



EFFECT OF ELASTIC RESISTANCE TRAINING ON MUSCULAR STRENGTH AMONG ELITE COLLEGE LEVEL ATHLETES

Physical Education & Sports

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ABSTRACT

The purpose of the present study was to investigate the effect of elastic resistance training on muscular strength among elite college level athletes. To achieve the purpose of the study thirty college level male athletes were selected from Erode, Tamilnadu, India during the year 2022. The subject's age ranges from 21 to 25 years. The selected subjects were divided into two equal groups consists of 15 subjects each namely experimental group and control group. The experimental group underwent elastic resistance training for six weeks. The control group was not taking part in any training during the course of the study. Muscular strength was taken as criterion variable in this study. The selected subjects were tested on muscular strength was measured through modified sit ups test. Pre-test was taken before the training period and post- test was measured immediately after the six week training period. Statistical technique 't' ratio was used to analyze the means of the pre-test and post test data of experimental group and control group. The results revealed that there was a significant difference found on the criterion variable. The difference is found due to elastic resistance training given to the experimental group on muscular strength when compared to control group.

KEYWORDS

Elastic Resistance Training, Muscular strength and 't' ratio.

INTRODUCTION

Resistance training is a form of physical activity that is designed to improve muscular fitness by exercising a muscle or a muscle group against external resistance. Heavy-duty rubber bands, tubing, and springs are forms of elastic resistance. The premise of using elastic resistance is that the greater the stretch of the band or spring, the greater the force needed to overcome the resistance. If the density is too great, the muscle will not be able to complete the full range of movement of a particular exercise. Elastic resistance may be integrated with gravitational resistance as well as fluid resistance to create yet again another variable for the muscle to adapt to.

Muscular strength refers to the amount of force a muscle can produce with a single maximal effort. The size of your muscle fibers and the ability of nerves to activate muscle fibers are related to muscle strength.

Research Methodology

Selection Of Subjects

The purpose of the study was to find out the effect of elastic resistance training on muscular strength among elite college level athletes. To achieve this purpose of the study, college athletes were selected as subjects at random. The age of the subjects were ranged from 21 to 25 years.

Selection Of Variable

Independent Variable

- Elastic resistance training

Dependent Variable

- Muscular strength

Experimental Design And Implementation

The selected subjects were divided into two equal groups of fifteen subjects each, such as a elastic resistance training group (Experimental Group) and control group. The experimental group underwent elastic resistance training for five days per week for six weeks. Control group, which they did not undergo any special training programme apart from their regular physical activities as per their curriculum. The following physical variable namely muscular strength was selected as criterion variable. All the subjects of two groups were tested on selected criterion variable Muscular strength was measured through modified sit ups test at prior to and immediately after the training programme.

Statistical Technique

The 't' test was used to analysis the significant differences, if any, difference between the groups respectively.

Level Of Significance

The 0.05 level of confidence was fixed to test the level of significance which was considered as an appropriate.

Analysis Of The Data

The significance of the difference among the means of the

experimental group was found out by pre-test. The data were analyzed and dependent 't' test was used with 0.05 levels as confidence.

Table I

Analysis Of T-ratio For The Pre And Post Tests Of Experimental And Control Group On Muscular Strength

Variables	Group	Standard Deviation		Sd Error	
		Pre	Post	Pre	Post
Muscular strength	Control Group	1.554	1.030	0.40	0.26
	Experimental Group	1.521	1.251	0.39	0.32

(Scores in numbers)

Table II

Variables	Group	Mean		Degree of freedom	't' ratio
		Pre	Post		
Muscular strength	Control Group	25.131	24.932	14	0.891
	Experimental Group	25.201	27.01	14	12.431*

*Significance at .05 level of confidence.

The Table-I and II shows that the mean values of pre-test and post-test of the control group on muscular strength were 25.13 and 24.93 respectively. The obtained 't' ratio was 0.89, since the obtained 't' ratio was less than the required table value of 2.14 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically insignificant. The mean values of pre-test and post-test of the experimental group on muscular strength were 25.20 and 27 respectively. The obtained 't' ratio was 12.43* since the obtained 't' ratio was greater than the required table value of 2.14 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a significant difference between control group and experimental group in calf circumference. It may be concluded from the result of the study that experimental group improved in muscular strength due to six weeks of elastic resistance training.

DISCUSSIONS ON FINDINGS

The result of the study indicates that the experimental group, namely elastic resistance training group had significantly improved the selected dependent variable, namely muscular strength, when compared to the control group. It is also found that the improvement caused by elastic resistance training when compared to the control group.

CONCLUSION

On the basis of the results obtained the following conclusions are drawn,

- There was a significant difference between experimental and

control group on muscular strength after the training period.

2. There was a significant improvement in muscular strength. However the improvement was in favor of experimental group due to six weeks of elastic resistance training.

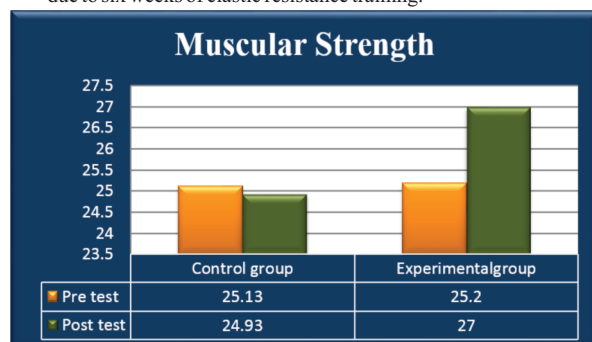


Figure-1 Bar Diagram Showing The Pre And Post Mean Values Of Experimental And Control Group On Muscular Strength

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