STAR
Research Journal

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PHYSICAL EDUCATION

EFFECT OF CIRCUIT TRAINING PROGRAMME ON SPEED AND CARDIO-RESPIRATORY ENDURANCE

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Abstract

The purpose of the study was to find out the effect of circuit training programme on speed and cardio-respiratory endurance among women students. To achieve this purpose, 20 women students were randomly selected as subjects from the Department of Physical Education and Sports Sciences, Annamalai University studying in various classes. The age of the subjects were ranged from 18 to 23 years. The subjects were further classified at random into two equal groups of 10 subjects each in which group - I underwent circuit training programme for three days per week for eight weeks and group - II acted as control who were not undergo any special training programme. The selected criterion variables such as speed and cardio-respiratory endurance were assessed before and after the training period. The collected data were statistically analysed by using Analysis of Covariance (ANCOVA). The speed was assessed by administering 50 meters dash and cardio-respiratory endurance was assessed by administering the Cooper's 12 minutes run/walk test. From the results of the study, it was found that there was a significant improvement on speed and cardio-respiratory endurance for circuit training group when compared with the control group.

Keywords: Circuit training programme, speed, cardio-respiratory endurance, ANCOVA.

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. Sports training is a scientifically based and pedagogically organized process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as well as at the contest in sports competition.

Circuit training is a form of body conditioning or endurance training or resistance training using high-intensity. It targets strength building or muscular endurance. An exercise "circuit" is one completion of all prescribed exercises in the program. When one circuit is complete, one begins the first exercise again for the next circuit. Traditionally, the time between exercises in circuit training is short, often with rapid movement to the next exercise. Speed is the ability to more from one pace to another in the shorted possible time. It is primarily innate yet it can be improved through practice for technique and movement efficiency. Cardio-respiratory endurance is a measurement of how well your heart, lungs, and muscles work together to keep your body active over an extended period of time. Exercisers can improve cardio-respiratory endurance by participating in a program of regular aerobic exercise. Improved cardio-respiratory fitness provides numerous health benefits.

METHODOLOGY

The purpose of this study was to find out the effect of circuit training on speed and cardio-respiratory endurance. To achieve the purpose of the present study, 20 college women students who were studying in the Department of Physical Education and Sports Sciences, Annamalai University during the academic year 2017-2018 were randomly selected as subjects. The age of the subjects were ranged from 18 to 23 years. The selected subjects were divided into two groups of ten subjects each. Group I considered as experimental group who underwent circuit training and Group II considered as control that did not undergo any special training programme. The experimental group underwent circuit training programme for 3 days per week for 8 weeks. The control group did not participate in any special training programme on strenuous physical activities apart from their day to day activities. The experimental group underwent their circuit training under the instruction and supervision of the investigators. The data were collected on selected criterion variables such as speed and cardio-respiratory endurance were measured by administering 50 meters dash test and Cooper's 12 minutes run/walk test at before and after the eight weeks of circuit training as pre and post test. Analysis of covariance (ANACOVA) was applied to find out significant difference if any between the experimental and control group.

TABLE – I
ANALYSIS OF COVARIANCE FOR SPEED AND CARDIO-RESPIRATORY ENDURANCE FOR CIRCUIT TRAINING GROUP AND CONTROL GROUP

Variable Name	Group Name	Circuit Training Group	Control Group	'F' Ratio
Speed (in Seconds)	**Pre-test Mean ± S.D**	8.09 ± 0.00051	8.15 ± 0.003	0.316
	Post-test Mean ± S.D.	7.86 ± 0.0031	8.23 ± 0.0004	8.395*
	Adj. Post-test Mean	7.932	8.206	12.339*
Cardio-respiratory endurance (in meters)	**Pre-test Mean ± S.D**	1555.67 ± 11.35	1152.93 ± 11.45	0.859
	Post-test Mean ± S.D.	1692.13 ± 10.41	1155.73 ± 12.51	35.96*
	Adj. Post-test Mean	1708.367	1153.86	79.51*

* Significant at 0.05 level of confidence.
(The table values required for significance at 0.05 level of confidence for 1 and 18 & 1 and 17 are 4.41 and 4.45 respectively).

RESULTS

Table-I showed that the results of the study there was a significant difference between experimental and control group on speed and cardio-respiratory endurance. Further the results of the study showed that there was a significant improvement in the performances of speed and cardio-respiratory endurance due to eight weeks of circuit training programme. However the improvement was in favour of experimental group.

CONCLUSIONS

1. There was a significant improvement in speed and cardio-respiratory endurance after the circuit training programme. However this improvement was in favour of experimental group due to eight weeks of circuit training.
2. There was a significant difference between experimental and control groups on speed and cardio-respiratory endurance.

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