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EFFECTS OF THERABAND TRAINING AND CIRCUIT TRAINING ON FLEXIBILITYAMONG 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 Flexibility 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 Flexibility has selected as criterion variable of this study. The experimental group underwent theraband training and 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 flexibility as compared to control group.*

Key Words: *Theraband training, circuit training, flexibility, college athletes.*

1. INTRODUCTION:

Sport is a unique activity that infuses the best qualities in our human being. A sports field is considered a laboratory where sports activities groom the individuals physically, mentally and morally with the important values of life to face the world confidently. The values imbibed elicit the best Character, behavior and action of an individual which bring happiness to the individual, the family, the organization and the society. The ability to generate maximal power is influenced by the type of muscle action involved and, in particular, the time available to develop force, storage and utilization of elastic energy, interactions of contractile and elastic elements, potentiation of contractile and elastic filaments as well as stretch reflexes. Furthermore, maximal power production is influenced by morphological factors including fibre type contribution to whole muscle area, muscle architectural features and tendon properties as well as neural factors including motor unit recruitment, firing frequency, synchronization and inter-muscular coordination (Halan, 1974).

The ability to generate maximal power during complex motor skills is of paramount importance to successful athletic performance across many sports. A crucial issue faced by scientists and coaches is the development of effective and efficient training programme that improve maximal power production in dynamic, multi-joint movements. Such training is referred to as 'power training' for the purposes of sports training (Clarke & Clarke, 1972).

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 increasing 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 (Csarmadi, 1966). 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. The 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 (Fox, 1984). 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. Increasing either factor automatically increases a runners sprinting speed. Stride frequency is an inborn quality; it might be possible to improve it slightly through training (Treibet, 1988). 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.

2. MATERIALS AND METHODS :

The Aim of the study was to find out the effects of Theraband training and Circuit training on flexibility 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, chittoor District Andhra Pradesh was 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.

3. FINDINGS AND ANALYSIS :

As shown in Table I, the obtained pretest means on flexibility on Theraband Training group was 14.25, circuit Training group was 15.10 was and control group was 14.75. The obtained pretest F value was 1.38 and the required table F value was 3.16, which proved that there was no significant difference among initial scores of the subjects. The obtained posttest means on Flexibility on theraband training group was 18.55, circuit Training group was 17.00 was and control group was 15.50. The obtained posttest F value was 12.51 and the required table F value was 3.16, which proved that there was significant difference among post test scores of the subjects.

Taking into consideration of the pretest means and posttest means adjusted posttest means were determined and analysis of covariance was done and the obtained F value 15.81 was greater than the required value of 3.16 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.

The post hoc analysis of obtained ordered adjusted means proved that there was significant differences existed between Theraband training group and control group (MD: 3.26). There was no significant difference between Circuit training group and control group (MD: 1.35). There was significant difference between treatment groups, namely, Theraband training group and Circuit training group. (MD: 1.90).

The ordered adjusted means were presented through bar diagram for better understanding of the results of this study in Figure 1

4. DISCUSSION:

The data reveals that there was a significant difference in adjusted post-test mean among the groups on flexibility. Pourtaghi (2017) and Fowles et al. (2000) were well established that resistance exercise improves flexibility. Dick (1992) and Vega et al. (2013) found out the use and its effect of elastic resistance band to increase flexibility and proved beneficial for the athletes in terms flexibility. Grancher (2011) and Gurudut (2014) were 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. Flexibility 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 flexibility (Gro et al. 2009).

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TABLE –I

COMPUTATION OF ANALYSIS OF COVARIANCE OF FLEXIBILITY

	TTG	CTG	CG	SOV	SS	df	MS	F
Pre Test Mean	14.25	15.10	14.75	B	7.30	2	3.65	1.38
				W	151.30	57	2.65	
Post Test Mean	18.55	17.00	15.50	B	93.03	2	46.52	12.51*
				W	211.95	57	3.72	
Adjusted Post Test Mean	18.74	16.83	15.48	B	104.95	2	52.48	15.81*
				W	185.93	56	3.32	

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

*Significant

TABLE II

SCHEFFE'S CONFIDENCE INTERVAL TEST SCORES ON FLEXIBILITY

MEANS				Required . C I
Theraband training Group	Circuit training group	Control Group	Mean Difference	
18.74	16.83		1.90*	1.45
18.74		15.48	3.26*	1.45
	16.83	15.48	1.35	1.45

***** Significant

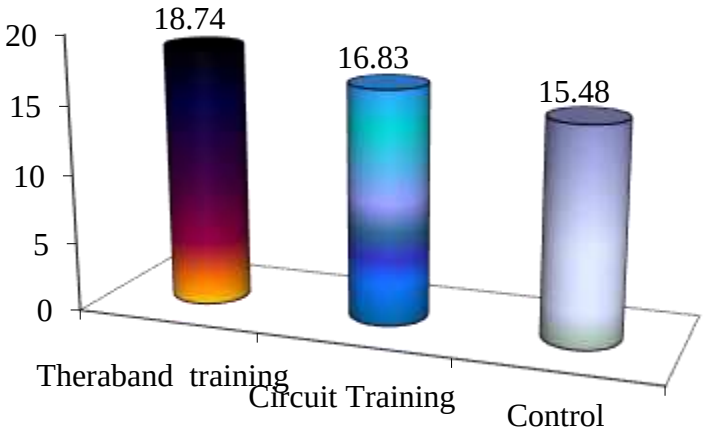

FIGURE 1: BAR DIAGRAM ON ORDERED ADJUSTED MEANS ON FLEXIBILITY

5. CONCLUSION:

Within the limitations and delimitation of the study, the following conclusions were drawn. It was concluded that Theraband training and circuit training significantly improved such as, flexibility of the college level athletes. Comparing between the treatments groups, it was found that theraband Training was better than Circuit training grouped.

REFERENCES :

1. Eckert Halan, M. (1974). *Practical Measurements of Physical Performance*, Philadelphia: Lea and Febiger, P.36.
2. Clarke & Clarke, (1972). *Advanced Statistics with Applications to Physical Education*, (Englewood Cliffs, N.J: Prentice Hall, Inc.), p. 36.
3. Csarmadi, A. (1966). *Soccer*, Atheneum printing House in Hungery. P. 407.
4. Edward, L. Fox. (1984). *Sports Psychology*, Philadelphia: Saunders College Publishers, P. 401.
5. Treiber, F. A., J. Lott., J. Duncan., G. Slavens., & H. Davis. (1998). Effects of Theraband and lightweight dumbbell training on shoulder rotation torque and serve performance in college tennis players, *PMID*, 9689369 DOI: 10.1177/03635465980260040601.
6. Pourtaghi, F. (2017), Effect of Resistance Training using Thera-Band on Muscular Strength and Quality of Life among the Elderly Evidence Based Care, *Journal (EBCJ*), School of Nursing & Midwifery, Mashhad University of Medical Sciences, Mashhad, Iran doi 10.22038/EBCJ.2017.25876.1584.
7. Fowles, J.R., Sale, D.G., & MacDougall, J.D. (2000). Reduced strength afterpassive stretch of the human plantar flexors. *J ApplPhysiol 89*, 1179–1188.
8. Frank, W. Dick. (1992). *Sports Training Principles*, Cambridge, University Press.
9. Mayorga-Vega., Daniel Viciana., Jesús Cocca Armando. (2013). Effects of a Circuit Training Program on Muscular and Cardiovascular Endurance and their Maintenance in Schoolchildren, *Journal of human kinetics, 37*, DO - 10.2478/hukin-2013-0036.
10. Granacher, U., Goesele, A., Roggo, K., Wischer, T., Fischer, S., Zuerny, C., Gollhofer, A., & Kriemler, S. (2011). Effects and mechanisms of strength training in children. *Int J Sports Med 32*, 357–364.
11. Peeyoosha Gurudut. (2014). Chronic Non-Specific Low Back Pain: A Randomized Clinical Trial. *J Yoga Phys Ther 5*, 180. doi:10.4172/2157-7595.1000180.
12. Gro, M., McGuigan, M. R., Pettigrew, S., & Newton, R. U. (2009). The effectof duration of resistance training interventions in children who are overweight or obese. *J Strength Cond Res 23*, 1263–1270.