

## A Study of Endurance Profile of Football and Lawn Tennis Players – A Comparative Study

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### Abstract

**Objective:** The purpose of the present study was to compare the endurance of Football and Lawn Tennis players.

**Design:** Descriptive study

**Methodology:** A total 100 players were selected as sample. Out of the hundred 50 subjects were selected from Football and 50 were from Tennis. The age of sample were ranged from 18 to 25. To assess the endurance of both sports the Cooper 12 minute run test was used. To compare the obtained results 't' test was used as a statistical tool and the level of significance was set at 0.05.

**Results:** A significant difference was analyzed between Football and Lawn Tennis players in their endurance. Obtained value of t was 2.642 which were higher than the tabulated value. Football players have significant endurance than lawn tennis players.

**Conclusion:** After analysis the obtained results it was concluded that the mean score of Football players in their endurance was higher than the Lawn Tennis Players. It means Football players have good endurance capacity than Lawn Tennis players.

**Key Words:** Football, Lawn Tennis, Endurance, Comparison.

### **1. Introduction:**

Physical fitness is a general state of health and well-being and, more specifically, the ability to perform aspects of sports. Physical fitness is generally achieved through correct nutrition, Physical exercise, physical activity, and sufficient rest. Before the industrial revolution, fitness was the capacity to carry out the day's activities without undue fatigue. However, with automation and changes in lifestyles physical fitness is now considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypo kinetic diseases, and to meet emergency situations. Endurance is also a big part of physical fitness. Soccer is a physically demanding game that requires a great level of physical fitness. Soccer requires you to walk, sprint and jog for a range of distance over a prolonged period of time. A high level of stamina is required to be a successful soccer player. Endurance training in basketball is essential for players looking to maintain stamina throughout an entire game as well as the entire season. Although endurance training can be performed off the basketball court, it is possible for you to increase stamina and endurance during practice through on-court conditioning drills. Endurance training drills range from on-court line sprints to off-court jogging routines.

Endurance is the ability of an organism to exert itself and remain active for a long period of time, as well as its ability to resist, withstand, recover from, and have immunity to trauma, wounds, or fatigue. It is usually used in aerobic or anaerobic exercise. The definition of 'long' varies according to the type of exertion – minutes for high intensity anaerobic exercise, hours or days for low intensity aerobic exercise. Training for endurance can have a negative impact on the ability to exert strength unless an individual also undertakes resistance training to counteract this effect. Many personnel consider endurance to be an indicator of progress, when strength and cardio training. A person is able to accomplish or withstand a higher amount of effort than their original capabilities means their endurance is increasing expressing improvement.

Endurance fitness is the ability to sustain the necessary activity level for a specific competitive sport. It includes both cardiovascular and muscular endurance required for the sport.

Events or sports more than 2-3 minutes transition from quick energy (muscle glycogen) sources to an oxygen-based (aerobic) energy source. A moderately high to high VO<sub>2</sub> max is a critical component for success in aerobic events, as well as local muscular endurance.

Marathon running demands a high level of constant, sustained activity, in contrast to weight lifting. Most sports use a combination of both aerobic and anaerobic energy systems, or strength-speed-endurance. Coaches must consider energy requirements, muscle groups, continuity, and intensity of activity, as well as skill requirements, when designing training programs for their sports.

Endurance and strength are the foundations to speed, agility and power, which are the sport-specific skills needed in football. To attain high levels of endurance, football players must have excellent stability and mobility. Stability describes your ability to control movement and maintain posture, and mobility equates to your freedom of movement. Stability and mobility are the foundations to all human movement. They work together to maintain posture, protect your spine and organs from injury, and allow for force production as you transfer work and energy from one body part to another -- punting, pushing an opponent, catching and then running. Lacking quality stability and mobility decreases the athletes' performance and increases the risk for injury.

## 2. Materials & Methods:

### *Selection of the Sample:*

For accomplish the study a total 100 players were selected as subject from Football and Lawn Tennis. For selection of the sample from population random sample technique was used. The age of the sample were ranged from 18 to 25 years.

### *Variable of the Study:*

To assess the endurance of the subjects Cooper 12 minute run test was used. The Cooper 12 minute run is a popular maximal running test of aerobic fitness, in which participants try and cover as much distance as they can in 12 minutes. There are several other variations of running/walking tests, including the Cooper 1.5 mile run test.

### *Administration of the Test:*

**Purpose:** To test aerobic fitness (the ability of the body to use oxygen to power it while running).

**Equipment Required:** flat oval or running track, marker cones, recording sheets, stop watch.

**Procedure:** Place markers at set intervals around the track to aid in measuring the completed distance. Participants run for 12 minutes, and the total distance covered is recorded. Walking is allowed, though the participants must be encouraged to push themselves as hard as they can to maximize the distance covered.

**Scoring:** There are Cooper test norm tables for general guidelines for interpreting the results of this test for adults. There are also several equations that can be used to estimate VO<sub>2</sub>max (in ml/kg/min) from the distance score (a formula for either kms or miles):

$$VO_{2max} = (35.97 \times \text{miles}) - 11.29$$

$$VO_{2max} = (22.35 \times \text{kilometers}) - 11.29$$

**Target Population:** This test can be modified to be suitable for most populations. For those who are unfit or unable to run, there are similar walking tests that can be performed.

**Validity:** Cooper (1968) reported a correlation of 0.90 between VO<sub>2</sub>max and the distance covered in a 12 min walk/run.

**Reliability:** the reliability of this test would depend on practice, pacing strategies and motivation level. There should be good reliability if these issues are addressed.

## 3. Results of the Study:

Table.1 Group Statistics

	GROUP	N	Mean	Std. Deviation	Std. Error Mean
ENDURANCE	LAWN TENNIS	50	2627.9000	175.27998	24.78833
	FOOTBALL	50	2742.7200	252.41608	35.69702

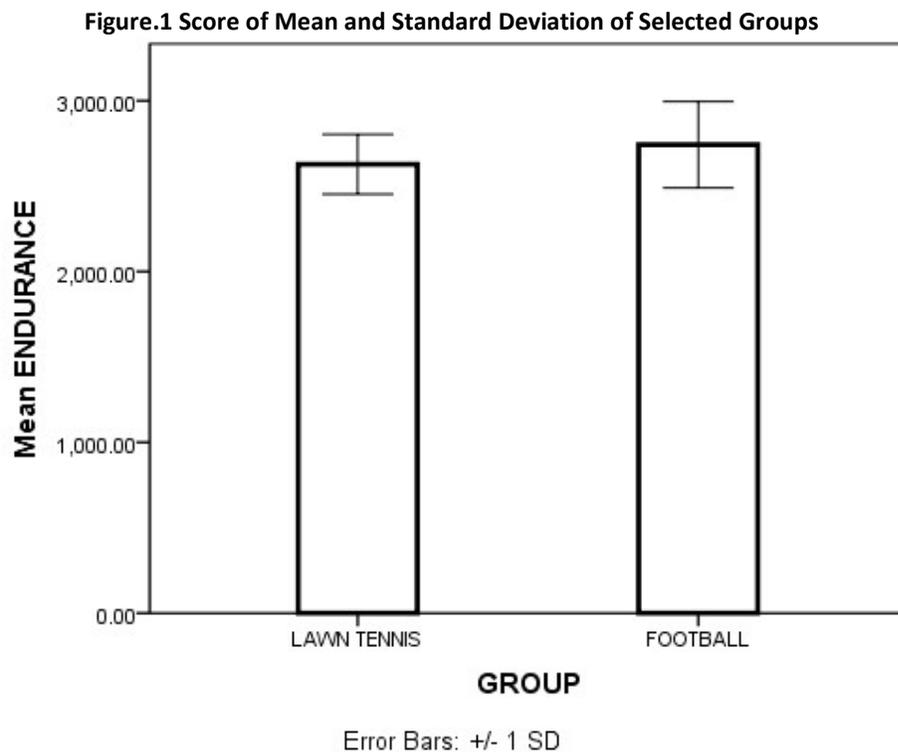
The table no 1 shows the statistics of selected groups and it was observed that mean and standard deviation of Lawn Tennis players were  $2627.9 \pm 24.78$  and mean and standard deviation of Football players were  $2742.72 \pm 35.69$  respectively. The standard error mean of both groups were  $24.78 \pm 35.69$  which shows the variation from sample to sample.

Table.2 score of Mean Difference between Lawn Tennis and Football Players in their Endurance

Variable	Group	df	t	Sig.(two tailed)	95% confidence interval	
ENDURANCE	Lawn Tennis	98	2.642	0.010	Lower	upper
	Football				201.064	28.57

*Significant at 0.05 with the df 98*

The table no 2 reveals the mean differences between the selected groups. The score obtained t value was 2.642 respectively which were two tailed significant. It means there was a statistically significant difference found between the groups in their endurance and the mean score of Football players is higher than the Lawn Tennis players. The confidence interval show the two tailed magnitude of 95% of score and it was observed that 95% score lie down between 28.57 to 201.064 respectively.



#### 4. Conclusion:

After analysis the obtained results it was observed that mean score of Football players is higher than the Lawn Tennis players in their endurance which was statistically proved by t test which also show a significant difference between both groups. Football field is bigger than Lawn Tennis court so it may be a reason that Football players have higher endurance capacity.

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