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## Comparative study of selected physical fitness variables between thrower and jumpers under 17 and 19 boys

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### Abstract

The purpose of the study was to find out the significant comparison of physical fitness variable (speed, coordinative ability, shoulder strength, endurance, and flexibility) between jumpers and thrower of under 17 and 19 year age group. For present study, total 60 school state level male thrower and jumpers (throwers-30 and jumpers-30) with their age ranging under 17 and under 19 years was selected randomly from Punjab state. To analysis the data statistically found the significant difference between Jumpers and Throwers as mean, standard deviation, t test. The outcome shows that Throwers have only more shoulder strength than jumpers in both groups and jumper have more speed, coordinative ability, endurance, flexibility than thrower in both groups.

**Keywords:** Speed, coordinative ability, shoulder strength, endurance, flexibility

### Introduction

Physical fitness means the condition of being physically healthy, especially exercises and proper nutrition. It is the reason, a state of general well-being marked by physical health and mental stability. Physical fitness is not just bending our body. It is about having cardiovascular and overall muscular endurance, as well as a strong immunity system, and most importantly, a satisfied state of your mind. Now a day's most of the people believe that, having a physically fit body is the most important thing that a person can possess.

The four standard throwing events shot put, discus, hammer, and javelin all involve the use of implements of various weights and shapes that are hurled for distance. All too often the throwing events of track and field are treated like strongman contests. Athletes are asked to hurl heavy implements as far as possible, so it's assumed the best way to train them is to simply make them as strong as possible. There are three types of jumping events in athletics long jump, triple jump and high jump

### Purpose of the Study

Purpose of the study was to find out the comparison of selected physical fitness variables between thrower and jumpers under 17 and 19 boys

### Method and Procedure

#### Sample Size

The total number of sample size was 60 athletes' i.e. 30 jumpers and 30 throwers are equally divided into two groups under 17 and 19 years age.

#### Sampling Area

The sample was selected from Punjab state who had participated at state level of competition under 17 and 19 years age group.

#### Sampling Techniques

The investigator was firstly divided the athlete's according to specific events jumpers and throwers and their age groups under 17 and 19 years age.

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### Selection of Subjects

The total number of sample size was 60 athletes' i.e. 30 jumpers and 30 throwers are equally divided into two groups under 17 and 19 years age.

### Selection of Variable Test

1. 50 meter Dash (sec.) (Johnson and Nelson 1979)
2. Shuttle Run (4×10m) (sec.) (Jension and Hirst 1980)
3. Shot Put (meters) (Johnson and Nelson 1979)
4. 600 yard Run/Walk (minutes) (AAHPER 1965)
5. Bend and Reach Test (cms) (Johnson and Nelson 1979)

### Tools

Steel tape  
Stop watch  
Shot put  
Measuring tape

### Procedure

The tests were administrated to the subjects at their respective ground. The researcher was explained about the tests and demonstration of all the tests items were given to them. He was allowed to warm-up their own, for 5 to 10 minutes before the actual test was administrated.

### Administration of Physical Fitness Tests

#### 50m Dash

**Aim:** To find out the **speed**

**Procedure:** Two lines were marked on the floor 50 mt. apart. One line was a starting line and the other as the finish line. On the signal Ready? Go, the subject start running at their best to reach the finish point at earliest. The signal Go was accompanied with the downward sweep of the starter's arm to give the visual signal to the timer/timers who stands/stand at the finish line.

**Scoring:** The duration between the starting signal and the instant the subject crosses the finish line was the score of the test. The time was recorded correct up to tenth of seconds.

#### 4x10m. Shuttle Run

**Aim:** To find out the **coordinative ability**.

**Procedure:** This test requires the person to run back and forth between two parallel lines as fast as possible. Set up two lines of cones 10mt apart or use line markings, and place two blocks of wood or a similar object behind one of the lines. Starting at the line opposite the blocks, on the signal "Ready? Go!" the participant runs to the other line, picks up a block and returns to place it behind the starting line, then returns to pick up the second block, then runs with it back across the line.

**Scoring:** Two trails may be performed, and the quickest time was recorded. Results were recorded to the nearest tenth of a second.

#### Shot Put

**Aim:** To find out the **shoulder strength**.

**Procedure:** At first the sector for shut put was marked. One by one the players stood in the centre of the sector with shot. After listening start the players put the shot with their shoulder strength using any techniques also. The distance covered with the shot was measured.

**Scoring:** The player was given three trails to put the shot. The longest distance was accepted as score in meters.

### Yard Run Test

**Aim:** To find out **endurance**

**Procedure:** The subject was asked to take a starting start. At the signal Ready? Go! The subject starts running the 600 yard distance. The test was usually performed on subjects together by pairing of before the start of the event. Walking was permitted but the performer was to cover the distance in the shortest period of time.

**Scoring:** The time taken to run 600 yards to record in the minutes and seconds was the score of this item.

### Bend and Reach Test

**Aim:** To find out the **flexibility**.

**Procedure:** To measure the trunk flexibility and stretch ability of hamstring muscles. After the proper warning up, the subject stood on the box. He came to downward bend. From this position without bending points of maximum reach, he holds the position about two seconds. In this manner two attempts were made.

**Scoring:** In case the subject was not able to reach the box then with the help of scale the distance between his hands and the edge of the box were measured was recorded. The best reach of the subject was taken.

### Statistical Techniques

**Table 1:** Show the comparison of speed (sec) between jumpers and throwers of under 17 and 19 years age groups.

Groups	Jumpers			Throwers			t value
	N	Mean	S.D.	N	Mean	S.D.	
Under17	15	7.0827	0.0191	15	7.3447	0.0307	28.0919
Under19	15	7.2947	0.0307	15	7.3580	0.0649	3.4153

Table show the comparison of speed between jumper and thrower of under 17 and 19 year age group. The mean value of under 17 year's age group of jumper and thrower were found to be (7.0827 and 7.3447) sec, respectively and under 19 year age group were found to be (7.2947 and 7.3580) sec, respectively. In statistically result were found to be non-significant in under 17 and 19 year age group ( $t=28.0919$  and 3.4153) respectively. The result show under 17 and 19 year age groups jumpers have more speed than throwers.

**Table 2:** Show the comparison of coordinative ability (sec) between jumpers and throwers of under 17 and 19 years age groups.

Groups	Jumpers			Throwers			t value
	N	Mean	S.D.	N	Mean	S.D.	
Under17	15	14.2313	0.0329	15	14.3447	0.0553	6.8226
Under19	15	13.9247	0.0553	15	14.3547	0.0553	21.3048

Table s how the comparison of coordinative ability (sec) between jumper and thrower of under 17 and 19 year age group. The mean value of under 17 year's age group of jumper and thrower were found to be (14.2313 and 14.3447) sec, respectively and under 19 year age group were found to be (13.9247 and 14.3547) sec, respectively. In statistically result were found to be non-significant in under 17 and 19 year age group ( $t=6.8226$  and 21.3048) respectively. The result show under 17 and 19 year age group jumpers have more coordinative ability than throwers.

**Table 3:** Show the comparison shoulder strength between jumpers and throwers of under 17 and 19 years age groups.

Jumpers				Throwers			
Groups	N	Mean	S.D.	N	Mean	S.D.	t value
Under17	15	8.9847	0.0669	15	9.1267	0.2089	2.5074
Under19	15	9.4640	0.0558	15	10.0267	0.0567	27.4098

Table show the comparison of shoulder strength between jumper and thrower of under 17 and 19 year age group. the mean value of under 17 year's age group of jumper and thrower were found to be (8.9847 and 9.1267) mt, respectively and under 19 year age group were found to be (9.4640 and 10.0267) mt, respectively. In statistically result were found to be non-significant in under 17 and 19 year age group (t=2.5074 and 27.4098) respectively. The result shows under 17 and 19 year age thrower have more shoulder strength than jumpers.

**Table 5:** Show the comparison Flexibility (cm) between jumpers and throwers of under 17 and 19 years age groups.

Jumpers				Throwers			
Groups	N	Mean	S.D.	N	Mean	S.D.	t value
Under17	15	23.8107	0.0202	15	23.7573	0.0255	6.3558
Under19	15	23.2853	0.0309	15	19.6293	0.0215	375.8836

Table show the comparison of flexibility (cm) between jumper and thrower of under 17 and 19 year age group. The mean value of under 17 year's age group of jumper and thrower were found to be (23.8107 and 23.7573) cms, respectively and under 19 year age group were found to be (23.2853 and 19.6293) cm, respectively. In statistically result were found to be non-significant in under 17 and 19 year age group (t=6.3558 and 375.8836) respectively. The result show under 17 and 19 year age group jumpers have more shoulder flexibility than throwers.

### Interpretation and Discussion

The present study shows the comparison of physical fitness variable between jumpers and thrower of under 17 and 19 year age group.

The jumpers have more speed in under17 year age group and in 19 years age group have similar speed. Jumpers have similar coordinative ability in under 17 year age group and jumpers have more coordinative ability in under 19 year age group. Jumpers have more endurance and flexibility in both groups. Throwers have only more shoulder strength than jumpers in both groups because jumper have more effect of training related to fitness components, jump event is the combination speed, coordination ability. Throwers have more shoulder strength, it is also effect of training on thrower because throwing events (shot put, javelin throw, hammer throw, discuss throw) have required more shoulder strength.

### Conclusions

The comparison between physical fitness variables, jumpers have found more speed, coordinative ability, endurance and flexibility only in single variable shoulder strength have been found more in throwers in both groups.

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**Table 4:** Show the comparison Endurance (min/sec) between jumpers and throwers of under 17 and 19 years age groups.

Jumpers				Throwers			
Groups	N	Mean	S.D.	N	Mean	S.D.	t value
Under17	15	2.1293	0.0215	15	2.2040	0.0256	8.6541
Under19	15	2.2573	0.0255	15	2.4200	0.0207	19.1874

Table show the comparison of endurance (min/sec) between jumper and thrower of under 17 and 19 year age group. The mean value of under 17 year's age group of jumper and thrower were found to be (2.1293 and 2.2040) (min/sec), respectively and under 19 year age group were found to be (2.2573 and .4200) (min/sec), respectively. In statistically result were found to be non-significant in under 17 and 19 year age group (t=8.6541 and 19.1874) respectively. The result show under 17 and 19 year age group jumpers have more endurance than throwers.

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