

## Comparative Study of Physical Fitness and Psychological Variables of Softball and Cricket Players

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### Abstract

“Fitness is that state which characterizes the degree to which the person is able to function. Fitness is an individual matter. It implies the ability of each person to live most effectively with his potential. The study finds the depth perception between cricket players & softball players and difference of arms strength & agility between cricket & softball players. This study provides the guide lines to the coaches, physical education teachers, trainers, players and sports administrators to understand the role of physical fitness components in sports.

It was observed that there was insignificant difference between Softball and Cricket players of school level at their respective schools for their Psychological Variable i.e. Depth Perception. There was insignificant difference between Softball and Cricket players of school level at their respective schools for their Physical Fitness Variable i.e. Arm Strength and insignificant differences were observed between Softball and Cricket players of school level at their respective schools for their Physical Fitness Variable i.e. Agility.

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### Introduction:

Games and sports had become an integral part of human beings; it rose to its greatest height in Greece, which is called “Golden Era” in the history of games and sports. Through the development of various motor fitness components such as agility, power, balance, flexibility, local muscle endurance, cardio vascular endurance, coordination of these entire components one is able to develop the various skills accurately & efficiently. These components can be achieved through scientific and systematically i.e. step wise step. General motor skills are developed from the childhood onwards when the children starts running, jumping, playing, walking etc. Motor ability refers to the level to which one has developed his innate capacity to learn motor skills.

“Fitness is that state which characterizes the degree to which the person is able to function. Fitness is an individual matter. It implies the ability of each person to live most effectively with his potential. Ability to function depends upon physical, mental, emotional & social components of fitness, all of which are related to each other & mutually interdependent.” Exercise Scientists have identified 9 elements that comprise the definition of strength, power, agility, balance, endurance, flexibility, co-ordination. But in this study explosive strength, arm strength & agility should be studied. Larson (1951) defined motor ability as the ability of the individual in the elements which underline motor performance, such as muscular strength, muscular power, muscular endurance, co-ordination ability & balance etc.

The level of motor abilities is of prime importance for the learning of various activities & perfections of different skills in various sports & physical activities. Harre (1979), the

sports men are not capable to giving their life's best performance at every age. Lempart (1973), because the period of high performance is of shorter duration it last only for a few years before and after these years, biologically, a man is not in a state to give his best performance.

**Statement of the Problem:**

The problem which is under consideration can be stated under the heading: "Comparative study of Physical Fitness and Psychological Variables between Softball and Cricket Players."

**Objectives of the Study:**

1. To find out the level of depth perception between cricket players & softball players.
2. To analyze the difference of arms strength between cricket & softball players.
3. To evaluate the level of agility between cricket & softball players.

**Hypotheses:**

1. There will be a significant difference of depth perception between cricket & softball players.
2. There will be a significant difference of arm strength between cricket & softball players.
3. It is hypothesized that there will be a significant difference of agility between cricket & softball players.

**Delimitations**

1. The study was delimited to the male students of 10th, 11th and 12th class only.
2. The study was delimited to the age group of less than 17 year male students.
3. The study was delimited to male students only.
4. The study was delimited to psychological & physical variables only. These variables are:

*Psychological Variable:*

- i. Depth Perception.

*Physical Variable:*

- i.) Agility
- ii.) Arm Strength

5. The study was delimited to the 40 subjects only.
6. The study was delimited to the cricket and softball players only.

**Limitations**

The state of mind, emotional stress at the time of giving the physical test and their socioeconomic background may affect the result of this study, hence will be considered as limitation of the study.

**Significance of the Problem**

- i. The present study will provide guide lines for the coaches, physical education teachers, trainers, players and sports administrators to understand the role of physical fitness components in sports.
- ii. It also may guide in their future plans, to get best results.
- iii. The coaches, physical education teachers and trainers can also draw line of action to boost their players.
- iv. The present study will surely contribute towards improving the performance of throwers and sprinters.

Matthys et. al. (2013) it was the goal of this cross-sectional study to examine differences in maturity, anthropometry and physical performance between youth handball players across different playing positions. In conclusion, it seems that anthropometrical and maturational characteristics are used by coaches to directly and/or indirectly select players for specific field positions. This strategy is risky since anthropometry and maturity status change over the years

Jasbir Singh (2011) conducted a study on “Comparative study of depth perception and Steadiness among archers at difficult distances”. The comparison were made between 30m and 50m, 30m and 70m, 30m and 90m, 50m and 70m, 50m and 90m, 70m and 90m archers.

Rao (2011) studied the difference in physical fitness among basketball and handball players in Hyderabad. This study shows that the handball players are good because they do good physical training compare to basketball players. The handball players are having very good speed, and endurance.

Dilraj Singh (2006), conducted a comparative study on arm strength and agility between softball and cricket players, he finds that softball and cricket players do not have significant difference between the variables: leg power, arm strength and agility. On the basis of these findings, it is concluded that the motor ability components such as: arm strength, leg power and agility contributes significant performance in softball and cricket. Both games require these components for better performance.

Mark W. et. al. (2005) The connection between perception and action has classically been studied in one direction only: the effect of perception on subsequent action. Although our action can modify our recently become clear that even without this external feedback the perception and execution of a variety motor actions can have an effect on three-dimensional perceptual processes. Allowing observer to act can drastically change the way they perceive the third dimension, as well as how scientist view depth perception.

Dey et. Al. (1997) undertook a comparative study of selected anthropometric and motor quality profile of girls. Results revealed ER girls were taller than NER girls were heavier than their ER counterparts except at the age of 13 years, where ER girls were found to be heavier. All the fitness scores should be positive correlation with age, height and weight, but 30mtrs run, agility run and 800 mtrs run showed negative significant relationship. Height and weight were found to strong predictors of strength. Whereas adiposity of reflected by some of skin folds was the weakest predictor of running, jumping and endurance performance.

#### **Tools**

##### *Psychological Variable:*

I. Depth Perception: It was measured with automated vision screener of softball and cricket players.

##### *Physical Variable:*

I. Agility: Shuttle Run was used to measure Agility of softball and cricket players. (AAHPER, 1976)

II. Arm Strength: Softball Throw was used to measure Arm Strength. (AAHPER, 1965)

**Analysis of data**

A comparative analysis of arm strength, agility and depth perception variables were statistically analyzed by applying test. The data of both groups were calculated separately for all the variables. Different types of descriptive statistical such as mean and standard deviation was computed to describe each variable statistically. The level of significance was set of at 0.05.

**TABLE 1**  
**Mean and Standard Deviation of Depth Perception For Softball And Cricket Players**

Depth Perception				
Groups	Mean	S.D.	Df	
Softball Players	.35	.20	38	.34
Cricket Players	-.14	.17		

Level of Significance .05

Table 't'-value at .05(1.96)

Table 1 shows that the Mean and Standard Deviation with regard to softball players .35 and .20 whereas in case of cricket players -.14 and 0.17 respectively. The calculated 't-value' (0.34) which is less than tabulated 't-value' (1.96) at 0.05 levels. So, it indicated that there is insignificant difference between these two groups for their depth perception.

**b. Physical Variable:**

**i. Softball Throw:**

**Table 2**

**Mean and Standard Deviation of Softball Throw for Softball and Cricket Players**

Softball Throw				
Groups	Mean	S.D.	Df	't' - Test
Softball Players	50.10	4.37	38	.007
Cricket Players	45.82	5.66		

Level of Significance .05

Table 't'-value at .05 (1.96)

Table 2 shows that the Mean and Standard Deviation with regard softball players 50.10 and 4.37 whereas in case of cricket players 45.82 and 5.66 respectively. The calculated t-value is (0.007) which is less than tabulated t-value (1.96) at 0.05 levels. So, it indicated that there is insignificant difference between these two groups for their arm strength.

**i. Shuttle Run (Agility):**

**Table-3**

**Mean and Standard Deviation of Shuttle Run for Softball and Cricket Players**

Shuttle Run				
Groups	Mean	S.D.	Df	't' - Test
Softball Players	8.83	.67	38	.0003
Cricket Players	9.53	.51		

Level of Significance .05

Table 't'-value at .05 (1.96)

Table 3 shows that the Mean and Standard Deviation with regard to softball players 8.83 and .67 where as in case of cricket players 9.53 and .51 respectively. The calculated t-value is (0.0003) which is less than tabulated t-value (1.96) at 0.05 levels. So, it indicated that there is insignificant difference between these two groups for their agility.

### **Discussion**

On the basis of analysis of the data, investigator found that the earlier study of, Neurophysiol C. (2013), Singh D. (2006), supported the present study as given below.

#### **a) Psychological Variable:**

##### **i.) Depth Perception**

It was found that there is insignificant difference between depth perception among softball and cricket players. Depth perception can be affected by some factors such as:-visual distance, visual ability, gender difference and level of steadiness. These findings are accepted by Manuel Q. et. al. (2007).

#### **b) Physical Variable:**

##### **i.) Arm Strength**

It was found that there is insignificant difference between arm strength among softball players and cricket players. These findings are supported by Singh D. (2006).

##### **ii.) Agility**

It was found that there is insignificant difference between agility among softball and cricket players. These findings are supported by Singh D. (2006).

### **Discussion of Hypotheses**

- I. The First Hypothesis:** "There will be significant difference for depth perception between softball and cricket players." This hypothesis is rejected because insignificant difference was reported in depth perception between school level softball and cricket players.
- II. The Second Hypothesis:** "There will be significant difference for arm strength between softball and cricket players." This hypothesis is rejected because insignificant difference was reported in arm strength between softball and cricket players.
- III. The Third Hypothesis:** "It is hypothesized that there will be a significant difference of agility between cricket & softball players." This hypothesis is rejected because insignificant difference was reported in agility between softball and cricket players.

### **CONCLUSION:**

- I.** It was observed that there was insignificant difference between Softball and Cricket players of school level at their respective schools for their Psychological Variable i.e. Depth Perception.
- II.** There was insignificant difference between Softball and Cricket players of school level at their respective schools for their Physical Fitness Variable i.e. Arm Strength.
- III.** Insignificant differences were observed between Softball and Cricket players of school level at their respective schools for their Physical Fitness Variable i.e. Agility.

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