an individual matter. It implies the ability of each person to live most effectively within his potentialities.

Objective of the study
1. To find out the relationship among muscular strength with abdominal strength, agility, speed and coordination between Punjab and Haryana male badminton players.
2. To find out the relationship among abdominal strength with muscular strength, agility, speed and coordination between Punjab and Haryana male badminton players.
3. To find out the relationship among agility with muscular strength, abdominal strength, speed and coordination between Punjab and Haryana male badminton players.
4. To find out the relationship among speed and muscular strength, abdominal strength, agility, speed and coordination between Punjab and Haryana male badminton players.
5. To find out the relationship among coordination with muscular strength and abdominal strength agility and speed between Punjab and Haryana male badminton players.

Hypotheses of the study

1. There will be no significant relationship among muscular strength with abdominal strength, agility, speed and coordination between Punjab and Haryana male badminton players.
2. There will be no significant relationship among abdominal strength with muscular strength, agility, speed and coordination between Punjab and Haryana male badminton players.
3. There will be no significant relationship among agility with muscular strength, abdominal strength, speed and coordination between Punjab and Haryana male badminton players.
4. There will be no significant relationship among speed and muscular strength, abdominal strength, agility, speed and coordination between Punjab and Haryana male badminton players.
5. There will be no significant relationship among coordination with muscular strength and abdominal strength agility and speed between Punjab and Haryana male badminton players.

Methodology

A total of 300 district level male badminton players 150 (Punjab) and 150 (Haryana.)Their ages are ranged between 15 to 17 years. To measure the muscular strength (pull-up test), abdominal strength (sit-up test), agility (shuttle-run test), speed (50 mt. dash test), and coordination (alternative hand eye coordination test) was used to measure these physical fitness components. To determine the statistically significant relationship between Punjab and Haryana male badminton players were established by computing coefficient of correlation. For testing the hypothesis, the level of significance was set at 0.05 level.

Result and Interpretation

Table 1: Relationship between arm and shoulder strength and other component of physical fitness of Haryana and Delhi badminton male players

Sr. No.	Components Correlated	Coefficients of Correlation (r)
1.	Arm and Shoulder Strength and Abdominal Strength	-.103*
3.	Arm and Shoulder Strength and Agility	.065
4.	Arm and Shoulder Strength and Speed	-.010
8.	Arm and Shoulder Strength and Coordination	.046

*Significant at 0.05 level

It may be observed from table 1 that arm and shoulder strength was significantly related to abdominal strength (r=-.103) of the Punjab and Haryana male badminton players. Whereas other components of physical fitness abdominal strength (r=-.065), agility (r=.065), speed (r=-.010) and coordination (r=.046) did not show any statistically significant coefficients of correlation with arm and shoulder strength of Punjab and Haryana male badminton players.

Table 2: Relationship between abdominal strength and other component of fitness of Haryana and Delhi badminton male players

Sr. No.	Components Correlated	Coefficients of Correlation (r)
1.	Abdominal Strength and Arm and Shoulder Strength	-.103*
3.	Abdominal Strength and Agility	-.049
4.	Abdominal Strength and Speed	.070
10.	Abdominal Strength and Accuracy	-.122*

*Significant at 0.05 level

It may be observed from table 2 that abdominal strength and was significantly related to physical fitness component of arm and shoulder strength (r=.103) of the Punjab and Haryana male badminton players. Whereas other components of physical fitness agility (r=-.049), speed (r=.070) and coordination (r=-.097) did not show any statistically significant coefficients of correlation with abdominal strength of Haryana and Delhi male badminton players.

Table 3: Relationship between agility and other component of fitness of Haryana and Delhi badminton male players

Sr. No.	Components Correlated	Coefficients of Correlation (r)
1.	Agility and Arm and Shoulder Strength	.065
2.	Agility and Abdominal Strength	-.049
3.	Agility and Explosive Power of Leg Extension	-.088
4.	Agility and Speed	-.031

*Significant at 0.05 level

It may be observed from table 3 that agility was significantly related to physical fitness component of coordination (r=.131) of the Punjab and Haryana badminton male players. Whereas other components of physical fitness arm and shoulder strength (r=-.065), abdominal strength (r=-.049), explosive strength (r=-.088), speed (r=-.031), coordination (r=-.131) did not show any statistically significant coefficients of correlation with agility of Punjab and Haryana badminton male players.

Table 4: Relationship between speed and other component of fitness of Haryana and Delhi badminton male players

Sr. No.	Components Correlated	Coefficients of Correlation (r)
1.	Speed and Arm and Shoulder Strength	-.010
2.	Speed and Abdominal Strength	.70
4.	Speed and Agility	-.031
8.	Speed and Coordination	-.050

*Significant at 0.05 level

It may be observed from table 4 that speed was significantly related with explosive strength (r=.149) of the Punjab and Haryana badminton male players. Whereas other components of physical fitness arm and shoulder strength (r=--.010), abdominal strength (r=.70) agility (r=-.031) and coordination (r=-.050) did not show any statistically significant coefficients of correlation with speed of Punjab and Haryana badminton male players.

Table 5: Relationship between coordination and other component of fitness of Haryana and Delhi badminton male players

Sr. No.	Components Correlated	Coefficients of Correlation (r)
1.	Coordination and Arm and Shoulder Strength	.046
2.	Coordination and Abdominal Strength	.097
3.	Coordination and Explosive strength	.080
4.	Coordination and Agility	.131*
5.	Coordination and speed	.050

*Significant at 0.05 level

It may be observed from table 5 that coordination was significantly related with agility (r=.131) of the Punjab and Haryana badminton male players. Whereas other components of physical fitness arm and shoulder strength (r=-.046), abdominal strength (r=.097) explosive strength (r=.080), agility (r=.131) and speed (r=.050) did not show any statistically significant coefficients of correlation with coordination (Physical Fitness Component) of Punjab and Haryana badminton male players.

Conclusion of the study

- Arm and Shoulder strength component of physical fitness was significantly related with other component of physical fitness i.e. abdominal strength of Punjab and Haryana badminton male players. Whereas agility, speed, and coordination did not show any statistically significant coefficient of correlation with arm and shoulder strength of Punjab and Haryana badminton male players.
- Abdominal strength component of physical fitness was significantly related with other component of physical fitness i.e. Arm and shoulder strength, of Punjab and Haryana badminton male players. Whereas agility, speed, and coordination did not show any statistically significant coefficient of correlation with arm and shoulder strength of Punjab and Haryana badminton male players.
- Agility component of physical fitness was significantly related with other component of physical fitness i.e. Coordination of Punjab and Haryana badminton male players. Whereas arm and shoulder strength, abdominal strength, speed, agility did not show any statistically significant coefficient of correlation with arm and shoulder strength of Punjab and Haryana badminton male players.
- Speed component of physical fitness did not show any statistically significant coefficient of correlation with arm and shoulder strength, abdominal strength, speed, agility and coordination arm and shoulder strength of Punjab and Haryana badminton male players.
- Coordination component of physical fitness was significantly related with other component of physical fitness i.e. Agility of Punjab and Haryana badminton male players. Whereas arm and shoulder strength, abdominal strength and agility did not show any statistically significant coefficient of correlation with arm and shoulder strength of Punjab and Haryana badminton male players.

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