

Impact of Resistance Training on Flexibility of Male College Hostel Students

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Abstract

The aim of this study was to find out the effect of resistance training on flexibility of male college hostel students. Twenty male hostel students (n=20) were randomly selected from the Government Degree College, Anantnag. The ages were ranged between 18 and 22 years. The selected subjects were randomly assigned into two equal groups as training group (TG) control group (CG). The training group (TG) underwent respective resistance training programme for twelve weeks duration for three days per week and a session on each day. The control group (CG) did not expose any special training apart from their regular activities. The flexibility was taken as a dependant variable for the study and it was measured by using sit and reach test. Analysis of covariance (ANCOVA) was used to analyze the collected data. The result revealed that resistance training was made significant improvement ($p < 0.05$) in physical fitness of selected subjects. The level of confidence was fixed at 0.05 levels.

Keywords: Resistance training; Flexibility; College hostel students

Introduction

Resistance training as an exercise programme where free or stationary weights are used for the purpose of increasing muscular strength, muscular endurance and power through which skills can be improved. Exercise is physical activity that is planned, structured, and repetitive for the purpose of conditioning any part of body. Resistance training is used to improve health, maintain fitness and is important as a means of physical rehabilitation. Strengthening exercises increase muscle strength and mass, bone strength, and body's metabolism Bloomfield [1]. Resistance training can produce the changes in the body compositions, strength, muscular hypertrophy, and motor performance desired by many individuals. To produce optimal changes in these areas it is necessary to adhere to some basic principles. These principles apply regardless of resistance modality or the type of system is used Champaign [2].

Resistance training is the most important ingredient in the process of making an athlete and it enhances performances along with success not only rehabilitation, but also in preventing injuries as well. Proper resistance training yields benefits for any athlete young or old. As a result, he is stronger, faster, more flexible, more enduring, and less likely to suffer from injury. Resistance training is used directly to improve maximum strength, elastic strength, strength endurance and it leads to intensive demands on muscular tendons, ligaments and joints [3].

Flexibility is concerned with range of movements in a joint. It limits the degree to which the some parts of the body can bend

twist or more by means of flexion and extension of muscles. It also depends up on the ligaments that surround the joints. Flexibility varies from one joint to another, flexibility of a joint can contributes to increase work performance and general state of good health [4]. Flexibility is an important component of physical fitness. Flexibility is a motor ability which is a conditional or coordinative process of the central nervous system. In common usage flexibility is often equated with stretch ability, elasticity, mobility, etc. But flexibility is the ability to execute movements with greater amplitude or range [5]. Flexibility is prerequisite to success, flexibility is one of the most important health related component of physical fitness. It is the maximal range of motion possible at a joint, the ability to move each joint through a full range of movements without undue strain is essential to efficient execution of everyday tasks.

Materials and Methods

The purpose of this study was to find out the effect of resistance training on flexibility of male college hostel students. Twenty male hostel students (n=20) were randomly selected from the Government Degree College, Anantnag. The ages were ranged between 18 and 22 years. The selected subjects were randomly assigned into two equal groups as training group (TG) control group (CG). The training group (TG) underwent respective resistance training for twelve weeks duration for three days per week and a session on each day. The control group (CG) did not expose any special training apart from their regular activities. Moderate intensity (60%-70%) of resistance was used in this

experimentation. The flexibility was taken as a dependant variable for the study and it was measured by using sit and reach test. These are the exercise used as resistance

- Bench press
- Half squat
- Heel raises
- Arm curl
- Leg curl
- Sit ups.

These exercises are used to perform this study for flexibility of the body

- Strech shoulder & chest
- Stretch arm across chest
- Triceps starch
- Glute stretch
- Abductor stretch
- Standing calf.

The pre and post test were conducted one day before and after the experimental treatment.

Analysis of Data

Mean, Standard deviation analysis of covariance (ANCOVA) were used for the analysis of data, and statistical significance was fixed at 0.05 levels

Results and Discussions

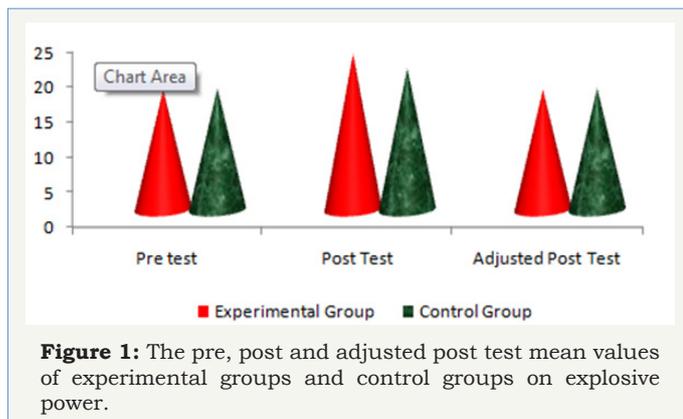
Analysis of covariance on flexibility of the training group and the control group (Table 1)

Table 1: Analysis of Covariance on Flexibility of the Training Group and the Control Group.

Test		Training Group	Control Group	SOV	SS	df	MS	F
Pre test	Mean	17.16	17.37	B	0.23	1	0.2	0.36
	SD	0.57	0.95	W	11.25	18	0.62	
Post test	Mean	22.3	20.26	B	0.23	1	19.02	11.39*
	SD	1.39	1.19	W	11.13	18	1.67	
Adjusted Post test	Mean	17.13	17.4	B	0.25	1	0.25	19.41
				W	11.09	17	0.66	

*Significant at 0.05 level of confidence.

The table value required for significance at 0.05 level of confidence with df 1 & 18 and 1 & 17 are 4.41 and 4.45 respectively.



The analysis of covariance on speed among experimental and control groups were described in table no I. The mean value of flexibility of training and control groups were 17.16 and 17.37. The obtained 'F' value of 0.36 was lesser than the table value of 4.41, there was insignificant improvement among the groups in pre test result of flexibility. The post test means of the groups were 22.3 and 20.6 respectively, and the obtained 'F' value of 11.39 was greater than the table value, and there was a significant difference in flexibility of the training and control groups among the male college hostel students. The obtained adjusted post test F value 19.41 also greater the table value of 4.45 for df 1 and 1 and 17. The pre, post

and the adjusted post test mean values of the experimental and control groups on flexibility were graphically represented in Figure 1.

Discussion

The current study utilized 12-weeks programme duration with three sessions per week and found that resistance training elicited an increase in flexibility. Resistance training may be the best method to improve flexibility. Bloomfield [1] & Hardiyal [5] were conducted a study on resistance training among college level hostel students and reached the conclusion that the resistance training is one of the best method for improving the flexibility. Champaign [2] & Mathews [3] also reached the conclusion of positive improvement in flexibility. Thorgtersson [6] & Abraham [4,7] concluded that resistance training improves the flexibility. McNeal [8-10] recommended that resistance training is more ideal to improve jumping ability through flexibility. These studies are supportive result of the present investigation and we can see the influence of resistance training on flexibility.

Conclusion

The result of the study raveled that the training group has significant improvement in flexibility among college male hostel students after the resistance training protocol. It was also



concluded that the resistance training is one of the best training methods for improving the flexibility as well as the physical fitness of young men.

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