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## A comparative study of physical fitness components of individual game players and team game players

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### Abstract

The purpose of the study was to find out and compare the endurance, agility and strength of individual game players and team game players. For the collection of data 160 players (80 individual game players and 80 team game players) were selected from the inter collage tournament. All these selected subjects secured first, second and third position in the tournaments. These players were in the age group of 19-27 years. On the basis of the study it is proved that there exist a significance difference in the endurance and strength of Individual Game Players and Team Games Players. The team game players were founded more endurance and strength than the individual game players. But the team game players and the individual game players have no significance difference on agility.

**Keywords:** Endurance, agility and strength

### Introduction

The concept of fitness has a long and involved history. According to the literature it can be traced to the work done by Charles Darwin on the survival of the fitness. Always the word fitness suggests the ability of an animal or a human to work and play with a maximum degree of physical efficiency and to be prepared to meet unforeseen danger or destruction. Physical fitness is the capacity to do prolong hard work and recover to the same state of health in a short duration of time. This is the result of the degree of strength, speed, endurance, agility, power and flexibility one possesses. These elements of physical fitness are useful for different games and sports. (SK Kochhar)

Physical fitness is the fundamental necessity for any sporting activity. Motor qualities such as speed, strength, endurance, and flexibility along with physical fitness are essential for excellence in sports. Sports trainers and coaches are emphasizing on improving the physical fitness and motor qualities of the players, which is also known as conditioning. A good conditioning program is the backbone of the over-all training of the sportsperson. Physical fitness is categorized into general and specific fitness. General fitness refers to the motor qualities required in any sportsperson irrespective of the sports discipline, such as speed, strength, flexibility, endurance and co-ordination. Each and every sport demands certain motor qualities above the ordinary. Specific fitness is the intensified level of motor qualities achieved by the sportsperson that is required by the specific sport.. Physical Fitness is generally achieved through exercise, accurate nutrition and enough rest. It is an important part of life. Different games can be provided to do the body activities, differently. Kabaddi and Kho-Kho players are equally conductive to developing skills amongst players. The present study will have the significance of self-assessment of physical fitness and physiological aspects of Kabaddi and Kho-Kho players. The proposed study may seek the significance through the comparison of the factors between the Kabaddi and Kho-Kho players. Coaches, trainers and physical education teachers for Kabaddi and Kho-Kho players have to develop physical and physiological fitness of sportsmen. (Balbir Singh).

Scientist and physiologist have been of the view that physiological parameters of an athlete have a lot to do with their performance more than the techniques and tactics of the player. Most of the games demand a greater amount of speed, strength, endurance, agility, and flexibility etc. Fitness from the stand point of the football players means that the player must have a high standard of physical and physiological condition, which makes possible through

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the perfect functioning of the organs of locomotion and circulation and of nervous system, the maximum possible use and application of his physical and mental capabilities and knowledge of football. The existing literature in the field of soccer shows that endurance, speed, agility, maximum leg strength, upper body strength, leg power, muscular Endurance, flexibility, coordination and reaction time are important pre-requisite for efficient soccer performance, and whereas excess body fat proves to be a hindrance. The game of soccer requires tremendous physical fitness as the duration of the game is longer in time in which basic management such as different skills are involved.

**Objectives of the study**

1. To find out the physical fitness components of sports person.
2. To compare the physical fitness components i.e. endurance, agility and strength of individual game players and team game players.

**Hypothesis of the study**

1. There exists no significance difference in the endurance between Individual game player and Team game player.
2. There exists no significance difference in the agility between Individual game player and Team game player.
3. There exists no significance difference in the strength between Individual game player and Team game player.

**Materials & Methods**

**Design of the study**

Survey and observation methods were used for the present study.

**Sample**

A sample consisting of 80 subjects for each sport (individual sport and team sport) were selected on the bases of stratified random sampling technique.

**Tool Used**

**12 Minutes Run/Walk to Measure Endurance:**

**Purpose**

To measure the cardio-vascular endurance of subjects.

**Facility &Equipment**

Stop-watches, marker flags, measuring tape, paper and pen etc.

**Procedure**

The subjects were made to run/walk for 12 minutes continuously. A standard track was used for conducting this test. The track was divided into segments of 10 meters and marker flags were kept at the inner edge of the track. The subjects were given a briefing. On the signal “Go” they started running or walking. On completion of 12 minutes, signal was given to the subjects to stop running.

**Scoring**

The distance covered by each subject was recorded to the nearest 10 meters.

**Zigzag Run: To Measure Agility**

**Purpose**

The objectives of this test are to monitor the development of the athlete’s speed and agility.

**Facility &Equipment**

5 cones, flat non-slip surface, stopwatch, assistant, pen and paper.

**Procedure**

The required, the athlete to run around a series of cones as fast as possible. The athlete warms-up for 10 minutes. The assistant makes out a rectangle 10×16 ft. with four cones and places cones in the centre. The assistant gives the command “Go” and starts the stopwatch. The athlete common as the test at the start & finish cone and follows the grey route indicated in the diagram. The assistant sports the stopwatch and records the time when the athlete’s torso crosses the start & finish cone.

**Scoring**

The assistant sports the stopwatch and records the time when the athlete’s torso crosses the start & finish cone.

**Medicine Ball Throw**

**To Measure Strength**

**Purpose**

To measure the strength

**Facility &Equipment**

Medicine Ball of 6 Pound, Measuring Tape, Pen and Paper etc.

**Procedure**

The event is explained and demonstrated. All the individual game player and team game player butting. The medicine ball throws from the setting position. The player sets on the line with legs apart and holds the ball with both hands in front of the chest and then she put the ball with force of both hands. Each player shall be allowed maximum three chances for their performance. Best distance counted in feet's. The measurement of their each throw shall be made from the line from where. The player sits and put the ball.

**Scoring**

The total distance of throw count in feet’s.

**Statistical Technique Used**

For interpretation of the data statistical techniques are required. In the present study the researcher used the ‘t’ test as a statistical technique to find out the means between individual game players and team game players.

**Results and Discussion**

After the analysis and discussion of the data the investigator observed the following results of the present study:-

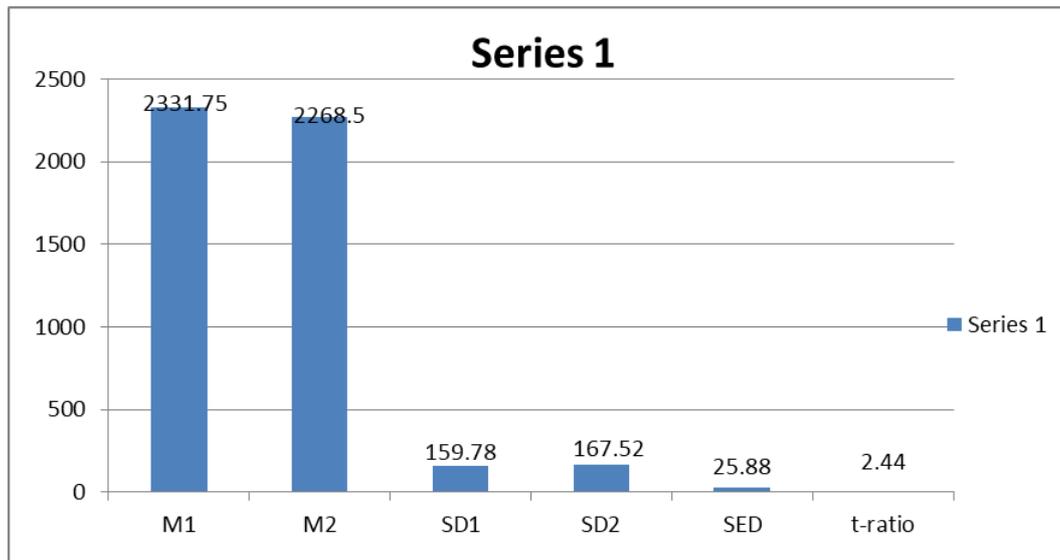
**Table 1:** Comparison of the 12 minutes run and walk test to measured endurance of individual game players and team games players

Groups	N	Mean	S.D	SED	t-ratio	Level of significance
Individual game players	80	2331.5	159.78	25.88	2.44	significance
Team game players	80	2268.5	167.52			

Significance difference at 0.05 levels.

The table no. 1 shows that there was a significance difference was found in the endurance level of individual game players and team games players. The mean value of individual game players and team games players is 2331.75 & 2268.5 and the

SD value is 159.78 & 167.52. The SED was founded 25.88 and the t-ratio is 2.44. It is clear from the table the Individual game players have more endurance level than the team game players. So the hypothesis is rejected.



**Fig 1:** Graphical analyses of the 12 minutes run and walk test to measured endurance of individual game players and team games players

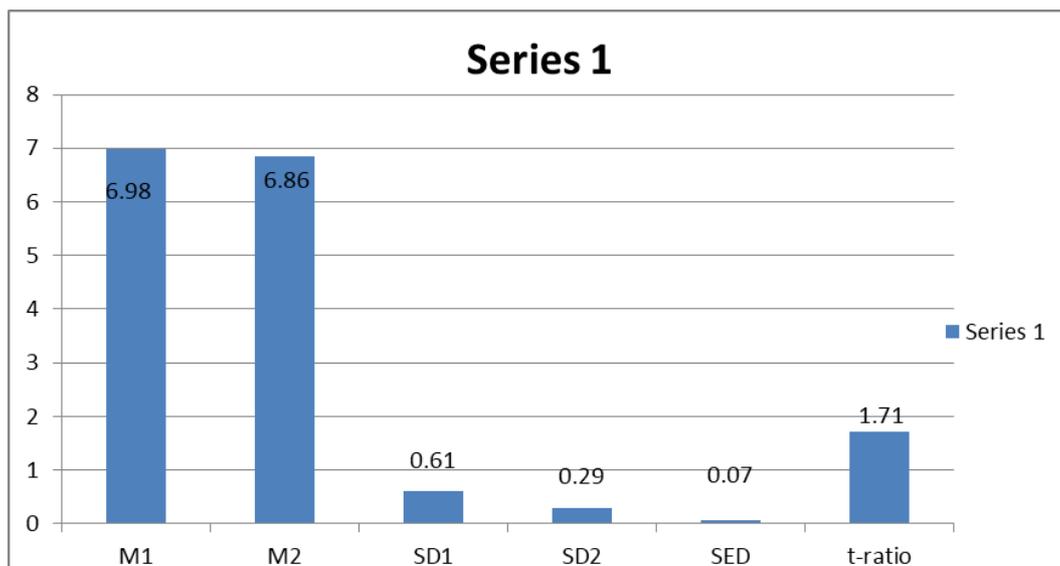
**Table 2:** Comparison of the zig-zag runs to measured agility of individual game players and team games players

Groups	N	Mean	S.D	SED	t-ratio	Level of significance
Individual game players	80	6.98	0.61	0.07	1.71	No significance
Team game players	80	6.86	0.29			

No significance difference at any levels.

The table no. 2 shows that there was no significance difference was found in the agility level of individual game players and team games players. The mean value of individual game players and team games players is 6.98&6.86 and the

SD value is 0.61&0.29. The SED was founded 0.07 and the t-ratio is 1.71. It is clear from the table; the team game players and the individual game players have no significance difference on agility. So the hypothesis is accepted.



**Fig 2:** Graphical analyses of the zig-zag runs to measured agility of individual game players and team games players

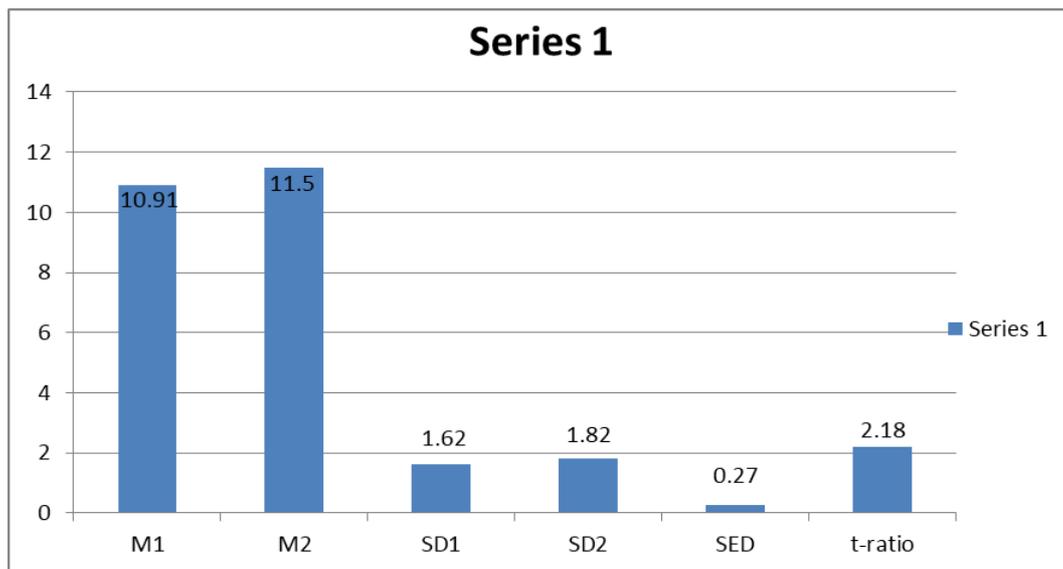
**Table 3:** Comparison of the Medicine Ball Throw To Measure Strength of Individual Game Players and Team Games Players

Groups	N	Mean	S.D	SED	t-ratio	Level of significance
Individual game players	80	10.91	1.62	0.27	2.18	significance
Team game players	80	11.50	1.82			

Significance difference at 0.01 levels.

The table no. 3 shows that there was a significance difference was found in the strength of individual game players and team games players. The mean value of individual game players and team games players is 10.91&11.5 and the SD value is

1.62&1.82. The SED was founded 0.27 and the t-ratio is 2.18. It is clear from the table; the team game players have more strength than the Individual game players. So the hypothesis is rejected.



**Fig 3:** Graphical analyses of the Medicine Ball Throw to Measure Strength of Individual Game Players and Team Games Players

### Conclusion

On the basis of the study it is proved that there exist a significance difference in the endurance and strength of Individual Game Players and Team Games Players. The team game players were founded more endurance and strength than the individual game players. But the team game players and the individual game players have no significance difference on agility.

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