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## Influence of Resistance Training on Endurance Among Under Graduate Students

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### ABSTRACT

The purpose of the study was to find out the influence of resistance training on endurance among under graduate students. To achieve the purpose of the present study, thirty college students from Sourashtra College, Madurai, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 21 years. The subjects were divided into two equal groups at random. The subjects were divided into two equal groups of fifteen subjects each. Group I acted as Experimental Group (Resistance training) and Group II acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. Endurance was assessed by coopers 12 minute run-test. Pre test was conducted for all the subjects on selected components. This initial test scores formed as pre test scores of the subjects. The groups were assigned as Experimental Group and Control Group in an equivalent manner. Experimental Group was exposed to resistance training and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 6 weeks. After the experimental treatment, all the thirty subjects were tested. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences. In all cases 0.05 level of significance was fixed to test hypotheses. It was observed that the six weeks of experimental group have significantly improved the endurance of under graduate students.

**KEYWORDS:** Resistance Training, Endurance, Under Graduate Students.

### INTRODUCTION

Resistance training is a type of solidarity preparing in which every exertion is performed against a particular contradicting power created by opposition. Opposition practice is utilized to build up the quality and size of skeletal muscles. Appropriately performed opposition preparing can give huge utilitarian advantages and improvement in by and large wellbeing and prosperity. As indicated by the American Sports Medicine Institute (ASMI) is to step by step and logically over-burden the musculature framework so it gets more grounded. Opposition preparing as an activity program in which free or stationary loads are utilized to increment strong quality, solid continuance, force and body sythesis through which abilities can be improved. Explicit preparing projects can likewise prompt the improvement of cardio-respiratory continuance. Basic, if one's



quality is going up quicker than one's bodyweight and one's presentation is improving too then one are destined for success. As the objective of opposition preparing, the ASMI says, is to "step by step and logically over-burden the musculoskeletal framework so it gets more grounded". Standard opposition preparing will fortify the bones, and reinforce the muscles. Oxygen consuming exercises, which fortify the cardiovascular framework, center principally around the enormous muscle gatherings of the lower body. Quality preparing offers a method for adjusting that by testing all the significant muscle gatherings, incorporating those in the chest, arms, back and midriff. As per medicinal research, for the most part the opposition preparing reinforces the solid framework, fortifies the skeletal framework, and improves bone thickness (diminishes the opportunity of osteoporosis) and expands digestion. So a well - arranged opposition preparing system ought to be a piece of everybody's wellbeing, wellness and way of life paying little heed to age, sex or objectives (Bompa, 2000).

## METHODOLOGY

The purpose of the study was to find out the influence of resistance training on endurance among under graduate students. To achieve the purpose of the present study, thirty college students from Sourashtra College, Madurai, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 21 years. The subjects were divided into two equal groups at random. The subjects were divided into two equal groups of fifteen subjects each. Group I acted as Experimental Group (Resistance training) and Group II acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. Endurance was assessed by coopers 12 minute run test. Pre test was conducted for all the subjects on selected components. This initial test scores formed as pre test scores of the subjects. The groups were assigned as Experimental Group and Control Group in an equivalent manner. Experimental Group was exposed to resistance training and Control Group was not exposed to any experimental training other than their regular daily activities. The duration of experimental period was 6 weeks. After the experimental treatment, all the thirty subjects were tested. This final test scores formed as post test scores of the subjects. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences. In all cases 0.05 level of significance was fixed to test hypotheses.

## RESULTS



**TABLE - I**  
**COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE OF ENDURANCE**  
**OF EXPERIMENTAL AND CONTROL GROUPS**

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	1677.33	1661.33	BG	1920.00	1	1920.00	0.22
			WG	234316.6	28	8368.45	
Post Test Mean	2184.00	1691.00	BG	1822867.50	1	1822867.50	255.68*
			WG	199620.00	28	7129.28	
Adjusted Post Mean	2185.71	1689.28	BG	1833337.98	1	1833337.98	262.15*
			WG	188817.96	27	6993.25	

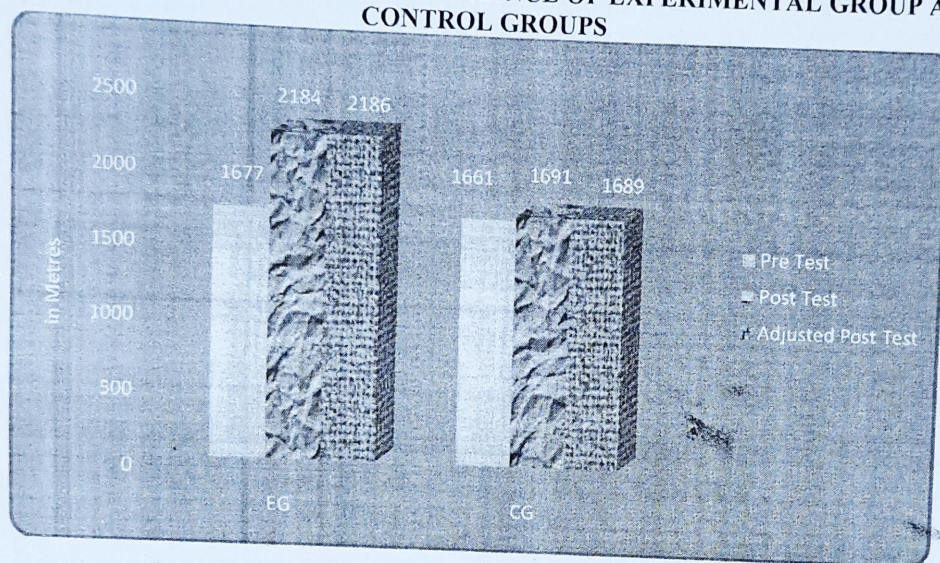
\* Significant at 0.05 level, Table value for df 1 and 28 was 4.20, 1 and 27 was 4.21

The above table indicates the adjusted mean value of endurance of experimental and control groups were 2185.71 and 1689.28 respectively. The obtained F-ratio of 262.15 for adjusted mean was greater than the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on endurance. The above table also indicates that both pre and post test means of experimental and control groups differ significantly.

The pre, post and adjusted post mean values of endurance of both experimental and control groups are graphically represented in the figure-I.



FIGURE – I  
SHOWS THE MEAN VALUES ON ENDURANCE OF EXPERIMENTAL GROUP AND CONTROL GROUPS



### Conclusion

From the results obtained, the following conclusions were drawn:

1. It was observed that the six weeks of experimental group have significantly improved the endurance of under graduate students.
2. The experimental group had achieved significant improvement on endurance than the control group.

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