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RESEARCH ARTICLE

EFFECT OF TWO DIFFERENT METHODS OF RESISTANCE TRAINING ON STRENGTH PERFORMANCE OF COLLEGE MEN ATHLETES OF KERALA

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Abstract

Purpose: The present study was designed to find out the effect of two different methods of resistance training on strength performance of college men athletes of Kerala **Subjects:** For this purpose forty five(N=45) men athletes studying various colleges affiliated to Kannur University, Kannur, Kerala, India, during the year 2021-2022 were selected as subjects. The subjects were divided at random into three groups of fifteen each (n=15). Group-I underwent Progressive Resistance Training, Group-II underwent Regressive Resistance Training and Group III acted as control. **Training Protocol:** Group-I underwent Progressive Resistance Training, Group-II underwent Regressive Resistance Training, and Group-III acted as Control. The duration of the training period for all the three Experimental groups was restricted to twelve weeks and the number of sessions per week was confined to three in a week. **Variables:** The dependent variable selected for this study was strength and it was assessed through push-ups test. **Statically Procedure:** All the subjects were tested prior to and immediately after the training for all the selected variables. Data were collected and statistically analyzed using ANCOVA. Scheffe's post hoc test was applied to determine the significant difference between the paired means. In all the cases 0.05 level of significance was fixed. **Results:** The results of the study showed that there was a significant difference was found among all the experimental groups namely Progressive Resistance Training programme group and Regressive Resistance Training programme had significantly increase in strength. When the experimental groups were compared with each other, the Progressive Resistance Training programme was found to be greater than the Regressive Resistance Training programmes on the increase of strength.

Keywords: Progressive Resistance Training, Regressive Resistance Training, Athletes, Strength

Introduction

Participation in everyday physical activity is essential for maintaining excellent health. Years of daily expertise in a variety of strenuous physical exercises have resulted in a high degree of physical fitness. Function determines structure, and structure determines function, according to biological principles. For man's growth and development, he requires intense exercise. Muscles in good health, strength, and endurance are necessary for man to conduct his daily activities efficiently. It is true that in order to build a muscle, it must be overloaded (Govindarajulu, 1991).

In various disciplines, the term "training" has distinct meanings. In sports, the term 'training' is often used interchangeably with the term 'exercise.' In a nutshell, training is physical activity that is done with the purpose of improving one's health. Building an exercise programme to prepare an athlete for a specific event is known as training. Equal consideration must be given to the expanding skill and energy capacity (Singh, 1991).

Many elements contribute to success in competitive sports and games, with training being one of the most significant. A variety of training methods have been widely employed to increase athletes' physical fitness and performance standards. Interval training, fartlek training, circuit training, weight training, plyometrics training, continuous method, variable pace method, technique training, speed training, resistance training, and so on are some of the training methods used by athletes to improve their performance.

Resistance training is a technique for growing physical strength by gradually increasing one's ability to resist force using free weights, machines, or one's own body weight. Strength training sessions are meant to increase resistance, which drives muscle strength development in order to meet the increased demand.

Methodology

To achieve this purpose forty five(N=45) men athletes studying various colleges affiliated to Kannur University, Kannur, Kerala, India, during the year 2021-2022 were selected as subjects. The selected subjects were divided into three equal groups of fifteen such as Progressive resistance training group, Regressive resistance training group and Control group. Group-I underwent Progressive Resistance Training programme, group-II Regressive Resistance Training programme for three days per week for twelve weeks, group-III acted as Control. Strength only selected as dependent variable for this study and it was assessed through push-ups. All the subjects of the three groups were tested on selected criterion variables at prior to and immediately after the training programme.

Analysis of the data

The data collected from the experimental groups and control group on 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. Whenever they obtained f-ratio value in the simple effect was significant the Scheffe's test was applied as post hoc test to determine the paired mean differences, if any. In all the cases 0.05 level of significance was fixed.

The Analysis of covariance (ANCOVA) on Strength of Experimental Groups and Control group have been analyzed and presented in Table -1.

Table-1 shows that the adjusted post test mean value of Strength for Progressive Resistance Training group, Regressive Resistance Training group, and Control group is 176.59, 181.55 and 189.01 respectively. The obtained F-ratio of 192.39 for the adjusted post test mean is more than the table value of 3.23 for df 2 and 41 required for significance at 0.05 level of confidence.

The results of the study indicate that there are significant differences among the adjusted post test means of Experimental groups on the decrease of Total Cholesterol (TC).

To determine which of the paired means had a significant difference, Scheffe's test was applied as Post hoc test and the results are presented in Table-2.

Table 1: Values of analysis of covariance for experimental groups on strength

Adjusted Post test Means			Source of Variance	Sum of Squares	df	Mean Squares	'F' Ratio
Progressive Resistance Training Group – (I)	Regressive Resistance Training Group – (II)	Control Group – (III)					
23.85	20.78	17.77	Between With in	274.45 52.72	2 41	137.22 1.29	106.72*

** Significant at. 0.05 level of confidence*
(Strength Scores in Counts)
(The Table value required for Significance at 0.05 level with df 2 and 41 is 3.23)

Table – 2: The scheffe's test for the differences between the adjusted post tests paired means on strength

Adjusted Post Test Mean			Mean Difference	Confident Interval Value
Progressive Resistance Training Group – (I)	Regressive Resistance Training Group – (II)	Control Group – (III)		
23.85	20.78	---	3.07*	1.05
23.85	---	17.77	6.09	
---	20.78	17.77	3.02*	

**** Significant at.05 level of confidence***

Table -2 shows that the adjusted post test means differences on Progressive Resistance Training group and Regressive Resistance Training group, Progressive Resistance Training group and Control group and Regressive Resistance Training group and Control group, are 4.96, 12.42 and 7.46 respectively and they are greater than the confidence interval value 1.04, which shows significant differences at 0.05 level of confidence.

The results of the study further have revealed that there is a significant difference in Strength between the adjusted post test means of Progressive Resistance Training group and Regressive Resistance Training group, Progressive Resistance Training

group and Control group and Regressive Resistance Training group and Control group.

However, the improvement in Strength was significantly higher for Progressive Resistance Training group than Regressive Resistance Training group and Control group. It may be concluded that the Progressive Resistance Training group has exhibited better than the Regressive Resistance Training group and Control group in improving Strength.

The adjusted post test mean values of Progressive Resistance Training group, Regressive Resistance Training group and Control group on Strength are graphically represented in the Figure - 1.

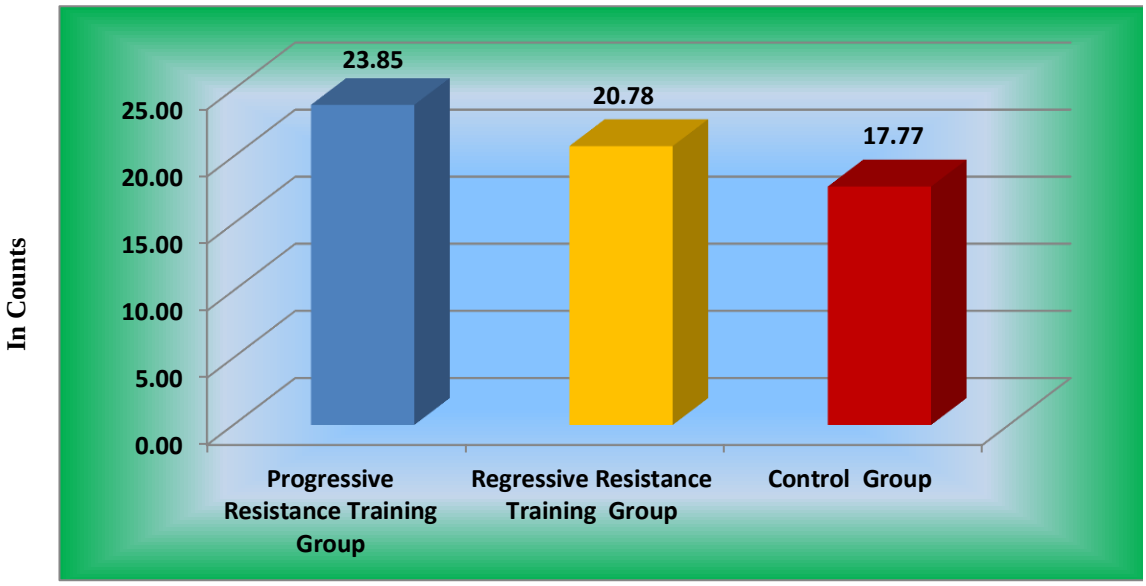

Figure- 1: The adjusted post test mean values of progressive resistance training group, regressive resistance training group and control group on strength

Conclusion

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

1. The Progressive Resistance Training programme had registered significant improvement on Strength.
2. The Regressive Resistance Training programme had registered significant improvement on Strength.
3. When the experimental groups were compared with each other, the Progressive Resistance Training programme was found to be greater than the Regressive Resistance Training programmes on the increase of Strength

Reference

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