

INFLUENCE OF CIRCUIT RESISTANCE TRAINING ON LEG STRENGTH AND STRENGTH ENDURANCE AMONG COLLEGE MEN STUDENTS

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ABSTRACT

The purpose of the study was designed to examine the effect of Circuit resistance training on leg strength and strength endurance of college men students. For the purpose of the study, thirty men students from SRKR Engineering College, Bhimavaram, West Gadavari District, Andhra Pradesh were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent Circuit resistance training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The following variables namely leg strength and strength endurance were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using leg lift with dynamometer and bend knee sit ups respectively at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered as an appropriate. The results of the study showed that there was a significant difference between Circuit resistance training group and control group on leg strength and strength endurance. And also it was found that there was a significant improvement on leg strength and strength endurance due to twelve weeks of Circuit resistance training.

Keywords: Circuit resistance training, leg strength, strength endurance, college men students.

INTRODUCTION

Sports training is the basic form of an athlete's training. It is the preparation systematically organized with the help of exercises which in fact is a pedagogically organized process of controlling the development of an athlete. Circuit training stations are generally sequenced in a way to alternate between muscle groups, which allow for adequate recovery. The rest interval between stations should be between 30-90 seconds and 1-3 minutes between circuits. A typical gym has several strength training machines and workstations, which enables the creation of several circuits. This benefit of variability challenges the skills of the participant and keeps them interested from session to session. Circuit training plays an integral role in the off-season workouts of many professional athletes. It serves as a way to maintain general fitness while avoiding the high physical demands of in-season sport.

METHODOLOGY

The purpose of the study was designed to examine the effect of Circuit resistance training on leg strength and strength endurance of college men students. For the purpose of the study, thirty men students from SRKR Engineering College, Bhimavaram, West Gadavari District, Andhra Pradesh were selected as subjects. They were divided into two equal groups. Each group

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ANALYSIS OF THE DATA

Leg strength

The analysis of covariance on leg strength of the pre and post test scores of Circuit resistance training group and control group have been analyzed and presented in Table I.

TABLE I
ANALYSIS OF COVARIANCE OF THE DATA ON LEG STRENGTH OF PRE AND POST TESTS SCORES OF CIRCUIT RESISTANCE TRAINING AND CONTROL GROUPS

Test	Circuit Resistance Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	92.20	92.13	Between	0.03	1	0.03	0.06
S.D.	0.75	1.24	Within	16.13	28	0.58	
Post Test							
Mean	96.73	92.27	Between	149.63	1	149.63	23.08*
S.D.	0.72	0.77	Within	181.50	28	6.48	
Adjusted Post Test							
Mean	96.71	92.29	Between	146.23	1	146.23	164.52*
			Within	24.00	27	0.89	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table I shows that the adjusted post-test means of Circuit resistance training group and control group are 96.71 and 9.29 respectively on leg strength. The obtained "F" ratio of 164.52 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on leg strength.

The results of the study indicated that there was a significant difference between the adjusted post-test means of Circuit resistance training group and control group on leg strength.

Strength endurance

The analysis of covariance on strength endurance of the pre and post test scores of Circuit resistance training group and control group have been analyzed and presented in Table II.

TABLE II
ANALYSIS OF COVARIANCE OF THE DATA ON STRENGTH ENDURANCE OF PRE
AND POST TESTS SCORES OF CIRCUIT RESISTANCE TRAINING
AND CONTROL GROUPS

Test	Circuit Resistance Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	35.13	34.87	Between	0.53	1	0.53	0.04
S.D.	3.77	3.67	Within	401.47	28	14.34	
Post Test							
Mean	39.20	34.07	Between	197.63	1	197.63	8.94*
S.D.	3.54	3.82	Within	618.97	28	22.11	
Adjusted Post Test							
Mean	39.16	34.11	Between	190.85	1	190.85	13.56*
			Within	380.05	27	14.08	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table II shows that the adjusted post-test means of Circuit resistance training group and control group are 39.16 and 34.11 respectively on strength endurance. The obtained "F" ratio of 13.56 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on strength endurance.

The results of the study indicated that there was a significant difference between the adjusted post-test means of Circuit resistance training group and control group on strength endurance.

CONCLUSIONS

1. There was a significant difference between Circuit resistance training group and control group on leg strength and strength endurance.
2. And also it was found that there was a significant improvement on selected criterion variables such as leg strength and strength endurance due to Circuit resistance training.

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