Isolated and Combined Effect of SAQ Training and Super Circuit Training on Elastic Power and Anaerobic Power among Volleyball Players

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ABSTRACT

The intention of this investigation was to investigate the isolated and combined effect of SAQ training and super circuit training on elastic power and anaerobic power among volleyball players. To achieve this purpose of the study sixty men volleyball players (N=60) selected from in and around Bangalore, India and their age ranged between 17-25 years were selected as subjects. The selected subjects were divided into four equal groups, in which, group – I (n = 15) underwent SAQ training, group – II (n = 15) underwent super circuit training, group – III (n = 15) underwent combined training and group – IV (n = 15) acted as control which do not participate in any special training. The training programme was carried out for this study is three days per week for twelve weeks. The assessed data of the four group's was analyzed through paired 't' test. Additionally, magnitude (%) of changes was also calculated. To abolish the early mean disparity, the three group's data (Pre & Post) were calculated through ANCOVA statistics.

Keywords: SAQ training, Super circuit training, Volleyball, Elastic power and Anaerobic power

INTRODUCTION

Volleyball is one of the leading sports and played by millions of peoples all around the world. Its popularity can be judged in terms of international volleyball federation membership. Now days, this game are more highly competitive than the usual recreational game. In advance level competitions, the well-executed spike have been timed at speeds ranging from 60 to 90 miles an hour which is much faster than the movement of the ball in most other game.

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. This method has been implemented for several years, but still today is not used by some athletes mainly due to the lack of information about the type of exercises to be used. This type of training can be used to increase the speed and the ability to develop maximum force during actions at high speeds, since it manipulates and takes better benefit of the stretch contraction cycle of the muscle, thus reducing the gap that exists between training conventional resistance and functional training with specific arrangements.

A super circuit training would be designed for sports persons looking to improve their performance in a particular sport. A running circuit might include leg and core strengthening exercisers interspersed among half-mile race pace runs on the treadmill, kickboxing circuits alternating core, shoulder and gluteus strength-moves with punching and kicking segments, and football circuits alternating agility drills with weight training.

Intensity has been called the most important of the prescriptive component. It is also the most difficult because of the necessity of bring it under control that is intensity is expressed in terms that they are stable such as heart rate, so attention must be made to condition that create stability and the method that monitor changes.

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Statement of the Problem

The intention of this investigation was to investigate the isolated and combined effect of SAQ training and super circuit training on elastic power and anaerobic power among volleyball players.

METHODOLOGY

To achieve this purpose of the study sixty men volleyball players (N=60) selected from in and around Bangalore, India and their age ranged between 17-25 years will be selected as subjects. The selected subjects were divided into four equal groups, in which, group – I (n = 15) underwent SAQ training, group – II (n = 15) underwent super circuit training, group – III (n = 15) underwent combined training and group – IV (n = 15) acted as control which do not participate in any special training. The training programme was carried out for this study is three days per week for twelve weeks. The selected dependent variable elastic power was measured by 30m sprint test and anaerobic power was assessed by running based anaerobic test before as well as after training.

Statistical Technique

To decide in the event that there were any measurably critical changes between the pre- and post-test, the information on flexible control and anaerobic control procured from the test and control bunches was factually examined utilizing the combined 't' test. Moreover, rate changes were computed to decide changes in a subset of subordinate factors as a result of the test treatment.

Analysis of covariance (ANCOVA) was utilized to measurably dissect the data assembled from the four bunches both sometime recently and after the try. Due to the association of four bunches, the Scheffe's test was utilized as a post hoc investigation on the off chance that the obtained "F" proportion esteem for balanced post-test implies was decided to be critical. The level of certainty for centrality was set at 0.05 in each illustration.

The volleyball player's elastic power and anaerobic power was analyzed statistically and presented in table- I.

Table I: Paired 't' Test results and % of changes on elastic power and anaerobic power of chosen four groups

Group	Test	N	Mean	SD	DM	't' - ratio	%
Elastic power							
Combined Training	**Pre**	15	3.83	0.19	0.37	5.56*	10.69
	Post	15	3.46	0.21			
SAQ Training	**Pre**	15	3.84	0.18	0.28	4.89*	7.86
	Post	15	3.56	0.22			
Super circuit Training	**Pre**	15	3.83	0.19	0.48	5.78*	14.32
	Post	15	3.35	0.21			
Control	**Pre**	15	3.84	0.20	0.00	0.001	0.00
	Post	15	3.84	0.23			
Anaerobic power							
Combined Training	**Pre**	15	228.68	5.48	28.48	7.85*	11.07
	Post	15	257.16	4.84			
SAQ Training	**Pre**	15	229.26	5.29	14.27	5.89*	5.86
	Post	15	243.53	4.85			
Super circuit Training	**Pre**	15	229.01	5.61	8.45	2.88*	3.55
	Post	15	237.46	4.48			
Control	**Pre**	15	229.11	5.49	0.55	0.23	0.24
	Post	15	229.66	4.58			

Table value for df 14 is 2.15(*significant)

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Since the "t" values for elastic power of combined training (5.56), SAQ training (4.89), and super circuit training (5.78) groups were more than the table value (df 14 = 2.15), the pre and post values of the three training groups varied significantly. Following a 12-week course of therapy, the elastic power of the combination training (10.69%), SAQ training (7.86%), and super circuit training (14.32%) groups increased significantly.Since the "t" values on the anaerobic power of the combined training (7.85), SAQ training (59), and super circuit training (2.88) groups were more than the table value (df 14 = 2.15), the pre and post values of the three training groups varied significantly. The anaerobic power of the combined training (11.07%), SAQ training (5.86%), and super circuit training (3.55%) groups improved significantly after 12 weeks of therapy.

By using ANCOVA statistics, the cardio elastic powerand anaerobic power of four groups were analyzed and exhibited in table–II.

Table II: ANCOVA Statistics output on elastic power and anaerobic power of chosen four group's

	CTG	STG	SCTG	CG	SoV	SS	df	MS	'F' ratio
Elastic power									
Adjusted Mean	3.592	3.632	3.415	3.841	B	66.82	3	38.41	48.453*
					W	8.272	55	0.09	
Anaerobic power									
Adjusted Mean	256.012	242.853	236.571	229.331	B	51.03	3	25.02	39.403*
					W	23.42	55	0.93	

(Table value for df 3 & 55 is 2.77) *Significant (.05 level)

CTG - Combined Training Group

STG -SAQ Training Group

SCTG - Super Circuit Training Group

CG -Control Group

The ANCOVA result proved that the adjusted final means on (CTG=3.592, STG=3.632, SCTG=3.415 & CG=3.841) on elastic power of all four chosen groups significantly differs, as the derived 'F' value (48.453) is better than the required value (df 3 & 55 is 2.77).

The ANCOVA result proved that the adjusted final means on (CTG=256.012, STG=242.853, SCTG=236.571 & CG=229.331) on anaerobic power of all four chosen groups significantly differs, as the derived 'F' value (39.403) is better than the required value (df 3 & 55 is 2.77).

As the adjusted final means is significant, the follow up test was applied as put on view in table-III.

Table – III: Scheffe's test outcome on elastic power and anaerobic power of four groups

Combined Training Group	SAQ Training Group	Super circuit Training Group	Control Group	MD	CI
Elastic power					
3.592	3.632			0.04	0.057
3.592		3.415		0.177*	
3.592			3.841	0.248*	
	3.632	3.415		0.217*	
	3.632		3.841	0.209*	
		3.415	3.841	0.426*	

Anaerobic power					
256.012	242.853			13.159*	0.185
256.012		236.571		19.441*	
256.012			229.331	26.681*	
	242.853	236.571		6.282*	
	242.853		229.331	13.522*	
		236.571	229.331	7.24*	

*Significant (.05)

As the confidence interval required to be significant at 0.05 level is 0.057 on elastic power and 0.185 on anaerobic power and the obtained values are greater than the required value except combined training and SAQ training groups on elastic power, it is observed that the significant difference is found to be existed. Chosen four group's elastic power and anaerobic power scores are illustrated in diagram-I.

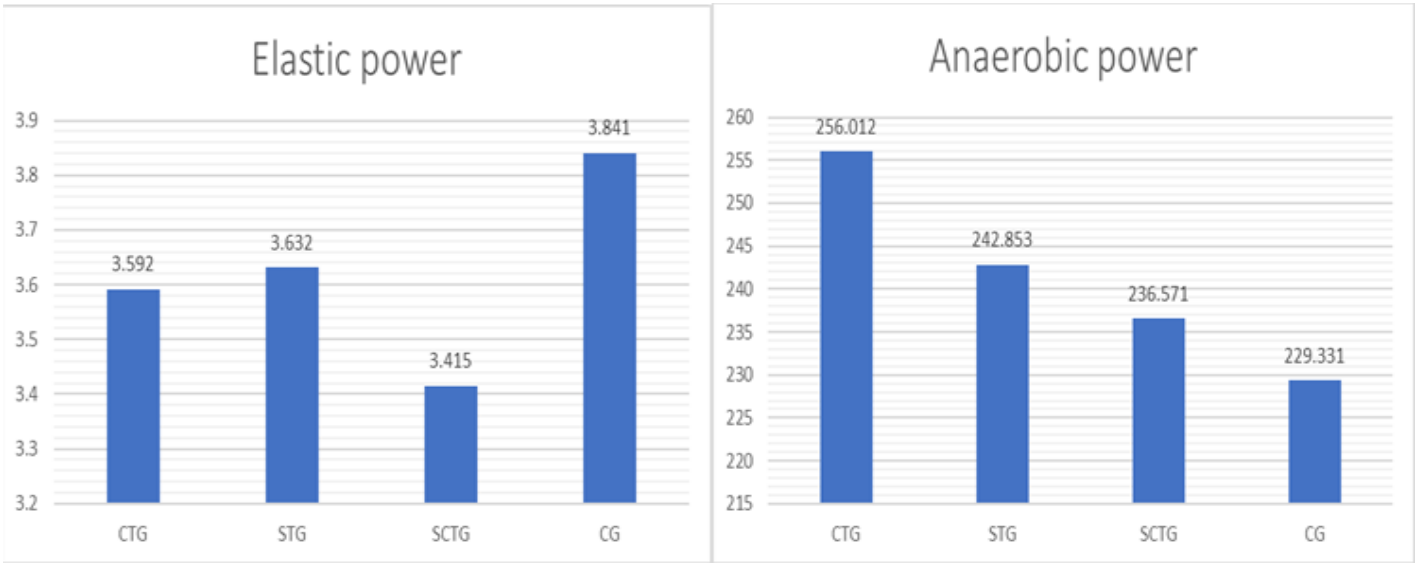

Figure – I: Adjusted post-test mean values on elastic power and anaerobic power of chosen groups

CONCLUSION

The conclusion of the study indicated that there was enormous improvement in elastic power and anaerobic power for the three training groups in contrast with the control group. In addition, the results of the tests shows that there was significant difference between experimental groups and control group on elastic power and anaerobic power. Research suggests that appropriate combined and isolated SAQ and super circuit training will improve elastic power and anaerobic power.

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