EFFECT OF SAQ TRAINING SUPER CIRCUIT TRAINING AND COMBINED TRAINING ON SKILL PERFORMANCES VARIABLES AMONG VOLLEYBALL PLAYERS

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Abstract

The study was designed to find out the "Effect of SAQ training super circuit training and combined training on skill performances variables among volleyball players. For the study 60 subjects were randomly assigned into four equal groups as three experimental groups and one control group. To achieve the purpose of the study 60 subjects are chosen and they were divided into 4 groups of 15 each, out of which group-I (n = 15) underwent combined (SAQ and super circuit) training for three days (alternative days) per week, group - II (n = 15) underwent SAQ training for three days (alternative days) per week, group - III (n = 15) underwent super circuit training for three days (alternative days) per week for twelve weeks and group – IV (n = 15) acted as control. The criterion variables selected for the study were Skill performance variables - passing ability and spiking ability. The study was formulated as a random group design consisting of pre and post-tests. Pre-test was conducted for all the subjects on selected criterion variables. Post-test was conducted after the experimental treatment of twelve weeks and the scores were recorded. The normality of the data was found through mean, standard deviation and F ratio. The analysis of covariance (ANCOVA) was applied to find out the significant difference in each criterion variables among the groups. Whenever, the obtained 'F' ratio value for adjusted post-test means was found to be significant, the Scheffe's post hoc test was applied to determine the paired mean differences, if any.

Keywords: *Super Circuit, SAQ Training, Skill Variables, passing ability Serving Ability*

1.1 Introduction

Volleyball is an exciting and challenging sport that has developed into a premier interscholastic and professional spectator event. Volleyball is a game of constant action and requires continuous adaptations to changing situations by the team as whole as well as individual players. The game of volleyball, which requires power, strength, agility, speed and fitness, is played around the world. Volleyball is an explosive sport that incorporates all different types of movements in multiple planes of direction. A game of volleyball requires high proficiency in its various skills such as serving, volleying, setting, spiking and blocking etc. which should be learnt and mastered as to give an outstanding performance.

Speed, Agility and Quickness (SAQ) training has become a very popular method for training athletes. Several athletes, from a child to a professional player, can take advantage from it. Speed, agility and quickness training can cover the complete range of training strength, from low to high strength. All human being will come into a training program at a different level, thus training intensities must coincide with the individual's abilities. Speed, agility, and quickness training are some of the mainly significant and visible components of athletic achievement. Speed, agility, and quickness all engage learned motor skills. Although the magnitude of proficiency will vary with each individual, learning the efficient and effective execution of these skills can improve overall athletic ability **(Brown et al . 2000).** Speed, agility and quickness training has become a popular way to train athletes. Whether they are school children in any field or professionals in a training camp, they can take all benefit from speed, agility and quickness training. A super circuit training would be designed for sports persons looking to improve their performance in a particular sport.

1.2Methodology

To achieve the purpose of the study 60 subjects are chosen and they were divided into 4 groups of 15 each, out of which group-I (n = 15) underwent combined (SAQ and super circuit) training for three days (alternative days) per week, group - II (n = 15) underwent SAQ training for three days (alternative days) per week, group - III (n = 15) underwent super circuit training for three days (alternative days) per week for twelve weeks and group – IV (n = 15) acted as control. The criterion variables selected for the study were Skill performance variables - passing ability and spiking ability. The study was formulated as a random group design consisting of pre and post-tests. Pre-test was conducted for all the subjects on selected criterion

variables. Post-test was conducted after the experimental treatment of twelve weeks and the scores were recorded.

1.3 Training Programme

The selected participants were randomly assigned to one of three groups of fifteen (n=15) each, such as SAQ training, super circuit training, combined training and control groups. The group I (n=15) underwent SAQ training, group II (n=15) underwent super circuit training, group III (n=15) underwent combined training for a duration of twelve weeks with three days per week, in addition to the regular schedule and group IV (n=15) had acted as control group which did not undergo, any special training except their leisure time pursuit. Students who have participated in the school teams and are healthy guys will make up the participants in these experimental groups. The duration of the training session in all days was between 60 - 90 minutes approximately which include warming up and limbering down. All the subjects involved in this study were carefully monitored throughout the training programme and none of them reported any injuries. They were questioned about their health status throughout the training programme. However, muscle soreness appeared in the earlier period of the training program, and it was reduced in due course. The training programme was scheduled in the morning between 6.30 am and 8.00 am.

1.4 Statistical Technique

The normality of the data was found through mean, standard deviation and F ratio. The analysis of covariance (ANCOVA) was applied to find out the significant difference in each criterion variables among the groups. Whenever, the obtained 'F' ratio value for adjusted post-test means was found to be significant, the Scheffe's post hoc test was applied to determine the paired mean differences, if any.

1.5 Analysis and results

Passing ability

The mean values of passing ability of combined, SAQ, super circuit groups and control group at different stages of tests have been analysed and submitted in table –I.

TABLE - I

ANALYSIS OF COVARIANCE ON PASSING ABILITY OF COMBINED, SAQ, SUPER CIRCUIT TRAINING GROUPS AND CONTROL GROUP

** Significant at 0.05 level of significance (The table value required for significance at 0.05 level of significance with df 3 and 56 and 3 and 55 were 2.78 and 2.77 respectively).*
CTG - Combined Training Group STG -SAQ Training Group
SCTG - Super Circuit Training Group CG - Control Group

	CTG	STG	RTG	CG	SOV	SS	df	MS	'F'
Pre-test mean	44.12	43.92	44.02	43.96	**B**	3.68	3	1.87	0.98
S.D	4.51	4.49	4.48	4.50	**W**	60.23	56	1.086	
Post-test mean	50.13	48.01	47.13	43.98	**B**	33.43	3	16.78	8.641*
S.D	4.71	4.67	4.68	4.61	**W**	49.44	56	0.88	
Adj. Post- test mean	49.24	47.71	47.01	44.01	**B**	22.07	3	7.36	33.284*
					W	5.31	55	0.97	

Table- I shows that the pre-test mean scores of passing ability of combined training group is 44.12, SAQ training group is 43.92, super circuit training group is 44.02 and control group is 43.96. The post-test mean shows reduction over the pre test scores due to twelve weeks combined and isolated SAQ and super circuit training programme and the mean values recorded are 50.13, 48.01, 47.13 and 43.98 respectively. The obtained 'F' value on pre-test scores 0.98 is less than the required 'F' value of 2.78 to be significant at 0.05 level. This proves that there is no significant difference among the groups at initial stage and the randomized assignment of the subjects into four groups are successful. The post test scores analysis proves that there is significant difference among the groups, as the obtained 'F' value 8.641 is greater than the required 'F' value of 2.78. This proves that there is significant difference among the post-test means of the subjects. Taking into consideration of pre and post-test scores among the groups, adjusted mean scores are calculated and subjected to statistical treatment. The obtained 'F' value of 33.284 is greater than the required table 'F' value of 2.77. This proves that there is significant differences existed among the adjusted means due to twelve weeks of combined and isolated SAQ and super circuit training programme on passing ability.

Since the significant improvements are recorded, the results are subjected to post hoc analysis using Scheffe's confidence interval test. The results are presented in table - II.

TABLE-II

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON PASSING ABILITY

**Significant at 0.05 level.*

Adjusted post-test means				Mean Difference	Confidence Interval Value
Combined Training Group	SAQ Training Group	Super Circuit Training Group	Control Group		
49.24	47.71			1.53*	0.189
49.24		47.01		2.23*	
49.24			44.01	5.23*	
	47.71	47.01		0.7*	
	47.71		44.01	3.7*	
		47.01	44.01	3*	

As the confidence interval required to be significant at 0.05 level is 0.189 and the obtained values are greater than the required value except combined training and SAQ training group, it is observed that the significant difference is found to be existed. The ordered pre, post and adjusted means on passing ability are illustrated through bar diagram for better understanding of the results of this study in figure-I.

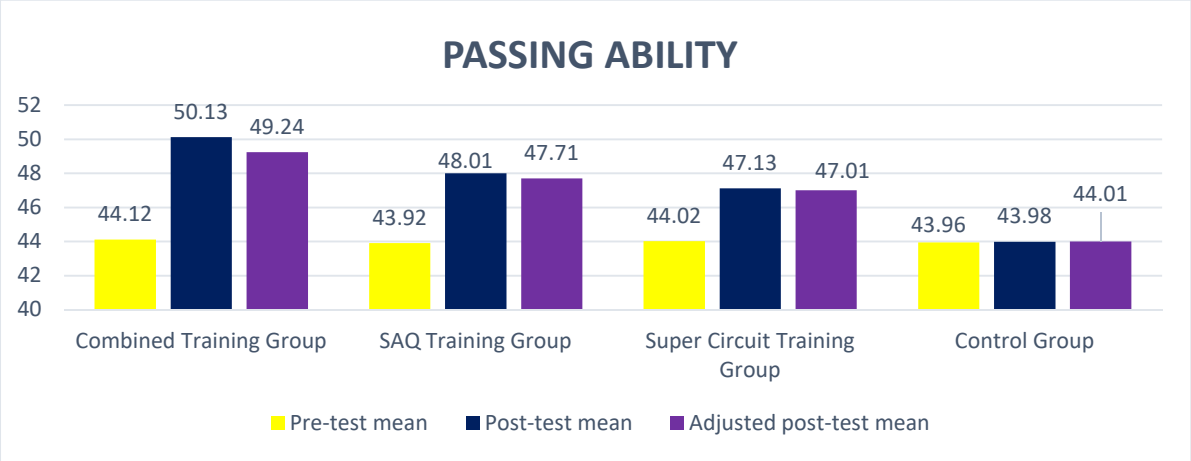

Figure - XI – Adjusted post-test mean values on passing ability of combined, SAQ, super circuit training groups and control group

Spiking ability

The mean values of spiking ability of combined, SAQ, super circuit groups and control group at different stages of tests have been analyzed and submitted in table – II.

TABLE - XXV

ANALYSIS OF COVARIANCE ON SPIKING ABILITY OF COMBINED, SAQ, SUPER CIRCUIT TRAINING GROUPS AND CONTROL GROUP

** Significant at 0.05 level of significance. (The table value required for significance at 0.05 level of significance with df 3 and 56 and 3 and 55 were 2.78 and 2.77 respectively).*

CTG - Combined Training Group *STG-SAQ Training Group*
SCTG - Super Circuit Training Group *CG-Control Group*

	CTG	STG	RTG	CG	SOV	SS	df	MS	'F'
Pre-test mean	29.30	29.50	29.40	29.70	**B**	44.26	3	22.13	
S.D	9.14	9.16	9.18	9.16	**W**	53.14	56	67.15	0.151
Post-test mean	37.35	35.25	34.75	29.95	**B**	49.58	3	24.93	
S.D	9.26	9.20	9.23	9.24	**W**	55.81	56	8.46	6.163*
Adj. Post- test mean	36.841	34.830	34.070	29.851	**B**	40.87	3	20.98	44.078*
					W	27.16	55	6.09	

Table- XXV shows that the pre-test mean scores of spiking ability of combined training group is 29.30, SAQ training group is 29.50, super circuit training group is 29.40 and control group is 29.70. The post-test mean shows reduction over the pre test scores due to twelve weeks combined and isolated SAQ and super circuit training programme and the mean values recorded are 37.35, 35.25, 34.75 and 29.95 respectively. The obtained 'F' value on pre-test scores 0.151 is less than the required 'F' value of 2.78 to be significant at 0.05 level. This proves that there is no significant difference among the groups at initial stage and the randomized assignment of the subjects into four groups are successful. The post test scores analysis proves that there is significant difference among the groups, as the obtained 'F' value 6.163 is greater than the required 'F' value of 2.78. This proves that there is significant difference among the post-test means of the subjects. Taking into consideration of pre and post-test scores among the groups, adjusted mean scores are calculated and subjected to statistical treatment. The obtained 'F' value of 44.079 is greater than the required table 'F' value of 2.77. This proves that there is significant differences existed among the adjusted means due to twelve weeks of combined and isolated SAQ and super circuit training programme on spiking ability.

Since the significant improvements are recorded, the results are subjected to post hoc analysis using Scheffe's confidence interval test. The results are presented in table - XXVI.

TABLE-III

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON SPIKING ABILITY

**Significant at 0.05 level.*

Adjusted post-test means				Mean Difference	Confidence Interval Value
Combined Training Group	SAQ Training Group	Super Circuit Training Group	Control Group		
36.841	34.830			2.011*	0.474
36.841		34.070		2.71*	
36.841			29.851	6.99*	
	34.830	34.070		0.76*	
	34.830		29.851	4.979*	
		34.070	29.851	4.219*	

As the confidence interval required to be significant at 0.05 level is 0.474 and the obtained values are greater than the required value except combined training and SAQ training group, it is observed that the significant difference is found to be existed. The ordered pre, post and adjusted means on spiking ability are illustrated through bar diagram for better understanding of the results of this study in figure-II.

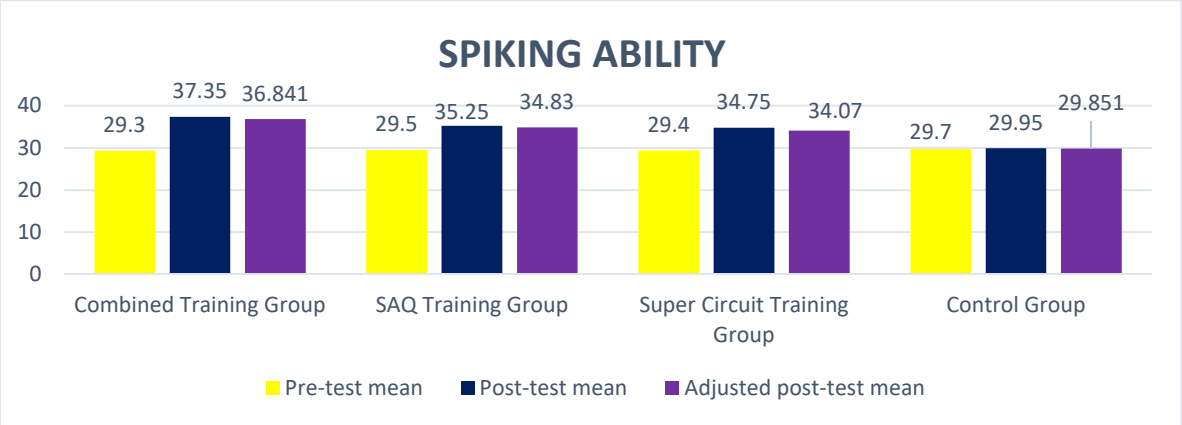

Figure - XII – Adjusted post-test mean values on spiking ability of combined, SAQ, super circuit training groups and control group

1.6 Discussion on findings

The study was designed to find out the effect of combined and isolated effect of SAQ training and super circuit training on selected skill performance variables such as passing ability and spiking ability among volleyball players. The present study shows that there was a critical increase in passing ability and spiking ability for combined, SAQ and super circuit training groups when compared with control groups and they were justified as by the following

previous studies. Abdulamir et al., (2019) Volleyball is one of the sports activities that need to apply the modern scientific methods through the development of the sport training science, which aims to improve the player's physical and functional abilities through careful planning of training courses for the development of its efficiency in the performance of all requirements for volleyball. Abbas and Alin (2018) documented that the Speed, Agility and Quickness (SAQ) training has befallen an extremely accepted scheme for training athletes.

1.7 Conclusion

From the results arrived through statistical view it was concluded that all the three experimental groups had a significant increase in the skill performances variables namely passing ability and spiking ability for the volleyball players among the three groups combined group showed high influence than the other training groups compare to the control group.

1.8 References

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