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The study was to compare selected height and speed of volleyball players of different positions of play

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Abstract
Physical education field services a lot for an individual to be healthy person. Man needs to participate in physical education for active growth and development and also maintain in good health. In recent years, athletic performances have been transformed skill techniques and training regimes have been vastly improved. The purpose of the study was to find out A repeated measure research design was used in this study. Randomly selected 100 volleyball players consisting of 20 attackers, 20 setters, 20 blockers, 20 libros and 20 universals were selected for this study from different schools in Andhra Pradesh. The players were selected from different schools in Andhra Pradesh who participated at inter school tournaments. The subjects were measured of their height using standard tests. Physical fitness of the subjects, speed measured through 20 M sprint. The collected data were subjected to statistical treatment using ANOVA among different positions of players in Volleyball. In all cases 0.05 level was fixed to test significance of the study. Based on the results and discussion made in the previous chapter, it was found that selected anthropometric profiles, height, weight, arm length, leg length differed among volleyball players of different positions. Likewise, selected physical fitness variables, speed, agility and upper body strength were differed among volleyball players of different positions. However there was no significant differences on leg strength of the volleyball players.

Keywords: Height and Speed

Introduction
Physical education field services a lot for an individual to be healthy person. Man needs to participate in physical education for active growth and development and also maintain in good health. In recent years, athletic performances have been transformed skill techniques and training regimes have been vastly improved. Performance standards and records are being constantly improved. The advancement of scientific researches in the field of physical education and sports given a boon to athlete, trainees and coaches. The physical education scientific have been trying to develop a new methods of training and techniques to attain a higher level performance in sports and games. The ability and traits for a better performance in particular sports vary due to anthropometric variables and motor fitness components of the performer. Anthropometry is the systematized measurement of the human body. It is usually referred to the variables such as maturation, body physique, strength and motor factor.

Objectives of the Study
The aim of the study was to make an analysis on height and speed of volleyball players in relation to their position of play. For this purpose, the study The study would collect data on selected height and speed of school level volleyball players.

Methodology
Randomly selected 100 volleyball players consisting of 20 attackers, 20 setters, 20 blockers, 20 libros and 20 universals were selected for this study from different schools in Andhra Pradesh. The players were selected from different schools in Andhra Pradesh who participated at inter school tournaments. The subjects were measured of their height using standard tests. Physical fitness of the subjects, speed measured through 20 M sprint. The collected data were subjected to statistical treatment using ANOVA among different positions of players in Volleyball.

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Results and Discussions
This study deals with the analysis of data collected from the samples under study. The purpose of the study was to compare selected height and speed of volleyball players of different positions. To achieve the purpose of the study, 100 volleyball players, consisting of 20 attackers, 20 setters, 20 blockers, 20 liberos and 20 universals. The players were selected from different schools in Andhra Pradesh who participated at inter school tournaments. The age group of the subjects ranged from 15 to 17 years. The subjects were selected on random basis.

Computation of analysis of variance and post hoc test Results on Height
Descriptive statistics mean, standard deviation, minimum and maximum of volleyball players of different positions' anthropometric variable Height is presented in Table 1.

Table 1: Descriptive statistics showing mean and standard deviation, minimum and maximum scores on height

	Volleyball Players of Different positions				
	Attackers	**Setters**	**Blockers**	**Leberos**	**Universals**
Mean	173.00	168.30	174.90	171.05	171.50
Std Dev	7.14	5.03	2.90	5.33	7.25
Minimum	164.00	163.00	170.00	165.00	162.00
Maximum	184.00	182.00	181.00	182.00	184.00

The results on the status of anthropometric variable on Height among volleyball players of different positions presented in Table 1 proved that obtained mean for attackers was 173.00 with standard deviation of $\pm$ 7.14. The minimum score was 164.00 and the maximum score was 184.00. The anthropometric status of settlers as presented in Table 1 mean was 168.30 with standard deviation $\pm$ 5.03. The minimum score was 163.00 and maximum score was 182.00.
Blockers' anthropometric status on variable Height is shown in Table 1. The results proved that obtained mean was 174.90 with standard deviation $\pm$ 2.90. The minimum score was 170.00 and the maximum score was 181.00. The status analysis on anthropometric variable Height among liberos proved the obtained mean was 171.05 with standard deviation $\pm$ 5.33. The minimum score was 165.00 and the maximum was 182.00. Universals' anthropometric status on variable Height shows that the obtained mean value of 171.50 with standard deviation $\pm$ 7.25. The minimum score was 162.00 and the maximum was 184.00. The obtained mean values among volleyball players of different positions on anthropometric variable Height is presented through bar diagram for better understanding of the results.
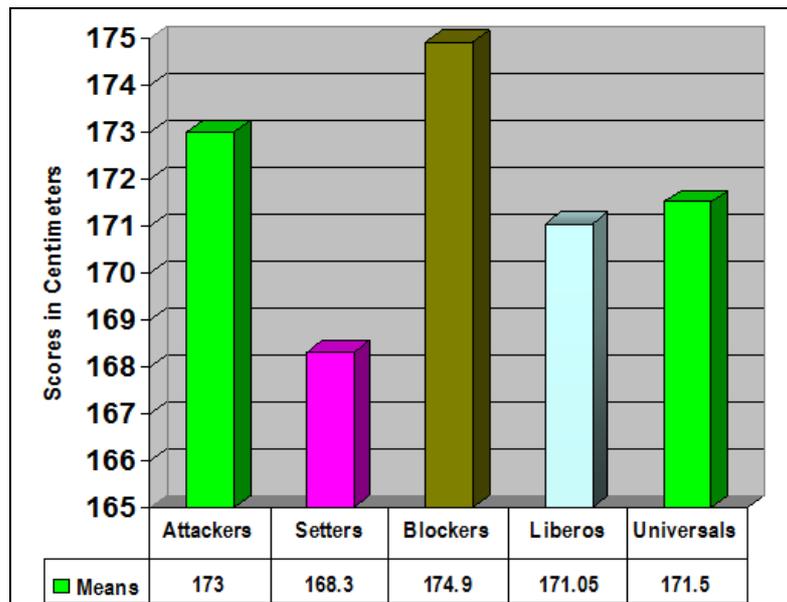
Fig 1: Bar Diagram Showing Mean Values of Volleyball Players of Different Postiions on Anthropometric Variable Height

Comparative Analysis Among Volleyball players of Different Positions of Play: The anthropometric variable of volleyball players of different playing positions were differed on Height as shown through the descriptive statistic presented in Table 1 To test statistical significance of the difference of Table 2.

the obtained data were subjected to ANOVA. The obtained data on anthropometric variable Height among volleyball players playing at different positions was subjected to statistical analysis using ANOVA and the results were presented in

Table 2: Showing the Analysis of Variance on the Means Obtained from Different Categories of Volleyball Players on Variable Height

Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Between	478.80	4	119.70	
Within	3145.95	95	33.12	3.61*
Total	3624.75	99		

Table F-ratio at 0.05 level of confidence for 4 and 95 (df) =2.69 *Significant at 0.05 level

The analysis of variance results presented in Table 2 shows that the obtained F value 3.61 was greater than the required F value of 2.69 to be significant at 0.05 level. Hence, it was found that there were significant differences among volleyball players playing at different positions. Since significant differences were obtained the data were further subjected to post hoc analysis using Scheffe's confidence interval and the results are presented in Table 3.

Table 3: Multiple Comparison of Paired Means of different categories of Volleyball players on Height

Attackers	Setters	Blockers	Liberos	Universals	MEAN DIFF	C.I
173.00	168.30				4.70	5.97
173.00		174.90			-1.90	5.97
173.00			171.05		1.95	5.97
173.00				171.50	1.50	5.97
	168.30	174.90			-6.60*	5.97
	168.30		171.05		-2.75	5.97
	168.30			171.50	-3.20	5.97
		174.90	171.05		3.85	5.97
		174.90		171.50	3.40	5.97
			171.05	171.50	-0.45	5.97

The results presented in Table 3 showed that the paired mean comparisons of the following were significant as the obtained mean differences were greater than the required confidence interval value of 5.97

Results on Speed
Descriptive statistics mean, standard deviation, minimum and maximum of volleyball players of different positions' anthropometric variable Speed is presented in Table 4.

Table 4: Descriptive Statistics Showing Mean and Standard Deviation, Minimum and Maximum Scores on Speed

	Volleyball Players of Different positions				
	Attackers	Setters	Blockers	Leberos	Universals
Mean	3.44	3.70	3.43	3.60	3.42
Std Dev	0.26	0.34	0.28	0.29	0.28
Minimum	3.10	3.16	2.95	3.11	3.03
Maximum	4.17	4.20	3.95	4.06	3.91

The results on the status of anthropometric variable on Speed among volleyball players of different positions presented in Table 4 proved that obtained mean for attackers was 3.44 with standard deviation of ± 0.26. The minimum score was 3.10 and the maximum score was 4.17. The anthropometric status of settlers as presented in Table 4 mean was 3.70 with standard deviation ± 0.34. The minimum score was 3.16 and maximum score was 4.20. Blockers' anthropometric status on variable Speed is shown in Table 4.
The results proved that obtained mean was 3.43 with standard deviation ± 0.28. The minimum score was 2.95 and the maximum score was 3.95. The status analysis on anthropometric variable Speed among liberos proved the obtained mean was 3.60 with standard deviation ± 0.29. The minimum score was 3.11 and the maximum was 4.06. Universals' anthropometric status on variable Speed shows that the obtained mean value of 3.42 with standard deviation ± 0.28. The minimum score was 3.03 and the maximum was 3.91. The obtained mean values among volleyball players of different positions on anthropometric variable Speed is presented through bar diagram for better understanding of the results.
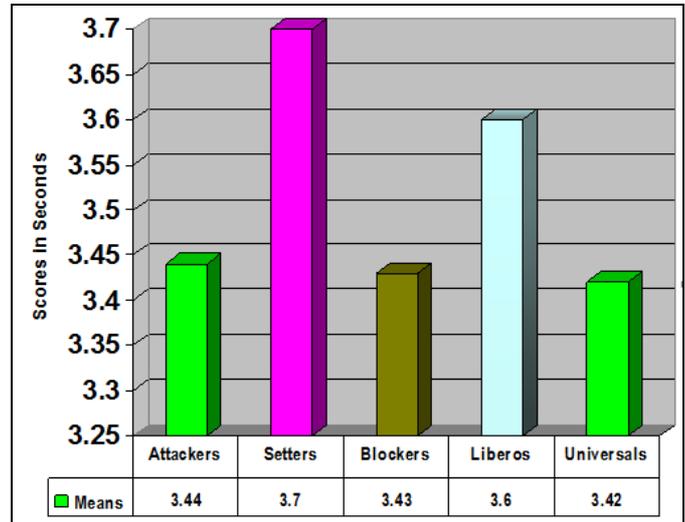
Fig 2: Bar Diagram Showing Mean Values of Volleyball Players of Different Postiions on Anthropometric Variable Speed

Comparative Analysis Among Volleyball players of Different Positions of Play
The anthropometric variable of volleyball players of different playing positions were differed on Speed as shown through the descriptive statistic presented in Table 5 To test statistical significance of the difference of the obtained data were subjected to ANOVA. The obtained data on anthropometric variable Speed among volleyball players playing at different positions was subjected to statistical analysis using ANOVA and the results were presented below.

Table 5: Showing the Analysis of Variance on The Means Obtained from Different Categories of Volleyball Players on Variable Speed

Source of Variance	Sum of Squares	df	Mean Squares	Obtained F
Between	1.34	4	0.34	
Within	8.13	95	0.09	3.93*
Total	9.47	99		

Table F-ratio at 0.05 level of confidence for 4 and 95 (df) =2.69. * Significant at 0.05 level

The analysis of variance results presented in Table 5 shows that the obtained F value 3.93 was greater than the required F value of 2.69 to be significant at 0.05 level. Hence, it was found that there were significant differences among volleyball players playing at different positions. Since significant differences were obtained the data were further subjected to post hoc analysis using Scheffe's confidence interval and the results are presented in Table 5.

Table 6: Multiple Comparison of Paired Means of different categories of Volleyball players on Speed

Attackers	Setters	Blockers	Liberos	Universals	MEAN DIFF	C.I
3.44	3.70				-0.27	0.28
3.44		3.43			0.01	0.28
3.44			3.60		-0.16	0.28
3.44				3.42	0.02	0.28
	3.70	3.43			0.28*	0.28
	3.70		3.60		0.10	0.28
	3.70			3.42	0.29*	0.28
		3.43	3.60		-0.18	0.28
		3.43		3.42	0.01	0.28
			3.60	3.42	0.19	0.28

The results presented in Table 5 showed that the paired mean comparisons of the following were significant as the obtained mean differences were greater than the required confidence interval value of 0.28.

Findings

Based on the results and discussion made in the previous chapter, it was found that selected anthropometric profiles, height, weight, arm length, leg length differed among volleyball players of different positions. Likewise, selected physical fitness variables, speed, agility and upper body strength were differed among volleyball players of different positions. However there was no significant differences on leg strength of the volleyball players.

Conclusions

Within the limitations and delimitations of the study, the following conclusions were drawn.

1. It was concluded that there existed differences on such as height among volleyball players of different positions and there was significant difference between blockers and setters and it was found blockers proved to be highest among volleyball players of different positions followed by attackers.

2. It was concluded that there existed differences on such as speed among volleyball players of different positions. It was found universal position volleyball players were speediest followed by blockers. It was concluded that there was significant differences between universals and setters; blockers and setters in speed. However, there was insignificant differences on remaining paired mean comparisons.

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