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COMBINED EFFECT OF CIRCUIT AND MOBILITY TRAINING ON SELECTED PHYSICAL VARIABLES AMONG COLLEGE MEN VOLLE BALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the effect of combined effect of circuit and mobility training on selected physical variables among college men volleyball players. To achieve this purpose, forty-five men volleyball players in the age group of 18 to 23 years from various department of Jammu University during the year 2019-2020 were selected as subjects. The selected forty-five subjects were divided into three equal groups of fifteen each as two experimental groups and one control group, in which group – I (n=15) underwent Circuit training for three days per week for six weeks, group – II (n=15) underwent the combination of mobility and circuit training for three days per week for six weeks and group – III (n=15) acted as control who did not participate any training apart from their regular activities. The selected criterion variables such as speed, explosive power and flexibility were assessed before and after the training period. Speed, explosive power and flexibility were measured by 50 meters dash, standing broad jump and sit and reach test. The collected data were statistically analyzed by using Analysis of Covariance (ANCOVA) and Scheff's Post-Hoc Test. From the results of the study, it was found that there was a significant difference when compared with the control group.

***Keywords**: Circuit Training, Mobility Training, Speed, Leg explosive power & Flexibility*

INTRODUCTION

In sports the word "Training" is generally understood to be a synonym of doing physical exercises. In a narrow sense, training is doing physical exercises for the improvement of performance.

Circuit training is a form of combined conditioned resistance training and high-intensity aerobics. It is planned to be easy to follow and target strength building as well as muscular endurance. It was first proposed in the late 1950s as a method to develop fitness by Morgan and Anderson a circuit format of 9 to 12 stations. The underlying schedules were masterminded around; shifting back and forth between distinction muscles bunches by permitting just a brief rest interim of 30-90 seconds, without recuperation and with

recuperation between the activities. Circuit Training is a form of Strength and endurance training that can improve strength, speed and endurance.

Circuit training is a very popular and effective way for the improvement of endurance. In circuit training several exercises are done one after the other. Finishing of one set of each exercise in revolution is called one round. There are usually three or more rounds in circuit training. In circuit training there are generally 5-12 exercises. Circuit training is a form of training combine resistance training and high-intensity aerobics. It is planned to be simple to follow and target strength build as well as muscular endurance. It was first proposed in the late 1950s as a method to develop general fitness by Morgan and Anderson a circuit format of 9 to 12 stations. The initial routines were arranged in a circle, alternating between difference muscle groups by allowing only a short rest interval of 30-90 seconds, without recovery and with recovery between the exercises. Circuit Training is a form of Strength and endurance training that can improve strength, speed and endurance. A high-quality circuit training route works the diverse sections in the body alone.

Mobility, or joint mobility, is the ability to move a limb through the full range of motion–with control. Mobility is based on voluntary movement while flexibility involves static holds and is often dependent upon gravity or passive forces. We use "mobility" to express how well you can move through the appropriate functional range of motion for a joint within a given movement pattern.

METHODOLOGY

To achieve the purpose, forty five men volleyball players in the age group of 18 to 23 years from various departments of Jammu University during the year 2019-2020 were selected as subjects The selected forty five subjects were divided into three equal groups of fifteen each as two experimental groups and one control group, in which group – I (n=15) underwent circuit training for three days per week for six weeks, group – II (n=15) underwent the combination of mobility and circuit training for three days per week for six weeks and group – III (n=15) acted as control who had not participated any training apart from their regular

activities. The selected criterion variables such as speed, explosive power and flexibility were assessed before and after the training period. Speed, explosive power and flexibility were measured by 50 meters dash, standing broad jump and sit and reach test.

ANALYSIS OF DATA

The data collected prior to and after the experimental periods on speed, explosive power and flexibility on combined of mobility and circuit training group, circuit training and control group were analyzed and presented in the following table -I.

Table-I

Analysis of covariance and 'f' ratio for speed, explosive power and flexibility for combined of mobility and circuit training, circuit training and control group

Variable Name	Group Name	Control Group	Circuit Group	Combined Group	'F' Ratio
Speed (in Seconds)	Pre-test Mean ± S. D	7.9 ± 0.008	7.89 ± 0.0089	7.9 ± 0.0083	.006
	Post-test Mean ± S.D.	7.88 ± 0.0081	7.59 ± 0.0092	7.48 ± 0.0097	6.766*
	Adj. Post-test Mean ± S.D.	7.89	7.589	7.492	15.095*
Explosive power (in Meters)	Pre-test Mean ± S. D	1.816 ± 0.12	1.818 ± 0.135	1.822 ± 0.13	.003
	Post-test Mean ± S.D.	1.819 ± 0.12	1.978 ± 0.22	2.141 ± 0.31	3.034*
	Adj. Post-test Mean ± S.D.	1.822	1.979	2.139	3.265*
Flexibility (in Centimeters)	Pre-test Mean ± S. D	5.91 ± 0.71	5.9 ± 0.72	5.9± 0.71	.001

	Post-test Mean ± S.D.	5.89 ± 0.70	7.19 ± 0.92	8.42 ± 0.97	3.657*
	Adj. Post-test Mean ± S.D.	5.912	7.187	8.439	29.012*

* Significant at .05 level of confidence.

(The table value required for significance at .05 level of confidence with df 2 and 43 and 2 and 42 were 3.21 and 3.22 respectively).

Further to determine which of the paired means has a significant improvement, Scheff's test was applied as post-hoc test. The result of the follow-up test is presented in Table - II.

Table - II

Scheff's Test for the Difference between the Adjusted Post-Test Mean of Speed, Explosive Power, and Flexibility

Adjusted Post-test Mean of Speed				
Combined Group	**Circuit Group**	**Control Group**	**Mean Difference**	**Confidence interval at .05 level**
7.492		7.89	0.398*	0.27
7.492	7.589		0.097	0.27
	7.589	7.89	0.301*	0.27
Explosive Power				
2.139		1.822	0.317*	0.037
2.139	1.979		0.16*	0.037
	1.979	1.822	0.157*	0.037
Flexibility				

8.439		5.912	2.527*	0.037
8.439	7.187		1.252*	0.037
	7.187	5.912	1.275*	0.037

* Significant at 0.05 level of confidence.

RESULTS

The analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the experimental groups and control group on selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. Since there was three groups were involved in this study, the Scheff's test was used as pos-hoc test and it was shown in Table - II.

Table - I showed that the results of the study there was a significant difference between combined of mobility and circuit training, circuit training and control group on speed, leg explosive power and flexibility. Further the results of the study showed that there was a significant improvement on speed, leg explosive power and flexibility due to six weeks of programme. However, the improvement was in favour of experimental group. The results of the study also shown that there was a significant difference between combined of mobility and circuit training, circuit training and control group on speed, explosive power and flexibility.

CONCLUSIONS

From the analysis of the data, the following conclusions were drawn.

1. There was a significant improvement due to the circuit training and combination of mobility and circuit training on speed, explosive power and flexibility when compared with the control group.

2. The improvement in flexibility was higher for combination of mobility and circuit group when compared with the circuit training group and control group.

3. Significant improvements noticed on selected motor ability components such as speed, explosive power and flexibility due to combination of mobility and circuit training and circuit training.

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