

Comparative Study over Selected Physical and Physiological Variables among Tribal and Non Tribal Soccer Players

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Abstract

The purpose of the study was to compare selected physical and physiological variables among tribal and non tribal soccer players. Total 60 soccer players of Tripura University were randomly selected as a subject for the study. 30 tribal and 30 non soccer players selected having age ranged 21-25 years. Selected physical variables were BMI, Fat%, Arm length, Leg length and Calf girth and physiological variables were Vital capacity, Systolic blood pressure, Diastolic blood pressure and Pulse rate. In order to compare the selected physical and physiological variables among tribal and non tribal soccer player collected data was analyzed by 't'-test. Finding of the present study showed that there were no significance difference among tribal and non tribal soccer players on selected physical and physiological variables, as the calculated value was smaller than table value at 0.05 labels.

KEYWORD: Tribal, Non tribal, Physical, Physiological and soccer.

INTRODUCTION

Modern soccer is very fast by its nature; spectator and the players enjoy the game with a great amount of joy. It is a game of constant action and it requires continuous adaptation to changing situations by the team as a whole as well as by the individual player. Although it is a team game, there are ample room for players to display their brilliance through individual play as well as team play involving improvisation and tactical knowledge. Playing soccer depend on various factors, especially physical fitness, physiological fitness, psychological fitness etc. BMI, speed, endurance, co-ordination, strength etc. referred for physical fitness. On the other hand vital capacity, peak flow, normal blood pressure, pulse rate etc. referred to physiological fitness. Psychological status is also very much important for soccer playing. Therefore the study was undertaken to compare the selected physical and physiological variables among tribal and non-tribal soccer players of Tripura University.

METHODOLOGY

A total of 60 subjects from tribal and non-tribal soccer player of Tripura University (30 in each group), was randomly selected for the purpose of the study. The age of the subjects was ranged between 21-25 years and all of them participate in inter departmental football tournament. In the present study the following parameters was selected-age, height (cm.) and weight (kg.) as personal data, physical measuring criteria- BMI, Fat Percentage, Arm Length (cm.), Leg Length (cm.) and Calf Girth (cm.), Physiological measuring criteria- Pulse Rate, Blood Pressure (systolic and diastolic [mm hg]) and Vital Capacity (lit.) .

PROCEDURE OF DATA COLLECTION

Height: The height was measured by stadiometer. Subject was instructed to remove shoe and stand erectly on the stadiometer. The paddler of meter pulled down toward the head and the paddle touches the highest point of the subject’s head and that was measured.

Weight: The weight of the subject is measured by standard weighing machine. Subject was instructed to remove shoe and stand on the weighing machine. The record was taken in nearest kilogram.

BMI: The BMI of the subject were collected from his own body weight and height of the subject with the help of following formula- Weight (kg.)/Height square(m.).

Blood Pressure and Pulse Rate: Blood pressure (systolic and diastolic) was measure by digital Blood Pressure machine where a hollow cuff (Blood pressure cuff) was wrapped around the left brachial artery. Then switched on the BP machine and record the systolic and diastolic blood pressure (mmHg) and pulse rate in beat/min.

Vital Capacity: Vital capacity was measured with the help of Dry Spiro-meter. It was ensured that the pointer of the scale was at the zero mark at the beginning of the test. The subject took a deep breath before starting the test, the subject exhaled slowly and steadily while bending forward slightly until the maximum volume of air could be expelled without taking a second breath. Vital capacity was recorded in ml.

Fat Percentage: Skin fold caliper was use to measure skin fold thickness in millimeter. Four sight of skin fold thickness was measure in mm. (Bicep, Triceps, Sub scapula and supra iliac). Based on Durnin and Womersley (1974) prediction equation, percentage of body fat determined.

Arm Length, Leg Length and Calf Girth: The subject wears minimum cloth and asked to stand erect with arms sideways. Then Arm Length, Leg Length and Calf Girth measured by the help of anthropometric tape. Arm Length and Leg Length recorded in nearest cm. and calf girth in mm.

PRESENTATION AND ANALYSIS OF DATA

Collected data tabulate and present in a graphical form.

Table – I. Mean and SD of personal data of the subjects

Parameter	Group	Mean	SD
Age(year)	Tribal	± 23.533	1.041
	Non-tribal	± 22.866	1.166
Height (m)	Tribal	± 1.65	5.451
	Non-tribal	± 1.68	5.607
Weight (kg)	Tribal	± 60.436	7.423
	Non-tribal	± 61.300	12.491

Table – I shows the mean age of tribal and non-tribal soccer players were 23.533 years and 22.866 years, and S.D. were ±1.041 and ±1.166 respectively. Mean height of tribal and non-tribal soccer players were 1.65m and 1.68m, and S.D. was ±5.451 and ±5.607

respectively. And in case of weight the mean weight and SD of tribal and non-tribal soccer players were $60.436\text{kg} \pm 7.423$ and $61.3\text{kg} \pm 12.491$ respectively. It was observed from the mean age, height and weight that both the tribal and non-tribal soccer players were homogeneous.

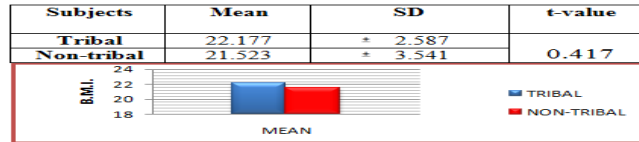


Figure 1-BMI, Bar Chart Presentation

Figure 2 shows that the mean difference of BMI among tribal and non-tribal soccer players of Tripura University. It is observed from the figure that tribal soccer has slightly high BMI comparing to non-tribal soccer player.

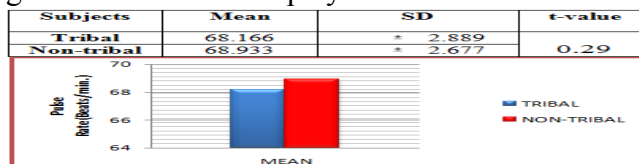


Figure 2-PULSE RATE, Bar Chart Presentation

Figure 2 shows that the mean difference of pulse rate among tribal and non-tribal soccer players. It is observed from the figure that pulse rate of non-tribal soccer players is slightly high than tribal soccer player.

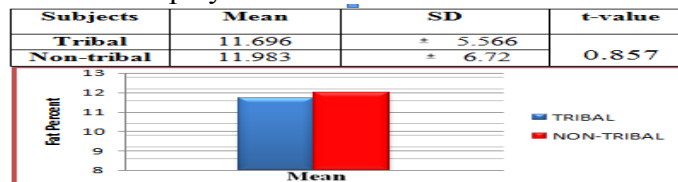


Figure 3-FAT PERCENTAGE, Bar Chart Presentation

Figure 3 shows that the mean difference of fat percentage among tribal and non-tribal soccer players of Tripura University. It is observed from figure that fat percentage of non-tribal is slightly high.

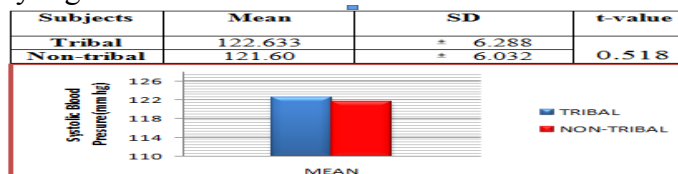


Figure 4-SYSTOLIC BLOOD PRESSURE, Bar Chart Presentation

Figure 4 shows that the mean difference of systolic blood pressure among tribal and non-tribal soccer players of Tripura University. It is observed that systolic blood pressure of tribal and non-tribal soccer player are nearly same.

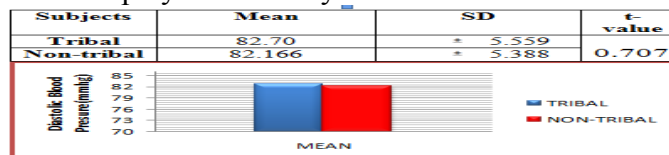


Figure 5-DIASTOLIC BLOOD PRESSURE, Bar Chart Presentation

Figure 5 shows that the mean difference of diastolic blood pressure among tribal and non-tribal soccer players of Tripura University. It is observed that diastolic blood pressure of tribal soccer player is slightly higher comparing to non-tribal soccer player.

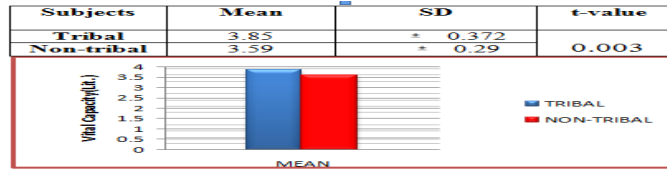


Figure 6-VITAL CAPACITY, Bar Chart Presentation

Figure 6 shows that the mean difference of vital capacity among tribal and non-tribal soccer players of Tripura University. It is observed from the figure that vital capacity of tribal soccer player is much better than non-tribal soccer player.

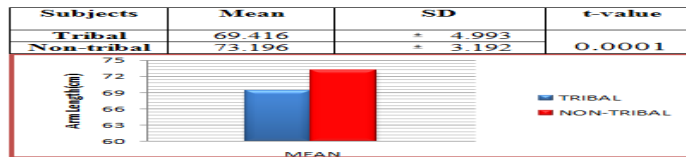


Figure 1-ARM LENGTH, Bar Chart Presentation

Figure 7 shows that the mean difference of arm length among tribal and non-tribal soccer players. It is observe from the figure that arm length of non-tribal soccer player is much longer comparing to tribal soccer player.

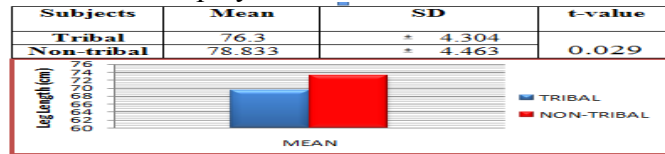


Figure 8-LEG LENGTH, Bar Chart Presentation

Figure 8 shows that the mean difference of leg length among tribal and non-tribal soccer players. It is observe from the figure that leg length of non-tribal soccer player is much longer than tribal soccer player of Tripura University.

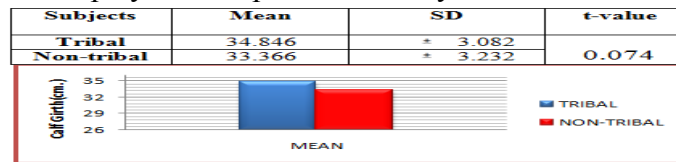


Figure 9-CALF GIRTH, Bar Chart Presentation

Figure 9 shows that the mean difference of calf girth among tribal and non-tribal soccer players of Tripura University. Calf girth of tribal soccer players is better comparing to non-tribal soccer players.

RESULT AND DISCUSSION

From the above data it can be observed that there exists difference among tribal and non-tribal soccer players of Tripura University. After analyze of above data for determining significance difference between mean of physical and physiological variables among tribal and non-tribal soccer players of Tripura University were as follows- B.M.I. (0.417),

fat percentage (0.857), arm length (0.0001), leg length (0.029), calf girth (0.074), systolic blood pressure (0.518), diastolic blood pressure (0.707), pulse rate (0.29) and vital capacity (0.003). But calculate t-value much lower than table value. So there were no statistical significance differences found at 0.05 level of confidence.

CONCLUSION

From the above discussion following conclusion may be drawn:

- ❖ There is no difference in selected physical variables among tribal and non-tribal soccer player of Tripura University.
- ❖ There is no difference in selected physiological variables among tribal and non-tribal soccer player of Tripura University.

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