

Effect of Varied Methods of Resistance Training on Selected Physical Fitness Components of Inter Collegiate Male Volley Ball Players

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Abstract: *The purpose of the study was to find out the effect of varied methods of resistance training on selected physical fitness components of inter collegiate male volleyball players. To achieve the purpose of the present study, forty five male volleyball players were selected as subjects from Bharathiar University affiliated college, Coimbatore, during the academic year 2012-2013. The subjects were selected on a random basis and were divided into three equal groups. Such as, two experimental group and one control group. Each group consists of 15 subjects. Group – I underwent Resistance with Circuit Training (RCT), Group – II underwent Resistance without Circuit Training (RWCT) and Group – III acted as control group (CG), they didn't take part in any specific activities. The ages of subjects were ranged from 18-28 years. Initial reading has been taken for both experimental and control groups and the readings have been carefully recorded. Whereas the experimental group was treated resistance with circuit and resistance without circuit training after six weeks of treatment, the post test was conducted for both experimental and control groups and the final readings have been recorded carefully. The collected data were analyzed statistically by using Analysis of covariance (ANCOVA) was used to determine the difference, if any among the adjusted post test means on selected dependent variables separately. In all the cases, 0.05 level of confidence was fixed to test the level of significance. The results of this showed that experimental groups showed better performance on selected physical fitness components of inter collegiate male cricket players.*

Keywords: resistance, circuit training and physical fitness components

1. Introduction

Resistance training is a 'training designed to increase the body's strength, power, and muscular endurance through resistance exercise the most common form which is weight training'. In other words, when we do a resistance training session, we are trying to get stronger by conditioning our muscles to lift either heavier weights or a certain weight for a longer period of time. Resistance circuit training is a great type of training routine that offers a number of benefits, especially for those who are on a have a limited time to work out. Circuit training will allow you to get the benefits from strength training while keeping your heart rate up and thus providing a nice aerobic workout as well. Think of resistance circuit training as being an anaerobic and resistance training workout fused into one. Pollock et.al. (1998), A resistance training program must consider the expressions of individual differences in adaptations. Faigenbaum (2007), Regular participation in a resistance training program may also offer observable health value to boys and girls who are not involved in sports programs. In addition to enhancing musculoskeletal health, regular resistance training provides an opportunity for participants to learn about their bodies and feel good about participating in strength-building activities that are engaging, progressive and fun. Resistance training is particularly beneficial for improving the function of most cardiac, frail, and elderly patients, who benefit substantially from both upper- and lower-body exercise. Resistance circuit training is the practice of doing exercises with resistance and moving simultaneously from one to the next with no real break in between exercises. So for example let's suppose that your circuit was composed of 5 different exercises (shoulder press, bicep curls, pushups, jump squats, and dips.) In this routine, you would do a set of shoulder press, and then move immediately to bicep curls, and then immediately to push

ups, and then immediately to jump squats, and then onto dips. These exercises would be done in rapid fire fashion with no rest, moving from one to the next. When you finish all 5 exercises, you would then rest for a minute or two then complete the circuit again.

2. Methodology

To achieve the purpose of the present study, forty five male volleyball players were selected as subjects from Bharathiar University affiliated college, Coimbatore, during the academic year 2012-2013. The subjects were selected on a random basis and were divided into three equal groups such as two experimental group and one control group. Each group consists of 15 subjects. Group – I underwent Resistance with Circuit Training (RCT), Group–II underwent Resistance without Circuit Training (RWCT) and Group – III acted as control group (CG), and they didn't take part in any specific activities. The ages of subjects were ranged from 18-28 years. Initial reading has been taken for both experimental and control groups and the readings have been carefully recorded. Whereas the experimental group was treated resistance with circuit and resistance without circuit training after six weeks of treatment, the post test was conducted for both experimental and control groups and the final readings have been recorded carefully. The collected data were analyzed statistically by using Analysis of covariance (ANCOVA) was used to determine the difference, if any among the adjusted post test means on selected dependent variables separately. In all the cases, 0.05 level of confidence was fixed to test the level of significance.

3. Training Programme

After the initial measurements the specially designed training programme was given to the subjects of the two groups namely medicine ball& resistance training group the control group do not undergo any special training, but they practiced their traditional training regularly. The resistance training with circuit training group performed 10 drills namely. Back extension, squats, bench press pull down, military press, upright row, triceps pull down, leg extension, biceps curl, leg curl this resistance training with circuit training group started with one set of eight repetition in the first two week and progressed to two sets of ten repetition in the second two week and one set of twelve repetition. 60sec rest was given in between the sets. As the intensity start with 65% for first two weeks, 5% of intensity was increased for every two weeks.

The resistance training group performed ten drills such as Shoulder press Bench press, Lat pull down, Military press, Leg press, Half squat, Leg Curl, Upright rowing, Abdominal crunches this resistance training group started with 55% of 1RM of intensity for the first two week and progressed to 60% of 1RM in the second two week and to 65% of 1RM at the last two week. the drills was done for 10 repetition for three sets for the entire 6week. 60sec rest was given in between the sets. Before starting their training they last undergo warm up and training was done for 3day a week with 2 day of rest. On the after alternate day they practiced their traditional training.

4. Results and Discussion

Table 1: Analysis of Co-Variance on selected physical fitness components of RCT, RWCT and CG

Variables	F-value		
	Pre-test	Post-test	Adjusted Mean
Speed	0.40	15.87*	18.99*
Flexibility	0.65	31.91*	47.47*
Muscular Power	0.50	16.94*	44.50*
Muscular strength and endurance	0.47	3.41*	45.32*
Cardio-respiratory endurance	0.64	32.61*	50.70*

Table 2: Scheffe’s test for the difference between the adjusted post test means on selected physical fitness components of RCT, RWCT and CG

Variables	RCT	RWCT	CG	Mean diff	C.V
Speed	6.41	6.738	-----	0.33*	0.24
	6.41	-----	7.02	0.61*	
	-----	6.73	7.02	0.28*	
Flexibility	2.05	1.96	-----	0.09*	0.09
	2.05	-----	1.81	0.24*	
	-----	1.96	1.81	0.15*	
Muscular power	23.50	21.97	-----	1.53*	1.09
	23.50	-----	19.40	4.10*	
	-----	21.97	19.40	2.57*	
Muscular strength & endurance	41.16	38.91	-----	2.25*	1.48
	41.16	-----	35.58	5.58*	
	-----	38.91	35.58	3.34*	
Cardio-respiratory endurance	2399.54	2515.83	-----	116.28*	102.21
	2399.54	-----	2111.30	288.25*	
	-----	2515.83	2111.30	404.53*	

5. Discussion on Findings

The results of the study indicate that the experimental group namely resistance with circuit training, resistance without circuit training had significantly improved the selected criterion variables namely speed, flexibility, muscular power, muscular strength and endurance and cardio-respiratory endurance when compared to the control group after the competition of six weeks training programme. The study observed that resistance with circuit training had significantly improvement on physical fitness variables namely speed, flexibility, muscular strength and endurance among inter-collegiate male cricket players. Chtaraet.al., (2008) examined the influence of the sequence order of high-intensity endurance training and circuit training on changes in physical fitness components. The results of this study suggested Circuit training alone improvements that induced physical fitness components were significantly greater than when resistance without circuit training. Therefore, resistance with circuit training is indeed effective in enhancing speed, flexibility, muscular power and muscular strength and endurance. The study observed that resistance without circuit training had significantly improvement on physical fitness variables namely cardio-respiratory endurance among inter-collegiate male cricket players. Reid and McNair (2004) studied the effects of four constant-resistant weight training programmes on muscular strength, endurance, body composition and cardiovascular functioning. Silva (2007) studied on Effects on cardiovascular response acute cardiovascular responses to different high-velocity resistance exercise protocols were compared in untrained older women. The results of this study suggested resistance without circuit training improvements that physical fitness components were significantly greater than when resistance with circuit training. Therefore, resistance without circuit training is indeed effective in enhancing cardio-respiratory endurance. The study showed that there was an enhanced improvement in resistance with circuit training on physical fitness components namely speed, flexibility, muscular power and muscular strength and endurance than the resistance without circuit training. Further, the study showed that there was a superior improvement in resistance without circuit training on physical fitness components namely cardio-respiratory endurance than the resistance with circuit training.

6. Conclusions

Based on the results of the study the following conclusions were drawn. The experimental groups namely the resistance with circuit training, resistance without circuit training groups have significant improvement on selected physical fitness components namely speed, flexibility, muscular power, muscular strength and endurance and cardio-respiratory endurance when compared to the control group.

Significant difference was found between experimental and control group on selected physical fitness components when compared to the control group. Resistance with circuit training programme was more effective than the resistance without circuit training programme on speed, flexibility, muscular power and muscular strength. Resistance without circuit training programme was more effective than the

resistance with circuit training programme on cardio-respiratory endurance.

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