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Influence of Strength Training on Speed and Strength Among Under Graduate Students

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ABSTRACT

The purpose of the study was to find out the influence of strength training on speed and strength 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 (Strength 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. Speed was assessed by 50 metres dash and strength was assessed by strength. 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 strength 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 speed and strength of under graduate students.

KEYWORDS: Strength Training, Speed, Strength, Under Graduate Students.

INTRODUCTION

Strength training also known as weight training is a common component of youth sports and physical fitness programs, though some teens may use strength training as a means of improving muscle size to enhance appearance. Strength training programs can include using free weights, weight machines, elastic tubing, or the body weight of an athlete himself. How much and how much weight strength training also known as weight training is a common component of sports and physical fitness programs for young people, although some adolescents may use strength training as a means to enhance muscle size for improving appearance. Strength training

programs may include the use of free weights, weight machines, elastic tubing, or an athlete's own body weight.

The amount and form of weight specific program goals are used and the duration of weight exercises. The benefits of such programs include increased muscle strength, local muscle power and muscle endurance, reduced sports and recreational injuries, improved performance in sports and recreational activities, muscle hypertrophy, improved body composition, reduced blood lipids, reduced muscle composition favorable improvement in body composition, reduced blood lipids, reduced blood pressure, and improved cardio respiratory performance. The popularity of weight training has increased in recent times. Not only is weight training used to increase muscular strength, power, endurance, and hypertrophy in athletes, but the adaptations to weight training have been shown to benefit the general population (Kraemer, et al. 2002).

METHODOLOGY

The purpose of the study was to find out the influence of strength training on speed and strength 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 (Strength 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. Speed was assessed by 50 metres dash and strength was assessed by strength. 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 strength 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 SPEED OF
EXPERIMENTAL AND CONTROL GROUPS

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	7.48	7.49	BG	0.001	1	0.001	0.44
			WG	0.04	28	0.002	
Post Test Mean	7.27	7.48	BG	0.34	1	0.34	133.01*
			WG	0.07	28	0.003	
Adjusted Post Mean	7.27	7.48	BG	0.35	1	0.35	155.63*
			WG	0.06	27	0.002	

* 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 speed of experimental and control groups were 7.27 and 7.48 respectively. The obtained F-ratio of 155.63 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 speed. 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 speed of both experimental and control groups are graphically represented in the figure-1.

FIGURE - I
SHOWS THE MEAN VALUES ON SPEED OF EXPERIMENTAL GROUP AND CONTROL GROUPS

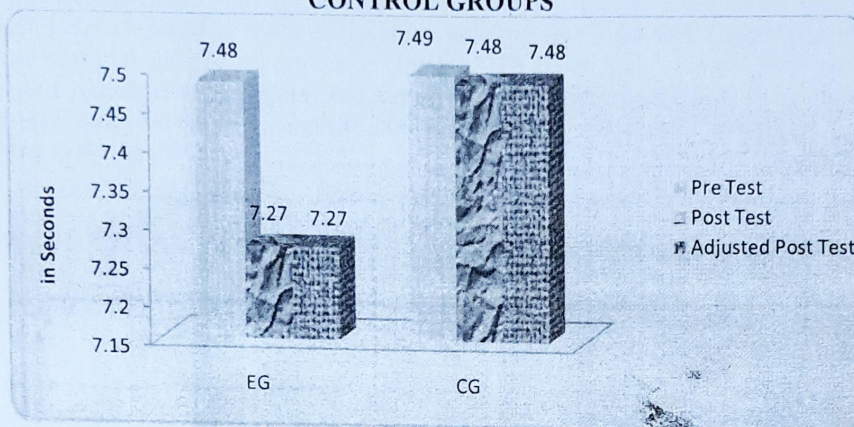


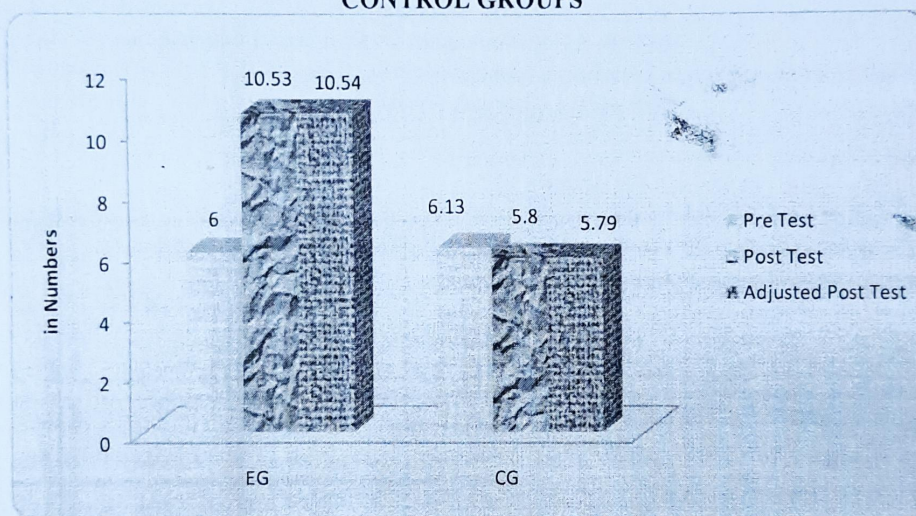
TABLE - II
COMPUTATION OF MEAN AND ANALYSIS OF COVARIANCE OF STRENGTH OF EXPERIMENTAL AND CONTROL GROUPS

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	6.00	6.13	BG	0.13	1	0.13	0.27
			WG	13.73	28	0.49	
Post Test Mean	10.53	5.80	BG	168.03	1	168.03	291.62*
			WG	16.13	28	0.57	
Adjusted Post Mean	10.54	5.79	BG	167.37	1	167.37	282.61*
			WG	15.99	27	0.59	

* 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 strength of experimental and control groups were 10.54 and 5.79 respectively. The obtained F-ratio of 204.86 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 strength. 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 strength of both experimental and control groups are graphically represented in the figure-II.

FIGURE – II
SHOWS THE MEAN VALUES ON STRENGTH OF EXPERIMENTAL GROUP AND CONTROL GROUPS



CONCLUSIONS

From the results obtained, the following conclusions were drawn:

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

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