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Comparison of selected motor ability variables among football players of different positional play

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Abstract
The purpose of the study was to compare the selected motor ability variables among football players of different positional play. The investigator has selected 80 football players in Chennai city who played at division league level from different teams namely the life sports academy, state bank, eleven star and income tax from each team 20 football players were selected on random basis. The positional play of the football players were finalized based on the data received from them. Finally the investigator selected 20 football players for each positional play. Their age ranged between 18 to 30 years. The group I consist of twenty life sports academy, the group II consist of twenty state bank, the group III consist of twenty eleven star, and the group IV consist of twenty income tax. The selected criterion variables such as Defenders, Mid fielders, Forwards and Goalkeeper. All the participants were tested on the selected variables. The collected data were statistically analysed by using Analysis of Variance (ANOVA) was used to find out significant difference, computed scheffe's post Hoc test was used to examine the significance of paired means. In all cases, 0.05 level of significance was used.

Keywords: Different positional play, motor ability variables, football players

Introduction
Sports are as old as human society and it has achieved a universal following in the modern time. It has now become an in eternal part of educational process and social activities millions of sports forms participate in sports for the fun adventure, health, physical fitness and financial benefits linked with a high degree of popularity.

Motor Ability
Motor ability is a term which is often used as synonyms to health in a limited manner. Motor ability denotes different fact of health. The term motor ability is the capacity of the individual to live and function effectively, purposefully, here and now to meet confidently the problems and crises which are among his expectation. Motor ability is a state which characterizes the degree to which a person is able to function. Ability to function depends upon the physical, mental, emotional, social and spiritual components as motor, all of which is related to each other and is mentally independent. This may be referred to as total motor ability.

Methodology
The purpose of the study was to compare the selected motor ability variables among football players of different positional play. The investigator has selected 80 football players in Chennai city who played at division league level from different teams namely the life sports academy, state bank, eleven star and income tax from each team 20 football players were selected on random basis. The positional play of the football players were finalized based on the data received from them. Finally the investigator selected 20 football players for each positional play. Their age ranged between 18 to 30 years. All the participants were tested on the selected variables. The data were collected on selected criterion variables such as life stress, obesity and cardiovascular risk among professional of different sectors were subjected to statistical one way analysis of variance (ANOVA) was computed scheffe's post Hoc test

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was used to examine the significance of paired means. In all cases, 0.05 level of significance was used.

Table 1: Analysis of variance on speed of defenders, mid fielders, forwards and goalkeepers

Mean+ Standard Deviation				Sources of variance	Sum of square	df	Mean square	F-ratio
Defender	Mid fielder	Forward	Goalkeeper					
6.59	6.23	6.26	6.51	Between	1.87	3	0.62	5.31
0.36	0.27	0.29	0.41	Within	8.92	76	0.11	

*Significant. The table value required for significance at 0.05 level with df 3and 76 is (2.72)

Discussion on speed

Table 1 show that the mean value on speed of defenders, mid fielders, forwards and goalkeepers was 6.59, 6.23, 6.26 and 6.51respectively. The obtained F-ratio value 5.31 with df 3 and 76 required for significance at 0.05 level. Since the value of F-ration is greater that the table value, it indicates that there is significance difference exists among the mean of defenders, mid fielders, forwards and goalkeepers on speed. Since there was a significant difference among football players of different positional play in motor ability speed, Scheffe's post hoc analysis was made and which is presented in table 2.

Table 2: Scheff's post hoc test for difference between means on speed among football players of different positional play (Scores in seconds)

Football players of different positional play				Mean difference	CI Value
Defenders	Mid fielders	Forwards	goalkeepers		
6.59	6.23			0.36	0.20
6.59		6.26		0.33	0.20
6.59			6.51	0.08	0.20
	6.23	6.26		0.03	0.20
	6.23		6.51	0.28	0.20
		6.26	6.51	0.25	0.20
		6.26	6.51	0.25	0.20

Table CI Value at 0.05 level of confidence for 3 and 76 (df) =2.72

The table 2 reveals that there was no significant difference in speed between defenders, mid fielders, forwards and goalkeepers as the obtained CI value 2.72 was lesser than the 0.05 level of confidence. The obtained mean values in speed among football players of different positional play were presented through bar diagram for better understanding of the results.
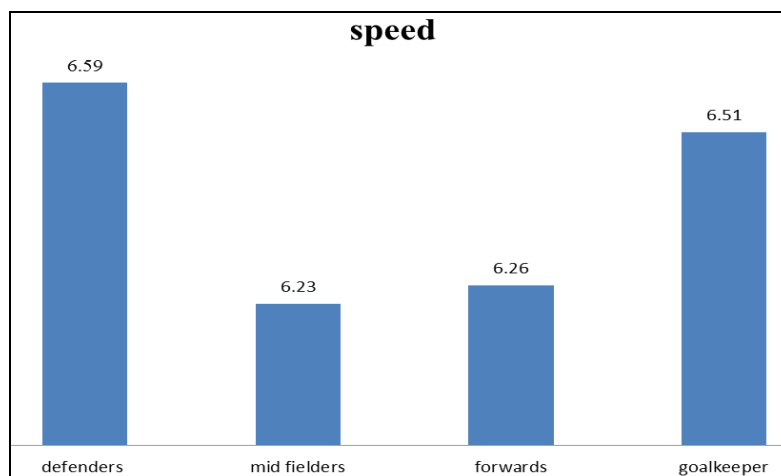

Fig 1: Bar diagram showing oneway anova for speed among football players of different positional play

Discussion on findings of speed

The results presented in Table 3 show that there exists no significant mean difference between, defenders, mid fielders, forwards and goalkeeper's. There was significant difference in speed among football players of different positional play. However, mid fielders was better than defenders, forwards, and goalkeepers.

Results on Agility

Analysis of variance on the data obtained on agility (in seconds) of defenders, midfielders, forwards and goalkeepers have been analyzed and presented in table – 3.

Table 3: Analysis of variance on agility of defenders, mid fielders, forwards and goalkeepers

Mean Standard Deviation				Sources of variance	Sum of square	df	Mean square	F-ratio
Defender	Mid fielder	Forward	Goalkeeper					
11.33	11.17	10.63	10.63	Between	7.82	3	2.60	8.51
0.82	0.49	0.39	0.62	Within	23.27	76	0.30	
					23.27	76	0.30	

The table value required for significance at 0.05 level with df 3and 76 is (2.72)

Discussion on agility
Table 3 show that the mean value on agility of defenders, mid fielders, forwards and goalkeepers was 11.33, 11.17, 10.63, and 10.63 respectively. The obtained F-ratio value 8.51 with df 3 and 76 required for significance at 0.05 level. Since the value of F-ration is greater that the table value, it indicates that there is significance difference exists among the mean of defenders, mid fielders, forwards and goalkeepers on agility. Since there was a significant difference among football players of different positional play in motor ability – agility, Scheffe's post hoc analysis was made and which is presented in table 4

Table 4: Scheff's post hoc test for difference between means on speed among football players of different positional play (Scores in seconds)

Football players of different positional play				Mean difference	CI Value
Defenders	mid fielders	Forwards	Goalkeepers		
11.33	11.17			0.16	0.33
11.33		10.63		0.17	0.33
11.33			10.63	0.17	0.33
	11.17	10.63		0.54	0.33
	11.17		10.63	0.54	0.33
		10.63	10.63	0	0.33

Table CI Value at 0.05 level of confidence for 3 and 76 (df) =2.72

The table 4 reveals that there was no significant difference in speed between defenders, mid fielders, forwards and goalkeepers as the obtained CI value 2.72 was lesser than the 0.05 level of confidence. The obtained mean values in speed among football players of different positional play were presented through bar diagram for better understanding of the results.
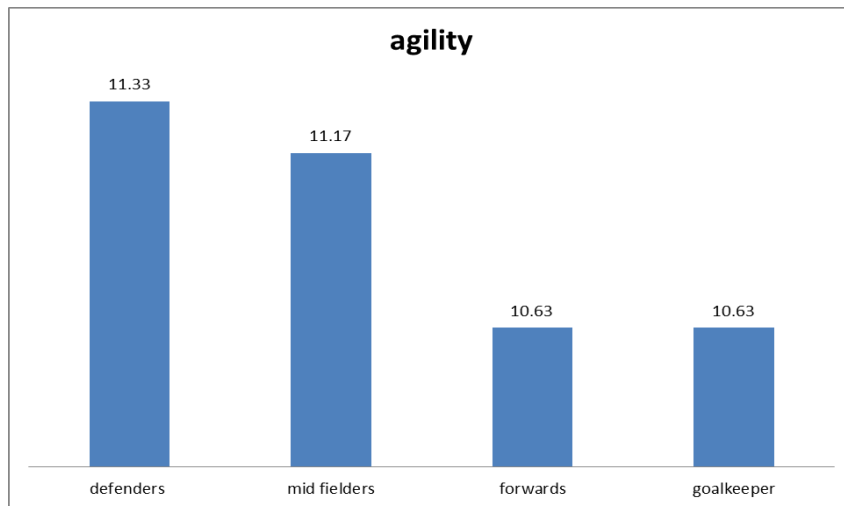

Fig 2: Bar diagram showing oneway anova for speed among football players of different positional play

Discussion on findings of agility
The results presented in Table 4 show that there exists no significant mean difference between, defenders, mid fielders, forwards and goalkeeper's. There was significant difference in speed among football players of different positional play. However, forwards and goalkeepers was better than defenders, mid fielders.

Results on Cardiovascular endurance.
Analysis of variance on the data obtained on cardiovascular endurance (in seconds) of defenders, mid fielders, forwards and goalkeepers have been analyzed and presented in table – 5.

Table 5: Oneway anova for cardiovascular endurance among football players of different positional play

Mean+ Standard Deviation				Sources of variance	Sum of square	df	Mean square	F-ratio
Defender	Mid fielder	Forward	Goalkeeper					
26.83	26.45	28.82	26.76	Between	7023.93	3	2341.31	4.29
204.79	193.94	295.30	226.58	Within	41439.4	76	545.25	

The table value required for significance at 0.05 level with df 3 and 76 is (2.72)

Table 5 show that the mean value on cardiovascular endurance of defenders, mid fielders, forwards and goalkeepers was 26.83, 26.45, 28.82, and 26.76, respectively. The obtained F-ratio value 4.29 with df 3 and 76 required for significance at 0.05 level. Since the value of F-ration is smeller that the table value, it indicates that there is significance difference exists among the mean of defenders, mid fielders, forwards and goalkeepers on cardiovascular endurance. Since there was a significant difference among football players of different positional play in motor ability, cardiovascular endurance Scheffe's post hoc analysis was made and which is presented in table 6.

Table 6: Scheff's post hoc test for difference between means on cardiovascular endurance among football players of different positional play

Football players of different positional play				Mean difference	CI Value
Defenders	mid fielders	Forwards	goalkeepers		
26.83	26.45			0.38	140.62
26.83		28.82		2.44	140.62
26.83			26.76	0.07	140.62
	26.45	28.83		2.38	140.62
	26.45		26.76	0.31	140.62
		28.83	26.76	2.07	140.62
		28.83	26.76	2.07	140.62

Table CI Value at 0.05 level of confidence for 3 and 76 (df) =2.72

The table 6 reveals that there was no significant difference in cardiovascular endurance between defenders, mid fielders, forwards and goalkeepers as the obtained CI value 2.72 was greater than the 0.05 level of confidence. The obtained mean values in cardiovascular endurance among football players of different positional play were presented through bar diagram for better understanding of the results.
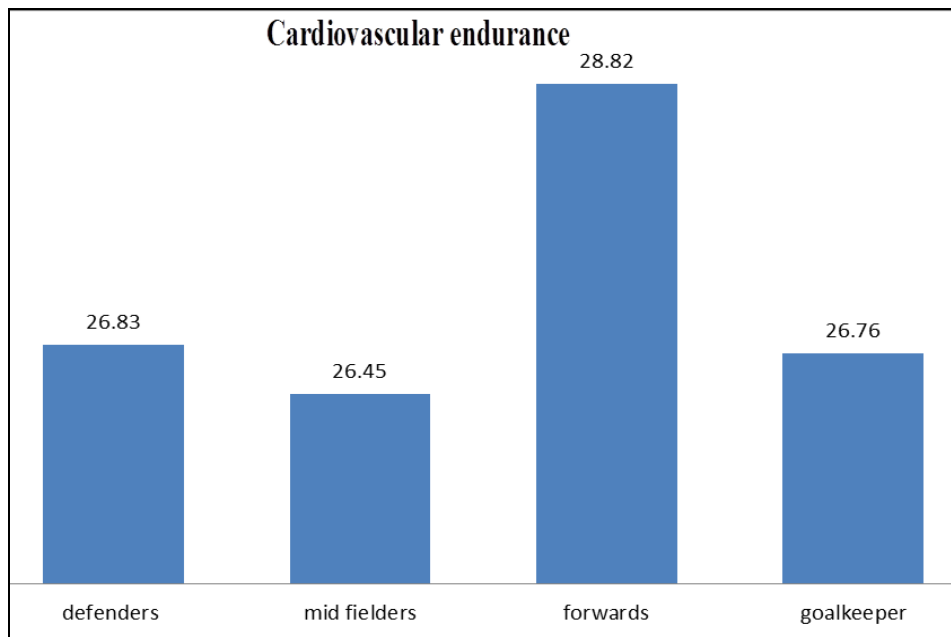

Fig 3: Oneway anova for cardiovascular endurance among football players of different positional play

Discussion on findings of cardiovascular endurance
The results presented in Table 6 show that there exists no significant mean difference between, defenders, mid fielders, forwards and goalkeeper's. There was significant difference in speed among football players of different positional play. However, forwards and goalkeepers was better than defenders, mid fielders.

Results on strength
Analysis of variance on the data obtained on strength (in seconds) of defenders, mid fielders, forwards and goalkeepers have been analyzed and presented in table – 7.

Table 7: Analysis of variance on strength of defenders, mid fielders, forwards and goalkeepers

Mean+ Standard Deviation				Sources of Variance	Sum of square	DF	Mean square	F-ratio
Defender	Mid fielder	Forward	Goalkeeper					
31.10	32.35	32.35	30.70	Between	43.65	3	14.55	0.61
5.94	4.42	4.42	4.53	Within	1807.10	76	23.77	

The table value required for significance at 0.05 level with df 3and 76 is (2.72)

Table 8 show that the mean value on strength of defender, mid fielder, forward, and goal keepers was 31.10, 32.35, 32.35 and 30.70 respectively. The obtained F-ratio value 0.61 with df 3 and 76 required for significance at 0.05 level. Since the value of F-ration is lesser than the table value, it indicates that there is no significance difference exists among the mean of defender, mid fielder, forward, and goal keepers on strength.
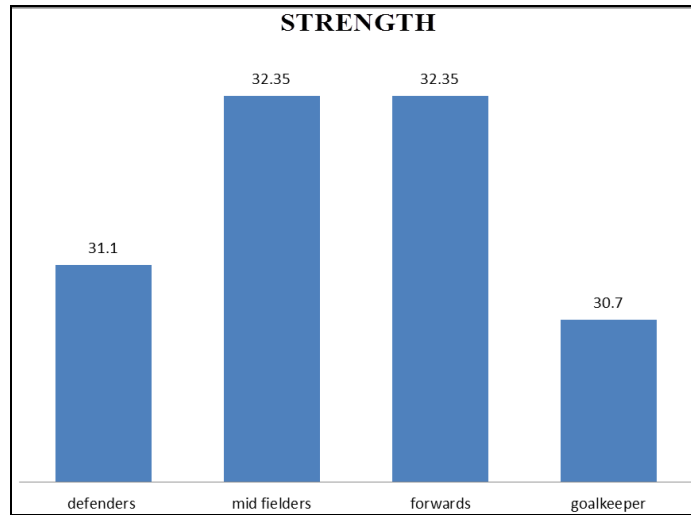
Fig 4: Oneway anova for strength among football players of different possitional play

Discussion on findings of strength
The results presented in Table 7 show that there exists no significant mean difference between, defenders, mid fielders, forwards and goalkeepers. There was no significant difference in strength among football players of different positional play. However midfielder, forwards was better than defenders, and goalkeepers.

Results on Explosive power
Analysis of variance on the data obtained on explosive power (in seconds) of defenders, mid fielders, forwards and goalkeepers have been analyzed and presented in table – 8.

Table 8: Analysis of variance on explosive power of defenders, mid fielders, forwards and goalkeepers

Mean Standard Deviation				Sources of Variance	Sum of square	DF	Mean square	F-ratio
Defender	Mid fielder	Forward	Goalkeeper					
2.30	2.36	2.31	2.29	Between	0.06	3	0.02	1.04
0.15	0.16	0.08	0.13	Within	1.47	76	0.01	

The table value required for significance at 0.05 level with df 3 and 76 is (2.72)

Table 8 show that the mean value on explosive power of defenders, mid fielders, forwards and goalkeepers was 2.30, 2.36, 2.31, and 2.29 respectively. The obtained F-ratio value 1.04 with df 3and 76 required for significance at 0.05 level.

Since the value of F-ration is lesser that the table value, it indicates that there is no significance difference exists among the mean of defenders, mid fielders, forwards and goalkeepers on explosive power.
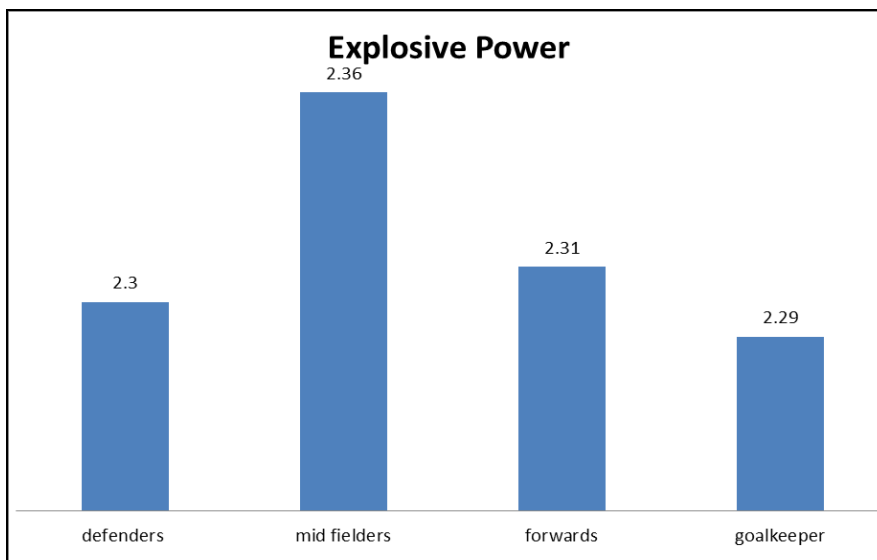

Fig 5: Oneway anova for explosive power among football players of different positional play

Discussion on finding of explosive power
The results presented in Table 9 show that there exists no significant mean difference between, defenders, mid fielders, forwards and goalkeepers. There was no significant difference in explosive power among football players of different positional play. However midfielder, forwards was better than defenders, and goalkeepers.

Results on coordination
Analysis of variance on the data obtained on coordinition (in seconds) of defenders, mid fielders, forwards and goalkeepers have been analyzed and presented in table – 9.

Table 9: Analysis of coordination of defenders, mid fielders, forwards and goalkeepers.

Defender	Mid fielder	Forward	Goalkeeper	Sources of Variance	Sum of square	DF	Mean square	F-ratio
Mean +Standard Deviation								
30.40	31.25	30.10	30.60	Between	14.23	3	4.76	0.57
2.66	3.20	3.33	2.16	Within	631.15	76	8.30	

The table value required for significance at 0.05 level with df 3 and 76 is (2.72)

Table 9 show that the mean value on coordination of defenders, mid fielders, forwards and goalkeepers was 30.40, 31.25, 30.10, and 30.60respectively. The obtained F-ratio value 0.57with df 3 and 76 required for significance at 0.05 level. Since the value of F-ration is lesser that the table value, it indicates that there is no significance difference exists among the mean of defenders, mid fielders, forwards and goalkeepers on coordination.
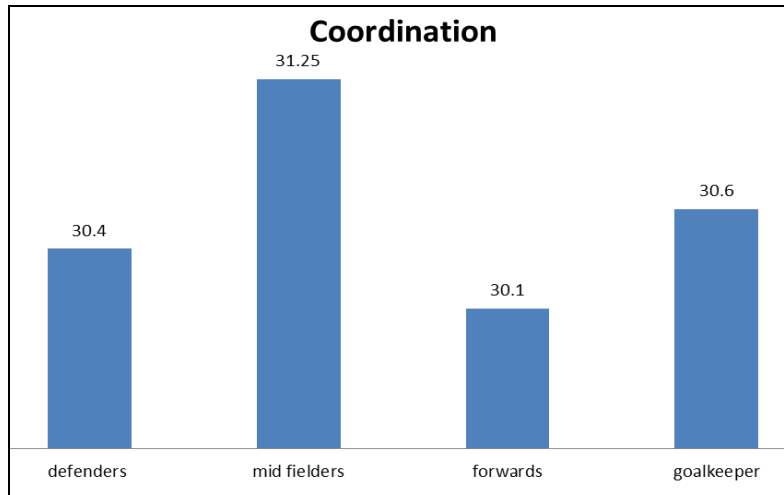

Fig 6: Oneway anova for coordination among football players of different positional play

Discussion on finding of coordination

The results presented in Table 10 show that there exists no significant mean difference between, defenders, mid fielders, forwards and goalkeepers. There was no significant difference in coordination among football players of different positional play. However midfielder, forwards was better than defenders, and goalkeepers.

Results on Flexibility

Analysis of variance on the data obtained on flexibility (in seconds) of defenders, mid fielders, forwards and goalkeepers have been analyzed and presented in table – 10

Table 10: Analysis of variance on flexibility of defenders, mid fielders, forwards and goalkeepers

Defender	Mid fielder	Forward	Goalkeeper	Sources of Variance	Sum of square	DF	Mean square	F-ratio
Mean Standard Deviation								
13.79	11.80	13.50	12.21	Between	56.29	3	18.76	3.08
2.66	1.78	3.01	2.22	Within	461.76	76	6.07	

Analysis of variance on flexibility of defenders, mid fielders, forwards and goalkeepers

The table value required for significance at 0.05 level with df 3 and 76 is (2.72)

Table 10 show that the mean value on flexibility of defenders, mid fielders, forwards and goalkeepers was 13.79, 11.80, 13.50, and 12.21 respectively. The obtained F-ratio value 3.08 with df 3 and 76 required for significance at 0.05 level. Since the value of F-ration is greater than the table value, it indicates that there is significance difference exists among the mean of defenders, mid fielders, forwards and goalkeepers on flexibility. Since there was a significant difference among football players of different positional play in motor ability flexibility, Scheffe's post hoc analysis was made and which is presented in table 11.

Table 11: Scheff's post hoc test for difference between means on flexibility among football players of different positional play (Scores in seconds)

Defenders	mid fielders	Forwards	goalkeepers	Mean difference	CI Value
Football players of different positional play					
13.79	11.80			1.99	1.84
13.79		13.50		0.29	1.84
13.79			12.21	1.58	1.84
	11.80	13.50		1.7	1.84
	11.80		12.21	0.41	1.84
		13.50	12.21	1.29	1.84

Table CI Value at 0.05 level of confidence for 3 and 76 (df) =2.72

The table 11 reveals that there was no significant difference in flexibility between defenders, mid fielders, forwards and goalkeepers as the obtained CI value 2.72 was greater than the 0.05 level of confidence. The obtained mean values in flexibility among football players of different positional play were presented through bar diagram for better understanding of the results.
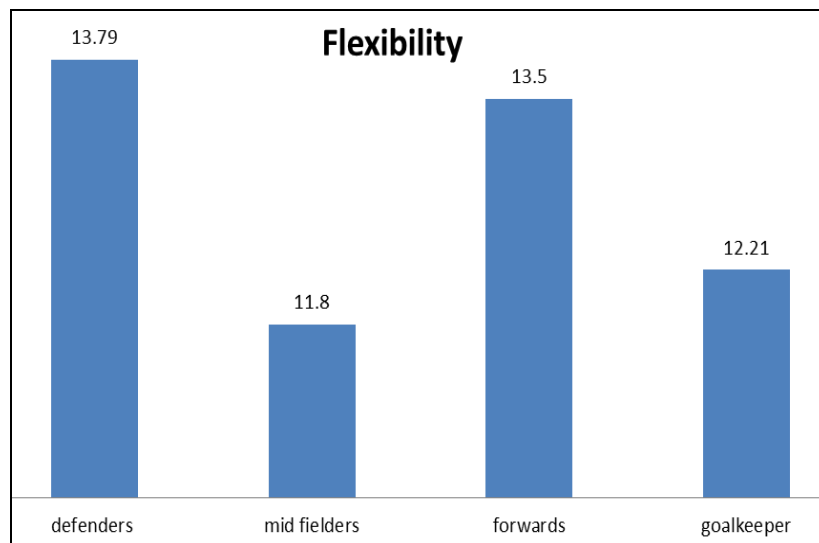
Flexibility

defenders	mid fielders	forwards	goalkeeper
13.79	11.8	13.5	12.21

Fig 7: Oneway anova for flexibility among football players of different positional play

Discussion on findings of flexibility
The results presented in Table 11 show that there exists no significant mean difference between, defenders, mid fielders, forwards and goalkeeper's. There was significant difference in flexibility among football players of different positional play. However, mid fielders and goalkeepers was better than defenders, forwards.

Conclusions
1. The speed of football players of defenders, mid fielders, forwards and goal keepers differ significantly.
2. The football mid fielders & forwards players and mid fielders & goal keepers differ significantly in their speed in favour of mid fielders.
3. The agility of football players of defenders, mid fielders, forwards and goal keepers differ significantly.
4. The football forwards & defenders, goal keepers & mid fielders and mid fielders & defenders differ significantly in their agility.
5. The cardiovascular endurance of football players of defenders, mid fielders, forwards and goal keepers differ significantly.
6. The football forwards and defenders differ significantly in their cardiovascular favour of forward players.
7. The flexibility of football players of defenders, mid fielders, forwards and goal keepers differ significantly.
8. The football forwards and defenders differ significantly in their flexibility favour of forward players.
9. The football player of different positional play does not differ significantly in their coordination.
10. The football player of different positional play does not differ significantly in their explosive power and strength.

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