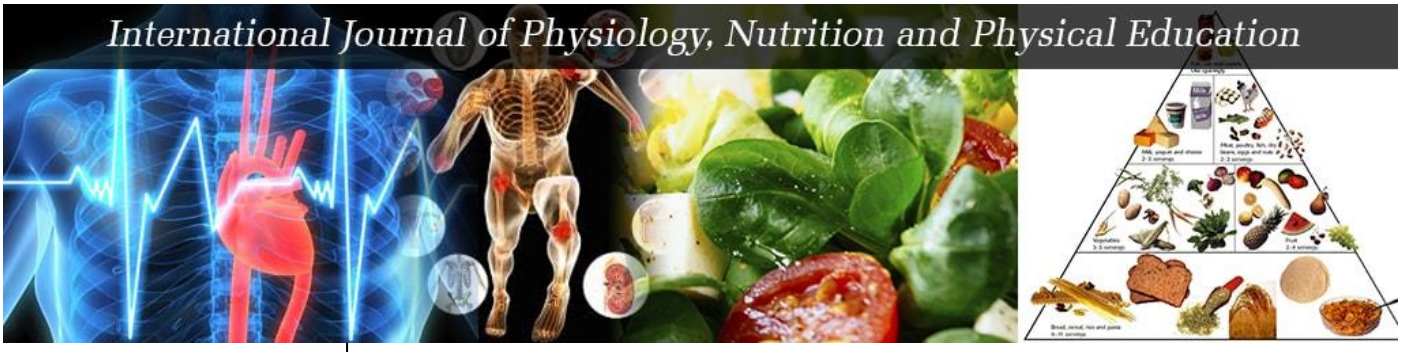

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Effects of specific soccer training programme on physical fitness variables among tribal and non tribal soccer players

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Abstract
The aim of the study was to investigate the comparative effects of specific soccer training programme on physical fitness variables namely speed, explosive strength, cardio-respiratory endurance and agility of tribal and non-tribal school boys. For the purpose of the study 60 tribal school soccer players and 60 non-tribal school soccer players were selected from Purulia district in the state of West Bengal. They were selected randomly. The age of the subjects were varied between 17 to 19 years. Sixty tribal students ware sub divided into two group's i.e. experimental tribal and control tribal. Similarly non-tribal students ware sub divided into two groups' i.e. experimental non-tribal and control non-tribal. Each group consist of 30 subjects. The physical fitness variables namely speed was measured through 50merter dash, Explosive Strength was measured through Standing Broad Jump, cardio-respiratory endurance was measured through 12 Min. Run-walk and agility was measured through 4×30feet Shuttle Run. For the comparison, analysis of covariance was used and the significant level was set at 0.05 level of confidence. The results revels significant differences of means in both tribal and non-tribal group of experimental category.

Keywords: Speed, explosive strength, cardio-respiratory endurance, agility

Introduction
Football is the most popular sport in the world. All over the globe, people are attached to this game in deep and passionate cultural way. Soccer or football, as it called in most part of the world. There is just something about soccer, which over the years has earned nick names including the beautiful game, the simplest game, the world's game and the people's game (Roberts, 2010).

Football is played as well as enjoyed by multitude of people all over the globe. This is one of the most recognized sports. Football has acquired popularity among the Indian masses within a short period of time and is the popular as well as widely played Indian sport. Although the modern game of football had emerged in England in its primitive from, it had undoubtedly been played for centuries in other countries. Play also claim that the game had been played in their countries from very ancient time. Soccer, the game evokes an out pouring passion and emotion unparalleled within the realm of sport. Soccer is a common language among people of diverse backgrounds and heritages, a bridge that spans economic political cultural and religious barriers. Football is known throughout the world and in Indian sub-continent also. Soccer is the national sport of many countries in Asia, Africa, Europe and South America. Soccer is a game which requires both aerobic and anaerobic fitness for parts of the game, one will work an aerobically. Most commonly, this will come in the form of short and sprints these periods are followed by longer spells of jogging and walking (Roy, Shepherd j, 1994).

All footballers, whatever their position, need a certain level of basic fitness. But once this is achieved, each player must connect improving specific areas of their fitness. Football is fast, quick, aggressive and attractive. It is considered as a strenuous game because the game demands a high degree of fitness as well as intelligence and alertness of mind Speed, endurance, strength, agility, balance, flexibility are the basic qualities for all the elite players (Eric Worthington, 1980).

A tribal group controlled land and pastures jointly and divided these amongst household as per its own rules.

These group of tribal people were found in almost every region of the subcontinent. The Khokhar tribe was influential during the 13th and 14th centuries, in Punjab.

Objective of the Study

The objective of the study was to find out the effects of specific soccer training programme on physical fitness variables among tribal and non-tribal soccer players.

Methodology

The selection of subjects, selection of Physical Fitness variables, criterion measures, experimental design, procedure for administration of tests, administration of training programme, training schedule, reliability of the data, design of the study and statistical procedure employed for analyzing the data have been described.

Selection of the Subjects

One hundred and twenty boys (60 tribal school soccer players and 60 non-tribal school soccer players) from Purulia district in West Bengal were selected at random, as subjects for the study. Sixty Tribal students ware sub divided into two groups i.e. Experimental Tribal and Control Tribal. Similarly Non-tribal students ware sub divided into two groups i.e. Experimental Non-tribal and Control Non-tribal. Each group consist of 30 subjects. The age of the subjects were ranged between 17 - 19 years.

Selection of the Variables

- Speed (50 mts. Dash)
- Explosive Strength (Standing Broad Jump)
- Cardio-respiratory Endurance (12 Min. Run-walk)
- Agility (4×30 feet Shuttle Run)

Criterion Measures

Physical Fitness Variables

- Speed was recorded to the nearest 1 /100th of a second using 50 meter dash
- Explosive Strength was measured in centimeter (than converted into meter) using standing broad jump.
- Cardio-respiratory Endurance assessed by Cooper's 12 min. run – walk test. The scores were recorded to the nearest fifty meters.
- Agility was recorded using 4×30 feet shuttle run. The scores were in 1/100th of a second in case of shuttle run.

Statistical Procedure

In order to investigate the comparative effect of specific soccer training on the mean values of each physical fitness variables of the tribal and non-tribal subjects, the analysis of covariance statistics was applied. For testing the mean difference among the subjects belonging to the experimental and control group each in tribal and non-tribal category as well as between the tribal and non-tribal subjects in physical fitness variables, the label of significance was set at. 05.

Table 1: Ancova table for the data on speed for experimental tribal, control tribal, experimental non-tribal and control non-tribal during training.

Source	Sum of squares	Df	Mean square	F	(p-value) Sig
Pre	27.22	1	27.22	1441.58	.000
Training	2.01	3	.68	35.43	.000
Error	2.17	115	.02		
Corrected total	31.88	119			

Shows the f-value [F(3,115)=35.43] for comparing the adjusted means of the criterion variable in four soccer training groups Experimental Tribal, Control Tribal, Experimental Non-tribal, Control Non-tribal. F statistics computed for aerobic training was significant because p value associated with it was. 000 which is less than. 05 thus the null hypothesis of no difference among the adjusted means for the data on criterion variable in four training groups may be rejected at 5% level.

Since F-statistics is significant, post-hoc comparison has been made for the adjusted means of the four training groups, which is shown in table -

Table 2: Speed

Group	Pretest mean	Posttest mean	Adjusted mean
Exp. Tribal	7.46	7.2	7.17
Con. Tribal	7.28	7.32	7.47
Exp. Non-tribal	7.46	7.31	7.29
Con. Non-tribal	7.55	7.59	7.49

Speed

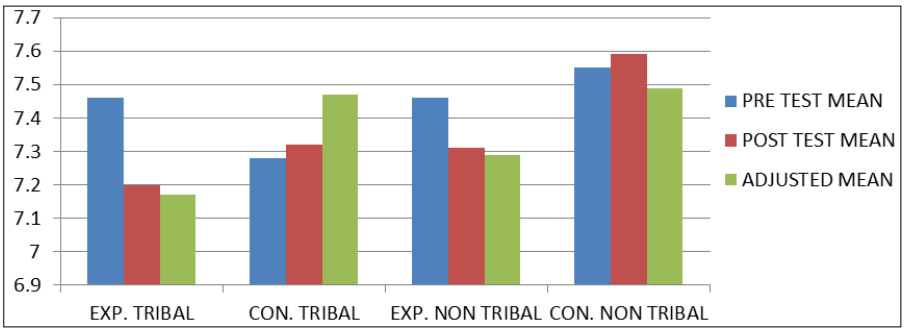

Fig 1: Pre, post and adjusted mean of the experimental tribal, control tribal, experimental non-tribal and control non-tribal

Table 3: Ancova table for the data on explosive strength for experimental tribal, control tribal, experimental non-tribal and control non-tribal during training.

Source	Sum of squares	Df	Mean square	F	(p-value) Sig
Pre	1.5	1	1.5	75.14	.000
Training	.29	3	.1	4.9	.003
Error	2.3	115	.02		
Corrected total	4.14	119			

Shows the f-value [F(3,115)=4.9] for comparing the adjusted means of the criterion variable in four soccer training groups EXP. TRIBAL, CON. TRIBAL, EXP. NON-TRIBAL, CON. NON-TRIBAL. F statistics computed for aerobic training was significant because p value associated with it was. 003 which is less that. 05 thus the null hypothesis of no difference among the adjusted means for the data on criterion variable in four training groups may be rejected at 5% level.

Since F-statistics is significant, post-hoc comparison has been made for the adjusted means of the four training groups, which is shown in table -

Table 4: Explosive Strength

Group	Pretest mean	Posttest mean	Adjusted mean
Exp. Tribal	2.01	2.11	2.11
Con. Tribal	2.05	2.02	1.99
Exp. Non-tribal	2.00	2.03	2.04
Con. Non-tribal	1.99	1.96	1.99

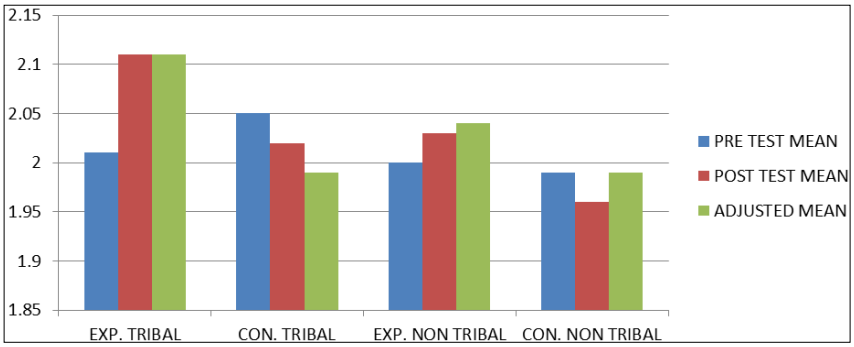

Fig 2: Pre, post and adjusted mean of the experimental tribal, control tribal, experimental non-tribal and control non-tribal

Table 5: Ancova table for the data on Cardio-respiratory Endurance for experimental tribal, control tribal, experimental non-tribal and control non-tribal during training.

Source	Sum of squares	Df	Mean square	F	(p-value) Sig
Pre	4818930.46	1	4818930.46	1195.46	.000
Training	1695587.46	3	565195.82	140.21	.000
Error	463569.54	115	4031.04		
Corrected total	7581250	119			

Shows the f-value [F(3,115)=140.211] for comparing the adjusted means of the criterion variable in four soccer training groups EXP. TRIBAL, CON. TRIBAL, EXP. NON-TRIBAL, CON. NON-TRIBAL. F statistics computed for aerobic training was significant because p value associated with it was. 000 which is less than. 05 thus the null hypothesis of no difference among the adjusted means for the data on criterion variable in four training groups may be rejected at 5% level.

Since F-statistics is significant, post-hoc comparison has been made for the adjusted means of the four training groups, which is shown in table –

Table 6: Cardio-respiratory Endurance

Group	Pretest mean	Posttest mean	Adjusted mean
Exp. Tribal	2265	2488.33	2458.23
Con. Tribal	2221.67	2210	2220.03
Exp. Non-tribal	2236.67	2403.33	2399.47
Con. Non-tribal	2206.67	2148.33	2172.26

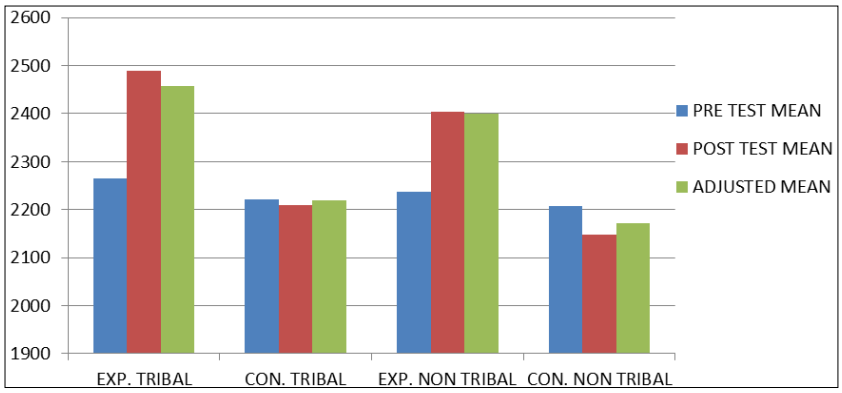

Fig 3: Pre, post and adjusted mean of the experimental tribal, control tribal, experimental non-tribal and control non-tribal

Table 7: Ancova table for the data on agility for experimental tribal, control tribal, experimental non-tribal and control non-tribal during training.

Source	Sum of squares	Df	Mean square	F	(p-value) Sig
Pre	63.83	1	63.83	648.35	.000
Training	3.66	3	1.22	12.4	.000
Error	11.32	115	.1		
Corrected total	109.36	119			

Shows the f-value [F(3,115)=12.4] for comparing the adjusted means of the criterion variable in four soccer training groups EXP. TRIBAL, CON. TRIBAL, EXP. NON-TRIBAL, CON. NON-TRIBAL. F statistics computed for aerobic training was significant because p value associated with it was. 000 which is less than. 05 thus the null hypothesis of no difference among the adjusted means for the data on criterion variable in four training groups may be rejected at 5% level.

Since F statistics is significant, post-hoc comparison has been made for the adjusted means of the four training groups, which is shown in table -

Table 8: Agility

Group	Pretest mean	Posttest mean	Adjusted mean
Exp. Tribal	10.24	9.81	9.50
Con. Tribal	10.30	10.3	9.96
Exp. Non-tribal	10.27	9.98	9.65
Con. Non-tribal	8.87	8.88	9.88

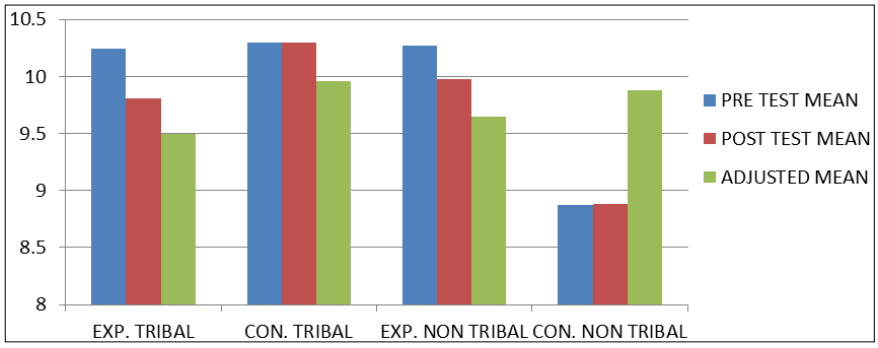

Fig 4: Pre, post and adjusted mean of the experimental tribal, control tribal, experimental non-tribal and control non-tribal

Discussion of Findings

Table 2 shows the comparison of speed for experimental tribal, control tribal, experimental non-tribal and control non-tribal groups involved in specific soccer training programme in pre, post, and adjusted means respectively which reveals significant in experimental tribal and control tribal, experimental tribal and control non-tribal, control tribal and experimental non-tribal, experimental non-tribal and control non-tribal. Whereas the result shows no significant difference between experimental tribal and experimental non-tribal, control tribal and control non-tribal.

Table 4 shows the comparison of explosive strength for experimental tribal, control tribal, experimental non-tribal and control non-tribal groups involved in specific soccer training programme in pre, post, and adjusted means respectively which reveals no significant in all groups i.e. experimental tribal and control tribal, experimental tribal and experimental non-tribal, experimental tribal and control non-tribal, control tribal and experimental non-tribal, control tribal and control non-tribal and experimental non-tribal and control non-tribal.

Table 6 shows the comparison of cardio-respiratory endurance for experimental tribal, control tribal, experimental non-tribal and control non-tribal groups involved in specific soccer training programme in pre, post, and adjusted means respectively which reveals significant in experimental tribal and control tribal, experimental tribal and control non-tribal, control tribal and experimental non-tribal, experimental non-tribal and control non-tribal. Whereas the result shows no

significant difference between experimental tribal and experimental non-tribal, control tribal and control non-tribal.

Table 8 shows the comparison of agility for experimental tribal, control tribal, experimental non-tribal and control non-tribal groups involved in specific soccer training programme in pre, post, and adjusted means respectively which reveals significant in experimental tribal and control tribal, experimental tribal and control non-tribal, control tribal and experimental non-tribal, experimental non-tribal and control non-tribal. Whereas the result shows no significant difference between experimental tribal and experimental non-tribal, control tribal and control non-tribal.

Conclusions

On the basis of the findings of the study, the following conclusion may be drawn;

1. The 12 weeks of specific soccer training undertaking for the study showed significant improvement on the training groups. However these effects are significantly higher in case of tribal than non- tribal boys. Thus it may be concluded the specific soccer training programme have distinct advantage in developing the physical fitness components like Speed, Cardio-respiratory Endurance and Agility.
2. The Explosive Strength of the subjects did not change significantly as the result of the specific soccer training programme.

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