

Effect of Circuit Training on Selected Physical Fitness Components among College Women Students

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Abstract

The purpose of the study was to examine the effect of eight weeks of supervised circuit training on enhancing the quality of performance in explosive power and muscular endurance for these purpose 30 untrained women students of Government first Grade College for women, Ramanagara, Karnataka. Aged 18 to 20 years took part in the study, subjects were randomly and subjected divided in two group, Group I underwent circuit training for five days per week for eight weeks, where as groups II acted as the control group who ,maintained their daily routine activities and no special training was given to them. The subjects of the groups were tested on explosive power and muscular endurance by using sergeant vertical jump and bent knee sit-ups at prior and immediately after the training period. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significant differences.

KEYWORDS: circuit training, explosive power, muscular endurance

INTRODUCTION:

The term training is widely used in sports. It is part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days and event months and years.

The sports persons and college going women must participate in year round conditioning programs to have the utmost efficiency, consistent improvement and balanced abilities for that they must put their bodies under a certain amount of stress to increase physical capabilities, physical exercise is extremely important for maintaining physical fitness including healthy weight, building and maintaining healthy bones, muscles and joints promoting physical fitness well being and strengthening the systems.

METHODOLOGY:

The purpose of the study was to find out the effect of circuit training on Muscular Endurance and Explosive power among college going women. To achieve this purpose of the study thirty women students studying in the Government First Grade College for women, Ramanagara were selected as subjects at random. Their age ranged between the 18 to 20 years. The selected subject were divided in two equal groups fifteen each namely circuit training group and control group. Group I underwent circuit training for five days per week for eight weeks, where as Group II acted as the control group who maintained their daily routine activities and no special training was given to them. The

following variable namely Muscular Endurance and Explosive was selected as physical components.

Table 1: Criterion Variables and test

Sl no	Variables	Tests/Instruments	Unit of Measurement
01	Muscular Endurance	Bent Knee Sit-ups	counts
02	Explosive Power	Sergeant Vertical jump	Centimeters

MUSCULAR ENDURANCE:

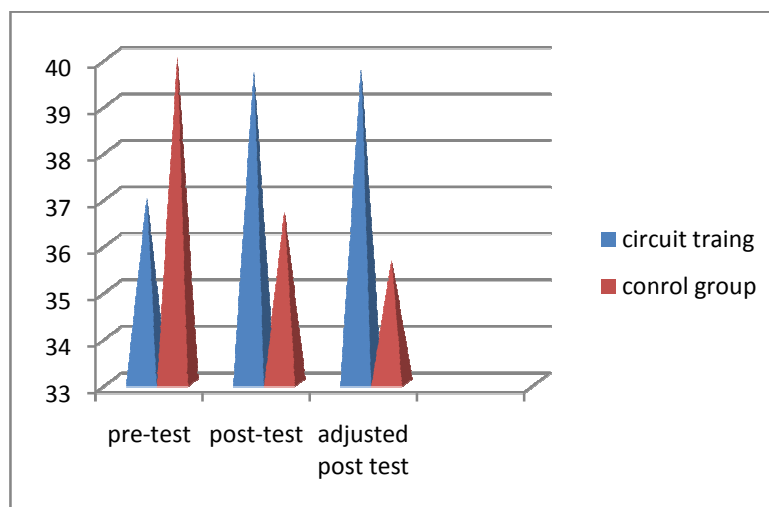
The analysis of covariance on Muscular endurance of the pre and post test score of training group and control group have been analyzed and presented in Table2.

**TABLE 2
ANALYSIS OF CONVARIANCE ON
FOR CIRCUIT TRAINING AND CONTROL GROUP**

Test/Group		Circuit training Group	Control Group	Source of Variance	Sum of Square	df	Mean Square	Obtained 'F' Ratio
Pre-Test	Mean	36.95	40.00	Between	0.04	1	0.04	0.021
	S.D	1.80	1.45	within	50.64	27	1.88	
Post-Test	Mean	39.69	36.67	Between	70.51	1	70.51	22.31*
	S.D	1.82	1.65	Within	85.26	27	3.16	
Adjusted post test	Mean	39.74	35.63	Between	72.40	1	72.40	47.63*
				Within	39.54	26	1.52	

*Significant at 0.05 level of confidence

The table 2 showed that the pre test mean values on circuit training group and control group were 36.95 and 40.00 respectively and the obtained 'F' ratio of 0.021 for pre test which was less than the required table value 4.20 with df 1 and 27 at 0.05 level of confidence on Muscular Endurance. The post test mean values on muscular endurance circuit training group and control group were 39.69 and 36.67 respectively and the obtained 'F' ratio of 22.31 for post test which was greater than the required table value 4.20 with df 1 and 27 at 0.05 level of confidence on Muscular endurance. The adjusted post test mean values on muscular endurance circuit training group and control group were 39.74 for adjusted post test which was grated than the required table value 4.21 wit df 1 and 26 for significance at 0.05 level of confidence on Muscular endurance.



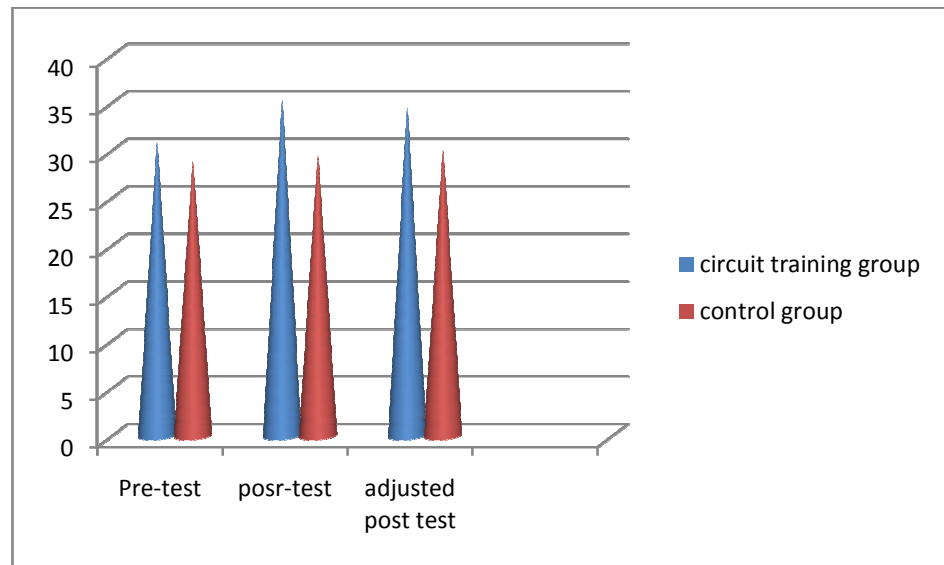
The analysis of covariance on Explosive Power of the pre and post test score of training group and control group have been analyzed and presented in Table3.

TABLE 3
ANALYSIS OF CONVARANCE ON EXPLOSIVE POWER FOR CIRCUIT TRAINING AND CONTROL GROUP

Test/Group		Circuit training Group	Control Group	Source of Variance	Sum of Square	df	Mean Square	Obtained 'F' Ratio
Pre-Test	Mean	30.85	28.87	Between	30.00	1	30.00	1.97
	S.D	3.88	3.80	within	411.47	27	15.24	
Post-Test	Mean	35.33	29.46	Between	258.13	1	258.13	29.04*
	S.D	3.00	2.83	Within	240.06	27	8.89	
Adjusted post test	Mean	34.50	30.00	Between	146.29	1	146.29	51.69*
				Within	73.47	26	2.83	

*Significant at 0.05 level of confidence

The table 3 showed that the pre test mean values on circuit training group and control group were 30.85 and 28.87 respectively and the obtained 'F' ratio of 1.97 for pre test which was less than the required table value 4.20 with df 1 and 27 at 0.05 level of confidence on Explosive Power. The post test mean values on Explosive power circuit training group and control group were 35.33 and 29.46 respectively and the obtained 'F' ratio of 29.04 for post test which was greater than the required table value 4.20 with df 1 and 27 at 0.05 level of confidence on Explosive Power. The adjusted post test mean values on Explosive Power circuit training group and control group were 39.74 and 30.00 for adjusted post test which was grated than the required table value 4.21 wit df 1 and 26 for significance at 0.05 level of confidence on Explosive Power



CONCLUSIONS:

The Circuit training resulted in the following changes in the circuit training when compared with the control group. The results of study showed that there was a significant difference exists between circuit training group and control group on Muscular Endurance and Explosive Power, and also there was a significant improvement on due to circuit training

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