



Comparison of Selected Anthropometric Measurements between the Soccer Players of National Sports University and Swarnim Gujarat Sports University

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Abstract: The main purpose of this study was to find out the significance of Anthropometric Measurements between the Soccer Players of National Sports University, Imphal and Swarnim Gujarat Sports University, Gandhi Nagar. Twenty (20) male soccer players from each university were selected as subjects. The age of the subjects was ranging from 18-25 years. Purposive Sampling method was used for the selection of 40 subjects.

Data on selected Anthropometric Measurements viz. Body Weight, Standing Height, Sitting Height, Leg Length, Thigh Circumference and Calf Circumference were collected by administering weighing machine, stadiometer, anthropometer rod, leg length was calculated by subtracting sitting height from standing height and steel tape, these instruments are used to measure the tests respectively on the aforementioned players and the scores were recorded according to the directions of the above mentioned tests.

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. The findings of the statistical analysis revealed that significance of difference was observed on body weight, thigh circumference and calf circumference between the two groups. It is also understood from the mean value that the Players of National Sports University, were significantly better than the Swarnim Gujarat Sports University. Insignificant difference was found in the variables of standing height, sitting height and leg length. As most of the players of NSU University were from North East States of India where Football is most popular game, accordingly they used to practice from childhood stage under the coaching of trained Coaches who might have put due attention to develop all these above mentioned components. Hence such results might have occurred.

Index Terms - Soccer Players, Body Weight, Standing Height, Sitting Height, Leg Length, Thigh Circumference and Calf Circumference.

1. INTRODUCTION

Soccer or football is a team game which is full of kicks, throws, headings. Passing, dribbling and dodging that runs through their combination. In other sense, passing of a football in nothing but kicking too accurately. Kicking of a high or short or low or short will be easy too to pass of accurately at the time of long passes it needs the high ball that is not easy to pass accurately. Similarly, it has been observed that coaching has been meant for preparing team for winning a match by kicking of distance accurately to the goal or one's team mate.

Football is essentially team game. It has developed into a fast and highly skillful area. In football generally players are divided into two categories. Offensive and defensive players are meant for scoring by combing their technique, tactics and effort and different times.

The oldest form of measurement, known as anthropometric, it is the measurement of human body part. Anthropometry was of interest in ancient India and later in Egypt. Where the study was undertaken to find ones part or component of the body that could be used as a common measure for all body part. In many game and sports the physical structures especially the height, and arm length provided definite advantage.

Anthropometric measurement consists of objective measurement of structure and functions of the body that is why the science of anthropometry has important place in sports and the sports performance. For classification as well as for comparison of certain measurement such as the ratio of height and weight, length of the limbs depth and width and the have an important role in the field of sports performance.

Purpose of the Study

The main purpose of the present study was to find out the difference in the selected Anthropometric Measurements between the Soccer Players of National Sports University and Swarnim Gujarat Sports University.

Significance of the Study

The results of this study would provide a guideline to understand the difference of Anthropometric Measurements among the Soccer Players of National Sports University and Swarnim Gujarat Sports University.

Hypothesis

In the beginning of this study it was hypothesized that there would be significant mean difference in the selected anthropometric measurements among the Soccer Players of National Sports University and Swarnim Gujarat Sports University.

Delimitations

The present study was delimited to the following aspects-

1. 20 each male soccer players were selected from National Sports University and Swarnim Gujarat Sports University.
2. The age of the subjects was ranging from 18 to 25 years.
3. Following variables were chosen in the present study
 - A. Anthropometric Measurements
 - i. Body Weight
 - ii. Body Height
 - iii. Sitting Height
 - iv. Leg Length
 - v. Thigh Circumference
 - vi. Calf Circumference

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.

2. METHODOLOGY

Selection of Subjects

40 male football players from National Sports University and Swarnim Gujarat Sports University 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 section of the subjects.

Collection of the Data

Anthropometric measurements

1. Body weight was measured by using weighing machine and score was recorded in kilogram.
2. Standing height was measured by applying stadiometer and the measurement was recorded in centimeter.
3. Sitting height was measured by Anthropometer rod (lower two segments, with a crossbar.) and it was recorded in centimeter.
4. Leg length was calculated by subtracting sitting height from standing height, and score was recorded in centimeter.
5. Thigh circumference was measured in centimeter by using steel tape and skin marking pencil.
6. Calf circumference was measured in centimeter with the help of steel tape.

3. RESULTS AND DISCUSSION

To determine the significant difference in anthropometric measurements 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 Anthropometric Measurements of NSU and SGSU Soccer Players

Variables	University	Mean	Standard deviation	MD	Standard error of MD	t-ratio
Body Weight	NSU	62.515	6.2795	6.235	1.70907	4.76933 *
	SGSU	68.75	4.3574			
Standing Height	NSU	170.4	5.8429	0.7	1.480691	0.57526@
	SGSU	169.7	3.1160			
Sitting Height	NSU	87.8	2.0149	0.65	0.573902	0.858014@
	SGSU	87.15	1.5898			
Leg Length	NSU	82.6	5.3702	0.05	1.264643	0.03953@
	SGSU	82.55	1.7741			
Thigh Circumference	NSU	53.27	2.5643	8.82	0.664195	13.27923 *
	SGSU	44.45	1.49916			
Calf Circumference	NSU	36.675	1.7697	6.625	0.46793	9.68496 *
	SGSU	30.05	1.1169			

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

@Not Significant at 0.05 level.

MD: Mean difference,
 NSU: National Sports University,
 SGSU: Swarnim Gujarat Sports University

It is evident from Table 1 that significant difference was found in the variables of Body Weight ($t = 4.76933 > 2.024$), Thigh Circumference ($t = 13.27923 > 2.024$) and Calf Circumference ($t = 9.68496 > 2.024$). It is also observed that insignificant difference was observed in the variables of Standing Height ($t = 0.57526 < 2.024$), Sitting Height ($t = 0.858014 < 2.024$), Leg Length ($t = 0.03953 < 2.024$) at 0.05 level.

Findings of the study revealed that the performance of NSU players is significantly better than the soccer players of SGSU in body weight, thigh circumference and calf circumference, it may be because most of the players of NSU were from the North East States of India where football is most popular game; accordingly, they used to practice from childhood stage 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 standing height, sitting height and leg length.

This section also deals with the mean difference of graphs of selected anthropometric variables between the soccer players of National Sports University and Swarnim Gujarat Sports University, which is shown in graph 1 to 6.

Figure-1

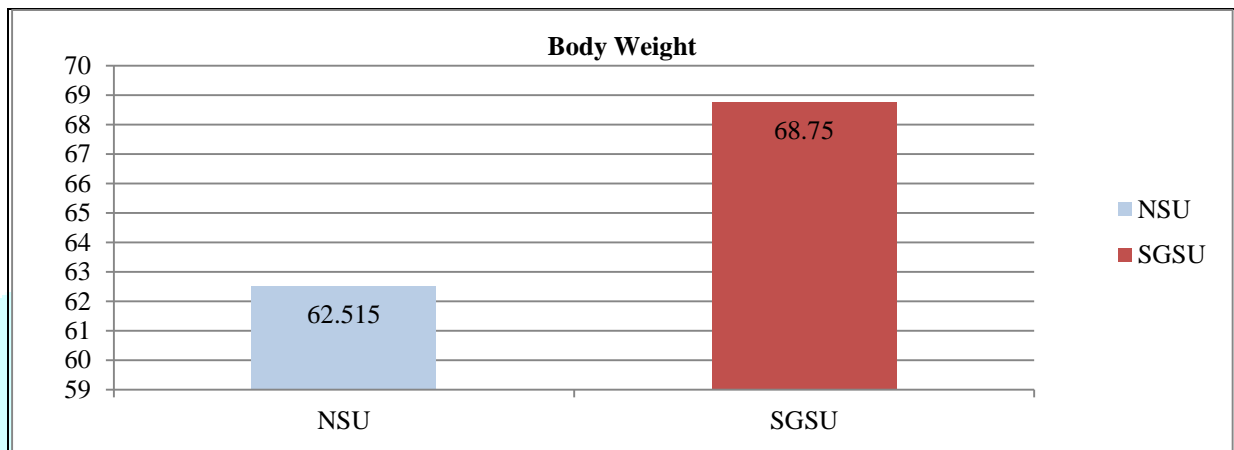


Figure-2 Mean difference graph on body weight of NSU and SGSU soccer players

Figure-2

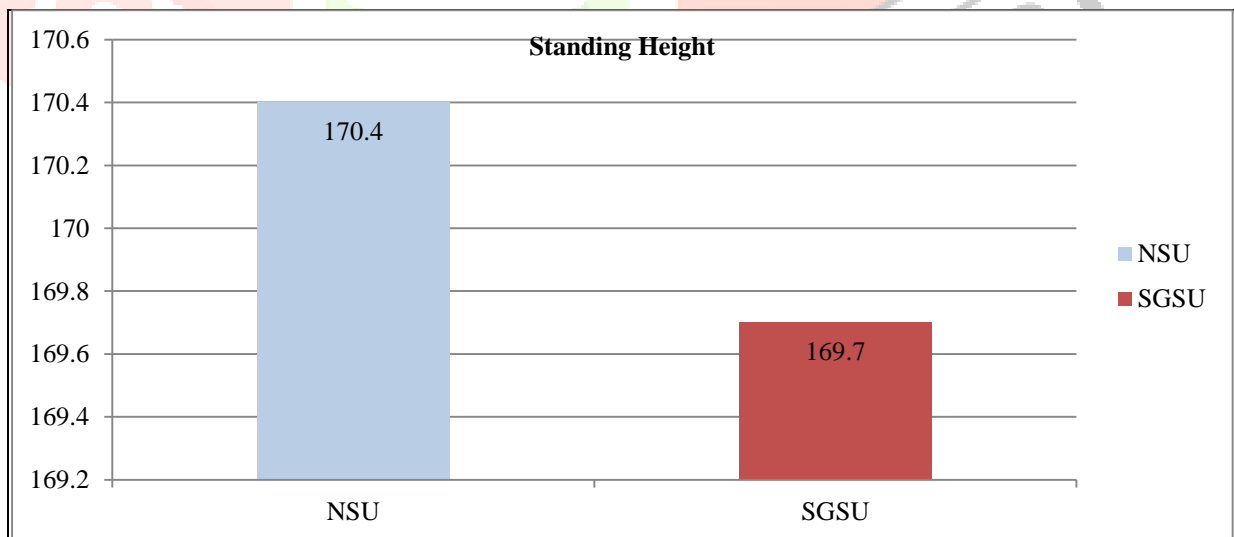


Figure-2 Mean difference graph on standing height of NSU and SGSU soccer players

Figure-3

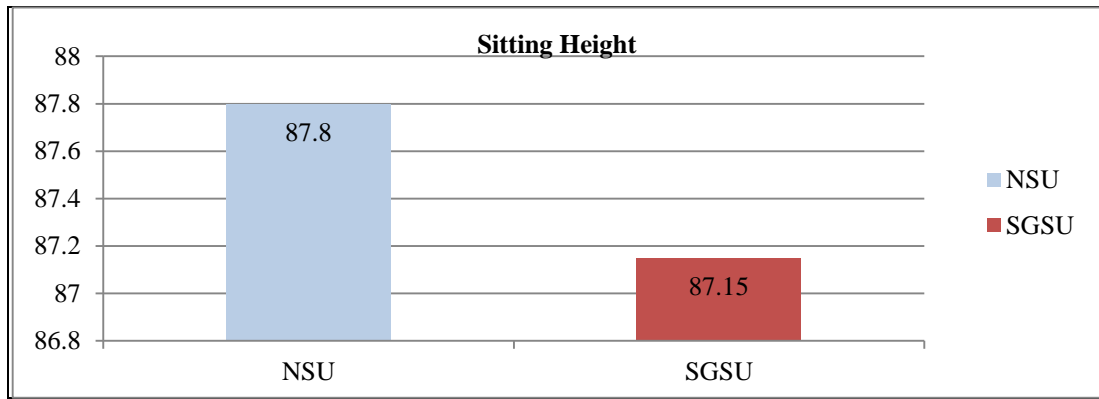


Figure-3 Mean difference graph on Sitting Height of NSU and SGSU soccer players

Figure-4

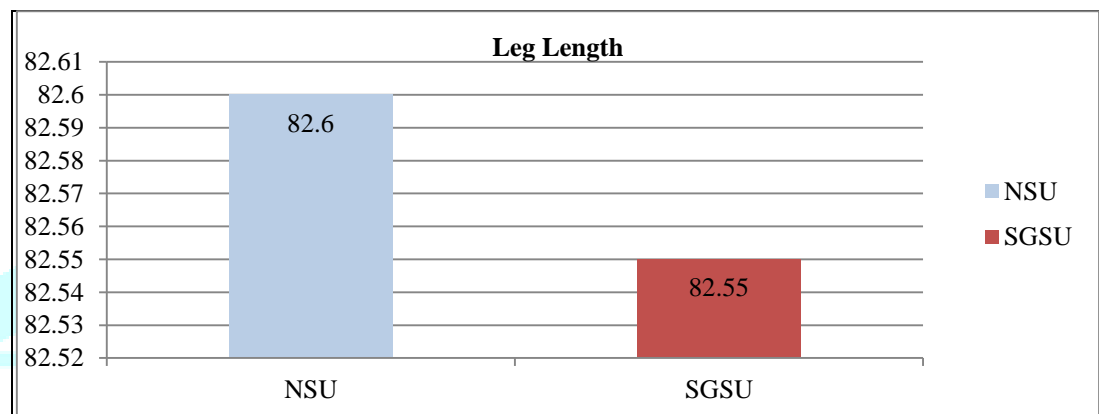


Figure-3 Mean difference graph on Leg Length of NSU and SGSU soccer players

Figure-5

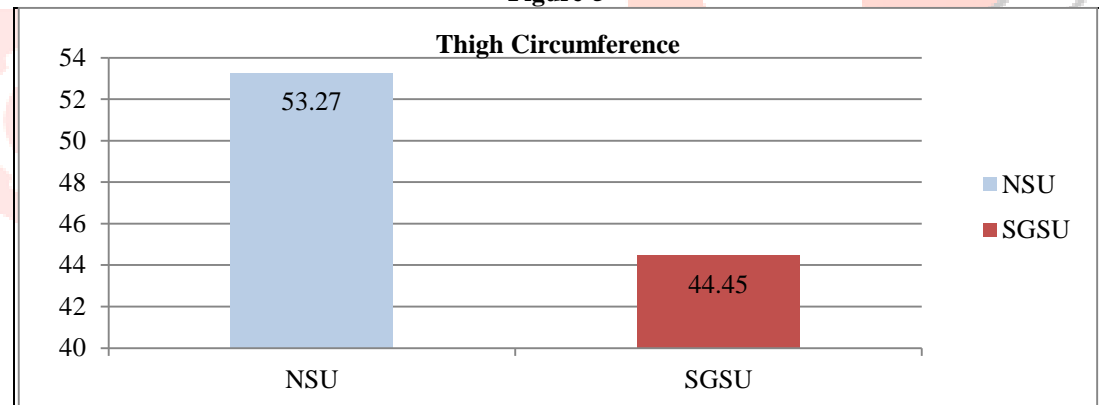


Figure-3 Mean difference graph on Thigh Circumference of NSU and SGSU soccer players

Figure-6

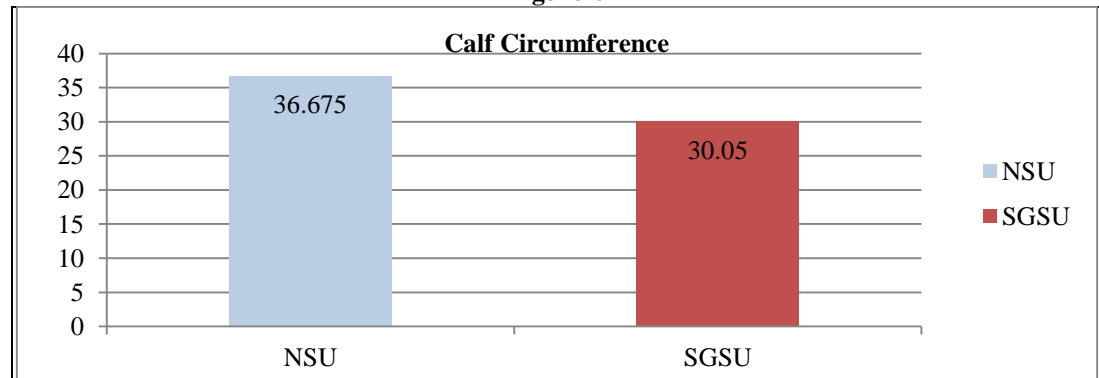


Figure-3 Mean difference graph on Calf Circumference of NSU and SGSU soccer players

4. CONCLUSION

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

- Body weight was shown by the soccer players of NSU (M=62.515) significantly are better than the players of SGSU (M=68.75).
- Thigh circumference was shown by the soccer players of NSU (M=53.27) significantly are better than the players of SGSU (M=44.45).
- Calf circumference was shown by the soccer players of NSU (M=36.675) significantly are better than the players of SGSU (M=30.05).
- No significant difference was observed in between the soccer players of NSU and SGSU in standing height, sitting height and leg length.

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