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Effects of soccer training programme on soccer skills and physical fitness variables of school level tribal students

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Abstract

The aim of the study was to find out the effects of specific soccer training programme on soccer skills and physical fitness variables namely passing, dribbling, endurance and leg explosive power of school level tribal students. For the purpose of the study 60 tribal students were selected from Pandit Raghunath Murmu Abasik School, Nangla, Susunia, Bankura, and West Bengal, India. The age of the subjects were 14 to 16 years as per school record. Sixty tribal students were sub divided into two group's i.e. experimental tribal (N=30) and control tribal (N=30). The training was given to the experimental group 4 day per week, par day one session for the period of the eight weeks. The content group was not provided any kind of specific soccer training. Pair T-Test was used to calculate the acquired data on soccer skills and physical fitness. Level of significance was set at 0.05 level. Result revealed that experimental group significantly improved their passing, dribbling, endurance and leg explosive power performance after 8 weeks specific soccer training but the improvement of control group was not significant.

Keywords: Soccer, physical fitness, passing, dribbling, endurance, leg explosive power

Introduction

Soccer is the sports which has a very old history. This is also very popular game in the world. This is a very familiar sports from small kids League to International team. The most popular tournament in the world is the Football world cup. The tournaments is held by every four year among countries. As a ball and an open ground area are necessary to play this game that is also one cause of popularity of soccer. The craze of soccer from all parts of the world over the year give it the names such as the beautiful game the world game The People's Game for the simplest game.

The way of playing football has been modified in the rapid pace. All round football or total football are the new term in modern football. Each player should have the capability to play in every position. The vital component of motor and fitness preparation of soccer players are jump, spread, agility and endurance (Datson *et al.*, 2014) ^[3].

To play football requires so many physical contracts while performing different types of soccer skills. So, a top level of physical fitness is needed. To perform the different types of skill speed, agility, power, strength and flexibility are necessary (Karahana, 2020) ^[8].

Total teamwork with individual skills is needed for playing better football (Bompa & Buzzichelli, 2022) ^[2], (McBurnie *et al.*, 2021) ^[11]. Regular observations of anthropometric, physical fitness and Physiological variables during training season may deliver important information for training and selection of players. (Bompa & Buzzichelli, 2022) ^[2].

Objective of the study:

The experimental study was to become aware about the effects of specific soccer training program on soccer skills and physical fitness variables in school level tribal students.

Methodology:

Selection of the subject:

In this experimental study sixty (60) school level tribal students selected from Pandit Raghunath Murmu Abasik School, Nangla, Susunia, Bankura, and West Bengal, India.

The subjects were randomly and equally divided into the two equal group experimental group (N=30) and control group (N=30). The training was given to the experimental group 4 day per week, par day one session for the period of the eight weeks. The content group was not provided any kind of specific soccer training. The age of the entitled tribal student was 14 to 16 year.

Selection of variables

The following variables were selected for this experimental study such as

- Passing
- Dribbling
- Endurance
- Leg explosive power

Criterion measurement

In this experimental study, on the basis of review of related literature and discussing with supervisor, expert and coaches in this field and its feasibility, availability of equipments and subjects were selected for following soccer skills and physical fitness variables as a Criterion measurement.

SL	Variables	Instruments	Unit
1	Passing	Mor-Christion Football Ability Test	In numbers
2	Dribbling	Mor-Christion Football Ability Test	In seconds
3	Endurance	600 yds. run	In seconds
4	Leg explosive power	Standing Broad Jump	In centimetres

Tools and technique

With the help of a supervisor expert, the investigators pick up the following test instruments to serve as criteria. The following tests were used to measure the highly standardized, suitable, and ideal test items that were chosen to evaluate the specified variables.

- Passing skill was measured by using Mor-christion football ability test which was recorded in total number of successful pass. (Stalin Jeyakumar, 2008) [13].
- Dribbling skill was measured by using Mor-christion football ability test which was recorded in nearest 1/10th of a second. (Stalin Jeyakumar, 2008) [13].
- Endurance was measured by using 600 yards run, which

was recorded in nearest 1/10th of a second (Kansal, 2021) [9].

- Leg explosive power was measured by using standing broad jump test, which was recorded in nearest 1/10th of a second. (Ajmer, R. N. S. 2008).

Statistical analysis

The data has been calculated from the groups pre and postage on soccer skills and physical fitness variables. This data are statistically analysed on soccer skills and physical fitness variables by period t-test using SPSS software (20). The fixed confident level was determine as 95% and level of significant set at 0.05 level of confidence.

Training Programme

Soccer training programmes for experiment groups of tribal Soccer players.

Week	Physical fitness components developments				Skill Training				Game situation				Total Duration	
	Duration of Activity	Intensity of Load	Frequency of Load	Density of Load	Duration of Activity	Intensity of Load	Frequency of Load	Density of Load	Deep Pass		Playing Match			
									Duration of Activity	Intensity of Load	Duration of Activity	Intensity of Load		
1 st & 2 nd	15 mins	Optimum	Minimum	2 mins	20 mins	Optimum	Minimum	2 mins	5 mins	Optimum	1 mins	15 mins	Optimum	60 mins
3 rd & 4 th	20 mins	Optimum	Minimum	2 mins	25 mins	Optimum	Minimum	2 mins	10 mins	Optimum	2 mins	20 mins	Optimum	81 mins
5 th & 6 th	25 Mins	Optimum	Minimum	3 mins	30 mins	Optimum	Minimum	3 mins	15 mins	Optimum	3 mins	25 mins	Optimum	104 mins
7 th & 8 th	30 Mins	Optimum	Minimum	3 mins	35 mins	Optimum	Minimum	3 mins	20 mins	Optimum	4 mins	30 mins	Optimum	125 mins

Warming up activities of experimental groups

Duration of time	Name of the activities
2.30mins.	Walking, Jogging and increasing the pace of the jogging.
2.30mins.	Rotational Exercises
2.30mins.	Stretching Exercises
1.30mins.	Short sprints With recovery

Detailed training programme for soccer skills and physical fitness for experimental group of school level tribal students

Week	Warming up	Fitness skill	Soccer skill	Game situation
1 st & 2 nd	Walking, jogging, rotational Exercises, stretching exercise, short sprint with recovery.	Shuttle run, continuous & interval method, jumping jack, push up, squat jump, sprint 10meters to 50 meters	Ball receiving, passing, heading, kicking, shooting, dribbling.	Deep Pass Between Two Teams and Playing Match Between Two Teams.
3 rd & 4 th	Walking, jogging, rotational Exercises, stretching exercise, short sprint with recovery.	Shuttle run, continuous & interval method, jumping jack, push up, squat jump, sprint 10meters to 50 meters	Ball receiving, passing, heading, kicking, shooting, dribbling.	Deep Pass Between Two Teams and Playing Match Between Two Teams.
5 th & 6 th	Walking, jogging, rotational Exercises, stretching exercise, short sprint with recovery.	Shuttle run, continuous & interval method, jumping jack, push up, squat jump, sprint 10meters to 50 meters	Ball receiving, passing, heading, kicking, shooting, dribbling.	Deep Pass Between Two Teams and Playing Match Between Two Teams.
7 th & 8 th	Walking, jogging, rotational Exercises, stretching exercise, short sprint with recovery.	Shuttle run, continuous & interval method, jumping jack, push up, squat jump, sprint 10meters to 50 meters	Ball receiving, passing, heading, kicking, shooting, dribbling.	Deep Pass Between Two Teams and Playing Match Between Two Teams.

Results

Table 1: Descriptive statistics of passing of experimental group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	4.30	30	1.15	.21
	Post Test	9.50	30	1.25	.23

In Table-1, the mean, standard deviation and standard error of

mean of passing of experimental group at pre and post training conditions have been presented. The mean, standard deviation and standard error of mean of passing of experimental group in pre-experimental condition were 4.30, 1.15 and .21 respectively. The mean, standard deviation and standard error of mean of passing of experimental group in post-experimental condition were 9.50, 1.25 and .23 respectively.

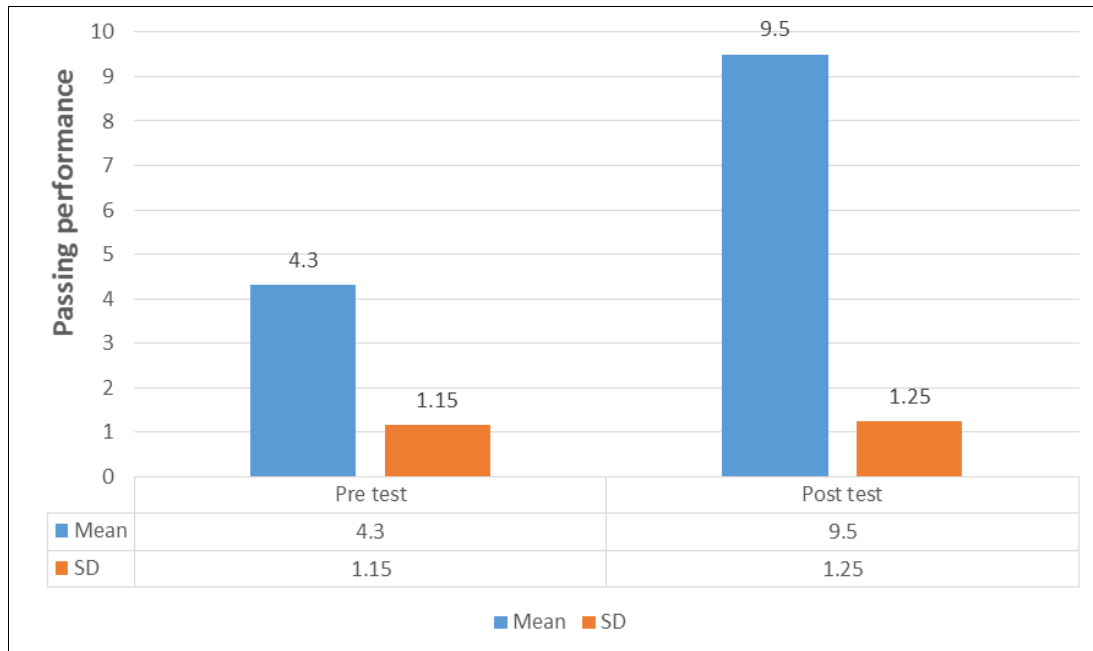


Fig 1: Comparison of passing skill of experimental group at pre and post training conditions

Table 2: Comparison of passing of experimental group at pre and post training conditions

		Paired Differences				T	DF	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair1	Pre test Post test	-5.20	1.32	.24	-5.69	-4.71	-21.52	29	.00

**p<0.05

Table-2 shows that the value of t is -21.52 and p value is 0.00. This t value is significant at 0.05 level as the obtained p-value 0.00 is less than 0.05. So, there is significant difference

between pre and post-test means of passing performance of Experimental group.

Table 3: Descriptive statistics of passing of control group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	3.53	30	.82	.15
	Post Test	3.67	30	.99	.18

In Table-3, the mean, standard deviation and standard error of mean of passing of control group at pre and post training conditions have been presented. The mean, standard deviation and standard error of mean of passing of control group in pre-

experimental condition were 3.53, .82 and .15 respectively. The mean, standard deviation and standard error of mean of passing of control group in post-experimental condition were 3.67, .99 and .18 respectively.

Table 4: Comparison of passing of control group at pre and post training conditions

		Paired Differences				T	DF	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair1	Pre test Post test	-.13	1.11	.20	-.55	.28	-.66	29	.51

**p<0.05

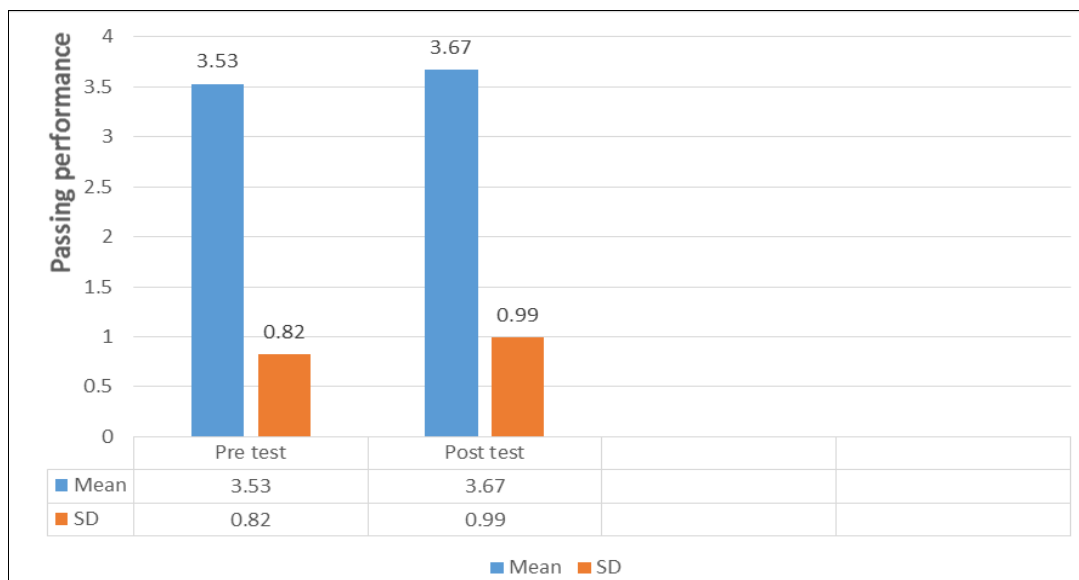


Fig 2: Comparison of passing skill of control group at pre and post training conditions

Table-4 shows that the value of *t* is -.66 and *p* value is 0.51. This *t* value is significant at 0.05 level as the obtained *p* value 0.51 is greater than 0.05. So, there is no significant difference between pre and post-test means of passing performance of Experimental group.

Table 5: Descriptive statistics of dribbling of experimental group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	45.29	30	3.57	.65
	Post Test	39.62	30	1.79	.33

In Table-5, the mean, standard deviation and standard error of mean of dribbling of experimental group at pre and post training conditions have been presented. The mean, standard deviation and standard error of mean of dribbling of experimental group in pre-experimental condition were 45.29,

3.57 and .65 respectively. The mean, standard deviation and standard error of mean of dribbling of experimental group in post-experimental condition were 39.62, 1.79 and .33 respectively.

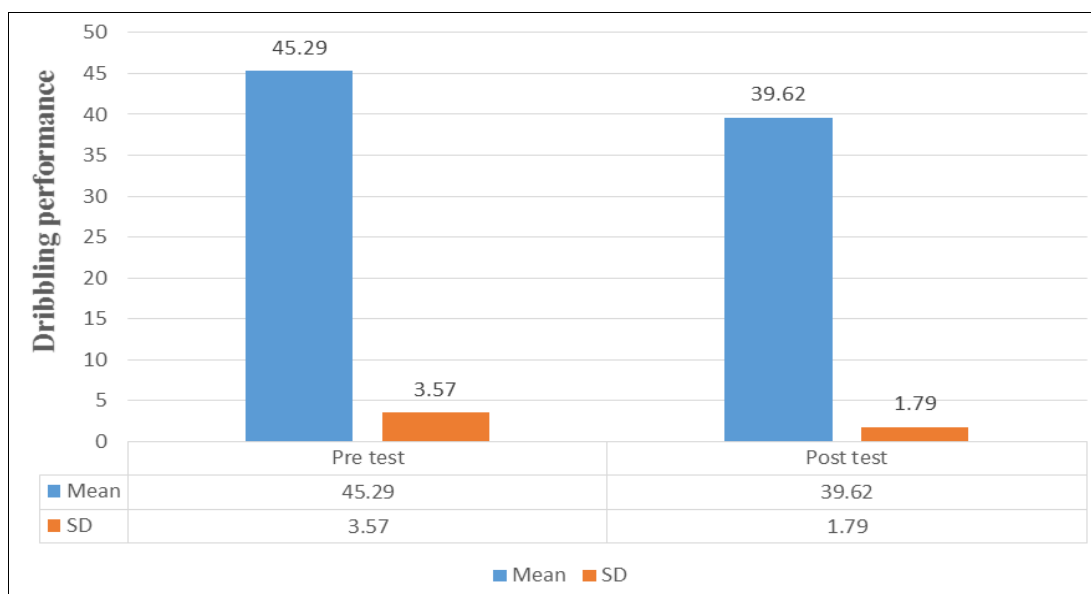


Fig 3: Comparison of dribbling skill of experimental group at pre and post training conditions

Table 6: Comparison of dribbling of experimental group at pre and post training conditions

		Paired Differences					T	DF	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair1	Pre test Post test	5.68	2.42	.44	4.78	6.58	12.86	29	.00

***p*<0.05

Table-6 shows that the value of *t* is 12.86 and *p*-value is 0.00. This *t*-value is significant at 0.05 level as the obtained *p*-value 0.00 is less than 0.05. So, there is significant difference

between pre and post-test means of dribbling performance of Experimental group.

Table 7: Descriptive statistics of dribbling of control group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	43.44	30	3.02	.55
	Post Test	43.34	30	3.15	.57

In Table-7, the mean, standard deviation and standard error of mean of dribbling of control group at pre and post training conditions have been presented. The mean, standard deviation and standard error of mean of dribbling of control group in

pre-experimental condition were 43.44, 3.02 and 55 respectively. The mean, standard deviation and standard error of mean of dribbling of control group in post-experimental condition were 43.34, 3.15 and .58 respectively.

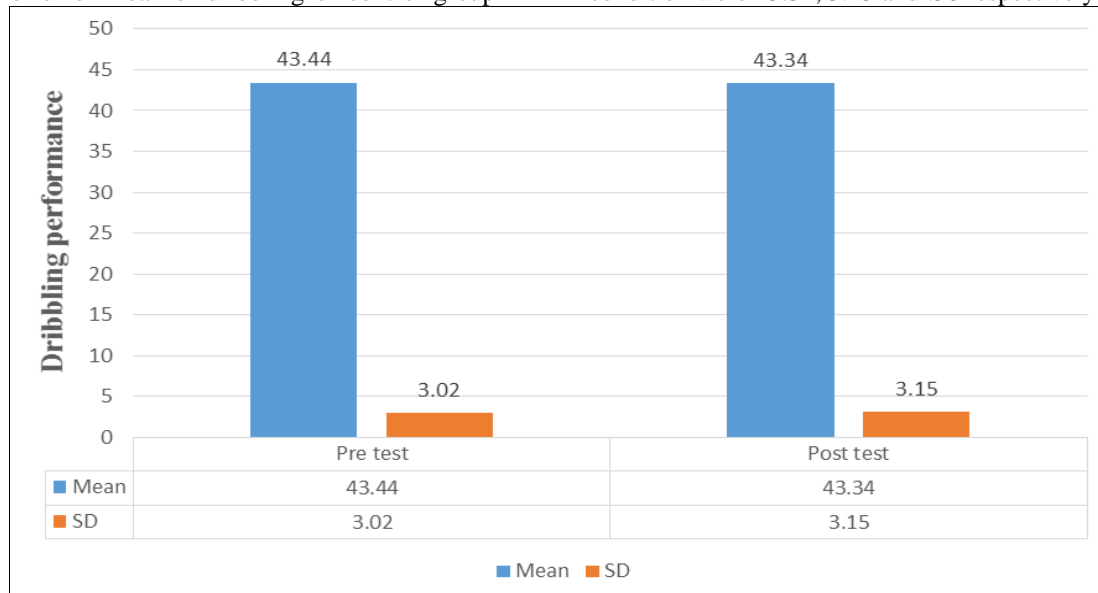


Fig 4: Comparison of dribbling skill of control group at pre and post training conditions

Table 8: Comparison of dribbling of control group at pre and post training conditions

		Paired Differences					T	DF	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair1	Pre test Post test	.10	.70	.13	-.16	.36	.78	29	.44

***p*<0.05

Table-8 shows that the value of *t* is 78 and *p* value is 0.44. This *t* value is significant at 0.05 level as the obtained *p* value 0.44 is greater than 0.05. So, there is no significant difference

between pre and post-test means of dribbling performance of experimental group.

Table 9: Descriptive statistics of endurance of experimental group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	2.05	30	.11	.02
	Post Test	1.85	30	.10	.02

In Table-9, the mean, standard deviation and standard error of mean of endurance of experimental group at pre and post training conditions have been presented. The mean, standard deviation and standard error of mean of endurance of experimental group in pre-experimental condition were 2.05,

11 and 02 respectively. The mean, standard deviation and standard error of mean of endurance of experimental group in post-experimental condition were 1.85, 10 and 02 respectively.

Table 10: Comparison of endurance of experimental group at pre and post training conditions

		Paired Differences					T	DF	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair1	Pre test Post test	.21	.09	.02	17	24	12.10	29	.00

***p*<0.05

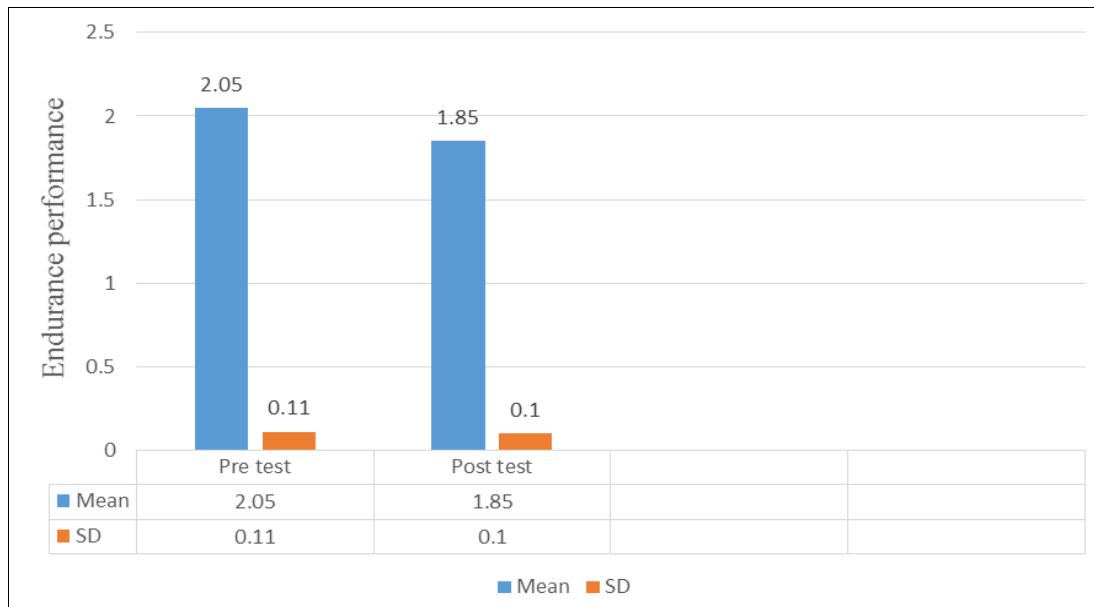


Fig 5: Comparison of endurance of experimental group at pre and post training conditions

Table-2 shows that the value of *t* is 12.10 and *p* value is 0.00. This *t* value is significant at 0.05 level as the obtained *p*-value 0.00 is less than 0.05. So, there is significant difference

between pre and post-test means of endurance performance of Experimental group.

Table 11: Descriptive statistics of endurance of control group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 2	Pre-Test	2.09	30	.16	.03
	Post-Test	2.08	30	.15	.03

Table-11 shows the mean, standard deviation and standard error of mean of endurance of control group at pre and post training conditions. The mean, standard deviation and standard error of mean of endurance of control group in pre-

experimental condition were 2.09, .16, and .03 respectively. The mean, standard deviation and standard error of mean of endurance of control group in post-experimental condition were 2.08, .15 and .02 respectively.

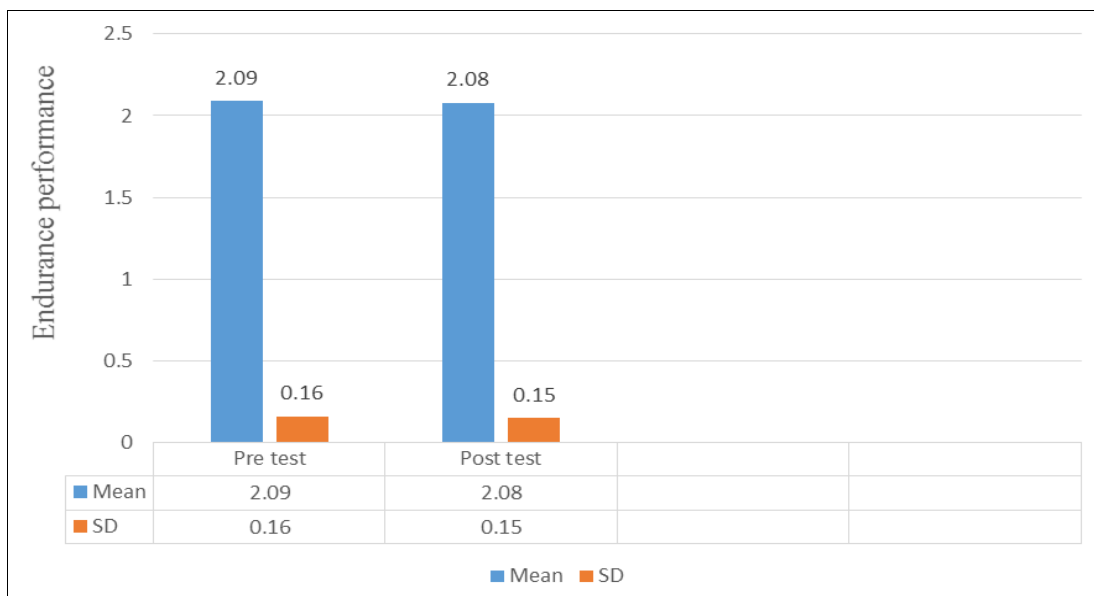


Fig 6: Comparison of endurance of control group at pre and post training conditions

Table 12: Comparison of endurance of control group at pre and post training conditions

		Paired Differences					T	DF	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 2	Pre test Post test	.01	.03	.01	-00	.02	1.79	29	.08

Table-12 shows that the value of *t* is 1.79 and *p* value is .08. The *t* value is no significant at 0.05 level as the obtained *p*-value 08 is more than 0.05. So, there is no significant

difference between pre and post-test means of endurance performance of Control group.

Table 13: Descriptive statistics of leg explosive power of experimental group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre Test	198.07	30	13.27	2.42
	Post Test	217.10	30	10.77	1.97

In Table-13, the mean, standard deviation and standard error of mean of leg explosive power of experimental group at pre and post training conditions have been presented. The mean, standard deviation and standard error of mean of leg explosive power of experimental group in pre-experimental

condition were 198.07, 13.27 and 2.42 respectively. The mean, standard deviation and standard error of mean of leg explosive power of experimental group in post-experimental condition were 217.10, 10.77 and 1.97 respectively.

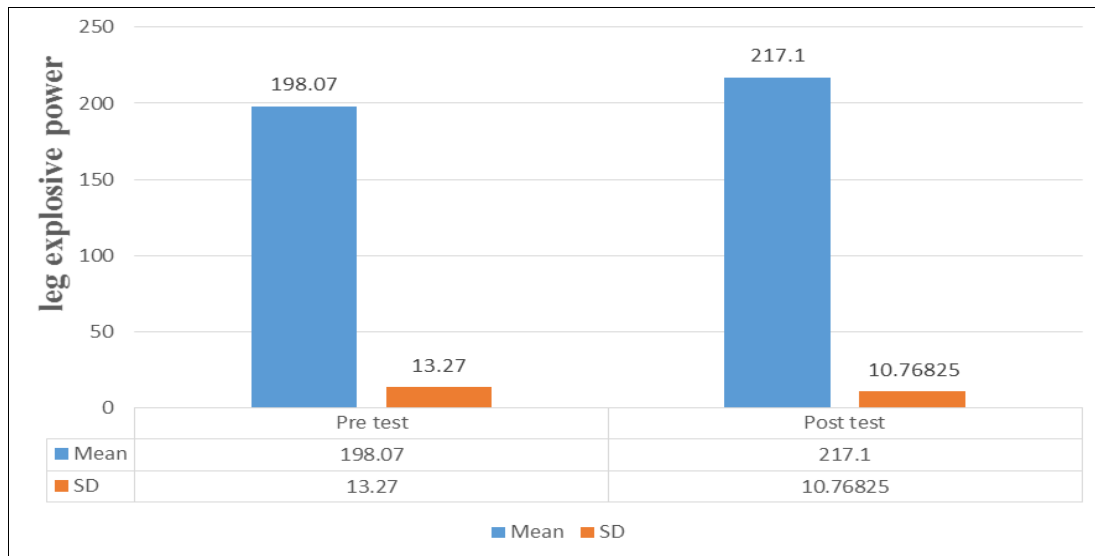


Fig 7: Comparison of leg explosive power of experimental group at pre and post training conditions

Table 14: Comparison of leg explosive power of experimental group at pre and post training conditions

		Paired Differences				T	DF	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 1	Pre test Post test	-19.03	8.62	1.58	-22.25	-15.81	-12.09	29	.00

***p*<0.05

Table-14 shows that the value of *t* is -12.09 and *p* value is 0.00. This *t* value is significant at 0.05 level as the obtained *p* value 0.00 is less than 0.05. So, there is significant difference

between pre and post-test means of leg explosive power performance of Experimental group.

Table 15: Descriptive statistics of leg explosive power of control group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 2	Pre test	200.97	30	6.16	1.12
	Post Test	201.30	30	6.34	1.16

Table-15 shows the mean, standard deviation and standard error of mean of leg explosive power of control group at pre and post training conditions. The mean, standard deviation and standard error of mean of leg explosive power of control group in pre-experimental condition were 200.97, 6.16, and

1.12 respectively. The mean, standard deviation and standard error of mean of leg explosive power of control group in post-experimental condition were 201.30, 6.34 and 1.16 respectively.

Table 16: Comparison of leg explosive power of control group at pre and post training conditions

		Paired Differences				T	DF	Sig. (2-tailed)	
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower				Upper
Pair 2	Pre test Post test	-.33	1.37	.25	-.85	.179	-1.33	29	.19

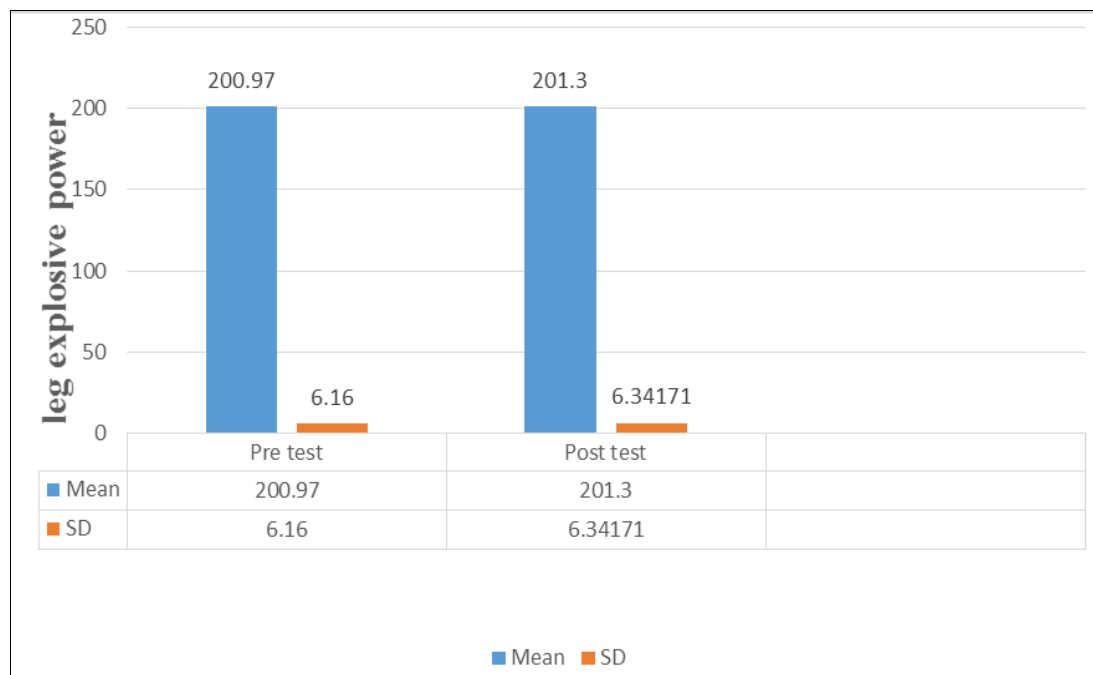


Fig 8: Comparison of leg explosive power of control group at pre and post training conditions

Table-16 shows that the value of t is -1.33 and p -value is 19. The t value is no significant at 0.05 level as the obtained p -value 19 is greater than 0.05. So, there is no significant difference between pre and post-test means of leg explosive power performance of Control group.

Discussion and findings

The analysis of pre and post test data of both control and experimental groups showed that the programme made for the experimental group was conducted and practical to improve the soccer skills and physical fitness level of tribal student. This age group players wear trained for developing soccer skills and physical fitness level. According to some researchers through specific soccer training programme players soccer skills and physical fitness level can be enhanced. The specific training program not only enhance strength, agility, endurance and speed but also soccer skill and performance. In this recent experimental study soccer skills and physical fitness performance has been enhanced significantly among experimental group.

According to Table-2 and 4, passing performance of Experimental group significantly ($P=0.00$) increased after eight weeks but the decrement of passing performance of Control group was statistically no significant ($P=0.51$). No of accurate passing performance is increased that means passing performance improved after 8 weeks soccer training. So, it appears that eight weeks specific soccer training is sufficient enough to improve the passing skill of school level tribal students. Similar result have been observed by (Souglis *et al.*, 2022) [12], (Wondirad & Atomsa, 2019) [15].

According to Table-6 and 8, dribbling performance of Experimental group significantly ($P=0.00$) decreased after eight weeks but the decrement of dribbling performance of Control group was statistically insignificant ($P=0.44$). Dribbling performance time is reduced that means dribbling performance improved after soccer training. So, it appears that eight weeks specific soccer training is sufficient enough to improve the dribbling skill of school level tribal students. Similar result have been observed by (Taga K & Asai T, 2012) [14], (Wondirad & Atomsa, 2019b) [15], (Kumar, 2021) [10], (Farooque *et al.*, 2023) [5].

According to Table-10 and 12, endurance performance of Experimental group significantly ($P=0.00$) decreased after eight weeks but the decrement of endurance performance of Control group was statistically insignificant ($P=0.08$). Endurance performance time is reduced that means endurance performance improved after soccer training so, it appears that eight weeks specific soccer training is sufficient enough to improve the endurance of school level tribal students. Similar result have been observed by (Halder & Chakraborty, 2014) [6], (Kumar, 2021b) [10].

According to Table-10 and 12, leg explosive power performance of Experimental group significantly ($P=0.00$) increased after eight weeks but the decrement of leg explosive power performance of Control group was statistically insignificant ($P=0.19$). Leg explosive power performance is improved that means leg explosive power performance improved after soccer training so, it appears that eight weeks specific soccer training is sufficient enough to improve the leg explosive power of school level tribal students. Similar result have been observed by (Halder & Chakraborty, 2014b) [6], (Kumar, 2021b) [14], (Hammami *et al.*, 2016) [7].

Conclusion

The specific soccer training undertaken of 8 weeks showed a significant changes on the training groups. This may be concluded that specific soccer training program have visible improvement on soccer skills and physical fitness components in tribal student.

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