



## INFLUENCE OF RESISTANCE TRAINING ON SPEED, EXPLOSIVE POWER AND ELASTIC POWER DEVELOPMENT OF COLLEGE MEN

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### Abstract

*The purpose of the study was to find out the influence of resistance training on Speed, Explosive Power and Elastic Power development of college men. To achieve the purpose of the study, forty college men studying in Department of Physical Education and Sports Sciences, Annamalai University, Annamalainagar, Tamilnadu, India, were randomly selected as subjects. The selected subjects were assigned equally into two groups of twenty each. Group –I underwent resistance training (n=20) and Group II acted as Control (n=20) for three days per week for twelve weeks respectively. Speed, Explosive Power and Elastic Power were selected as dependent variables. All the subjects were tested on selected dependent variables prior to and immediately after the training programmes. The data was collected from the Experimental groups were statically examined with Analysis of covariance (ANCOVA). Significant differences were found between resistance training group and control group on Speed, Explosive Power and Elastic Power.*

**Keywords:** Suitability, Farm women, Cotton technologies and poultry keeping.

### INTRODUCTION

Now a day's people are more aware of physical fitness and the importance of physical education. When a person is fit the various systems of the body are well conditioned so that each system can do its part towards effective performance. Fitness serves as a general base for excellence in performance, but it does not include all essentials. An excellent performance in a particular activity must possess in addition to motor fitness, the specific skills that are part of activity. (Bucher, 1964). Physical conditioning is essential to a desired level for the development of particular motor qualities, in view of the requirements of the game concerned and also keeping in view the limitation of the sportsman concerned.

The word training means different things in different fields. In sports the word training is generally understood to be synonyms of doing exercise. In a narrow sense training is physical exercise for the improvement of performance. This concept is reflected in words for terms, which are given to separate components of training for separate methods of procedures of doing physical exercise. Sports medicine and exercise physiologists also understand training to be doing physical exercise for improvement of performance or of separate performance factors. (Singh, 1984)

Resistance training, also known as weight training or strength training, is for everyone. It is an

important tool for achieving a complete healthy life. Resistance training is not just for people who are athletes, want to build or tone muscle, or are using resistance training to achieve a better-looking body. Resistance training is the term used to describe using weights, machines, and even your own body weight to effectively work your muscles. It is the umbrella term used to accurately describe all forms of resistance training, whether working with weights or not. Although strength training accurately describes what resistance training does, many people do not use the term because they think it only applies to those trying to become bigger and stronger when, in fact, all resistance training which is correctly done indeed increases strength, but does not necessarily visibly increase size.

The essentials of weight training (Strength training) and regularity and gradual increase in training intensity (principles of over loading) supported by good nutrition and adequate rest. Unlike endurance training, weight training does not spend many calories. As such, its role of reducing body weight is limited, on the other hand, weight due to muscle hypertrophy, strength training does not mean one will lose flexibility or become muscle bound. Studies on Olympic athletes have shown only the gymnasts have better flexibility than the weight lifters. Weight training does not slow down muscular movement. It has also been established that increase in muscular speed (Explosive Power)

accompanies an increase in muscular strength (Fox, 1989). Strength is the ability of the body, or a part of the body, to apply or withstand force. The development of strength relies on resistance training and involves exercising at various loads, modes, speeds, angles and frequencies. The combination of these variables dictates the outcome of the resistance programme.

#### METHODOLOGY

Forty college men studying in Department of Physical Education and Sports Sciences, Annamalai University, Annamalainagar, Tamilnadu, India, were randomly selected as subjects and the age ranged from 18-21 years. The selected subjects were assigned equally into two groups of twenty each. Group -I underwent resistance training (n=20) and Group II acted as Control (n=20). The training period was limited to one hour per day for three days per week for twelve weeks.

The dependent variables selected for this study were Speed, Explosive Power and Elastic

Power. Speed was assessed by fifty meters run, explosive power was assessed by standing broad jump and elastic power was assessed by bunny hop test. The selected dependent variables were assessed prior to and immediately after the training period.

#### ANALYSIS OF THE DATA

The data collected from the resistance training group and control group prior and after experimentation on selected variables were statistically examined by analysis of covariance (ANCOVA) was used to determine differences, if any among the adjusted post test means on selected criterion variables separately. The level of significance was fixed at .05 level of confidence to test the 'f' ratio obtained by analysis of covariance.

The analysis of covariance on of Speed, Explosive Power and Elastic Power of resistance training group and control group have been analyzed and presented in Table – I.

**TABLE – I**  
**ANALYSIS OF COVARIANCE ON CRITERION VARIABLES OF RESISTANCE TRAINING GROUP AND CONTROL GROUP**

Criterion Variable	Adjusted Post Test means		Source of Variance	Sum of Square	df	Mean squares	'f' - ratio
	Resistance Training Group	Control Group					
Speed	6.63	7.46	B	8.34	1	8.34	50.97*
			W	6.05	37	0.16	
Explosive Power	44.13	38.89	B	267.28	1	267.28	59.91*
			W	165.08	37	4.46	
Elastic Power	10.31	9.38	B	8.74	1	8.74	34.46*
			W	9.38	37	0.25	

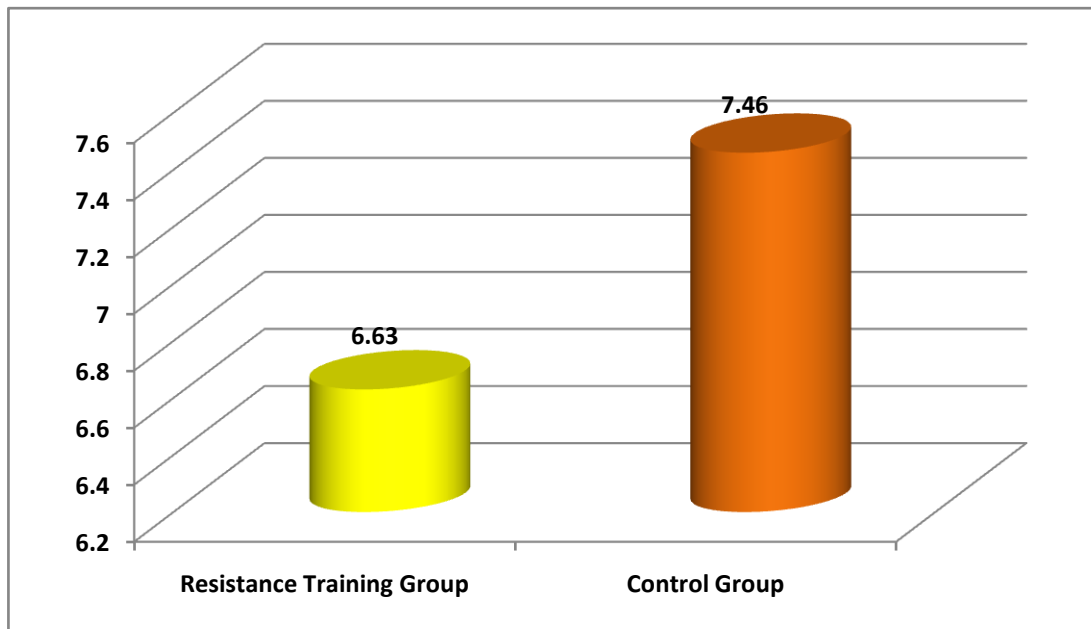
\* Significant at .05 level of confident.

(Table value required for significance at .05 level with df 1 and 37 is 4.11)

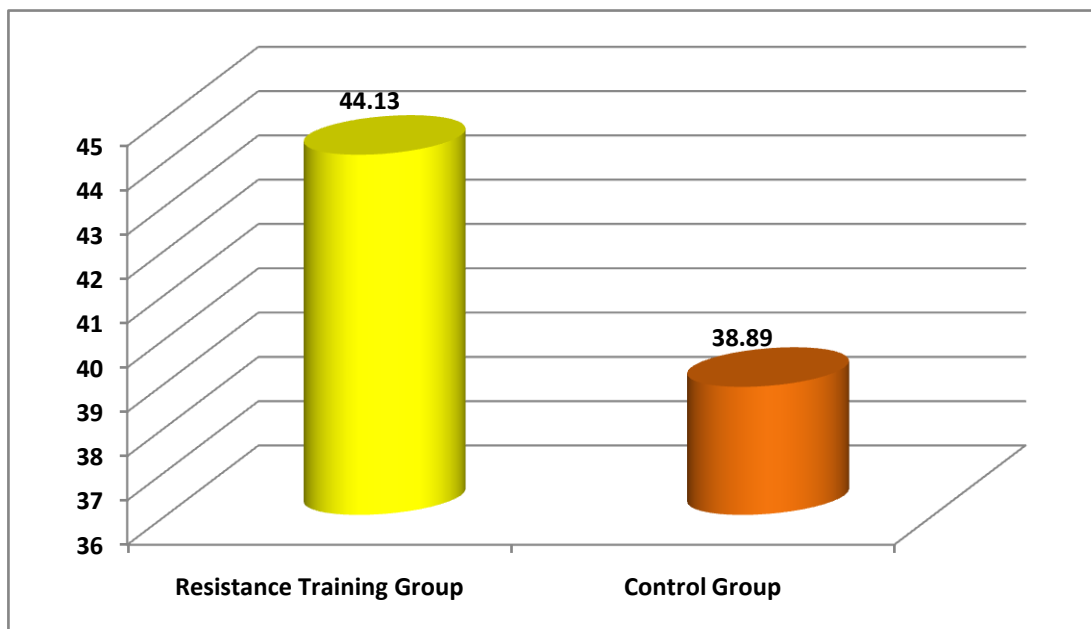
From table – I, the obtained value of 'f' - ratio for Speed, Explosive Power and Elastic Power, for adjusted post test means were 50.97, 59.91 and 34.46. The obtained 'f' - ratio value of the resistance training group was greater than the table value of 4.11 for df 1 and 37 required for significant at 0.05 level of confidence. The results of the study indicated that significant differences exist among the adjusted post test means of resistance training group and control group on the development of Speed, Explosive Power and Elastic Power.

#### RESULTS AND DISCUSSION

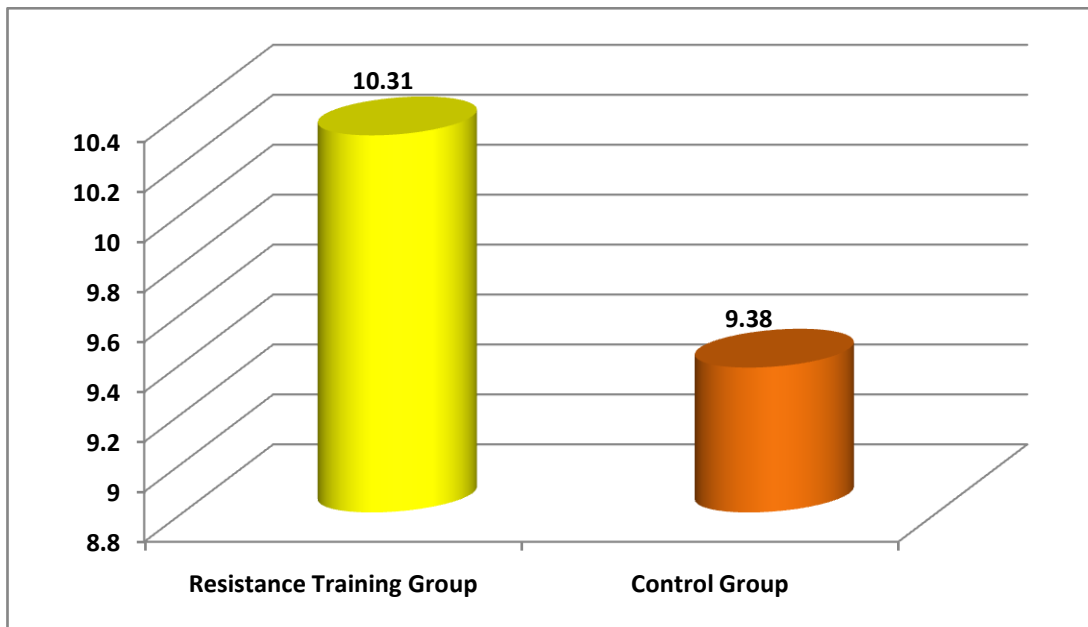
The results of the Study indicate that resistance-training group had significantly improved in the selected dependent variables namely Speed, Explosive Power and Elastic Power. It is also found that the improvement achieved by the resistance-training group was greater when compared to those of the control group. The mean values of Resistance training group and control group on Speed, Explosive Power and Elastic Power were graphically represented in the Figure I, Figure-II and Figure-III respectively.



**FIGURE-I**  
**MEAN VALUES OF RESISTANCE TRAINING GROUP AND CONTROL GROUP ON SPEED**



**FIGURE-II**  
**MEAN VALUES OF RESISTANCE TRAINING GROUP AND CONTROL GROUP ON EXPLOSIVE POWER**



**FIGURE-III**  
**MEAN VALUES OF RESISTANCE TRAINING GROUP AND CONTROL GROUP ON ELASTIC POWER**

**CONCLUSION**

From the analysis of the data, the following conclusions were drawn.

1. The Experimental group namely, resistance training had significantly improved in selected speed and power components such as speed, explosive power and elastic power.
2. Significant differences in achievement were found among resistance training had significantly improved in selected speed and power components such as speed, explosive power and elastic power.
3. The resistance-training group was found to be better than the control group in

developing speed, explosive power and elastic power.

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