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Effect of Bench Step Aerobics on Horizontal and Vertical Jumping ability among men Jumpers

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Abstract

The purpose of the study was to find out the influence of bench step aerobics on horizontal and vertical jumping ability among men jumpers. It was hypothesized that the bench step aerobics group might show significant differences on horizontal and vertical jumping ability among men jumpers. To achieve the purpose of the present study, thirty intercollegiate level jumpers were selected from Tirunelveli district, Tamilnadu were selected as subjects at random and their ages ranged from 18 to 25 years. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n=30) were randomly assigned to two equal groups as bench step aerobics group (BSAG) and control group (CG) in an equivalent manner. The bench step aerobics group participated for a period of six weeks for alternate three days in a week and the post-tests were taken. To find out the difference between the two groups analysis of covariance (ANCOVA) was used. The bench step aerobics had positive impact on horizontal jump and vertical jump among jumpers.

Keywords: Bench Step Aerobics, Horizontal, Vertical, Jumpers.

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Introduction

People are encouraged to take part in regular physical activity for health and fitness benefits. It is believed that the low physical fitness level of an individual is associated with higher mortality rate. Different exercise modalities have been explored in the story of time to promote cardiovascular fitness. Aerobic dance, walk-jog combination, and bench step aerobics are best examples. Bench step aerobics were innovated by Gin Miller around 1989. It is distinguished from other forms of aerobic exercise by its use of an elevated platform (the step or bench) which offer more vigorous work out compared to other forms of aerobic exercises. The plastic benches with variable heights which are frequently used for bench step test and were accepted worldwide. Bench step aerobics exercise has been shown to help individuals for improvement of cardiovascular fitness, body composition and aerobic capacity in a wide variety of populations (Greenlaw, 1995). Both horizontal and vertical jumping ability plays a major role in almost all the games and sports. The explosive nature of the jumps provides initial sudden movement with more power to accelerate that particular skill.

Purpose of the study

The purpose of the study was to find out the

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influence of bench step aerobics on horizontal and vertical jumping ability among men jumpers.

Hypothesis

It was hypothesized that the bench step aerobics group might show significant differences on horizontal and vertical jumping ability among men jumpers than the control group.

Methodology

To achieve the purpose of the present study, thirty intercollegiate level jumpers were selected from Tirunelveli district, Tamilnadu were selected as subjects at random and their ages ranged from 18 to 25 years. The study was formulated as a true random group design, consisting of a pre-test and post-test. The subjects (n=30) were randomly assigned to two equal groups as bench step aerobics group (BSAG) and control group (CG) in an equivalent manner. The bench step aerobics group participated for a period of six weeks for alternate three days in a week and the post-tests were taken.

Table 1
Variables and Test

S.No	Variables	Tests
1	Horizontal Jump	Standing Jump Broad Jump
2	Vertical Jump	Sargeant Jump

To find out the difference between the two groups analysis of covariance (ANCOVA) was used.

Results

The findings pertaining to analysis of dependent ‘t’ test between experimental group and control group on horizontal and vertical jumping ability

among men jumpers 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 Bench Step Aerobics Group (BSATG)

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	‘t’ Ratio
1	Horizontal Jump	1.79	1.86	0.07	3.14	0.76	6.88*
2	Vertical Jump	0.48	0.54	0.06	0.37	0.10	12.18*

* Significant at 0.05 level

Table II shows the obtained ‘t’ ratios for pre and post test mean difference in the selected variable of horizontal jump (6.88) and vertical jump (12.18). 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 horizontal jump (0.07 p<0.05) and vertical jump (0.06 p<0.05) thus the formulated hypothesis is accepted.

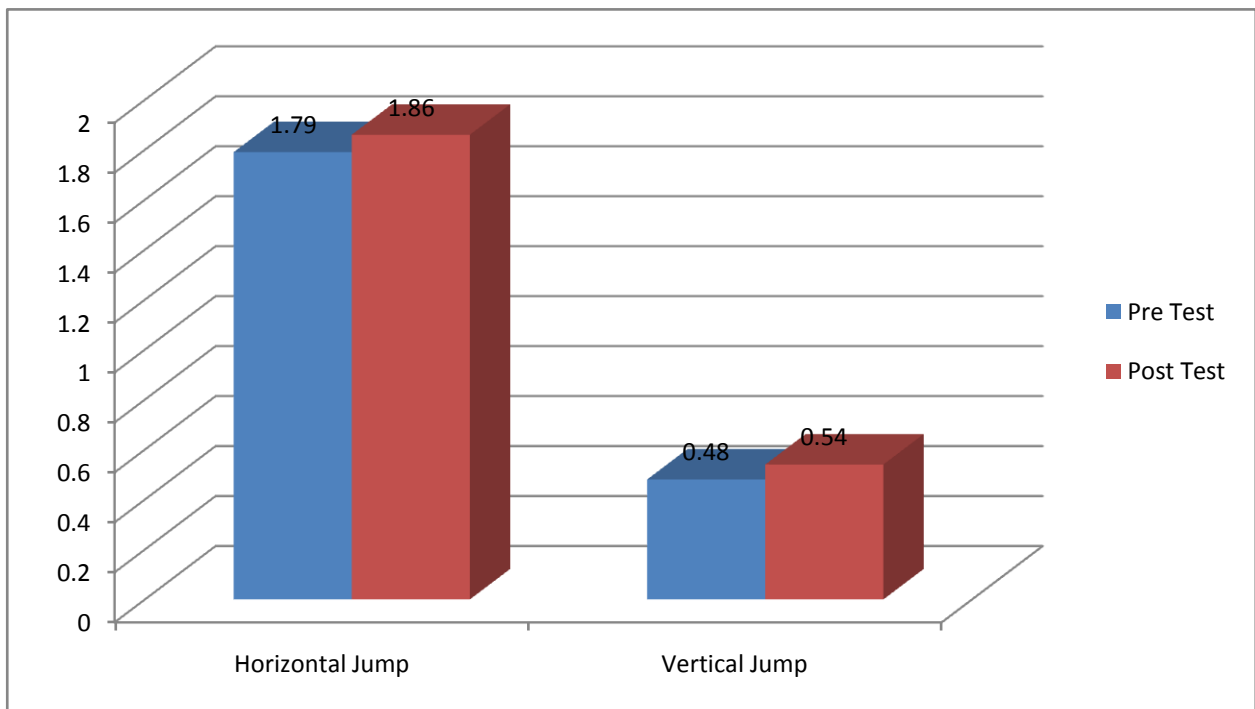


Figure 1

Comparisons of Pre – Test Means and Post – Test Means for Experimental Group in Relation to horizontal and vertical jumping ability

Table 3
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	Horizontal Jump	1.78	1.79	0.01	2.12	0.54	0.58
2	Vertical Jump	0.47	0.48	0.01	0.45	0.11	0.20

* Significant at 0.05 level

Table III shows the obtained 't' ratios for pre and post test mean difference in the selected variable of horizontal jump (0.58) and vertical jump (0.20). 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 horizontal jump (0.01 $p > 0.05$) and vertical jump (0.01 $p > 0.05$) thus the formulated hypothesis is accepted.

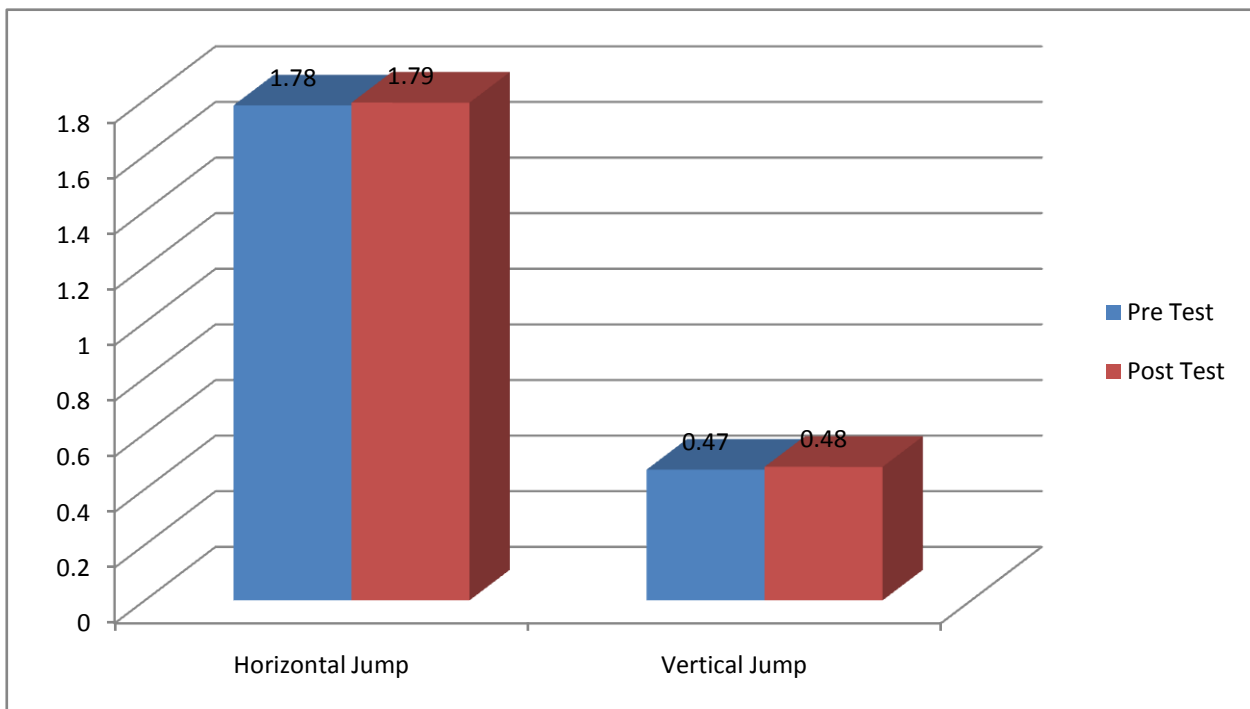


Figure II
Comparisons of Pre – Test Means and Post – Test Means for Control Group in Relation to horizontal and vertical jumping ability

Discussions on Findings

In case of selected variables i.e. horizontal jump and vertical jump 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 bench step aerobics of six weeks have significant effect on selected variables i.e., horizontal jump and vertical jump of jumpers. Hence the hypothesis earlier set that bench step aerobics programme would have been significant effect on selected horizontal and vertical jumping ability in

light of the same the hypothesis was accepted.

Conclusions

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

1. The bench step aerobics had positive impact on horizontal jump and vertical jump among jumpers.

2. The experimental group showed better improvement on horizontal jump and vertical jump among jumpers than the control group.

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