STAR Research Journal

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PHYSICAL EDUCATION

EFFECT OF RESISTANCE TRAINING ON MUSCULAR STRENGTH OF SCHOOL BOYS

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Abstract

The purpose of the study was to find out the effect of resistance training on muscular strength of school boys. To achieve the purpose of this study, thirty school boys were selected from cuddalore, Tamilnadu, India. The age, height and weight of the subjects ranged from 13 to 14 years, 142 to 147 centimetres and 31 to 36 kilograms respectively. They were divided into two groups; each group consisted of fifteen subjects. Group-I underwent resistance training and group-II acted as control who does not participate in any training programme. The data collected from the two groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA). The experimental group had significant improvement on muscular strength when comparing to the control group.

Keywords: Resistance Training and Muscular strength.

INTRODUCTION

Resistance training is a modality of exercise that has grown in popularity over the past two decades, particularly for its role in improving athletic performance by increasing muscular strength, power and speed, hypertrophy, local muscular endurance, motor performance, balance, and coordination (Kraemer &Ratamess, 2000). According to the several benefits of resistance training; the data about the design of resistance training is no unequivocal vote. Numerous researchers compared different resistance training systems and found different results for the strength, endurance, body composition and physical fitness (Fleck & Kraemer, 2004). One of the important keys for the design of resistance training is number of sets. Single-set system and multiple-set system are common systems for improving muscular performance in trained and healthy subjects. The single-set system, the performance of each exercise for one set, is one of the oldest resistance training systems, whereas a multiple-set system can involve performing multiple sets with the same resistance.

METHODOLOGY

The purpose of the study was to find out the effect of resistance training on muscular strength of school boys. To achieve the purpose of this study, thirty school boys were selected from cuddalore, Tamilnadu, India. The age, height and weight of the subjects ranged from 13 to 14 years, 142 to 147 centimetres and 31 to 36 kilograms respectively. They were divided into two groups; each group consisted of fifteen subjects. Group-I underwent resistance training and group-II acted as control who does not participate in any training programme. The data collected from the two groups prior to and post experimentation were statistically analyzed by analysis of covariance (ANCOVA). The muscular strength was measured by bench press 1 RM.

RESULTS

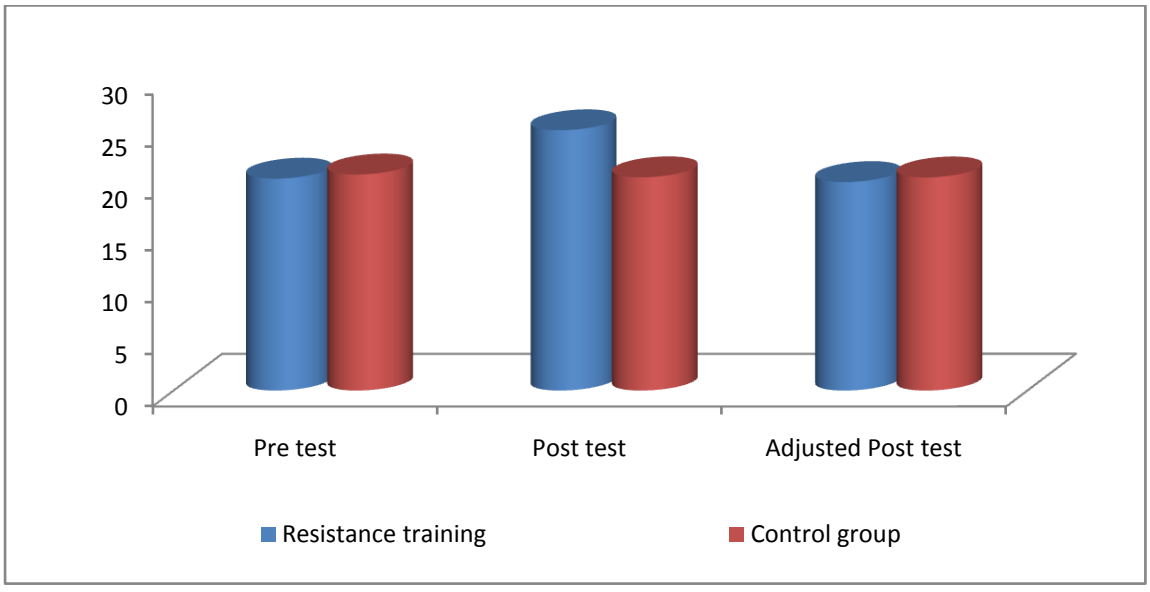
TABLE - I
ANALYSIS OF COVARIANCE ON MUSCULAR STRENGTH OF RESISTANCE TRAINING AND CONTROL GROUPS

	Experimental Group	Control Group	SoV	Sum of Squares	df	Mean squares	'F' ratio
Pre-test Mean	20.40	20.80	B	1.20	1	1.20	0.46
SD	1.63	1.56	W	72.00	28	2.57	
Post-test Mean	25.06	20.53	B	154.13	1	154.13	45.58*
SD	1.48	2.13	W	94.66	28	3.38	
Adjusted Post-test Mean	20.07	20.52	B	153.17	1	153.17	43.80*
			W	94.42	27	3.49	

(The required table value for significance at 0.05 level of confidence with degrees of freedom 1 & 28 and 1 & 27 are 4.20 and 4.21 respectively) *Significant at .05 level of confidence

The adjusted post test means on muscular strength of resistance training and control groups are 20.07 and 20.52 respectively. The obtained 'F' ratio value of 43.80 for adjusted post test means on muscular strength of resistance training and control groups were higher than the required table value of 4.21 for the degrees of freedom 1 and 27 at 0.05 level of confidence. It is observed from this finding that significant differences exist among the adjusted post test means of experimental and control groups on muscular strength. Due to the resistance training the muscular strength significantly improved of the subjects.

FIGURE - I
CYLINDER DIAGRAM ONMUSCULAR STRENGTH OF RESISTANCE TRAINING AND CONTROL GROUPS



DISCUSSION AND FINDINGS

The results of the study showed that there was a significant improvement on muscular strength of resistance training group when compared to the control group. The following studies are supporting with my study results. Using loading 40-60% of 1RM during circuit resistance training has been shown to improve both upper and lower body strength in men and women (Wilmore, *et al*., 1978; Esquivel &Welsch, 2007). circuit resistance training was sufficient to increase maximum strength and muscular endurance but not isometric strength when compared with multiple circuits over 13 weeks of training in individuals who were slightly trained (Hass et al., 2000). The circuit weight training program significantly increased 1RM strength (15-42%) (Gettman& Pollock, 1981).

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