



# Comparative Study on Selected Motor Fitness Components between the Soccer Player of Tamil Nadu Physical Education and Sports University and Laximibai National Institute of Physical Education

Name of 1<sup>st</sup> Author Mr. Ajjul Rahaman Khan, Name of 2<sup>nd</sup> Author Prof. Sanjit Sardar

Designation of 1<sup>st</sup> Author: Research Scholar, Department of Physical Education, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India

Designation of 2<sup>nd</sup> Author: Professor, HOD, Department of Physical Education, Guru Ghasidas Vishwavidyalaya, Bilaspur, Chhattisgarh, India

**Abstract:** The main purpose of the study was to find out a Comparative Study on Selected Motor Fitness Components between the Soccer Player of Tamil Nadu Physical Education and Sports University and Laximibai National Institute of Physical Education. Twenty (20) male soccer players from each university were selected as subjects. The age of the subjects was in between the 18-25 years. Selection of 40 subjects was used by the Purposive Sampling method. Data on selected Motor Fitness Components viz. Cardio-vascular Endurance, Agility, Speed, Explosive Leg Strength and Flexibility were collected by administering 12 minute Run and Walk test and score was recorded in meter, Semo agility test and the score was recorded in seconds, 50M dash and score was noted down in seconds, vertical jump and the measurement was recorded in centimeter, Sit and reach test and the score was recorded in centimeter. To determine the significance of difference on the above mentioned variables between the two groups of Players, independent 't' test was employed for each variable separately. For testing the hypothesis the level of significance was set at 0.05. The findings of the statistical analysis revealed that significance of difference was observed on Cardio-vascular Endurance and Explosive Leg Strength between the two groups. It is also understood from the mean value that the Players of Lakshmibai National Institute of Physical Education, were significantly better than the Tamil Nadu Physical Education and Sports University. Insignificant difference was found in the variables of Agility, Speed and Flexibility. Hence such results might have occurred.

**Index Terms - Soccer Players, Cardio-vascular Endurance, Agility, Speed, Explosive Leg Strength, Flexibility.**

## I. INTRODUCTION

Soccer is the most popular and most attended spectacular game in the world at present. It is not merely a games, it is a part of one's life. It is a vigorous, fast and skilled game for the well conditioned sports man, who most possess strength, speed, agility, balance, flexibility, endurance, co-ordination and many other undefined qualities such as dribbling, kicking for passing and shooting at the goal.

Soccer demands stamina, Players have to keep going for ninety minutes frequently sprinting both with and without the ball, Physiologist call the ability to keep going at a moderate pace aerobic capacity.

Motor fitness is general by performance and this performance is based on a composition of many factors. The most commonly mentioned fitness factors are strength, endurance, power, speed, agility, balance, flexibility, and coordination. Some of these factors evidently are more dominant than others and thus have a higher relationship with motor fitness.

**Purpose of the study:**

The main purpose of the present study was to find out the difference in the selected Motor Fitness Components between the Soccer Player of Tamilnadu Physical Education and Sports University and Laximibai National Institute of Physical Education.

**Significance of the Study:**

The results of this study would provide a guideline to understand the contribution of Motor Fitness Components among the Football players of Tamil Nadu Physical Education and Sports University and Laximibai National Institute of Physical Education.

The result of this study would provide an idea to develop a suitable training programme for the football players of Tamil Nadu Physical Education and Sports University and Laximibai National Institute of Physical Education.

**Hypothesis:**

In the beginning of this study it was hypothesized that there would be significant mean difference in the selected motor fitness components among the Soccer Players of Tamil Nadu Physical Education and Sports University and Laximibai National Institute of Physical Education.

**Delimitations:**

The present study was delimited to the following aspects

1. 20 each male soccer players were selected from Tamil Nadu Physical Education and Sports University and Laximibai National Institute of Physical Education.
2. The age of the subjects was ranging from 18 to 25 years.
3. Following variables were chosen in the present study
  - A. Motor Fitness Components
    - i. Cardio-vascular Endurance
    - ii. Agility
    - iii. Speed
    - iv. Explosive Leg Strength
    - v. Flexibility

**Limitations**

1. No specific motivational technique was used during the test.
2. The social and economical status of the subjects were unknown.
3. Training background of the selected subjects was not considered.

**II. Methodology**

Total forty male football players from Tamil Nadu Physical Education and Sports University and Laximibai National Institute of Physical Education were chosen randomly as subjects for this study. The age of the subjects was ranging from 18 to 25 years.

**Sampling Technique**

Purposive sampling method was employed for the selection of the subjects.

**Motor Fitness Components**

1. Cardio-vascular Endurance was measured by administering 12 minute Run and Walk test and score was recorded in meter.
2. Semo agility test was applied to assess agility and the score was recorded in seconds.
3. 50M dash was administered to measure speed and score was noted down in seconds.
4. Explosive leg strength was measured by applying vertical jump and the measurement was recorded in centimeter.
5. Sit and reach test was applied to measure flexibility and the score was recorded in centimeter.

**III. RESULTS AND DISCUSSION**

To determine the significant difference in motor fitness components of the soccer players of both sport universities, independent “t”-test was employed. The level of significance was set at 0.05. The result pertaining to the data is presented in Table-1.

**Table-1****Description of Mean, Standard Deviation and t-ratio for the Data on Selected Variables of Motor Fitness Components of LNIPE and TNPESU Soccer Players**

Variables	University	Mean	Standard deviation	MD	Standard error of MD	t-ratio
Cardio-vascular Endurance	LNIPE	2815.4	187.643	153.3	54.7536	20.7174*
	TNPESU	2662.1	157.3193			
Agility	LNIPE	11.836	0.6099	0.202	0.1692	0.4910@
	TNPESU	12.038	0.4505			
Speed	LNIPE	6.667	0.4128	0.2065	0.1093	0.6246@
	TNPESU	6.8735	0.2633			
Explosive Leg Strength	LNIPE	52.1	14.7339	11.85	3.7220	6.1424*
	TNPESU	40.25	7.7451			
Flexibility	LNIPE	24.70	4.2083	1.25	1.1758	1.1528@
	TNPESU	23.45	3.1539			

\*Significant at 0.05 level tabulated  $t_{0.05(38)} = 2.024$

@Not Significant at 0.05 level.

MD: Mean difference,

LNIPE: Laximibai National Institute of Physical Education,

TNPESU: Tamil Nadu Physical Education and Sports University.

It is evident from Table 1 that significant difference was found in the variables of Cardio-vascular Endurance ( $t = 20.7174 > 2.024$ ), and Explosive Leg Strength ( $t=6.1424>2.024$ ). It is also observed that insignificant difference was observed in the variables of Agility ( $t = 0.4910 < 2.024$ ), Speed ( $t = 0.6246 < 2.024$ ) and Flexibility ( $t= 1.1528 < 2.024$ ) at 0.05 level.

Findings of the study revealed that the performance of LNIPE players is significantly better than the soccer players of TNPESU in cardio-vascular endurance and explosive leg strength, it may be because most of the top players or students all over India get admission here on physical ability and skill performance and then they get better with good facilities and under the supervision of trained coaches who might have put due attention to develop all these above-mentioned components. Findings also showed that the insignificant difference was found in the variables of agility, speed and flexibility.

This section also deals with the mean difference of graphs of selected motor fitness components between the soccer players of Tamil Nadu Physical Education and Sports University and Laximibai National Institute of Physical Education, which is shown in graph 1to 5.

Figure-1

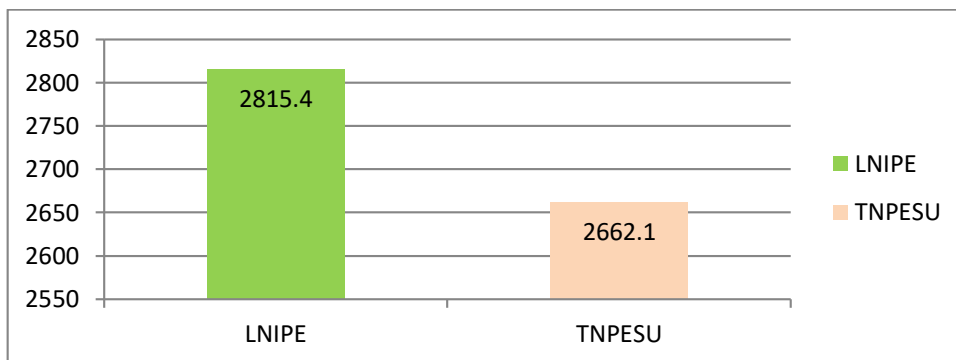


Figure-1 Mean difference graph on Cardio-vascular Endurance of LNIPE and TNPESU soccer players

Figure-2

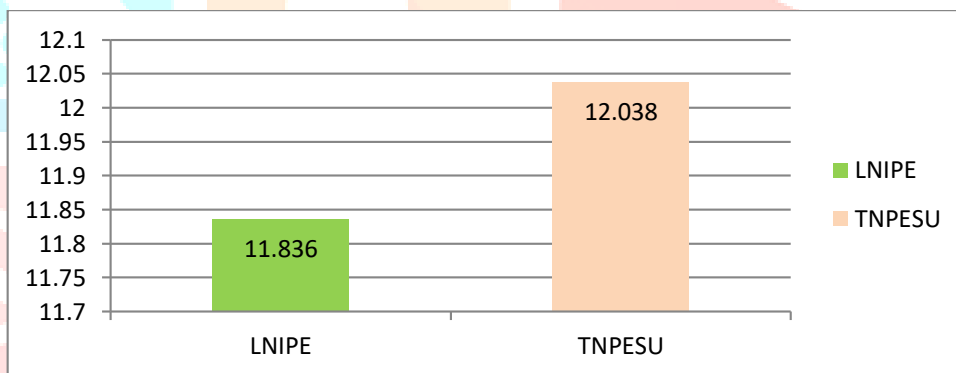


Figure-2 Mean difference graph on Agility of LNIPE and TNPESU soccer players

Figure-3

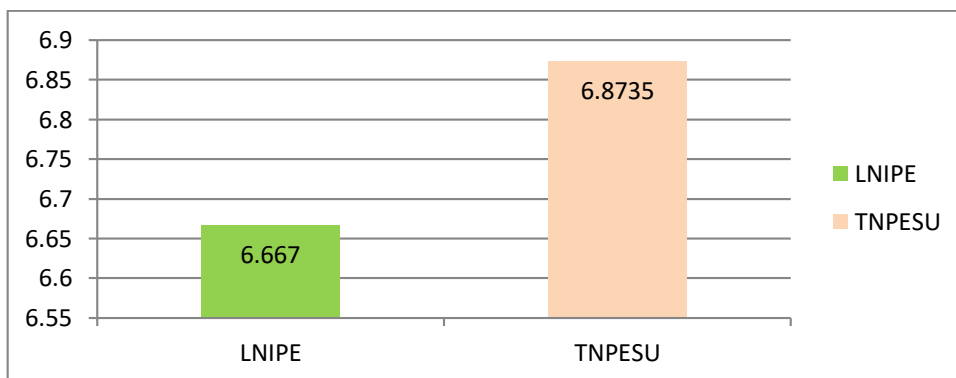


Figure-3 Mean difference graph on Speed of LNIPE and TNPESU soccer players

Figure-4

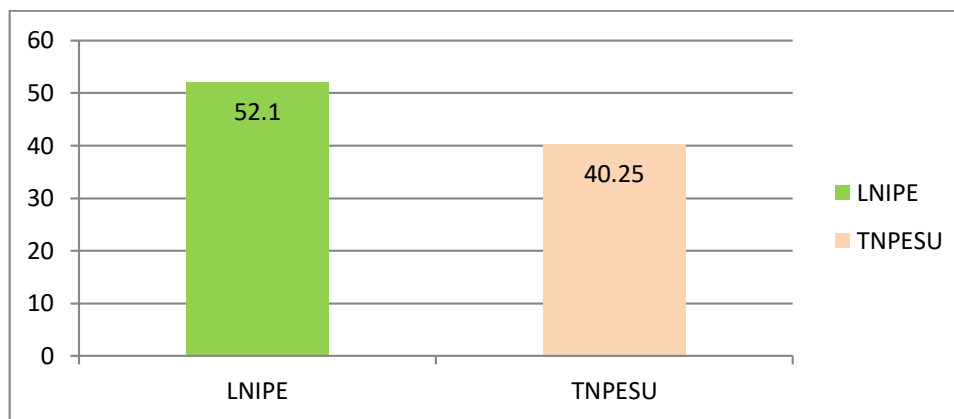


Figure-4 Mean difference graph on Explosive Leg Strength of LNIPE and TNPESU soccer players

Figure-5

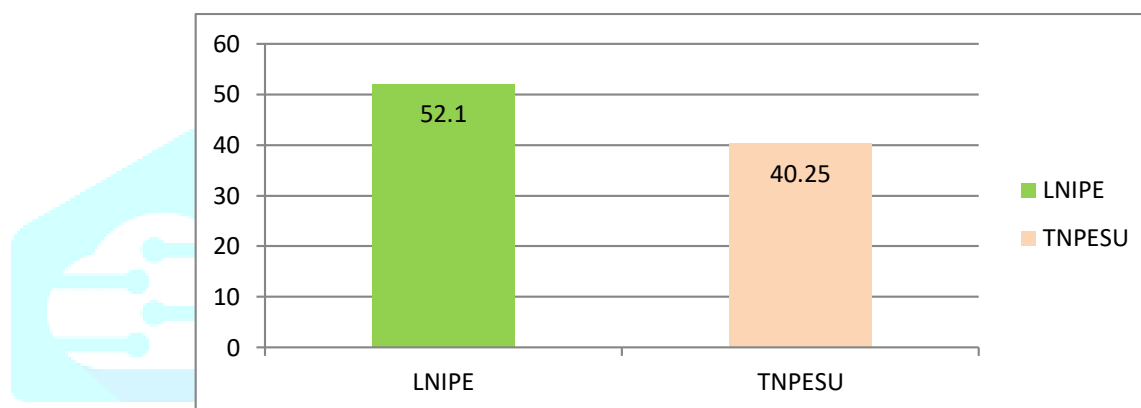


Figure-4 Mean difference graph on Flexibility of LNIPE and TNPESU soccer players

#### IV. CONCLUSION

Recognizing the limitations of this study and on the basis of statistical findings, the following conclusions are drawn:

- Cardio-vascular Endurance was shown by the soccer players of LNIPE (M=2815.4) significantly are better than the players of TNPESU (M=2662.1).
- Explosive Leg Strength was shown by the soccer players of LNIPE (M=52.1) significantly are better than the players of TNPESU (M=40.25).
- No significant difference was observed in between the soccer players of LNIPE and TNPESU in agility, speed and flexibility.

#### REFERENCES

1. Devinder K. Kansal, Textbook of Applied Measurement Evaluation & Sports Selection, (New Delhi: Sports & Spiritual Science Publications, 2008), p.340.
2. Devinder K. Kansal, Textbook of Applied Measurement Evaluation & Sports Selection, (New Delhi: Sports & Spiritual Science Publications, 2008), p.328.
3. Devinder K. Kansal, Textbook of Applied Measurement Evaluation & Sports Selection, (New Delhi: Sports & Spiritual Science Publications, 2008), pp.313-314.
4. M.J. Mathotra, "Evaluation of General Physical Fitness of National Level Sportsmen" SNIPES Journal, 4 (July 1981).
5. William Thomson, Teaching Soccer, (Delhi: Surface Publication, 1957) P. 133.
6. Warren R.Johnson and E.R. Buskirth rtal, Science and Medicine of Exercise and Sport (Newyork:Harper and Bros, 1974). p.174