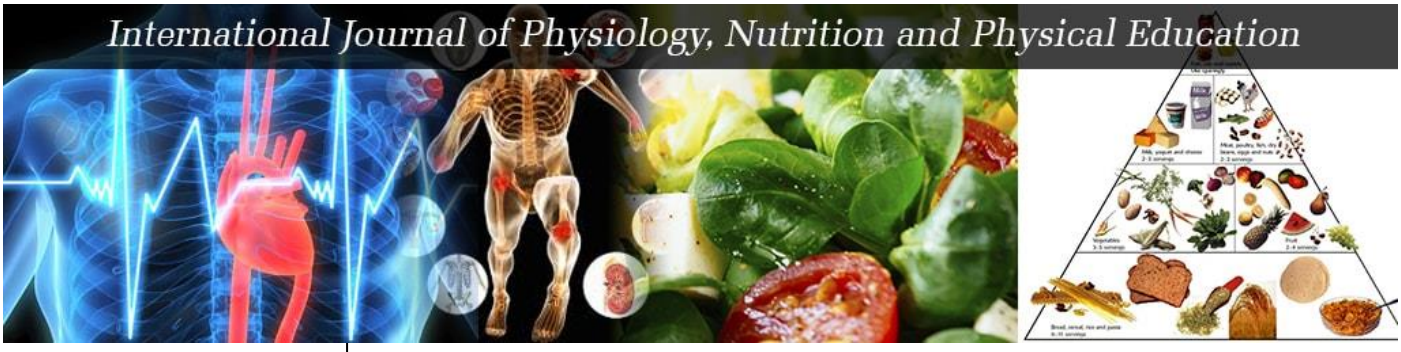

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Comparative study on selected physical fitness components of different position district level football players

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Abstract
The purpose of the study was to measure the selected Physical fitness components and to compare the Physical fitness of different position of district level Football players. To observe the physical fitness of district level male football player in different position 30 Subjects were selected from Nadia district in west Bengal. The 30 subjects were consisting 10 goal keeper, 10 defenders and 10 Striker. The age of the subjects was from 20 to 25 years. All the subjects were performed of the test with in stipulated time. The test includes 50yard dash for speed and 600yard run for cardio vascular endurance, 4 X 10-meter shuttle run for agility, Nelson Stick / Scale Drop Test for Hand reaction time test and Foot Reaction Time Test and Catching Test Item, throwing a Ball at a target for Upper limb co-ordination and lastly Eye – Foot co-ordination test were considered for co-ordination test. The subject was encouraged and instructed to perform their best. The significance of difference between the mean values of three groups of subject was tested using ANOVA The level of significance chosen was 0.05 levels and the following conclusions were drawn.

1. There was no significance difference in Hand reaction time, Catching the ball, Throwing ball at a target and Agility among the three groups.
2. Foot reaction time of Goal keeper was better than the Defender and Striker. The compare between Defender and Striker, Striker was not better than Defender though a higher mean value was observed
3. Eye-foot Coordination of Goal keeper was better than the Defender and Striker. The compare between Defender and Striker, Defender was not better than Striker though a higher mean value was observed.
4. Speed of Defender was better than the Striker and Goal keeper. The compare among Goal keeper, Defender and Striker, Striker was better than the others though a higher mean value was observed
5. Endurance of Goal keeper was better than the Striker and Defender. The compare between Defender and Striker, Striker was not better than Defender though a higher mean value was observed.

Keywords: Physical fitness, goal keeper, defender, striker

Introduction
A fit person is one who has well-adjusted to his environment, whose mind and body are in harmony, and who can meet the normal demands both mentally and physically without undue fatigue. Physical fitness implies that the body system is capable of carrying on their activities satisfactorily. It is one of the basic elements which are essential for better performance. The athlete must be in top most physical condition. In the word of VC Rossum Rax (1986) [27], "Physical fitness for track and field event consists of a number of interrelated qualities or components". Trank, Robert and Lewis (1993) [17] defined Physical fitness as a "quantitative expression of the physical condition of an individual." The development of the body to a state or condition which permits the performance of a given amount of physical work, when desired, with a minimum of physical efforts. The efficiency of physical efforts depends upon the mutual development of the muscular respiratory and circulatory system integrated and co-ordinate by the activity of the central nervous system.

Every vigorous game or sport requires certain qualities to physical fitness to be developed in every athlete on priority basis.

In general, these qualities are speed, the ability to run, move walk or run faster. Agility, the ability to change direction in the air and on the ground. Flexibility, the range of movement determined by the joints of the body. Strength, the ability of muscles to pull, push the squeeze or Press. During the course of one's training in sports these qualities are developed depending upon physical constitution of an individual. All the basic components of physical fitness are extremely necessary in all the sports events; however, each sport event is basically dominated by one component of the other. Barrow & McGee (1894) [28] acknowledged that the physical fitness is a complete phenomenon consisting of various factors such as speed, strength, flexibility ability, cardio-vascular endurance etc.

Soccer is game played by two teams on rectangular field with the object of driving the ball into the opponent's goal. The ball is controlled and advanced primarily by using the feet, only goal keeper is allowed to handle the ball. All that needed to play is an area of open space and ball. Much of the world soccer is played in formally on patches of ground, without field making, or real goal. In many place the game is played bare foot using rolled up rugs or newspaper as ball, soccer is the world most popular sports, played by men and women of all ages, with millions of fans throughout the world.

For high level performance in soccer depend on many things such as physical ability, mental capacity, and skill technique strategy etc. among this some of the qualities can improve directly through practice skill and some of them develop through experience. Among the qualities skill and fitness of a player can directly improve through practice which directly influence the playing ability of a player.

The performance of sportsman in any game or event also depends on physical fitness. The physical fitness or condition is the sum total of five motor abilities namely muscular strength, agility, power, speed and cardiovascular endurance. Therefore, the sports performance in all sports depends to great extent on these abilities. Improvement and maintenance of physical fitness is the most important aim of sports training (Uppal 1980) [29]. Physical fitness is very important concept of physical education and can't be neglected. It is very important determinant, Harre, (1979) [30] for a high level of efficiency in techniques and tactics in most sports; a high level of physical fitness is most important. So for making selection in sports physical fitness is the most important factor and can't be neglected.

Deepla K and Raj T. Rajender made a study on the physical fitness among athletes and football players of schools in Hyderabad. The results indicated that football players are having good in pull ups, sits ups, shuttle run, standing broad jump compare to athletes who were good in 50 yards & 600 yards run.

Maurya D.C. *et al* (2010) [31] made a comparative study of physical variable (muscular strength) football players & athletes of school levels. They found that there was no significant difference was found in football players and athletes of school level in regards of muscular strength variable.

Bandhopadhyay Pathikrit and Murma Biswanath (2015) [32] also made a study on selected physical fitness components of state level male tribal footballers. They found significant difference was found on selected physical fitness components. The study relates to the importance of physical fitness components as one of the primary factors for better performance in game / sports. The attempt is made in this study of selected physical fitness variable among athletes and football players. A physical fit player can give good performance in his game / sports for a long time. This study will be very useful to physical educators / coaches in the field of competitive performance.

Any research method function effectively only to the extent that the instruction recognizes equalize only the factors of one's height, weight, body build or physique. Human physical performance whether it is in variety of sport or in a number of daily life activities, influence physical fitness level of different position of football players.

Purpose of the study

The purpose of the study were

1. To measure the selected Physical fitness components of district level Football players.
2. To compare the Physical fitness of different position of district level football players.

Design of the study

To observe the physical fitness of district level male football player in different position 30 Subjects were selected from Nadia district in west Bengal. The 30 subjects were consisting 10 goal keeper, 10 defenders and 10 Striker. The age of the subjects was from 20 to 25 years. All the subjects were performed of the test with in stipulated time. The test includes 50yard dash for speed and 600yard run for cardio vascular endurance, 4 X 10-meter shuttle run for agility, Nelson Stick / Scale Drop Test for Hand reaction time test and Foot Reaction Time Test and Catching Test Item, throwing a Ball at a target for Upper limb co-ordination and lastly Eye – Foot co-ordination test were considered for co-ordination test. The subject was encouraged and instructed to perform their best. All the tests were conduct through standard procedure as par test manual. Mean and Standard Deviation were calculated for each parameter of each group. The significance of difference between the mean values of three groups of subject was tested using ANOVA The level of significance chosen was 0.05 levels.

Results and Discussion

In this chapter the data which were collected have been presented. The analysis of data the interpretation of result has also been presented here. The result of the study has been summarized in table 1 to 8 respectively and the discussion have been made here for each item separately.

Analysis of personal data

Table 1: The Mean and SD of personal data of three different Positions of football players were presented in table no-1

Parameters	Three different Position of football player		
	Goal keeper	Defender	Striker
Age(yrs)	21.60±1.43	21.20±1.69	20.90±1.45
Height(cm)	172.60±6.17	167.80±4.57	169.20±4.73
Weight(kg)	62.80±9.21	64.60±11.15	60.90±10.41

From the table no.1 It was found that the Mean and SD of age of Three different position of football player i,e goal keeper, defender and striker were 21.60yrs and1.143, 21.20yrs and 1.69and 20.90yrs and 1.45 respectively and the Mean and SD of height were 172.60cm and 6.17, 167.80cm and 4.57 and 169.20cm and 4.73 respectively and the Mean and SD value of the weight of Three different position of football player were 62.80kg and 9.21, 64.60kg and 11.15 and 60.90kg and 10.41 respectively. Comparing the mean data of the groups it observed the players were homogeneous in personal data.

Table 2: The Mean, SD and F- value of Reaction time among three different Position of football player were presented in table no-2

Reaction time					
Parameter	**Position of player**	**Mean**	**SD**	**F**	**Sig**
Hand reaction time	Goal keeper	.593	.073	.431	.655
	Defender	.616	.104		
	Striker	.586	.030		
Foot reaction time	Goal keeper	.603	.098	5.823*	.008
	Defender	.687	.054		
	Striker	.723	.083		

Df = Between Groups- 2, Within Groups- 27 and Total- 29.
Table value =3.35(at 0.05 level of significant).
5.49 b (at 0.01 level of significant).

From the table no 2 it was found that the mean and SD of Hand reaction time of Goalkeeper were .593 and .073, Defender.616 and .104, and Striker.586 and .030 respectively, and also F value was found .431.

The mean and SD of Foot reaction time of Goalkeeper were .603 and .098, Defender.687 and .054, and Striker.723 and .083 respectively, and also F value was found 5.823.
The difference was presented in figure no.1.

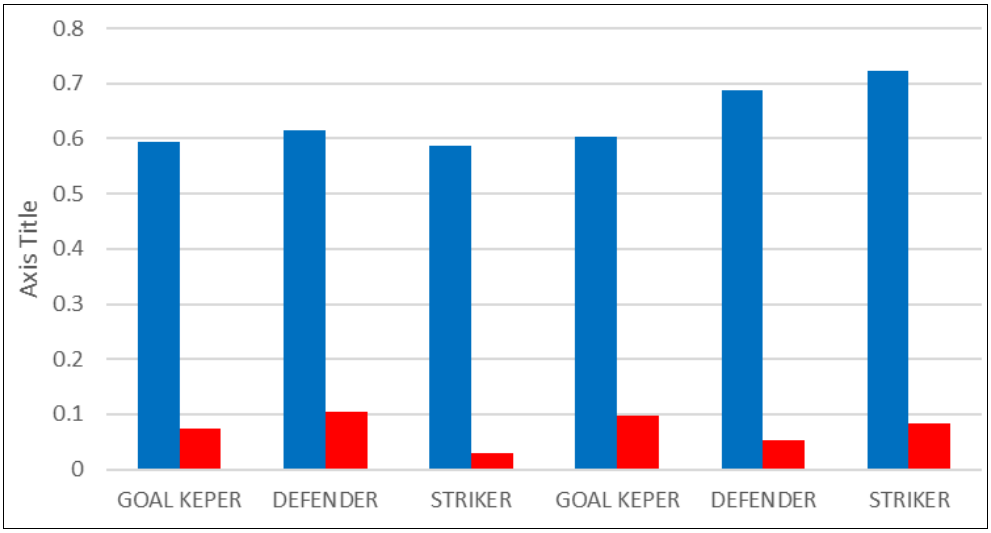

Fig 1: Hand and Foot reaction time

Comparing the mean value of Foot reaction time among three groups F value was found 5.823 which was significant at .01 level. To observe the difference between groups, post hock test was conducted.

Table 3: Post hock test of Foot reaction time among three groups

Dependent variable	**(I)Group (J) Group**		**Mean Difference (I-J)**	**Std. Error**	**Sig.**
Foot reaction time	Goal keeper	Defender	-.084*	.036	.028
		Striker	-.120*	.036	.003
	Defender	Striker	-.036	.036	.327

From the result of the post hock test in table no 3 it was found that in Foot reaction time, difference between Goal keeper and Defender was significant and the difference between Goal keeper and Striker was also significant but difference between Defender and Striker was not significant. So, Foot reaction time of Goal keeper was better than the Defender and Striker. The compare between Defender and Striker, Striker was not better than Defender though a higher mean value was observed.

Table 4: The Mean, SD and F- value of coordination ability among three different Position of football player were presented in table no-4

Coordination ability					
Parameter	**Position of player**	**Mean**	**SD**	**F**	**Sig**
Catching the ball	Goal keeper	4.800	.421	1.474	.247
	Defender	4.300	.823		
	Striker	5.300	2.057		
Throwing ball at a target	Goal keeper	1.500	.849	1.842	.178
	Defender	.4002	1.26		
	Striker	1.900	.994		
Eye- foot Coordination	Goal keeper	5.827	1.250	7.931*	.002
	Defender	7.775	2.358		
	Striker	5.010	.712		

Df = Between Groups- 2, Within Groups- 27 and Total- 29.
Table value = 3.35(at 0.05 level of significant).
5.49 b (at 0.01 level of significant).

From the table no 4 it was found that the mean and SD of Catching the ball of Goalkeeper were 4.800 and .421,

Defender4.300 and .823, and Striker.823 and 2.057 respectively, and also F value was found 1.474.
The mean and SD of Throwing ball at a target of Goalkeeper were 1.500 and .849, Defender2.400 and 1.26, and Striker1.900 and .994 respectively, and also F value was faound 1.842.

The mean and SD of Eye- foot Coordination of Goalkeeper were 5.827 and 1.250, Defender 7.775 and 2.358, and Striker 5.010 and .712 respectively, and also F value was found 7.931.
The difference was presented in figure no.2.

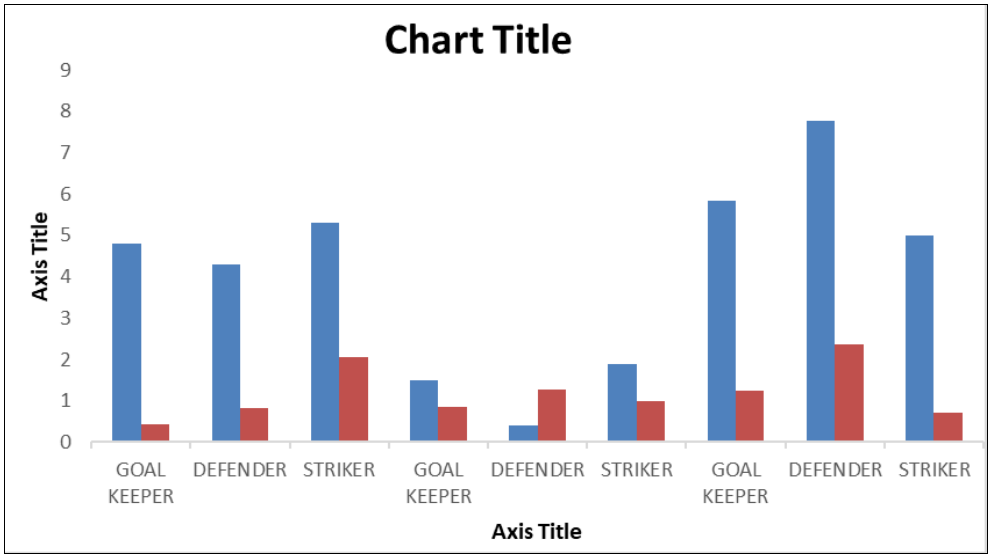

Fig 2: Mean and SD of Eye- foot Coordination of Goalkeeper

Comparing the mean value Eye- foot Coordination among three groups F value was found 7.931 which was significant at .01 level. To observe the difference between groups, post hock test was conducted.

Table 5: Post hock test of Eye- foot Coordination among three groups

Dependent variable	(I)Group	(J) Group	Mean Difference (I-J)	Std. Error	Sig.
Eye- foot Coordination	Goal keeper	Defender	1.948*	.713	.011
		Striker	-.817*	.713	.262
	Defender	Striker	2.765	.713	.001

From the result of the post hock test in table no 5 it was found that in Eye-foot coordination, difference between Goal keeper and Defender was significant and the difference between Goal keeper and Striker was also significant but difference between Defender and Striker was not significant. So, Eye-foot Coordination of Goal keeper was better than the Defender and Striker. The compare between Defender and Striker, Defender was not better than Striker though a higher mean value was observed.

Table 6: The Mean, SD and F- value of Speed, agility and Endurance among three different Position of football player were presented.

Parameter	Position of player	Mean	SD	F	Sig
Speed	Goal keeper	7.031	0.770	3.864*	.033
	Defender	7.308	0.941		
	Striker	6.432	0.277		
Agility	Goal keeper	9.778	0.785	1.902	.169
	Defender	9.264	0.674		
	Striker	9.189	0.740		
Endurance	Goal keeper	2.149	0.145	20.870*	.000
	Defender	0.730	0.773		
	Striker	1.785	0.400		

Df = Between Groups- 2, Within Groups- 27 and Total- 29.
Table value = 3.35(at 0.05 level of significant).
5.49 b (at 0.01 level of significant).

From the table no 5 it was found that the mean and SD of Speed of Goalkeeper were 7.031and 0.770, Defender7.308and 0.941, and Striker6.432and 0.277respectively, and also F value was found 3.864.
The mean and SD of Agility of Goalkeeper were 9.778 0.785, Defender9.264and 0.674, and Striker9.189and 0.740respectively, and also F value was found 1.902.
The mean and SD of Endurance of Goalkeeper were 2.149and 0.145, Defender0.730and 0.773, and Striker1.785and 0.400respectively, and also F value was found 20.870.
The difference was presented in figure no.3.

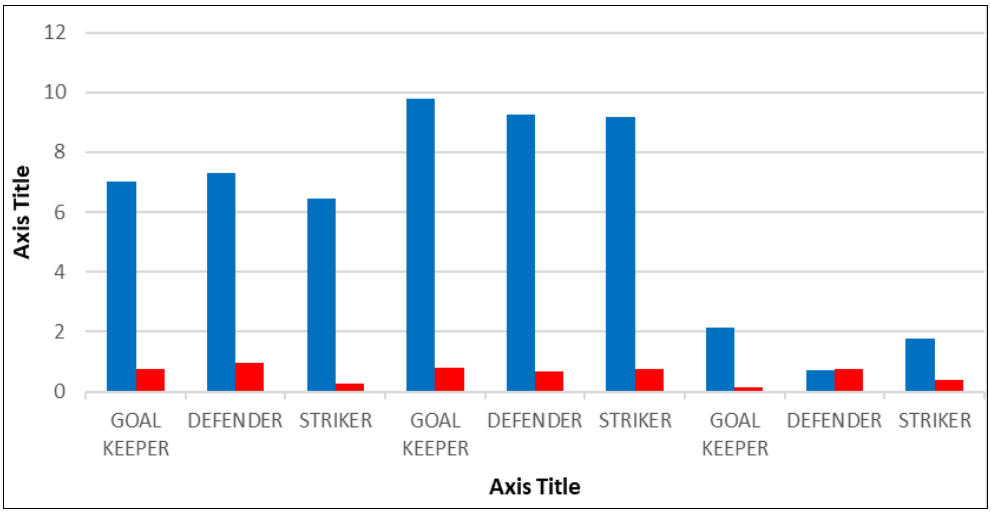

Fig 3: Speed, Agility and Endurance

Comparing the mean value Speed among three groups F value was found 3.864 which was significant at .05 level. To observe the difference between groups, post hock test was conducted.

Table 7: Post hock test of Speed among three groups

Dependent variable	(I)Group (J) Group		Mean Difference (I-J)	Std. Error	Sig.
Speed	Goal keeper	Defender	-.277	.322	.397
		Striker	.599	.322	.074
	Defender	Striker	.876*	.322	.011

From the result of the post hock test in table no 7 it was found that in Speed, difference between Goal keeper and Defender was not significant and the difference between Goal keeper and Striker was also not significant but difference between Defender and Striker was significant. So, Speed of Defender was better than the Striker and Goal keeper. The compare among Goal keeper, Defender and Striker, Striker was better than the others though a higher mean value was observed.

Comparing the mean value Endurance among three groups F value was found 20.870 which was significant at .01 level. To observe the difference between groups, post hock test was conducted.

Table 8: Post hock test of Endurance among three groups

Dependent variable	(I)Group (J) Group		Mean Difference (I-J)	Std. Error	Sig.
Endurance	Goal keeper	Defender	1.419*	.228	.000
		Striker	.364	.228	.122
	Defender	Striker	-1.055*	.228	.000

From the result of the post hock test in table no 8 it was found that in Endurance, difference between Goal keeper and Defender was significant and the difference between Goal keeper and Striker was not significant but difference between Defender and Striker was also significant. So, Endurance of Goal keeper was better than the Striker and Defender. The compare between Defender and Striker, Striker was not better than Defender though a higher mean value was observed.

Discussion

According to the study through the corresponding 'F 'value clearly indicate that there was statistically difference among the three different position of district level football players of Foot reaction time, Eye- foot Coordination, Speed and Endurance. And also the corresponding 'F' value clearly indicate that there was no statistically significant difference among the three different position of district level football players of Hand reaction time, Catching the ball, Throwing ball at a target and Agility.

Conclusion

On the basis of the result and discussion the following conclusion were drawn.

1. In Hand reaction time there was no significance difference among the three groups.
2. Foot reaction time of Goal keeper was better than the Defender and Striker. The compare between Defender and Striker, Striker was not better than Defender though a higher mean value was observed
3. In Catching the ball there was no significance difference among the three groups.
4. In Throwing ball at a target there was no significance difference among the three groups.
5. Eye-foot Coordination of Goal keeper was better than the Defender and Striker. The compare between Defender and Striker, Defender was not better than Striker though a higher mean value was observed.
6. Speed of Defender was better than the Striker and Goal keeper. The compare among Goal keeper, Defender and Striker, Striker was better than the others though a higher mean value was observed
7. In Agility there was no significance difference among the three groups.
8. Endurance of Goal keeper was better than the Striker and Defender. The compare between Defender and Striker, Striker was not better than Defender though a higher mean value was observed.

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