



EFFECT OF CIRCUIT TRAINING ON SELECTED PHYSIOLOGICAL VARIABLES AMONG PHYSICAL EDUCATION STUDENTS

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ABSTRACT

The purpose of the study was to find out the effect of circuit training on selected physiological variables among physical education students. It was hypothesized that there would be significant differences on selected physiological variables due to the effect of circuit training among physical education students. For the present study the 30 male physical education students from Alagappa University College of Physical Education, Karaikudi, 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 circuit 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 circuit training had positive impact on systolic blood pressure and diastolic blood pressure among physical education students.

Keywords: Circuit Training, Systolic blood pressure, Diastolic blood pressure.

INTRODUCTION

Circuit training is also a convenient way to exercise. It maximizes the total exercise volume (number of sets, repetitions, and amount of weight) completed in a period of time. Exercises are completed in a row, and therefore, the time spent exercising is condensed. Separate cardiovascular training is not necessary. All body parts are trained in one session, and therefore, exercisers do not need to work out every day. Circuit training is a type of exercise program where one does a series of timed exercises at a fairly rapid pace, with a brief period of rest in between each exercise. Circuit training workouts may target the entire body or just one specific area, such as the arms, legs, or chest. In addition, circuit training workouts may focus on strength training, aerobics, or a combination of the two; the possibilities are virtually limitless. In general, there are four types of circuit training workouts, and these include a timed circuit, a competition circuit, a repetition circuit, and a sport specific/running circuit (Paul et al. 2013).

METHODOLOGY

The purpose of the study was to find out the effect of circuit training on selected physiological variables among physical education students. It was hypothesized that there would be significant differences on selected physiological variables due to the effect of circuit training among physical education students. For the present study the 30 male physical education students from Alagappa University College of Physical Education, Karaikudi, 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 circuit 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.

TABLE –I
VARIABLES AND TEST

S.No	Variables	Tests
1	Systolic blood pressure	Digital Blood Pressure Monitor
2	Diastolic blood pressure	Digital Blood Pressure Monitor

RESULTS

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

TABLE –II
SIGNIFICANCE OF MEAN GAINS & LOSSES BETWEEN PRE AND POST TEST SCORES ON SELECTED
VARIABLES OF CIRCUIT TRAINING GROUP (CTG)

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Systolic blood pressure	121.45	118.45	3.00	1.11	0.24	11.73*
2	Diastolic blood pressure	81.20	78.60	2.60	1.25	0.31	8.69*

* Significant at 0.05 level

Table II shows the obtained 't' ratios for pre and post test mean difference in the selected variable of systolic blood pressure (11.73) and diastolic blood pressure (8.69). The obtained ratios when compared with the table value of 2.14 of the degrees of freedom (1, 14) it was found to be statistically significant at 0.05 level of

confidence. It was observed that the mean gain and losses made from pre to post test were significantly improved in physiological variables namely systolic blood pressure (3.00, $p < 0.05$) and diastolic blood pressure (2.60, $p < 0.05$) thus the formulated hypothesis is accepted.

FIGURE- I
COMPARISONS OF PRE – TEST MEANS AND POST – TEST MEANS FOR EXPERIMENTAL GROUP IN
RELATION TO PHYSIOLOGICAL VARIABLES

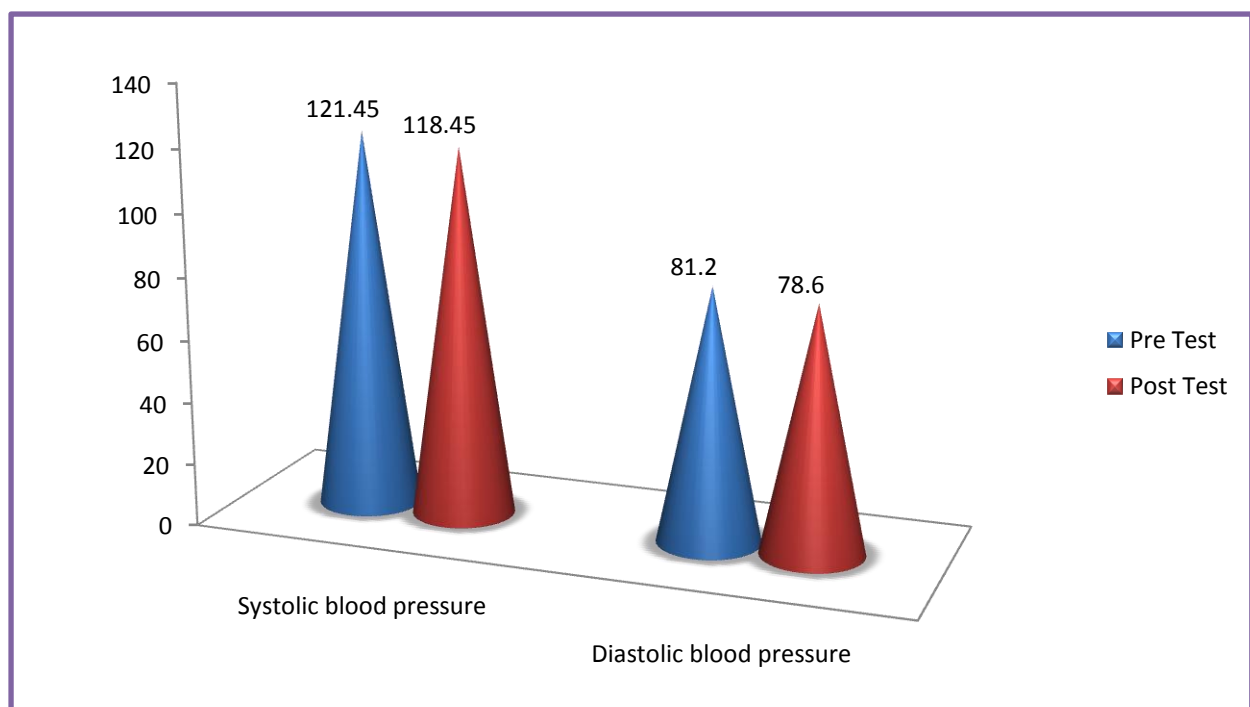


TABLE – III
SIGNIFICANCE OF MEAN GAINS & LOSSES BETWEEN PRE AND POST TEST SCORES ON SELECTED VARIABLES OF CONTROL GROUP (CG)

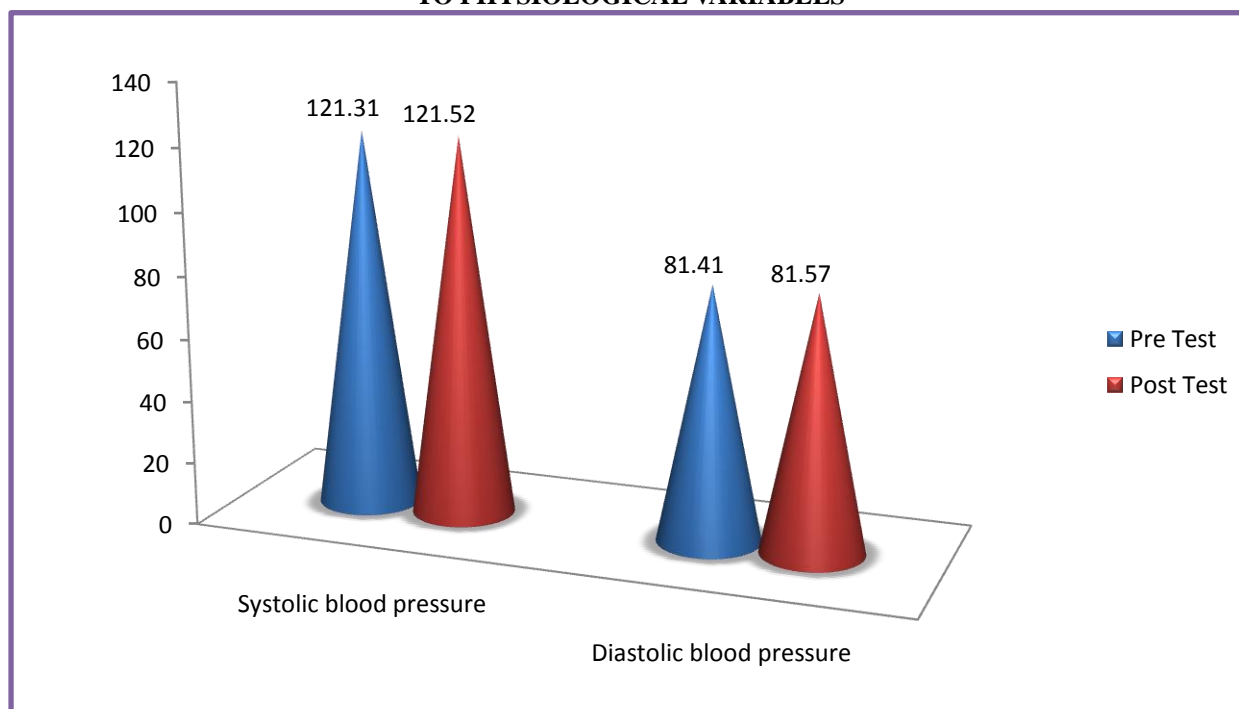
S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Systolic blood pressure	121.31	121.52	0.21	1.21	0.26	0.40
2	Diastolic blood pressure	81.41	81.57	0.16	1.37	0.33	0.51

* Significant at 0.05 level

Table III shows the obtained 't' ratios for pre and post test mean difference in the selected variable of systolic blood pressure (0.40) and diastolic blood pressure (0.51). The obtained ratios when compared with the table value of 2.14 of the degrees of freedom (1, 14) it was found to be statistically significant at 0.05 level of

confidence. It was observed that the mean gain and losses made from pre to post test were not significantly improved in physiological variables systolic blood pressure (0.21, $p > 0.05$) and diastolic blood pressure (0.16, $p > 0.05$).

FIGURE II
COMPARISONS OF PRE – TEST MEANS AND POST – TEST MEANS FOR CONTROL GROUP IN RELATION TO PHYSIOLOGICAL VARIABLES



DISCUSSIONS ON FINDINGS

In case of physiological variables i.e. systolic blood pressure and diastolic blood pressure power the results between pre and post test has been found significantly higher in experimental group in comparison to control group. The findings of the present study have strongly indicates that circuit training of six weeks have significant effect on selected physiological variables i.e., systolic blood pressure and diastolic blood pressure of physical education students. Hence the hypothesis earlier set that circuit training programme would have been significant effect on selected physiological variables in

light of the same the hypothesis was accepted.

CONCLUSION

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

1. The circuit training had positive impact on systolic blood pressure and diastolic blood pressure among physical education students.
2. The experimental group showed better improvement on systolic blood pressure and

diastolic blood pressure among physical education students than the control group.

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