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Effect of Resistance Training on Selected Physiological Variables among College Volleyball Players

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Abstract

The purpose of the study was to find out the effect of resistance training on selected physiological variables among college volleyball players. It was hypothesized that there would be significant differences on selected physiological variables due to the effect of resistance training among college volleyball players. For the present study the 30 male college volleyball players from Selvam College of Physical Education, Namakkal, Tamilnadu were selected at random and their age ranged from 18 to 25 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent resistance training and Group 'B' has not undergone any training. The data was collected before and after six weeks of training. The data was analyzed by applying dependent 't test. The level of significance was set at 0.05. The resistance training had positive impact on systolic blood pressure, diastolic blood pressure and resting pulse rate among college volleyball players.

Keywords: Resistance Training, Blood Pressure, Pulse Rate, Volleyball.

Introduction

Resistance exercise has gained popularity over the last decade. Resistance training is any exercise that causes the muscles to contract against an external resistance with the expectation of increases in muscle strength, muscle tone, muscle mass and muscle endurance. The resistance training is should be done two to three times a week with an average of 8 to 12 repetitions of a series of different exercises. Resistance training is a form of strength training in which each effort is performed against a specific opposing force generated by resistance. Exercises are isotonic if a body part is moving against the force. Exercises are isometric if a body part is holding still against the force. Avery and Faigenbaum (2007) opines that regular strength training can mean the difference between spending your last years in a nursing home and spending them traveling, enjoying your family and doing recreational pursuits.

Volleyball is a worldwide popular game and ranks third as a recreational team sport. It is one of the few popular games that originated from the United States. Volleyball is an Olympic team sport in which two teams of six players each. At the advanced skill levels, technical performance may be limited by physical characteristics and performance characteristics.

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Physiological parameters plays a vital role in players overall performances.

Methodology

The purpose of the study was to find out the effect of resistance training on selected physiological variables among college volleyball players. It was hypothesized that there would be significant differences on selected physiological variables due to the effect of resistance training among college volleyball players. For the present study the 30 male college volleyball players from Selvam College of Physical Education, Namakkal, Tamilnadu were selected at random and their age ranged from 18 to 25 years. For the present study pre test – post test random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of fifteen each and named as Group 'A' and Group 'B'. Group 'A' underwent resistance training and Group 'B' has not undergone any training. The data was collected before and after six weeks of training. The data was analyzed by applying dependent 't test. The level of significance was set at 0.05.

Results

The findings pertaining to analysis of dependent 't' test between experimental group and control group on selected physiological variables among college volleyball players for pre-post test respectively have been presented in table I to II.

Table I. Significance of mean gains & losses between pre and post test scores on selected variables of resistance training group

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Systolic Blood pressure	123.71	120.63	3.08	3.62	1.04	4.21*
2	Diastolic Blood Pressure	82.82	79.49	3.33	2.72	0.63	7.12*
3	Resting Pulse rate	70.79	68.09	2.70	5.81	1.35	6.53*

An examination of table-I indicates that the obtained't' ratios were 4.21, 7.12 and 6.53 for systolic blood pressure, diastolic blood pressure and resting pulse rate respectively. The obtained't' ratios were found to be greater than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be significant. The results of this study showed that statistically significant and explained its effects positively. The graphical representation of data has been presented in figure I.

Figure I. Comparisons of pre – test means and post – test means for experimental group in relation to physiological variables

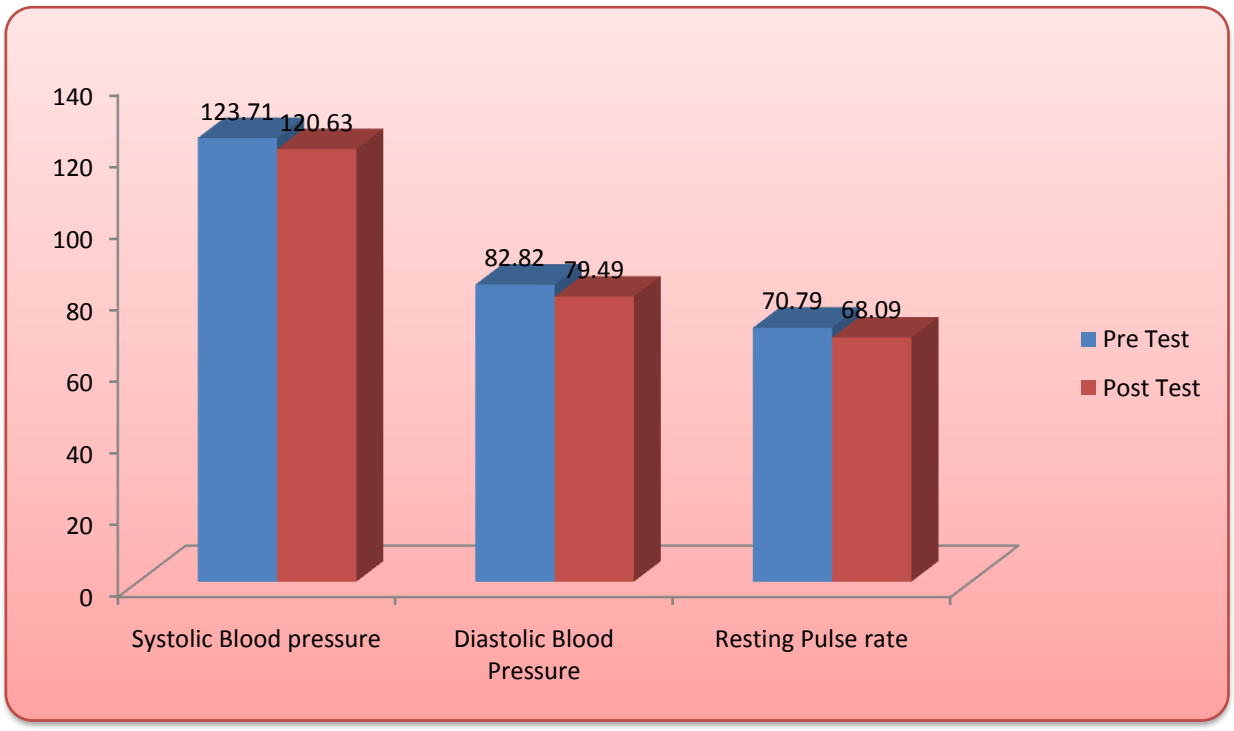
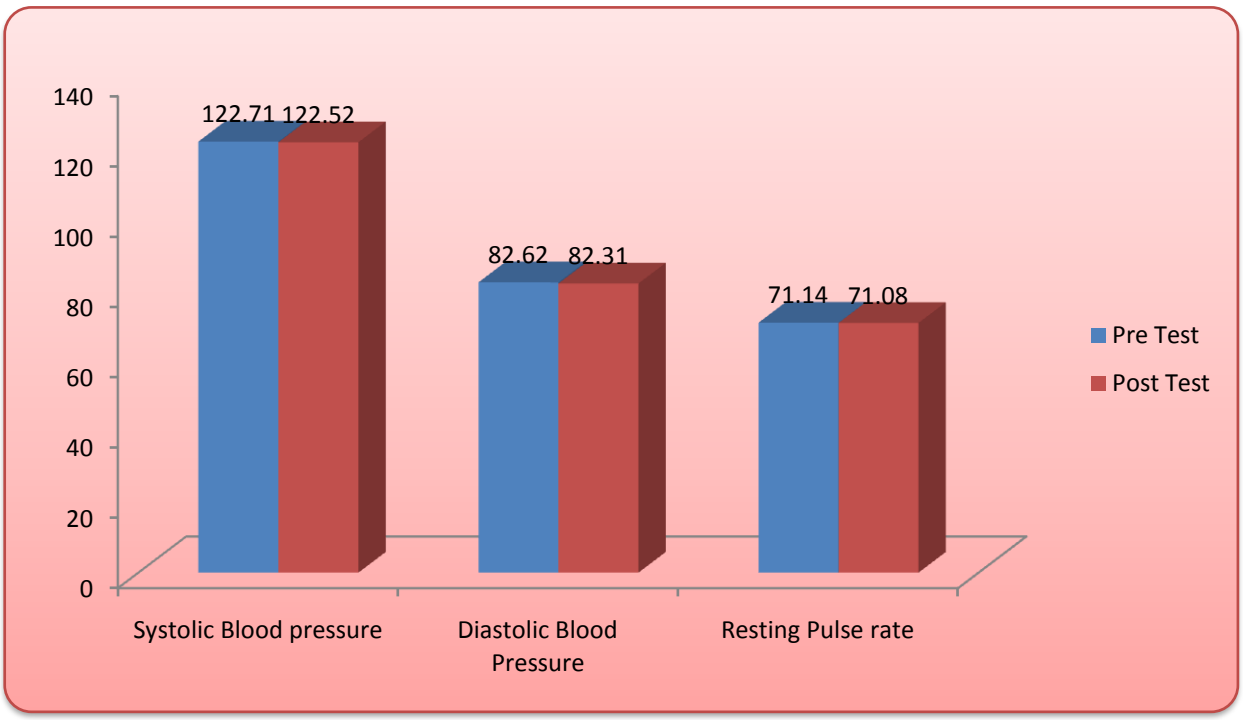


Table II. Significance of mean gains & losses between pre and post test scores on selected variables of control group

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Systolic Blood pressure	122.71	122.52	0.19	3.41	0.96	1.32
2	Diastolic Blood Pressure	82.62	82.31	0.31	2.14	0.52	1.49
3	Resting Pulse rate	71.14	71.08	0.06	4.28	1.42	0.81

An examination of table-II indicates that the obtained't' ratios were 1.32, 1.49 and 0.81 for systolic blood pressure, diastolic blood pressure and resting pulse rate respectively. The obtained't' ratios were found to be lesser than the required table value of 2.14 at 0.05 level of significance for 14 degrees of freedom. So it was found to be insignificant. The graphical representation of data has been presented in figure II.

Figure II. Comparisons of pre – test means and post – test means for control group in relation to physiological variables



Conclusions

On the basis of findings and within the limitations of the study the following conclusions were drawn:

1. The resistance training had positive impact on systolic blood pressure, diastolic blood pressure and resting pulse rate among college volleyball players.
2. The experimental group showed better improvement on systolic blood pressure, diastolic blood pressure and resting pulse rate among college volleyball players than the control group.

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