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# EFFECT OF RESISTANCE AND CIRCUIT TRAINING ON VITAL CAPACITY AMONG BASKETBALL PLAYERS

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**ABSTRACT**

The objective of this study was to find out the effect of Resistance and Circuit Training on vital capacity among basketball players. 48 male Basketball Players were randomly selected as subjects from Lucknow University campus and affiliated Colleges. The age of the subjects were ranged between 17 to 26 years. The study was formulated as pre and post test random group design, in which 48 subjects were divided into three equal groups. Experimental Group-I (N=16) performed the Resistance training Group. The Experimental Group-II (N=16,) performed Circuit training program. Control group (N=16; CG) did not undergo any specific training programmed but there practiced the regular game. The analysis of covariance was used to analyze the significant difference, if any among the groups. Three groups were compared, whenever they obtained 'f' ratio for adjusted post test was found to be significant, the Scheffe's test to find out the paired mean differences, if any. The 0.05 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 result of the study indicates due to training on vital capacity has been improved significantly.

**Keywords:** Resistance, Circuit Training, Vital Capacity & Players.

## INTRODUCTION

The Weight Training has two primary functions in a workout program: instability and support. Instability during an exercise forces you to engage your core muscles to maintain your balance, making the exercise more difficult. Training the core with instability helps develop a strong support system for your legs and back, which prevents injuries and helps you get the most out of your exercise routine. The Training can also be used to support your back as you work on developing core stability. For instance, you can place the ball against the wall and lean your back against it as you do a

squat. To add lower back support to an abdominal crunch, sit on the ball, walk your feet out in front of you until you are lying back on the ball with a neutral spine, and do crunches from there. Rutherford and Jones (1986) suggested that adaptations from Resistance training resulted in better coordination of synergistic and stabilizer muscles.

**OBJECTIVE OF THE STUDY**

The objective of this study was to find out the effect of Resistance and Circuit Training on vital capacity among basketball players.

**DESIGN OF THE STUDY**

The objective of this study was to find out the effect of Resistance and Circuit Training on vital capacity among basketball players. 48 male Basketball Players were randomly selected as subjects from Lucknow University campus and affiliated Colleges. The age of the subjects were ranged between 17 to 26 years. The study was formulated as pre and post test random group design, in which 48 subjects were divided into three equal groups. Experimental Group-I (N=16) performed the Resistance training Group. The Experimental Group-II (N=16,) performed Circuit training program. Control group (N=16; CG) did not undergo any specific training programmed but there practiced the regular game. The analysis of covariance was used to analyze the significant difference, if any among the groups. Three groups were compared, whenever they obtained 'f' ratio for adjusted post test was found to be significant, the Scheffe's test to find out the paired mean differences.

**Training Programs:**

**Experimental group -1: Circuit Training –** The Exercise as follows. 1. Patter step 2. pivoting lateral clip 3- vertical jump 4. Zig Zag dribble 5. lay upshot with right hand 6. Lay up shot with centre side 7. Lay up shot with left hand 8. Vertical jump 9. Side to side running. **Experimental group -2: Weight training -** 1 – Pac fly, 2 – Bench press, 3 - Ab Crunches, 4-Squat, 5 –Dynamic Lunges, 6- Leg Standing calf rise.

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## STATISTICAL ANALYSIS

**Table No: I**

**Computation of Analysis of Covariance of Pre-Test, Post-Test and Adjusted Post-Test on Vital Capacity of Experimental Group I, Experimental Group II and Control Group (Scores in Lit.)**

| Test | Ex Group I | Ex Group II | Control Group | Sources of Variance | Sum of Square | Mean of Square | Obtain F ratio |
|---|---|---|---|---|---|---|---|
| Pre Test Mean | 2.02 | 2.06 | 2.45 | Between | 3.4 | 1.70 | 2.26 |
| | 0.04 | 0.06 | 0.04 | within | 28.2 | 0.32 | |
| Post Test Mean | 2.26 | 2.94 | 2.44 | Between | 7.3 | 3.64 | 8.66* |
| | 0.04 | 0.05 | 0.05 | within | 36.6 | 0.42 | |
| Adjusted Post Test Mean | 2.41 | 3.04 | 2.18 | Between | 11.5 | 5.75 | 45.76* |
| | | | | within | 10.8 | 0.13 | |

*Significance at .05 level of confidence, DF:46

**Results of Vital Capacity:**

Table no. I show the analysis data on Vital capacity. The pre-test means of Vital capacity were 2.02for experimental groups I, 2.06 for experimental groups II, and 2.45 for control group. The obtain "F" ratio of 2.26 was lesser than the table F-ratio 3.22. Hence the pre-test was not significant at 0.05 level of confidence for the degree of freedom 2 and 46.

The post –test mean of Vital capacity were 2.26 for experimental group I, 2.94 for experimental group II, 2.44 for control group. The obtained "F" ratio of 8.66 was higher than the table F-ratio 3.22. Hence the post –test was significant at 0.05 level of confidence.

The adjusted post –test mean of Vital capacity were 2.41 for experimental group I, 3.04 for experimental group II, 2.18 for control group. The obtained "F" ratio of

45.76 was higher than the table F-ratio 3.23. Hence the post –test was significant at 0.05 level of confidence.

**Table No: II**

**Ordered Scheffe's Post Hock test Mean Differences on Vital Capacity among Three Groups (Scores in lit.min$^{-1}$)**

| Experimental Group I | Experimental Group II | Control Group | Mean Difference | Confidence Interval Value |
|---|---|---|---|---|
| 2.41 | 3.04 | - | 0.63 | 0.23 |
| 2.41 | - | 2.18 | 0.24* | 0.23 |
| - | 3.04 | 2.18 | 0.87 | 0.23 |

*Significance at .05 level of confidence.

Table 1.6.1 shows the Scheffe's post –hoc test result .The ordered adjusted final mean difference for Vital capacity of experimental groups I, II and control group were tested for significant at 0.05 level of confidence against confidential interval value.

The mean difference between experimental group I and experimental group II 0.63, experimental group I and control group 0.24, experimental group II and Control group were 0.87 respectively and it was seen to be greater than the confidential interval value of 0.23 Hence the above comparisons were significant.

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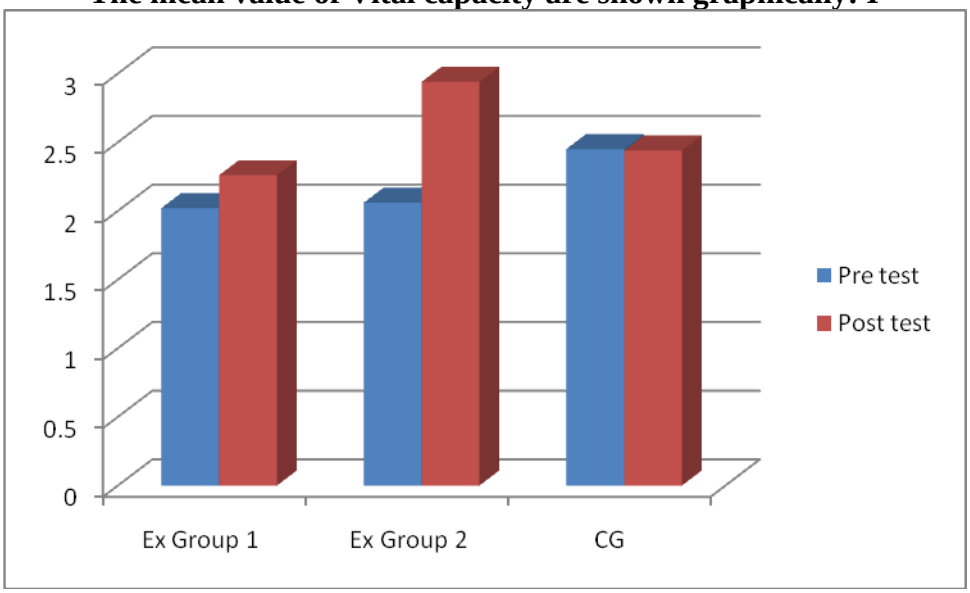
**The mean value of Vital capacity are shown graphically: I**

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**Vital Capacity:**

The experimental groups Circuit training and Weight training showed significant increase in the vital capacity: 2.41 and 3.04 respectively from pre to post training. The Circuit Training group was found significantly better than (f<.05) the Weight Training group and Control Group ,Weight Training group was better than the Control group in increasing the vital capacity rate as measured by Digital Dry Spirometer therefore circuit training is more better to improve vital capacity among the basketball players.

**CONCLUSION**

The result of the study indicates due to training on vital capacity has been improved significantly.

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