

EFFECTS OF THERABAND TRAINING AND CIRCUIT TRAINING ON SPEED AMONG COLLEGE LEVEL ATHLETES

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Abstract

The Aim of the study was to find out the effects of Theraband training and Circuit training on speed among college level Athletes. The investigator randomly selected 90 athletes ($n = 90$), who competed at inter collegiate level sports meets. They were divided into three groups with thirty subjects each ($n = 30$) at random again consisting thirty subjects in each group and they were randomly assigned as experimental group I (*TTG*) and Experimental group II (*CTG*) and control group (*CG*) and speed has selected as criterion variable of this study. The experimental group underwent circuit training for eight weeks three days per week and a session on each day. The difference between the pre-test and post-test means were subjected to statistical treatment using *ANCOVA*, In all cases 0.05 level was fixed to test the hypothesis of the study, which was considered as an appropriate. It was concluded from the result of the study that there was a significant improvement ($p \leq 0.05$) due to theraband training and circuit training on Speed as compared to control group.

Keywords: Theraband training, Circuit training, speed, college athlete.

Introduction

Athletic performance has dramatically progressed over the past few years. Performance levels inconceivable before square measure currently commonplace, and also the range of athletes capable of outstanding results are increasing. One issue is that athletics may be a difficult field, and intense motivation has inspired long, arduous hours of labour. Also, employment has become a lot of refined, part from the help of sport specialists and scientists. A broader base of information regarding athletes currently exists, that is mirrored in training

methodology. Improving skill means that the performance of any motor task becomes more efficient thereby reducing the time taken to complete the task and the level of effort required. This increased level of skillfulness could also mean more enjoyment and satisfaction for the performer by increasing the ease with which the task can be completed or by allowing new, more complex skills to be attempted (Arnheim, 1985). If by understanding the processes that govern the control of movement we can show the way for all individuals to improve their ability to perform the myriad of motor tasks that they confront, then we can claim to have made a real contribution to improving the quality of life within our society. Sports training may be a planned and controlled method for achieving a goal, changes in advanced sports motor performance, ability to act and behaviour square measure created through measures of content, ways and organization (Singh, 1984).

The term circuit training describes the way a workout is structured rather than the type of exercise performed. It typically consists of a series of exercises or stations completed in succession with minimal rest in between. Circuit routines allow the athlete or coach to create an endless number of workouts and add variety to routine training programs. Through circuit training the athletes may increase their strength and endurance by increasing the repetitions of exercise at each station or by doing the required frequencies of exercise in a shorter length of form (Clarke & Clarke, 1972). If the work load is kept constant, the athletes can develop strength and endurance by gradually decreasing the time taken to go through the circuit. The Therabands are 6 inches wide latex bands which come in different colour coded resistance levels, distinguished by the thickness of the bands. The Therabands are resistance bands which are made up of durable rubber latex/latex free material widely used for strengthening, general conditioning and rehabilitation of the athletes. Theraband exercise requires excellent posture, warming up and stretching, similar to most strength training programs.

Muscles are made up of a combination of fast twitch and slow twitch fibers. Fast twitch fibers contract rapidly and slow twitch fibers contract more slowly and with lower level of force. Speed is an ability to execute motor action under given condition in maximum possible time (Clarke, 1987). If all other things are equal, athletes with longest muscle fibers and greater percentage of fast twitch fiber should have the ability to run faster than an athlete with shorter slow twitch fibers. Eicher (1975) pointed out that speed is the product of two factors, stride length and stride frequency. Increasing either factor automatically increases a runner's sprinting speed. Stride frequency is an inborn quality; it might be possible to improve

it slightly through training (Astrand & Rodahe, 1970). But the stride length can be increased by increasing the leg strength and power. In this study fifty meters sprint has been taken as a test for measuring the speed of the subjects.

Materials and Methods

The Aim of the study was to find out the effects of Theraband training and Circuit training on speed among college level Athletes the investigator randomly selected 90 athletes ($n = 90$), who competed at inter collegiate level sports meets representing different colleges in Tirupati District Andhra Pradesh. Were selected as subjects and the age of students were between 17 and 21 years. The selected subjects were randomly divided into three equal groups of thirty subjects each ($n = 30$). Experimental group I was assigned as Theraband training (TTG) and Experimental group II was assigned as circuit training Exercises (CTG) and control group. During the training period, the experimental groups underwent their respective training programme for eight weeks 3 days per week. Control group (CG), who did not participate in any specific training. Speed was selected as dependent variable for this study. It was measured by 50mt Dash and sits and reach test. These are the exercises used as a Tharaband training 1. Shoulder Flexion 2.Lateral Raise 3. Reverse Flies 4. Chest presses 5. Chest Flies, 6. Side Bend 7. Quick Kicks 8. Lunges. For Circuit training; 1. Jumping jacks, 2. Burpees, 3. Crunches 4. High knee, 5. Half squat, 6. Triceps dips, 7. Butt kicks, 8. Push-ups. The collected data were statistically examined by analysis of covariance (ANCOVA). The confidence level was fixed at 0.05 levels, which is appropriate to the present study. Whenever the F ratio is found be significant, Sheffee's test was applied as post hoc test to find out the paired mean differences.

Results and Discussion

Table - I

Analysis of Covariance on Speed of Theraband training, Circuit training and the Control Group

	TTG	CTG	CG	SOV	SS	df	MS	F
Pre Test				Between	0.05	2	0.03	0.51
Mean	7.05	7.10	7.10	Within	4.55	87	0.05	
Post Test	6.74	6.86	7.89	Between	23.81	2	11.9068	80.28*

Mean				Within	12.90	87	0.15	
Adjusted Post Test Mean	6.76	6.85	7.88	Between	22.93	2	11.47	88.00*
				Within	11.21	86	0.13	

*Significant, Table F-ratio at 0.05 level of confidence for 2 and 87 (df) = 3.10, 2 and 86 (df) 3.10.

As shown in Table IV, the obtained pre-test means on Speed on Theraband Training group was 7.05, Circuit training group was 7.10 was and control group was 7.10. The obtained pre-test F value was 0.51 and the required table F value was 3.10, which proved that there was no significant difference among initial scores of the subjects.

The obtained post-test means on Speed on Theraband Training group was 6.74, Circuit training group was 6.86 was and control group was 7.89. The obtained post-test F value was 80.28 and the required table F value was 3.10, which proved that there was significant difference among post test scores of the subjects.

Taking into consideration of the pre-test means and post-test means adjusted post-test means were determined and analysis of covariance was done and the obtained F value 88.00 was greater than the required value of 3.10 and hence it was accepted that there was significant differences among the treated groups. Since significant differences were recorded, the results were subjected to post hoc analysis using Scheffe's Confidence Interval test. The results were presented in Table II.

Table -II

Scheffe's Post hoc Test on Speed

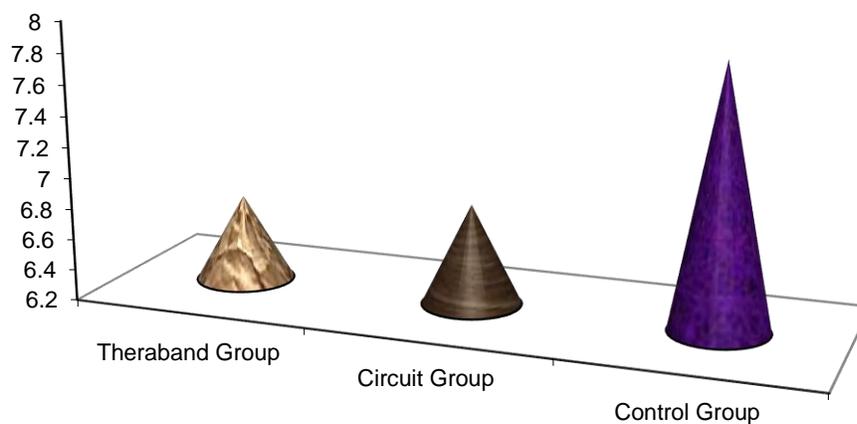
Adjusted Post Test Means				CI
TTG	CTG	CG	MD	
6.76	6.85		0.09	0.23
6.76		7.88	1.11*	
	6.85	7.88	1.03*	

* Significant

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Theraband Training group and control group (MD: 1.11). There was significant difference between circuit training group and control group (MD: 1.03). There was no significant difference between treatment groups, namely, Theraband Training group and circuit training group. (MD: 0.09). The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure I.

Figure I

Bar Diagram on Adjusted Post Test Means on Speed



The data reveals that there was a significant difference in adjusted post-test mean among the groups on speed. Kumaran (2018) found out the effect of circuit training on speed of Physical education students. Mayorga et al. (2013) was observed that there was a significant improvement in the sprinting ability of the subjects through the circuit training programme. It was also found that circuit training exercises had more effect on the beginners, that is, in high school girls. Speed is one of the most important requirements for all sports and games. Several research studies suggested that resistance training may be valuable for determining the variable such as sprinting speed (Pedro *et al.*, 2008). According to Roma *et al.*, (2013) aerobic training used as the means to enhance the muscular strength and speed. Ruchan *et al.*, (2010) pointed out the high intensity aerobic training is best suited for developing speed. Delecluse (1995) examined that the effect of high velocity training on different phases of 100 meters sprint and he found that it improved acceleration phase also. Young (1995) investigated the relation between strength resources and sprinting performances. McBride (2005) indicates the training with squat jump

helps to increase the movement velocity and speed. Christophe (1999) observed that the Theraband training is able to promote similar strength gains to conventional resistance training, in different population profiles and using diverse protocols. Due to its effectiveness on muscular performance, the Thera-Band training model can be recommended to the coaches and players in addition to the regular technical training.

Conclusion

Any practical application requires careful implementation and individual experimentation. In summary, the speed can be improved during the age between 17 and 21 years of athletes and favour the prescription of circuit training and theraband training. It was concluded that theraband Training and Circuit training made significantly improvement on speed of the college level athletes. However there was an insignificant difference between the training groups.

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