



Effect of Plyometric Training with Yogic Practices on Selected Physiological Variables among Volleyball Players

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Abstract

The purpose of the study was to find out the effect of plyometric training with yogic practices on selected physiological variables among volleyball players. It was hypothesized that there would be significant differences on selected physiological variables due to the effect of plyometric training with yogic practices among volleyball players. For the present study the 30 male volleyball players from Pasumpon Muthuramalinga Thevar College, Usilampatti and Arul Anandar College, Karumathur, Tamilnadu, India 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 plyometric training with yogic practices 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 experimental group showed better improvement on systolic blood pressure, diastolic blood pressure and resting pulse rate among volleyball players than the control group.

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

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Introduction

Plyometrics is the term given to exercises designed to increase the power of an athlete. It is defined as the equivalent of explosive strength (Brukner & Khan, 2001) and referred to by others as "speed-strength". In layman's terms, the aim of plyometrics is to increase the explosiveness of the muscle allowing an athlete to run faster, jump further, or generate force at a greater rate. Plyometric training is a form of training that is used to help develop and enhance explosive power, which is a vital component in a number of athletic performances. This training method is meant to be used with other power development methods in a complete training program to improve the relationship between maximum strength and explosive power. The modern history of Plyometrics is somewhat brief but not relatively new. This technique was originated in Russia and Eastern Europe in the middle of 1960. The Soviets were very successful in the use of Plyometrics in their training programmes, especially in track and field. Yoga is a physical, mental and spiritual discipline, originating in ancient India. Yoga enhances the intelligence, empowers the mind and makes the life pleasant (Joshi, 2001).

Volleyball is a team game where six players in the court will play as a unit and not like machine. Volleyball is considered as a top level competitive sport played in more than sixty countries and more than sixty million people. The game of Volleyball was invented in 1895 by William G Morgan who worked for the Y.M.C.A in Holyoak, Massachusetts. His early form of the game was designed to provide mild exercise for large groups of businessmen. At first, Morgan tried on Tennis to these people, but the problem of purchasing rockets and materials paved the way for the invention of volleyball. However, the Tennis net was first used to raise it to a height of six feet over which a Basketball bladder was volleyed. Since the bladder was too light and the flight over the net was rather slow, he used the Basketball but it was too large and heavy to volley over the net. A proposal for manufacturing a ball that was neither heavy nor big as Basketball was given to splading and brothers with definite specification. The resulting ball that was smaller and lighter than Basketball and then the net was also approved. Since then the game has developed and spread worldwide. The main reason of its popularity was it can be played indoors and outdoors, need little space compared to other games, and it can be played by both sexes and over a considerable age range. Play can be tremendously varying standards from a purely recreations level on the beach and in the park, through all levels of clubs and school level competitions, right up to international level (Chen, 1989).

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Methodology

The purpose of the study was to find out the effect of plyometric training with yogic practices on selected physiological variables among volleyball players. It was hypothesized that there would be significant differences on selected physiological variables due to the effect of plyometric training with yogic practices among volleyball players. For the present study the 30 male volleyball players from Pasumpon Muthuramalinga Thevar College, Usilampatti and Arul Anandar College, Karumathur, Tamilnadu, India 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 plyometric training with yogic practices 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 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 plyometric training with yogic practices group

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Systolic Blood pressure	121.25	119.45	1.80	1.37	0.30	12.97*
2	Diastolic Blood Pressure	82.14	80.02	2.12	2.1	0.58	14.11*
3	Resting Pulse Rate	72.17	70.24	1.93	1.46	0.32	10.32*

An examination of table-I indicates that the obtained 't' ratios were 12.97, 14.11 and 10.32 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

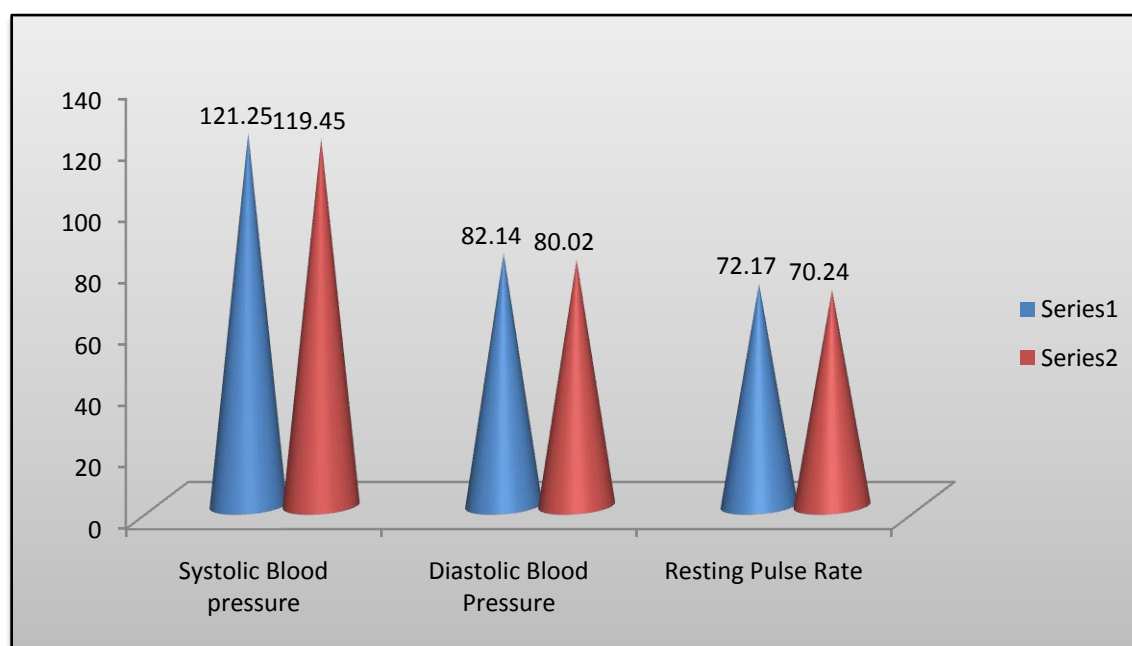
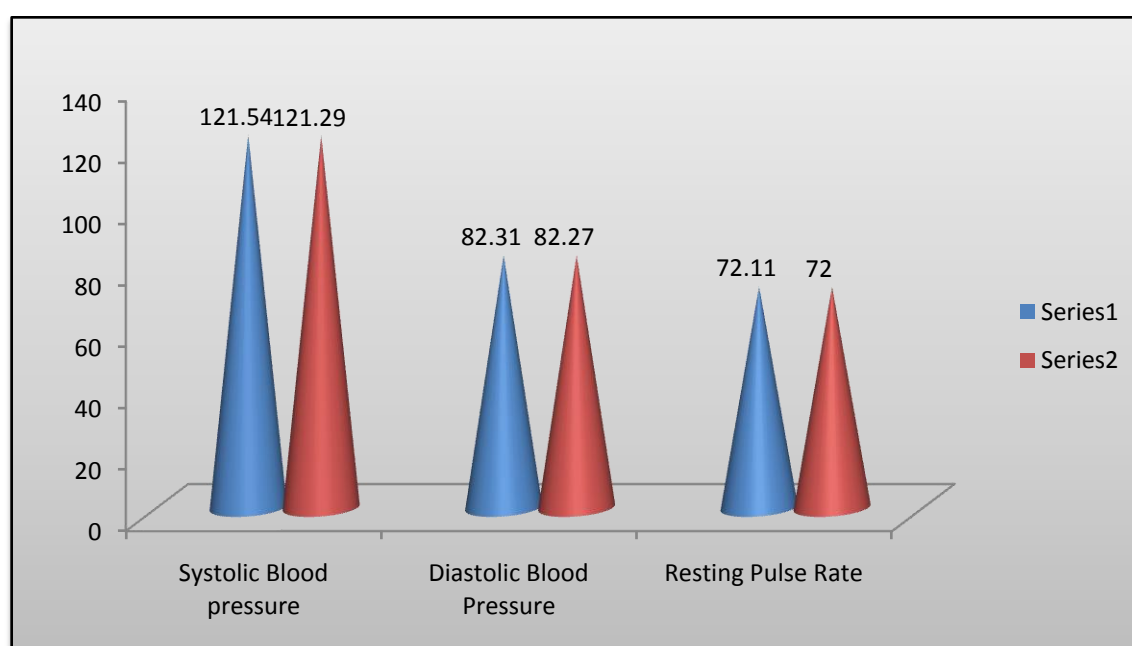


Table II. Significance of mean gains & losses between pre and post test scores on selected variables of control group

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Systolic Blood pressure	121.54	121.29	0.25	2.91	0.75	1.74
2	Diastolic Blood Pressure	82.31	82.27	0.04	0.99	0.25	0.50
3	Resting Pulse Rate	72.11	72	0.11	1.57	0.40	0.60

An examination of table-II indicates that the obtained 't' ratios were 1.74, 0.50 and 0.60 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 plyometric training with yogic practices had positive impact on systolic blood pressure, diastolic blood pressure and resting pulse rate among volleyball players.
2. The experimental group showed better improvement on systolic blood pressure, diastolic blood pressure and resting pulse rate among volleyball players than the control group.

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