

Effect of SAQ Training and Circuit Resistance Training on Selected Bio Motor and Skill Performance Variables of Football Players

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KEYWORDS

SAQ Training,
Circuit Resistance
Training, Explosive
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Respiratory
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Muscular
Endurance, Passing,
Shooting.

ABSTRACT

This study was designed to investigate the effect of saq training and circuit resistance training on selected bio motor and skill performance variables of football players. To achieve the purpose of the study (N=60) sixty men football players were selected from affiliated colleges of Periyar University, Salem, Tamilnadu, India as subjects. The age of the subjects ranged from 18 to 25 years. The selected subjects were divided into three equal groups (N=20). Group I underwent SAQ training. Group II underwent circuit resistance training. Group III acted as control group who did not undergo any specialized training program other than their daily routine. The bio motor variables such as explosive power, cardio respiratory endurance and muscular endurance; and the performance variable such as passing and shooting were selected as dependent variables and they bio motor variable were assessed by vertical jump, cooper 12 minutes run and walk and sit ups test ; and performance variable assessed by Mor – Christian Football Ability Test . The subjects were concerned with their particular training programmes for three sessions per week for twelve weeks, alternatively three days per week. The collected data from three groups prior to and immediately after the training programme on selected criterion variables were statistically analyzed with analysis of covariance (ANCOVA). The result of the study reveals that the SAQ training and circuit resistance training groups achieved significant improvement on selected bio motor variables such as explosive power, cardio respiratory endurance and muscular endurance and the performance variable such as passing and shooting of college men football players.

1. INTRODUCTION

Physical training entails exposing the organism to a training load or work stress of sufficient intensity, duration and frequency to produce a noticeable or measurable training effect, that is, to improve the functions for which one is training. To achieve such a training effect, it is necessary to expose the organism to an overload (i.e., a stress) that is larger than the one regularly encountered during everyday life. It is a common conception in training environments that “to build up, one must first break down.” Admittedly, exposure to the training stress is associated with some catabolic processes, such as break down of glycogen, followed by an overshoot or anabolic response that causes an increased deposition of the molecules that were mobilized or broken down during training. As to the effect on other cellular components, this is the best an imprecise statement.

Today, the molecular mechanisms involved in training responses have started to emerge, but the pictures are still far from complete. As a basis for studying the training process, however, one can safely state that all cells and tissues of the body, regardless of the presence or absence the training, are subject to some kind of continuous exchange and remodeling. On the cellular level, molecules have a restricted lifetime and are constantly replaced by new molecules of the same kind or by another is form of the same molecules if so demanded by current activity level **(Astrand, 2003).**

Sports Training

Sports training is a process of sports perfection directed by scientific and pedagogic principles and aims at leading a sportsperson to high and top level sports performance in a game or a sport or an event by means of planned and systematic improvement of performance capacity and readiness of performance **(Uppal, et.al., 2004).**

The sports training aims at achieving high performance in sports competition. In order to achieve high performance, sports training is done in a planned and systematic manner. A system most suitable for achieving high performance has to be first made on the basis of which sports training is planned. It is based on scientific facts and principles. It is always assessed, planned, organised and implemented by a coach or a sports teacher or some other person.

Resistance Training

Resistance training is an anaerobic form of exercises. This training program can be used to enhance the ability of the body to perform a very high force and power out puts for a very short period of time to improve the ability of the body by doing repeated bouts of maximal activity. Resistance training is for everyone. It is an important tool for achieving a complete healthy life. Resistance training is not just for people who are athletes, want to build or tone muscle, or are using resistance training to achieve a better looking body. Resistance training has two different, sometimes confused meanings – a more broad meaning that refers to any training that uses a resistance to the force of muscular contraction (better termed strength training), and elastic or hydraulic resistance which refers to a specific type of strength training that uses elastic or hydraulic resistance, which 12 refers to a specific type of strength training that uses elastic or hydraulic tension to provide this resistance **(Burgeson, 2001).**

Tang et. al., (2008) defines resistance training is a conditioning that involves the progressive use of a wide range of resistive loads and a variety of training modalities (eg. free weights, weight machines, elastic cords and body weight) designed to enhance fitness and sports performance and it is an anaerobic form of exercises. It enhances the ability of the body to perform at a very high force or power outputs for a very short period of time.

Physical Fitness

Physical fitness is one of the main mottoes of physical education programmer. Physical fitness is defined as the ability of the body to adopt and recovery from strenuous exercise. The sports performance depends largely on physical fitness i.e., speed, strength, power, agility, flexibility and co-coordinative abilities. The process of improvement of a motor ability is also called conditioning. Physical fitness is a matter of fundamental importance to the well being of the every individual in the fields of physical education (**Vijaya, 2018**).

Football

Football is the most popular ball game in the world in both number of participants and spectators. Simple in its principal rules and essential equipment, the sport can be played almost anywhere, from official football playing field to gymnasiums, streets, school playgrounds, parks or beaches.

The game of football is full of challenges and counter-challenges between the contesting teams. Many unforeseen situations evolve during the game. Performance of a team depends on the talents of the individual players and the understanding between the teammates and above all the attitude of players towards the interest of the team (**Saha, Sukumar, 2008**).

2. Objectives

This study was designed to investigate the effect of SAQ training and circuit resistance training on selected bio motor and skill performance variable of football players.

3. Methodology

To achieve the purpose of the study (N=60) sixty men football players were selected from Affiliated Colleges of Periyar University, Salem, Tamilnadu, India as subjects. The age of the subjects ranged from 18 to 25 years. The selected subjects were divided into three equal groups (N=20). Group I underwent saq training. Group II underwent circuit resistance training. Group III acted as control group who did not undergo any specialized training program other than their daily routine. The bio motor variables such as explosive power, Cardio Respiratory Endurance and muscular endurance; and the performance variable such as passing and shooting were selected as dependent variables. Bio motor variable were assessed by vertical jump, cooper 12 minutes run and walk and sit ups test ; and performance variable assessed by mor- christian football ability test respectively. The subjects were concerned with their particular training programmes for twelve weeks, alternatively three days per week. The collected data from three groups prior to and immediately after the training programme on selected criterion variables

were statistically analyzed with analysis of covariance (ANCOVA). The level of confidence was fixed at 0.05 for all the cases to test the hypothesis.

4. Results

Table 1: Computation of Analysis of Covariance of Means of SAQ Training and Circuit Resistance Training and Control Group on Explosive Power, Cardio Respiratory Endurance and Muscular Endurance (In Counts and Meters)

Variables	Test	SAQ Training Group (STG)	Circuit Resistance Training Group (CRTG)	Control Group (CG)	Source of Variance	Sum of Square	Df	Mean Squares	'F' Ratio
Explosive Power	Pre Test	45.20	45.25	45.25	Between	0.31	3.00	0.10	0.01
					Within	57.39	56.00	1.02	
	Post Test	47.67	46.43	44.22	Between	279.49	3.00	93.16	69.88*
					Within	74.66	56.00	1.33	
	Adjusted Post Test	47.65	46.39	44.28	Between	275.49	3.00	91.83	89.69*
					Within	56.31	55.00	1.02	
Cardio Respiratory Endurance	Pre Test	2102.67	2107.87	2107.87	Between	306.45	3.00	102.15	0.01
					Within	632319.73	56.00	1129.42	
	Post Test	2329.67	2327.87	2057.60	Between	836631.80	3.00	278877.27	27.50*
					Within	567847.60	56.00	10140.14	
	Adjusted Post Test	2330.56	2325.89	2058.82	Between	826718.50	3.00	275572.83	40.35*
					Within	375601.13	55.00	6829.11	
Muscular Endurance	Pre Test	35.40	34.20	34.65	Between	0.42	3.00	0.14	0.06
					Within	124.26	56.00	2.22	
	Post Test	41.90	38.85	34.90	Between	80.05	3.00	26.68	16.85*
					Within	88.66	56.00	1.58	
	Adjusted Post Test	41.55	39.15	34.95	Between	77.09	3.00	25.70	31.91*
					Within	44.29	55.00	0.81	

*Table value required for significant at 0.05 (Table with df 3 & 56 and 3 & 55 is 2.776 and 2.78 respectively).

The pre, post-test and adjusted post-test mean values of Explosive Power on Saq Training Group (STG), Circuit Resistance Training Group (CRTG) and Control Group (CG) were 45.20, 45.25, 45.25; 47.67, 46.43, 44.22; and 47.65, 46.39, 44.28 respectively.

The pre, post-test and adjusted post-test mean values of Cardio Respiratory Endurance on Saq Training Group (STG), Circuit Resistance Training Group (CRTG) and Control Group (CG) were 2102.67, 2107.87, 2107.87; 2329.67, 2327.87, 2057.60; and 2330.56, 2325.89, 2058.82 respectively.

The pre, post-test and adjusted post-test mean values of Muscular Endurance on Saq Training Group (STG), Circuit Resistance Training Group (CRTG) and Control Group (CG) were 35.40, 34.20, 34.65; 41.90, 38.85, 34.90; and 41.55, 39.15, 34.95 respectively.

The F value of adjusted post-test on explosive power, cardio respiratory endurance and muscular endurance were 89.69, 40.35; and 31.91 respectively. The obtained F values of adjusted post-test were greater than the table value of 2.78 Hence it was proved that there were significant improvements on leg explosive power, cardio respiratory endurance and muscular endurance of college men football players.

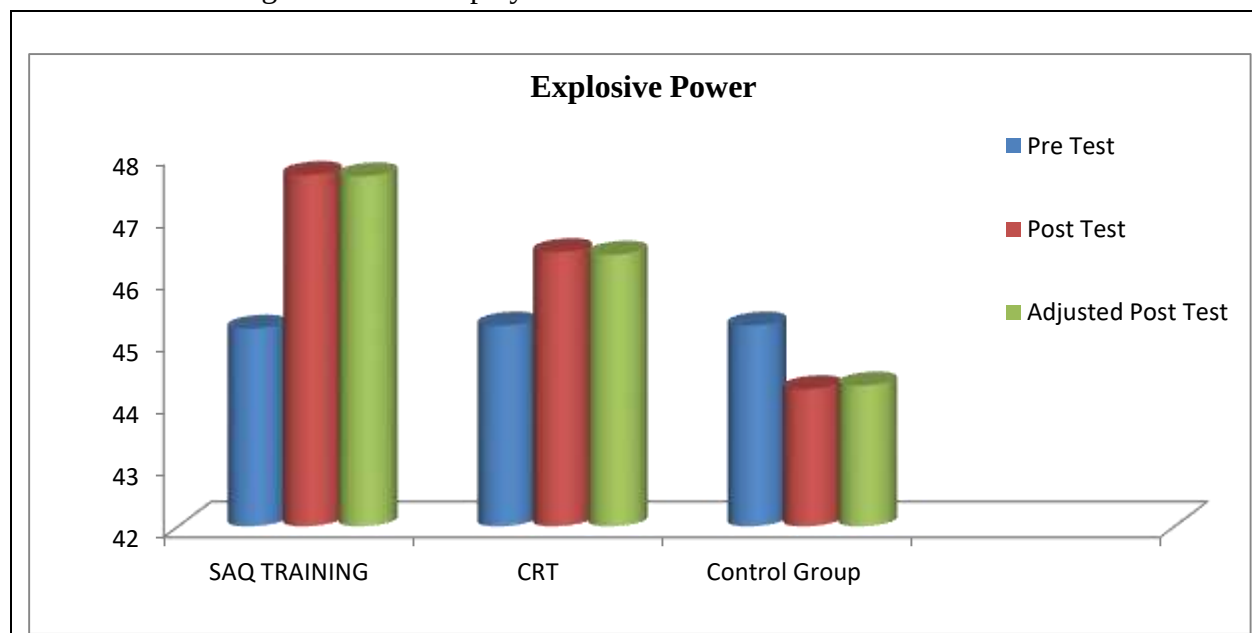


Figure 1: Pre, Post and Adjusted Post Test Means of SAQ Training and Circuit Resistance Training and Control Group on Explosive Power

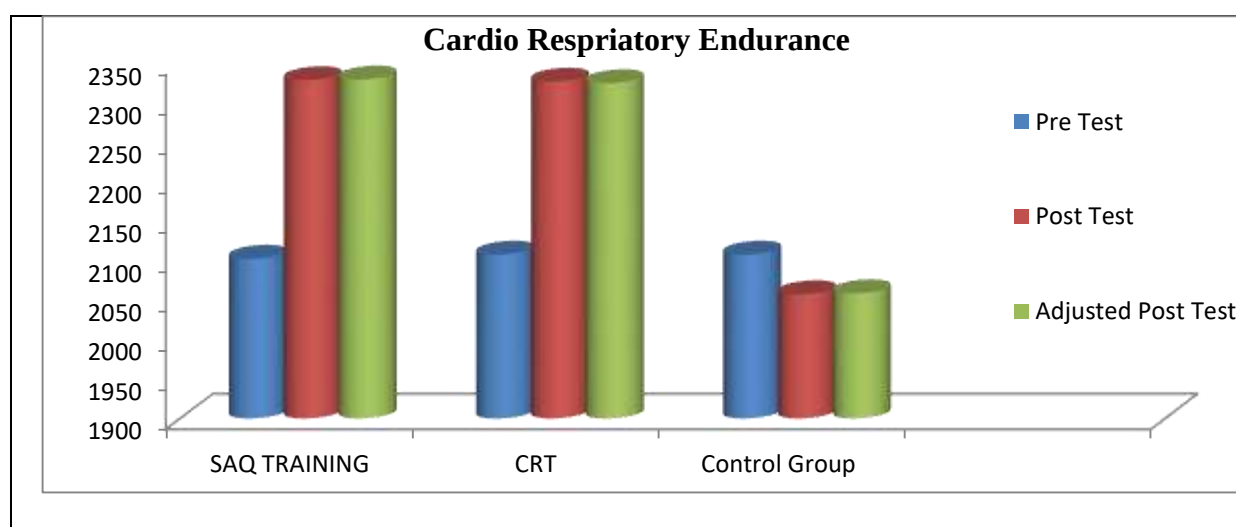


Figure 2: Pre, Post and Adjusted Post Test Means of SAQ Training and Circuit Resistance Training and Control Group on Cardio Respiratory Endurance

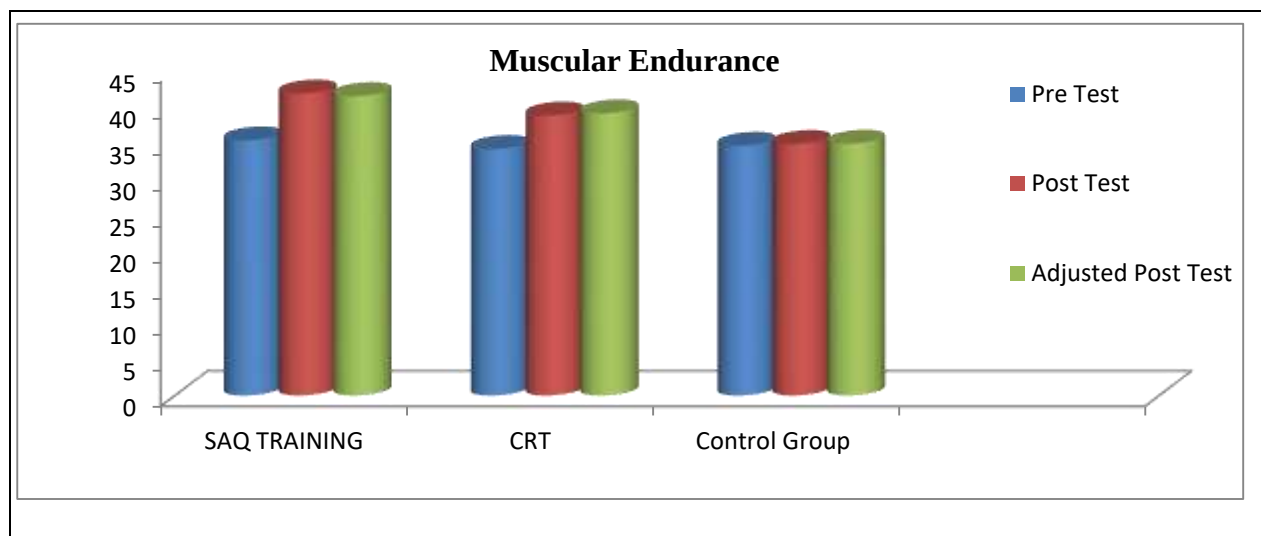


Figure 3: Pre, Post and Adjusted Post Test Means of SAQ Training and Circuit Resistance Training and Control Group on Muscular Endurance

Table 2: Computation of Analysis of Covariance of Means of SAQ Training and Circuit Resistance Training and Control Group on Passing and Shooting (In Counts and Meters)

Variables	Test	SAQ Training Group (STG)	Circuit Resistance Training Group (CRTG)	Control Group (CG)	Source of Variance	Sum of Square	Df	Mean Squares	'F' Ratio
Passing	Pre Test	6.60	6.73	6.73	Between	3.00	3.00	1.00	0.85
					Within	66.00	56.00	1.18	
	Post Test	8.87	8.33	5.80	Between	91.78	3.00	30.59	31.26*
					Within	54.80	56.00	0.98	
	Adjusted Post Test	8.82	8.21	5.99	Between	74.80	3.00	24.93	36.38*
					Within	37.69	55.00	37.69	
Shooting	Pre Test	52.07	51.87	51.87	Between	7.92	3.00	2.64	0.03
					Within	4329.33	56.00	77.31	
	Post Test	58.73	58.53	48.80	Between	1122.18	3.00	374.06	4.69*
					Within	4462.00	56.00	79.68	
	Adjusted Post Test	58.53	58.46	49.19	Between	1007.34	3.00	335.78	6.71*
					Within	2752.09	55.00	50.04	

*Table value required for significant at 0.05 (Table with df 3 & 56 and 3 & 55 is 2.776 and 2.78 respectively).

The pre, post-test and adjusted post-test mean values of Passing on Saq Training Group (STG), Circuit Resistance Training Group (CRTG) and Control Group (CG) were 6.60, 8.87, 8.82; 6.73, 8.33, 8.21; and 6.27, 5.80, 5.99 respectively.

The pre, post-test and adjusted post-test mean values of Shooting on Saq Training Group (STG), Circuit Resistance Training Group (CRTG) and Control Group (CG) were 52.07, 58.73, 58.53; 51.87, 58.83, 58.46; and 51.87, 48.80, 49.19 respectively.

The F value of adjusted post-test on passing and shooting were 36.38 and 6.71 respectively. The obtained F values of adjusted post-test were greater than the table value of 2.78. Hence it was proved that there were significant improvements on passing and shooting of college men football players.

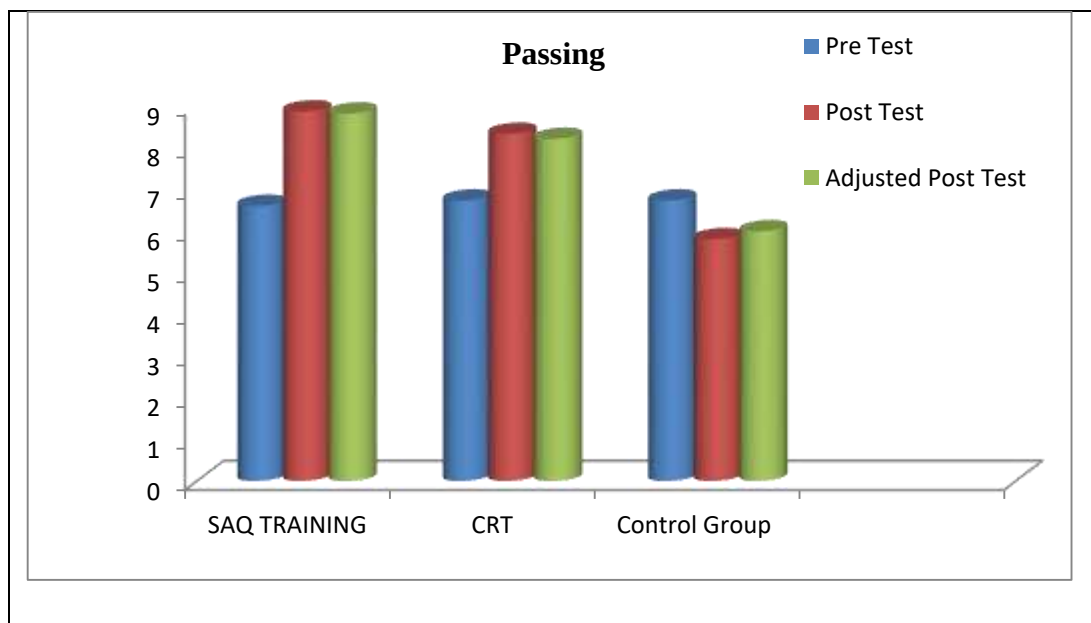


Figure 4: Pre, Post and Adjusted Post Test Means of SAQ Training and Circuit Resistance Training and Control Group on Passing

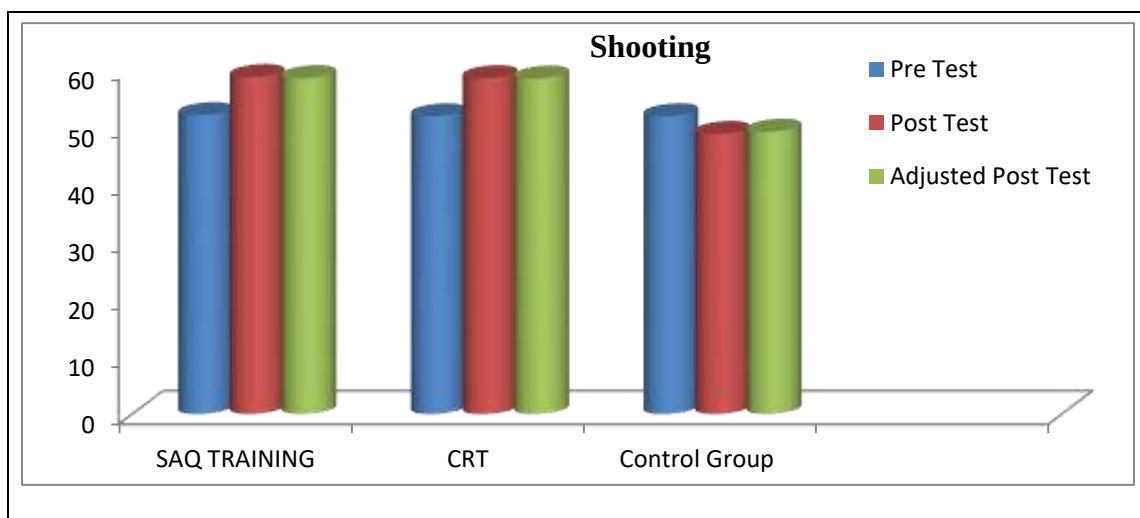


Figure 5: Pre, Post and Adjusted Post Test Means of SAQ Training and Circuit Resistance Training and Control Group on Shooting

5. Discussion of Findings

The result of the study indicates that the experimental group namely as SAQ training and circuit resistance training had significantly improved in the selected dependent variables namely explosive power, cardio respiratory endurance, muscular endurance, passing and shooting. It is also found that the improvement caused by SAQ training and circuit resistance training. The results of the studies are in statement with the studies of **(Raghavendra, et.al., (2016) and Kubendren, (2014).**

6. Conclusions

Based on the findings and within the limitation of the study it is noticed that practice of SAQ training and circuit resistance training helped to improve performance of footballers. Due to the influence of six week's SAQ and circuit resistance training influence the bio motor and performance variables such as explosive power, cardio respiratory endurance muscular endurance, passing and shooting of football players.

It was concluded that college level player should practice both SAQ training and circuit resistance training for positive development of playing.

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