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Effect of resistance training on diastolic blood pressure of Annamalai University Students

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The purpose of the study is to find out the effects of resistance training on Diastolic blood pressure. fifteen (N=15) men studying in Annamalai University Tamilnadu, India were randomly selected as subjects. The age, height and weight of the subjects ranged from 18 to 21 years, 162 to 171 cms and 60 to 68 kg respectively, and the standard deviations were 0.14, 0.06, and 0.09 kilograms respectively.

Subjects selected (n=15) underwent Resistance Training for twelve weeks. A written consent was also obtained from the subjects. However, they were free to withdraw their consent in case they felt any discomfort during the period of their participation. There were no such dropouts in this study.

The data collected from the subject prior to and immediately after the training programme on the selected criterion variables were statistically analysed with dependent 't' test the dependent 't' test values between the pre and posttest means of Resistance Training is 4.14 respectively. Since the obtained 't'-test value of experimental groups is greater than the table value 2.15 with df 14 at .05 level of confidence, it is concluded that Resistance Training have registered significant improvement in performance of Diastolic Blood Pressure.

Keyword: Diastolic blood pressure, resistance training

Introduction

Resistance training is a method of physical conditioning that employs both apparatus resistance training and calisthenics' conditioning exercises. It provides a means of achieving optional fitness in a systemized controlled fashion. The intensity and vigor of resistance training are indeed challenging and enjoyable to the performer. The system produces positive changes in motor performance, general fitness, muscular power, endurance and speed (Aruheim, 1987) [1].

Methodology

The purpose of the study is to find out the effects of resistance training on diastolic blood pressure. fifteen (N=15) men studying in Annamalai University Tamilnadu, India were randomly selected as subjects. The age, height and weight of the subjects ranged from 18 to 21 years, 162 to 171 cms and 60 to 68 kg respectively, and the standard deviations were 0.14, 0.06, and 0.09 kilograms respectively.Subjects selected (n=15) underwent Resistance Training for twelve weeks.

Selection of Variables

Dependent Variables

The dependent variables selected in this study was Diastolic blood pressure

Training programme

During the training period, the experimental group has undergone the training programme as given in table- 1.

Resistance Training

The researcher selected eight exercises and fixed them as stations High Knee Action, Jump and Reach, Shuttle run, Bounding, Rope Skipping, Bent Knee Sit-ups, Jump Squats and Tuck Jumps to be carried out by the subjects and the same is shown in Figure-I.

Table 1: Training Intensity for Resistance Training.

Week	Duration of Exercises (in Seconds)	Number of Resistances	Recovery Time between Resistance (in Minutes)
I-II	40	2	5
III-IV	40	2	4
V-VI	45	2	5
VII-VIII	45	2	4
IX-X	50	3	5
XI-XII	50	3	4

As per the table above, total training period has been allotted to twelve weeks. Duration of each exercise per resistance varied from 40 to 50 seconds, number of resistances for these twelve weeks also varied from two to three. Recovery time taken between resistances also varied from four to five weeks.

Collection of Data

The data were collected from all subjects during their resting conditions.

Selection of Test
diastolic blood pressure Purpose

The purpose is to measure diastolic blood pressure.

Equipment

A dial type of Sphygmomanometer and stethoscope, a chart and a table were used for recording the blood pressure.

Procedure

The blood pressure for the subjects was taken in the morning session. Each subject was given adequate time to relax in a seat in a comfortable position to maintain the normal blood pressure. The blood pressure for all the subjects were taken in a systematic manner for which the subject's right arm was completely made bare to make certain that clothing did not press the blood vessels. The Sphygmomanometer was kept at the level of the heart to avoid any gravitational influences.

The blood pressure measurement was taken with the subject in a relaxed position on the table. The cuff was wrapped around the arm evenly with the lower edge approximately one inch above the antecubital space. The stethoscope was placed firmly over the artery in the antecubital space. It was made sure that stethoscope was free from contact with the cuff. The cuff was inflated until the artery fully collapsed to the extent that no pulse beat could be heard.

Pressure was then released by releasing the knob slowly as the investigator watched the gauge. When the first sound of the pulse became audible, the reading in millimeters of mercury at the instant was recorded as systolic blood pressure. It represented the blood pressure when the heart was contracting. This was further released gradually. As the sound of the pulse got reduced by intensity and quality, the index of diastolic heart sound completely ceased. It represented the blood pressure while in releasing.

Scoring

The reading in the blood pressure apparatus at which the sound was first heard was taken as systolic blood pressure. Then the sound became progressively louder with changes in quality and finally disappeared. The split second in which it disappeared was taken as diastolic pressure.

Statistical Technique

The data obtained from the experimental group before and after the experimental period were statistically analyzed with dependent 't'-test.

Diastolic Blood Pressure

The analysis of dependent 't'-test on the data obtained for Diastolic Blood Pressure of the subjects in the Pre-test and Post-test of experimental group and control group has been presented in Table I.

Results

Table 1: The summary of mean and dependent 't' test for the pre and post tests on diastolic blood pressure of experimental group

Pre-test mean	84.47	t- test =	8.90*
Post-test mean	82.40		

* Significant at .05 level.
(Table value required for significance at .05 level for 't'-test with df 14 is 2.15)

Conclusion

From table 1 it is learnt that the dependent 't' test values between the pre and posttest means of Resistance Training is 8.90 respectively. Since the obtained 't'-test value of experimental groups is greater than the table value 2.15 with df 14 at .05 level of confidence, it is concluded that Resistance Training have registered significant effect on diastolic Blood Pressure.

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