



Meta Analysis of Different Positional Players on Selected Coordinative Abilities among College Level Volleyball Players

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ABSTRACT

The study was to find out the meta-analysis of different positional players on selected coordinative abilities among college level volleyball players. To achieve the purpose of this study, 90 volleyball women players were selected as subjects from departments and affiliated colleges of Bharathiar university, Coimbatore, Tamil Nādu and their ages were ranged between 18 to 25years. the selected 90 volleyball women subjects were divided into three equal groups Group – I named as (Spiker) Group – II named as (Setter) and Group – III (Libero). The data were collected statically analyzed by analysis of variance (ANOVA) which was used to find out the significant difference among spikers, setter and libero in coordinative ability such as Balance, Reaction time, Agility and Hand eye coordination.

Keywords: volleyball, coordinative ability (balance, hand eye coordination, reaction time, agility)

INTRODUCTION

Volleyball is the game that is played by all ages and both sexes indoor and outdoor. It is highly competitive and requires high level of fitness. Competitive Volleyball is all action game with none of the players acting as involuntary spectators as seen in the others games. The popularity of volleyball has grown in the past two. Decades and the game continue to build momentum at all competitive levels (**Scates and Linn, 2003**).

COORDINATIVE ABILITIES

Coordinative abilities enable the sports man to do a group movement with better quality and effect. The speed of learning of skill and its stability is directly dependent on the level of various coordinative abilities. Coordinative abilities are needed for maximal utilization of conditional abilities, technical skills, psychological parameters and tactical skills.

Orientation ability, Differentiation ability, coupling ability, Adaptation ability, Rhythm ability, Balance ability and Reaction ability are seven identified coordinative abilities. All the coordinative abilities are important for learning of sports techniques and for their continuous refinement and modifications during long-term training process. The motor learning ability depends to a large extent on the level of coordinative abilities.

CRITERION MEASURES

1. The Balance was measured by Stork balance stand test and the unit was in seconds.
2. The Hand and Eye coordination test was measured by Alternative Hand wall toss test and the unit was in Seconds.
3. The reaction time was measured by Ruler drop test and the unit was in Seconds.
4. The Agility was measured by Illinois agility test and the unit was in Seconds

METHODS

The purpose of the study,90 volleyball women players were selected as subjects from departments and affiliated colleges of Bharathiar University, Coimbatore, Tamil Nādu. The subjects age ranged between 18 and 25 years. The selected women volleyball players were assessed by coordinative abilities. The selected 90 volleyball women subjects were divided into three equal groups, Group – I named as Spikers, Group – II named as Setters and Group-III named as Libero.

STATISTICAL ANALYSIS

The statistics of analysis of variance (ANOVA) were used to find out the significance among the mean differences, find out the paired mean difference. The Scheffe's Post hoc test were used. In all cases 0.05 level of significance.

RESULT

The selected variables were analyzed by statistical technique of one-way analysis of variance (ANOVA) was used. If there is a significant changes Scheffe's post hoc test was used to find out the paired mean difference and which was presented from table I to IV.

Table 1

One way ANOVA for Balance among the spiker, setter and libero of college level volleyball players.

	SPIKER	SETTER	LIBERO	SOURCE OF VARIANCE	SUM OF SQUARE	DF	MEAN SQUARE	F
Mean	18.29	23.87	18.70	Between groups	581.16	2	290.580	3.30 *
				Within groups	7648.661	87	87.916	

*Significance at 0.05 level of confidence for 2 and 87 (3.10)

Table I. Shows that the obtained mean values of spiker, setter and libero were 18.29, 23.87 and 18.70 respectively. The obtained mean value was 3.30 at 0.05 level of confidence with the degree of freedom 2 and 87. Since the obtained value of 3.30 was greater than the table value of 3.10 it was proved that there were significant differences among the spiker, setter and libero.

Since there were significant difference among spikers, setters and libero in coordinative ability of balance, Scheffe's Post Hoc analysis was used to find out the paired mean difference and was presented in table.1 (a)

TABLE I (a)

SCHEFFE'S POST HOC test for difference between means on Balance among the spiker, setter and libero of college level volleyball players.

SPIKER	SETTER	LIBERO	MD	CI
18.29	23.87	-	5.58*	0.77
18.29	-	18.70	0.59	
	23.87	18.70	5.17*	

*Significance at 0.05 level of confidence

Table I (a) shows that the mean difference on Balance among spikers, setters and libero of volleyball players.

The mean difference between spiker and setter, spiker and libero and setter and libero were 5.58, 0.59 and 5.17. Since the mean difference between spiker and setter, setter and libero were greater than the CI value of 0.77, it was proved that there was significant difference among the above groups.

FIGURE I

The obtained mean values on balance among the spiker, setter and libero in the volleyball players are resented through bar diagram for better understanding of the results in figure.



Table II
One way ANOVA for Hand eye coordination among the spiker, setter and libero of college level volleyball players.

	SPIKER	SETTER	LIBERO	SOURCE OF VARIANCE	SUM OF SQUARE	DF	MEAN SQUARE	F
Mean	28.76	30.53	23.46	Between groups	811.489	2	405.744	7.76
				Within groups	4546.300	87	52.256	

*Significance at 0.05 level of confidence for 2 and 87 (3.10)

Table 2 Shows that the obtained mean values of spiker, setter and libero were 28.76 ,30.53 and 23.46 respectively. The obtained mean value was 7.76 at 0.05 level of confidence with the degree of freedom 2 and 87. Since the obtained value of 7.76 was greater than the table of 3.10 it was proved that there were significant differences among the spiker, setter and libero.

Since there were significant difference among spikers, setters and libero in coordinative ability of Hand eye coordination, Scheffe’s Post Hoc analysis was used to find out the paired mean difference and was presented in table. 2(a)

TABLE II(a)

SCHEFFE’S POST HOC test for difference between means on Hand eye coordination among the spiker, setter and libero of college level volleyball players.

SPIKER	SETTER	LIBERO	MD	CI
28.76	30.53	-	1.77*	0.59
28.76	-	23.46	5.3	
	30.53	23.46	7.07	

Table II (a) shows that the mean difference on Hand eye coordination among spikers, setters and libero of volleyball players.

The mean difference between spiker and setter, spiker and libero and setter and libero were 1.77,5.3 and 7.07. Since the mean difference between spiker and setter, spiker and libero and setter and libero were greater than the CI value of 0.59, it was proved that there was no significant difference among the above groups.

FIGURE II

The obtained mean values on Hand eye coordination among the spiker, setter and libero in the volleyball players are resented through bar diagram for better understanding of the result in figure

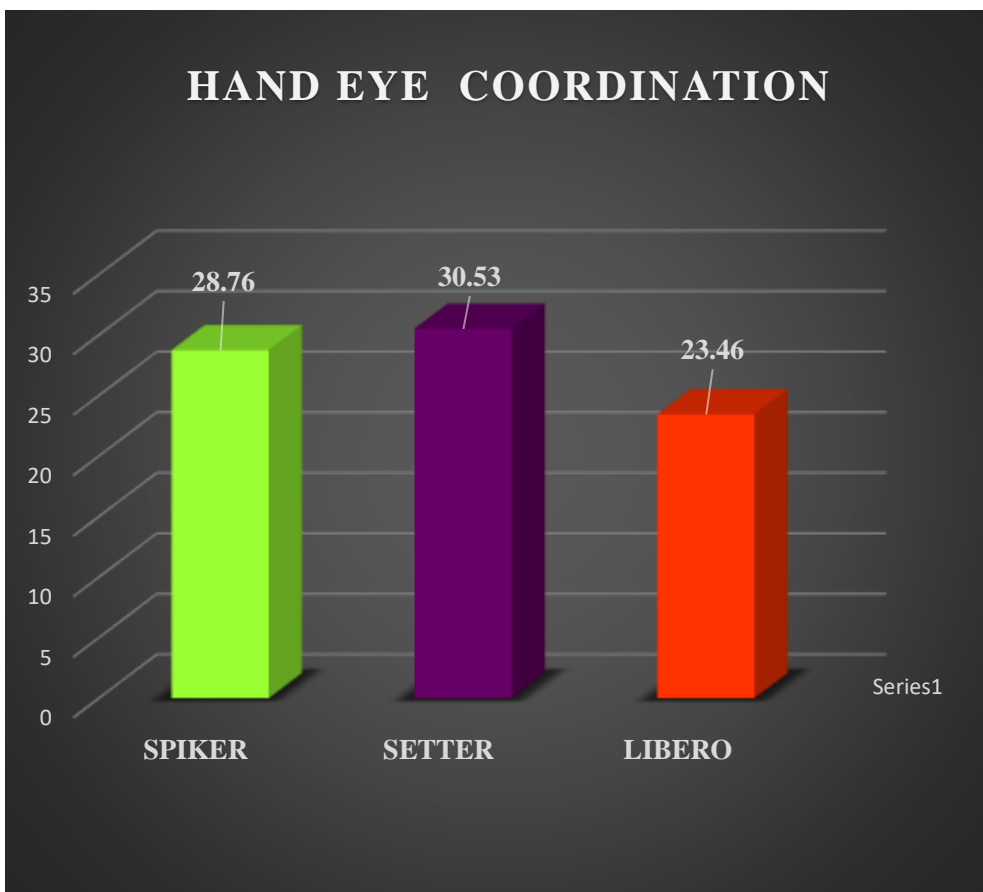


Table III

One way ANOVA for Agility among the spiker, setter and libero of college level volleyball players.

	SPIKER	SETTER	LIBERO	SOURCE OF VARIANCE	SUM OF SQUARE	DF	MEAN SQUARE	F
Mean	16.96	20.33	16.88	Between groups	231.973	2	115.987	4.88
				Within groups	2066.371	87	23.75	

*Significance at 0.05 level of confidence for 2 and 87 (3.10)

Table III. Shows that the obtained mean values of spiker, setter and libero were 16.96 ,20.33 and 16.88 respectively. The obtained mean value was 4.88 at 0.05 level of confidence with the degree of freedom 2 and 87. Since the obtained value of 4.88 was greater than the table of 3.10 it was proved that there were significant differences among the spiker, setter and libero.

Since there were significant difference among spikers, setters and libero in coordinative ability of Agility, Scheffe’s Post Hoc analysis was used to find out the paired mean difference and is presented in table III (a)

TABLE III (a)

SCHEFFE’S POST HOC test for difference between means on Hand eye coordination among the spiker, setter and libero of college level volleyball players.

SPIKER	SETTER	LIBERO	MD	CI
16.96	20.33	-	3.37*	0.40
16.96	-	16.88	0.08	
	20.33	16.88	3.45*	

Table III (a) shows that the mean difference on Agility among spikers, setters and libero of volleyball players.

The mean difference between spiker and setter, spiker and libero and setter and libero were 3.37, 0.08 and 3.45. Since the mean difference between spiker and setter, setter and libero were greater than the CI value of 0.40, it was proved that there was significant difference among the above groups.

FIGURE III

The obtained mean values on Agility among the spiker, setter and libero in the volleyball players are presented through bar diagram for better understanding of the result in figure

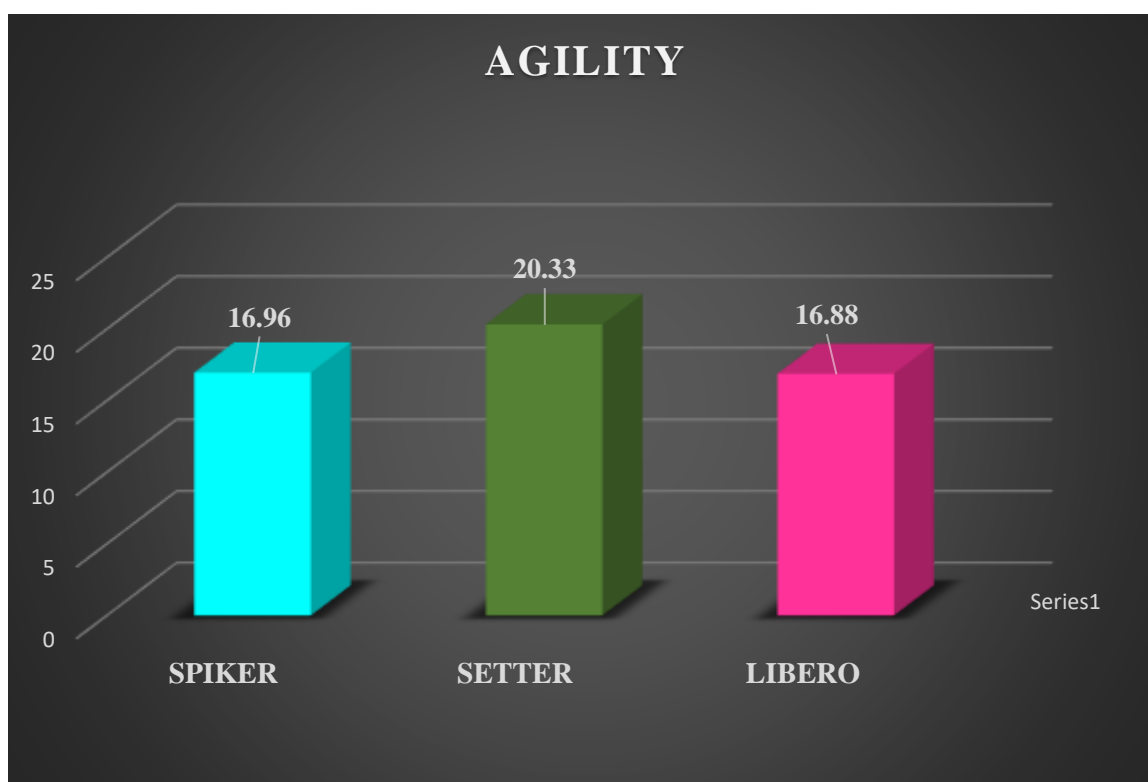


Table 1.4

One way ANOVA for Reaction time among the spiker, setter and libero of college level volleyball players.

	SPIKER	SETTER	LIBERO	SOURCE OF VARIANCE	SUM OF SQUARE	DF	MEAN SQUARE	F
Mean	13.13	15.27	21.83	Between groups	1233.032	2	616.516	13.085
				Within groups	4099.212	87	47.117	

*Significance at 0.05 level of confidence for 2 and 87 (3.10)

Table IV. Shows that the obtained mean values of spiker, setter and libero were 13.13, 15.27 and 21.83 respectively. The obtained mean value was 13.085 at 0.05 level of confidence with the degree of freedom 2 and 87. Since the obtained value of 13.085 was greater than the table of 3.10 it was proved that there were significant differences among the spiker, setter and libero.

Since there were significant difference among spikers, setters and libero in coordinative ability such as Reaction time, Scheffe's Post Hoc analysis was used to find out the paired mean difference and is presented in table IV (a)

TABLE IV (a)

SCHEFFE'S POST HOC test for difference between means on Reaction time among the spiker, setter and libero of college level volleyball players.

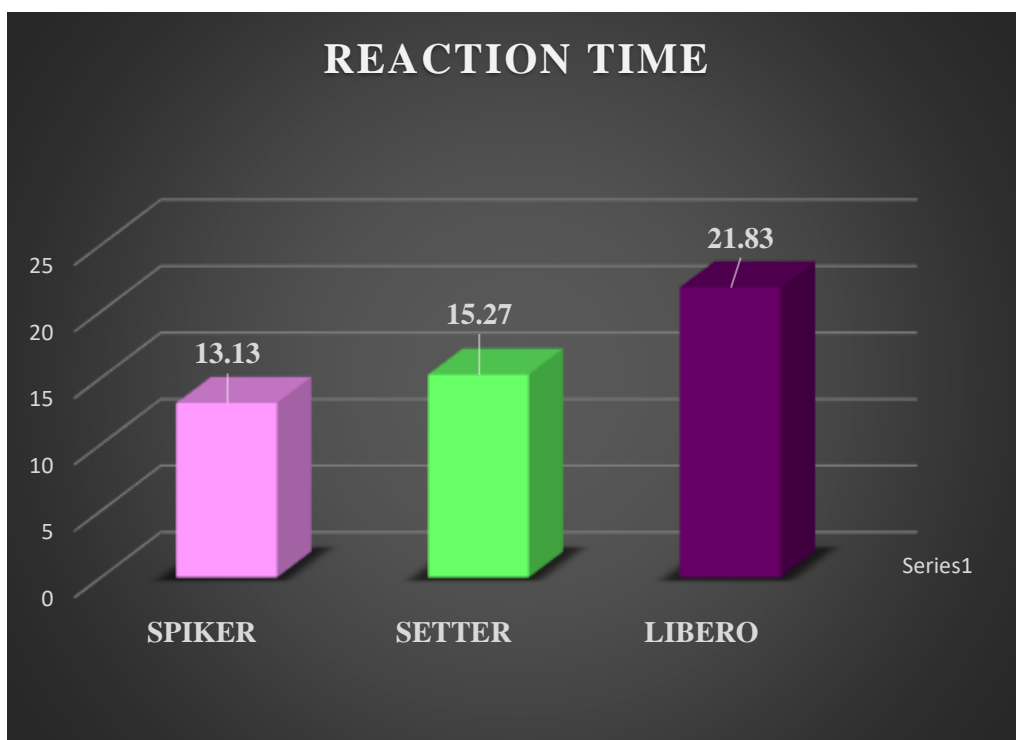
SPIKER	SETTER	LIBERO	MD	CI
13.13	15.27	-	2.14*	0.56
13.13	-	21.83	8.7*	
	15.27	21.83	6.56*	

Table IV (a) shows that the mean difference on Reaction time among spikers, setters and libero of volleyball players.

The mean difference between spiker and setter, spiker and libero and setter and libero were 2.14,8.7 and 6.56. Since the mean difference between spiker and setter, setter and libero and spiker and libero were greater than the CI value of 0.56, it was proved that there was no significant difference among the above groups.

FIGURE IV

The obtained mean values on Reaction time among the spiker, setter and libero in the volleyball players are resented through bar diagram for better understanding of the result in figure



DISCUSSION ON FINDINGS

- The result of the study shows that there was significant difference on balance among different positional players namely spikers, setter and Libero.
- The result of the study shows that there was significant difference on Hand eye coordination among different positional players namely spikers, setter and Libero
- The result of the study shows that there was significant difference on Reaction time among different positional players namely spikers, setter and Libero .
- The result of the study shows that there was significant difference on Agility among different positional players namely spikers, setter and Libero

CONCLUSION

Based on the results of the study, the following conclusions were drawn.

1. It was concluded that there was a significant change in balance among different positional players namely spikers, setters and libero.
2. It was concluded that there was a significant change in Hand eye coordination among different positional players namely spikers, setters and libero
3. It was concluded that there was a significant change in Reaction time among different positional players namely spikers, setters and libero
4. It was concluded that there was a significant change in Agility among different positional players namely spikers, setters and libero

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