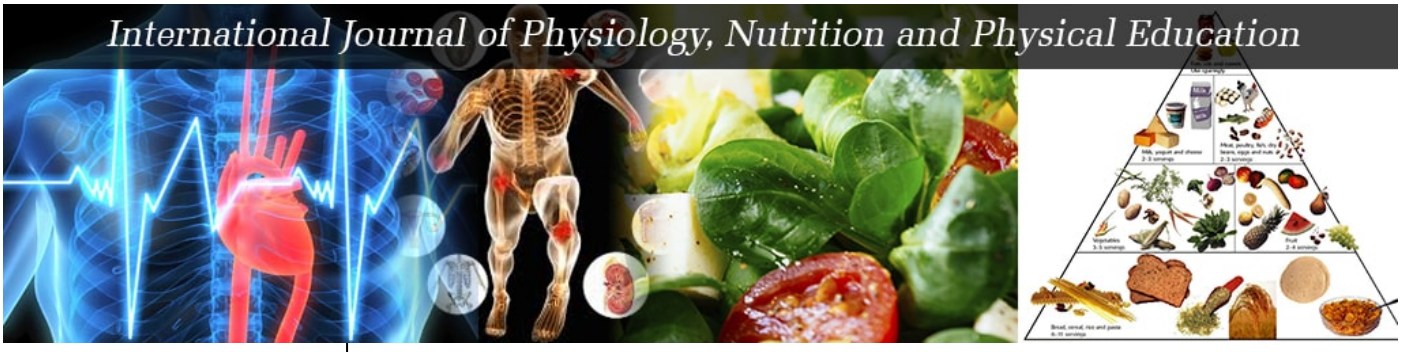

ISSN: 2456-0057
IJPNPE 2025; 10(2): 98-101

www.journalofsports.com
Received: 11-06-2025
Accepted: 14-07-2025

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A study on selected physical profile of Uttar Pradesh male football players

Raj Veer Singh and Manish Majhwar

Abstract
The purpose of the study was to make Physical profiles of state level/inter university men's football players of (BHU, DDUGU, MGKVP, RMLAU, LU, AU, AMU) Uttar Pradesh. The total 100 mael football players were selected for present study, aged 18-25 years, the selected physical variable considered for this study Endurance, Speed and Leg Explosive Strength. The data was collected with the help specific standard test and measurement procedure. The data was subjected to descriptive analysis. The average value of physical variables of all male football players were Endurance (1620 m), Speed (7.3 sec) and Leg Explosive Strength (60.5 cm).

Keywords: Physical variables, male football players, state level/inter university

Introduction
Football, also known as soccer, is one of the most popular and widely played sports in the world, requiring a unique combination of technical skill, tactical understanding, and physical prowess. Among all the physical attributes that contribute to a player's success on the field, endurance, speed, and explosive leg strength are some of the most critical. These components of physical fitness not only enhance individual performance but also significantly impact the overall effectiveness and competitiveness of a football team. In the modern era of sports science, understanding and assessing these variables have become essential for optimizing training, reducing injury risk, and maximizing performance.

The game of football involves continuous movement interspersed with frequent sprints, sudden stops, direction changes, jumps, and physical duels. A single match often lasts 90 minutes or more, during which players cover distances ranging from 8 to 12 kilometers on average. This dynamic nature of the game places immense physical demands on players, making aerobic and anaerobic endurance vital for sustained high-level performance. Endurance enables players to maintain intensity throughout the match, recover quickly between high-effort bursts, and resist fatigue—especially in the latter stages of the game where lapses in performance can prove costly.

Alongside endurance, speed is a fundamental component that plays a decisive role in both offensive and defensive scenarios. A player's ability to accelerate quickly and reach top speed in a short distance can create scoring opportunities, allow rapid transitions, and help in recovery runs. Speed is particularly important in modern football, where the tempo of the game has increased significantly due to tactical evolutions and improvements in training methodologies. Whether it's beating a defender to the ball, closing down an opponent, or launching a counter-attack, superior sprinting ability can be the difference between success and failure on the pitch.

Complementing speed is explosive leg strength, which underlies many football-specific movements such as jumping for headers, changing direction sharply, sprinting from a static position, and shooting with power. Explosive leg strength refers to the ability of the muscles—particularly in the lower limbs—to exert maximal force in a short burst of time. This component is closely associated with muscular power and is critical for explosive actions that require both strength and speed. Movements like vertical jumping, long-distance kicking, and fast take-offs heavily depend on the explosive capabilities of the legs. It is also essential for injury prevention, stability, and performance in one-on-one physical contests.

Despite the importance of these variables, there is a notable lack of comprehensive, region-specific data on football players from various parts of India, particularly from states like Uttar Pradesh. Uttar Pradesh, being one of the largest and most populous states in India, has a growing base of young football talent. Numerous tournaments, academies, and school-level programs are emerging in the region, reflecting increased participation and interest in the sport. However, systematic research and scientific analysis of the physical attributes of these players remain limited. This restricts the ability of coaches and sports scientists to design effective, evidence-based training programs that cater to the unique needs of athletes from the region.

The absence of such data is especially concerning considering the diversity in physiological, environmental, nutritional, and socio-economic conditions across Indian states. Players from different regions may exhibit differences in physical capabilities due to genetic predispositions, training exposure, dietary habits, and even climatic conditions. Therefore, there is a pressing need to conduct targeted research to understand the physical characteristics of football players in Uttar Pradesh, focusing on key performance variables such as endurance, speed, and explosive leg strength.

In many parts of the world, football development is guided by empirical data that helps in player profiling, talent identification, and performance benchmarking. For example, national football associations in countries like Germany, Brazil, and Spain use regular fitness assessments to track players' physical progress and tailor training accordingly. In contrast, most Indian football programs—particularly at the state and grassroots levels—lack this scientific support. This gap results in generalized training approaches that may not address the specific performance needs of individual players, thereby limiting their developmental potential.

This study aims to fill that gap by evaluating selected physical variables—specifically endurance, speed, and explosive leg strength—of male football players in Uttar Pradesh. The objective is to assess the current physical status of players, identify areas for improvement, and contribute valuable data that can be used by coaches, trainers, and sports administrators to enhance football training in the region.

Methodology

Selection of subject

One hundred state level/inter university football players were selected randomly for present study from (BHU, DDUGU, MGKVP, RMLAU, LU, AU, AMU) Uttar Pradesh. Prior consent taken from coaches and all players were precisely informed about the purpose and the procedure of data collection. The age group of the subjects ranged from 18-25 years.

Selection of Variable

The researcher had been selected the following physical variable for present study i.e. Endurance, Speed and Leg explosive strength.

Administration of the test

Endurance (YOYO level 1 Test)

YOYO test is widely used to assess endurance of athletes. This is a reliable test and requires less time and space, so it will be used to assess endurance of soccer players in present study.

Equipment required: Flat, non-slip surface, marking cones, 20m measuring tape, beep test audio, music player, recording sheets.

Procedure: This test involves continuous running between two lines 20m apart in time to recorded beeps. For this reason the test is also often called the 'beep' or 'bleep' test. In this test participants asked to stand behind one of the lines facing the second line, and begin running when instructed by the recording. The speed at the start is quite slow. The subject continues running between the two lines, turning when signaled by the recorded beeps. After about one minute, a sound indicates an increase in speed, and the beeps will be closer together. This continues each minute (level). If the line is reached before the beep sounds, the subject has to wait until the beep sounds before continuing. If the line is not reached before the beep sounds, the subject will be given a warning and asked to continue to run to the line, then turn and try to catch up with the pace within two more ‘beeps’. The test has to stop if the subject fails to reach the line (within 2 meters) for two consecutive ends after a warning.

Scoring: The athlete's score will be the level and number of shuttles (20m) reached before they were unable to keep up with the recording. The last level completed will be recorded (not necessarily the level stopped at). This norms table below is based on personal experience, and gives you a very rough idea of what level score would be expected for adults, using the standard Australian beep test version.

Speed (45 M Sprint Test)

To assess sprinting speed short sprint of 45 meter will be used. Short sprints are the best way to assess speed of an individual or a group which requires less time and equipment, short sprints is widely used to assess speed of sportspersons.

Purpose: The purpose of this test will be to determine acceleration and speed of athletes. Sprinting start equipment required: measuring tape, speed gun, cone, and markers. Procedure: The test involves running a single maximum sprint over a set distance, with time recorded. After a standardized warm up, the test is conducted for a distance of 45 meters. The starting position will be be standardized, starting from a stationary position with a foot behind the starting line, with no rocking movements. Time will be measured in 10th part of sec with the help of a calibrated stopwatch, and time will be recorded as their score. Some encouragement will be also provided in order to continue running hard past the finish line.

Scoring: An excellent score is under 3.6 seconds for a male, less than 15 seconds for a female.

Leg explosive strength (Vertical broad jump)

Sting and measurement are the means of collecting information upon which subsequent performance evaluation and decisions are made in the analysis, we need to consider factors influencing the result.

The Sargent Jump Test (Sargent 1921) also known as the vertical jump test, was developed by Dr Dudley Allen Sargent (1849-1924).

Purpose: To monitor the development of the athlete's elastic leg strength.

Required equipment

To conduct this test, you will require:

- Wall
- Tape measure
- Step Ladder

- Chalk
- Assistant

Procedure

- The athlete warm up for 10 minutes
- The athlete chalks the end of their fingertips
- The athlete stands side onto the wall, keeping both feet remaining on the ground, reaches up as high as possible with one hand and marks the wall with the tips of the fingers (M1)
- From a static position, the athlete jumps as high as possible and marks the wall with the chalk on his fingers (M2).
- The assistant measures and records the distance between M1 and M2
- The athlete repeats the test 3 times
- The assistant calculates the average of the recorded distances and uses this value to assess the athlete's performance

Analysis of Data & Result of the Study

Table 1: Descriptive Analysis of performance in selected Physical Variables

Column 1	Endurance	Speed	Leg Explosive Strength
Mean	1620	7.3	60.5
Standard Error	8.625	0.05005	2.143541
Median	1615.9	4.69	60.1
Standard Deviation	10.5	0.254809	6.17521
Sample Variance	189.39	0.054928	75.2120
Kurtosis	6.5422	1.1654212	0.375122
Skewness	-6.1252	0.1925263	-0.0765221
Range	50	1.03	40
Minimum	1580	4.4	50
Maximum	1660	5.3	75

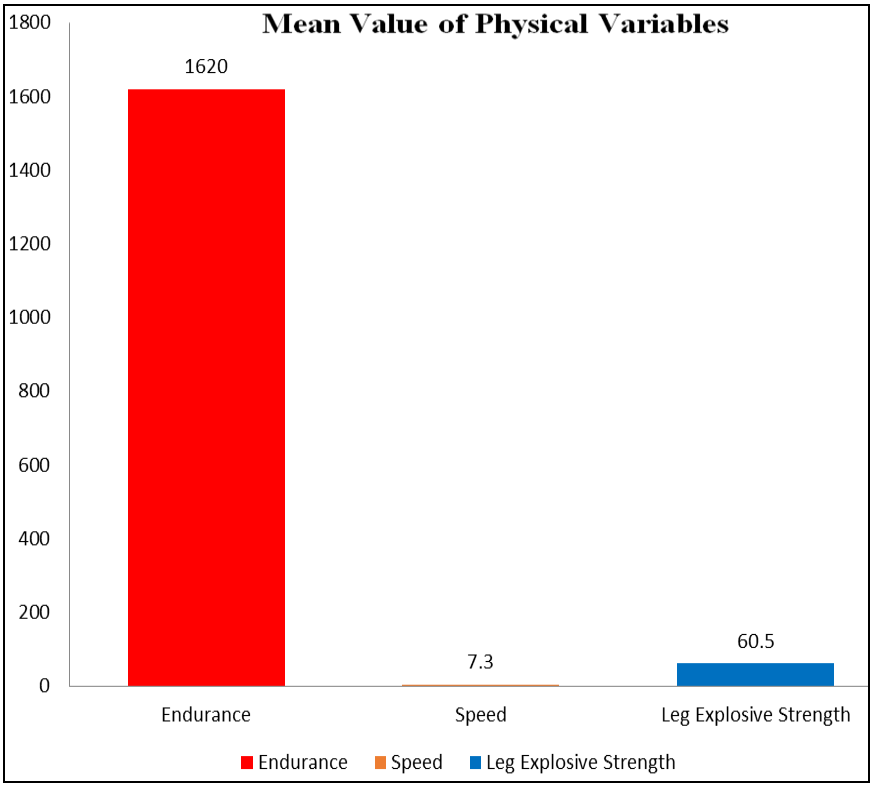

Fig 1: Mean value of physical variables

Table 1 describe various statistics of state level/inter university male football players in relation to physical variable, the mean value of physical variables of all football players were Endurance (1620 m), Speed (7.3 sec), and Leg Explosive Strength (60.5 cm).

Results revealed the mean and standard deviation of Endurance (1620 m), Speed (7.3 sec) and Leg Explosive Strength (60.5 cm). The speed of football players was found in present study is 7.3 sec found below average because players involve continue strenuous exercise programme.

Discussion and Conclusion

The physical demand of football players can be decisive determinant of success during a tournament, and if a player wishes to achieve success in state level/inter university competition, improvement in physical needs to be emphasised. The test data obtained from this study provided a good baseline and reference for the individual players tested the coaches of the state level/inter-university, as well as future elite players and coaches. It also enabled strength and weakness within the group to be identified. So that appropriate training plan could be designed to improve their performance. This data also helps to coaches for selection purposes.

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