



EFFECT OF SHORT HILL TRAINING ON SELECTED CARDIO RESPIRATORY PARAMETERS AMONG COLLEGE MEN PLAYERS

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Abstract:

The purpose of the study was to find out the effect of short hill training on selected cardio respiratory parameters among college men players. It was hypothesized that there would be significant differences on selected cardio respiratory parameters due to the effect of short hill training among college men players. For the present study 40 men inter-collegiate players from Madurai Kamaraj University affiliated colleges, Tamilnadu were selected at random and their age ranged from 18 to 24 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 twenty men players each and named as Group 'A' and Group 'B'. Group 'A' underwent short hill training and Group 'B' has not undergone any training. The data was collected before and after twelve weeks of training. The data was analyzed by applying dependent 't test'. The level of significance was set at 0.05. The short hill training had positive impact on breath holding time and vital capacity among college men players.

Key Words: Short Hill Training, Vital Capacity, Breath Holding Time & College Men Players.

Introduction:

Hill running has a strengthening effect as well as boosting your athlete's power and is ideal for those athletes who depend on high running speeds - football, rugby, basketball, cricket players and even runners. To reduce the possibility of injury hill training should be conducted once the athlete has a good solid base of strength and endurance. In hill running, the athlete is using their body weight as a resistance to push against, so the driving muscles from which their leg power is derived have to work harder. The technique to aim for is a "bouncy" style where the athlete has a good knee lift and maximum range of movement in the ankle. They should aim to drive hard, pushing upwards with their toes, flexing their ankle as much as possible, landing on the front part of the foot and then letting the heel come down below the level of the toes as the weight is taken. This stretches the calf muscles upwards and downwards as much as possible and applies resistance which overtime will improve their power and elasticity. The athlete should look straight ahead, as they run (not at their feet) and ensure their neck, shoulders and arms are free of tension. Many experts believe that the "bouncy" action is more important than the speed at which the athlete runs up the hills.

A short hill is one which takes no more that 30 seconds to run up and has an inclination between 5 and 15 degrees gradient. The athlete's energy source on short hills is entirely anaerobic. The athlete should focus on a running technique which has vigorous arm drive and high knee lift, with the hips kept high, so that they are 'running tall', not leaning forwards. The session is anaerobic so the recovery time can be long, a walk back down the hill, or a slow jog of 60 to 90 seconds. The total volume will depend on the fitness of the athlete and the reason for doing it. A sprinter looking for strength might do 10 repetitions of 15 second duration up a steep slope with a long recovery where as a distance runner who is trying to improve sprinting speed might do 30 repetitions of 15 seconds duration. Short hills of 5 to 10 second duration will help improve the Adenosine Triphosphate and Phosphate-creatine (ATP+PC) energy system and hills of 15 to 30 second duration will help develop the ATP+PC+muscle glycogen energy system.

Methodology:

The purpose of the study was to find out the effect of short hill training on selected cardio respiratory parameters among college men players. It was hypothesized that there would be significant differences on selected cardio respiratory parameters due to the effect of short hill training among college men players. For the present study 40 men inter-collegiate players from Madurai Kamaraj University affiliated colleges, Tamilnadu were selected at random and their age ranged from 18 to 24 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 twenty men players each and named as Group 'A' and Group 'B'. Group 'A' underwent short hill training and Group 'B' has not undergone any training. The data was collected

before and after twelve weeks of training. The data was analyzed by applying dependent 't' test. The level of significance was set at 0.05.

Table 1: Variables and Test

S.No	Variables	Tests
1	Breath Holding Time	Manual Holding Method
2	Vital Capacity	Spirometer

Results:

The findings pertaining to analysis of dependent 't' test between experimental group and control group on selected cardio respiratory parameters among college men players for pre-post test respectively have been presented in table II to III.

Table 2: Significance of mean gains & losses between pre and post test scores on selected variables of short hill training group (SHTG)

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Breath Holding Time	45.56	58.32	12.76	2.04	0.91	4.51*
2	Vital Capacity	3.56	4.10	0.54	0.68	0.23	21.26*

* Significant at 0.05 level

Table I shows the obtained 't' ratios for pre and post test mean difference in the selected variable of breath holding time (4.51) and vital capacity (21.26). The obtained ratios when compared with the table value of 2.09 of the degrees of freedom (1, 19) 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 cardio respiratory parameters namely breath holding time (12.76, p<0.05) and vital capacity (0.54, p<0.05) thus the formulated hypothesis was accepted.

Figure 1: Comparisons of pre – test means and post – test means for experimental group in relation to cardio respiratory parameters

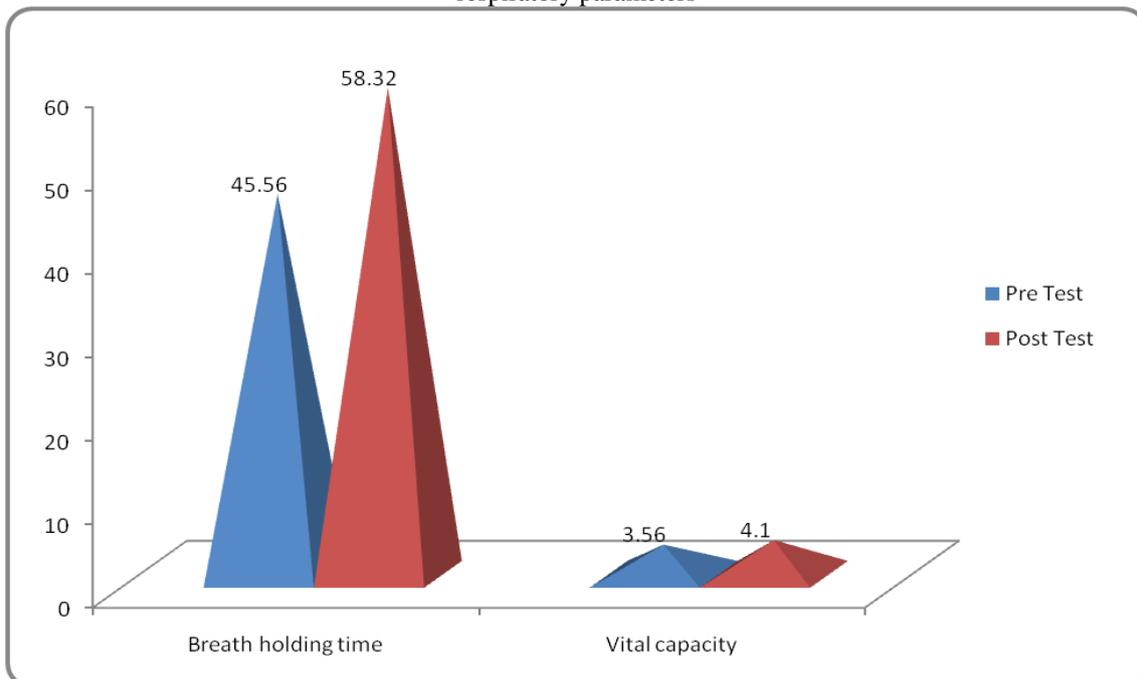


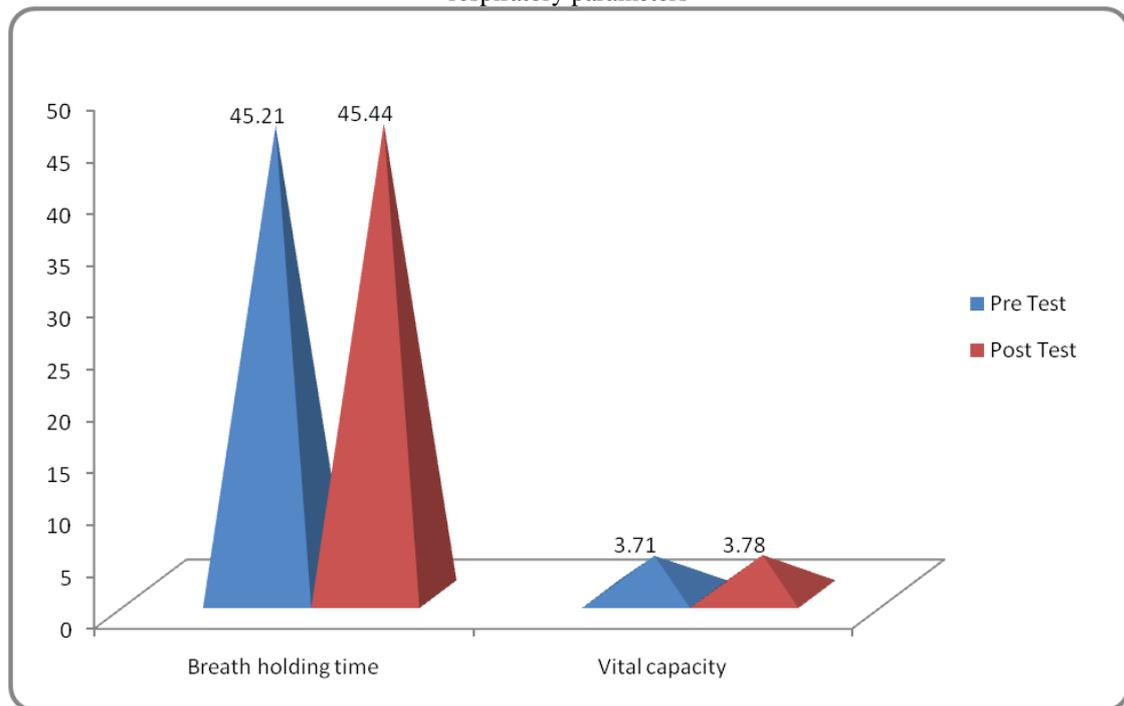
Table 2: Significance of Mean Gains & Losses between Pre and Post Test Scores on Selected Variables of Control Group (CG)

S.No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev (±)	σ DM	't' Ratio
1	Breath Holding Time	45.21	45.44	0.23	1.67	0.56	0.59
2	Vital Capacity	3.71	3.78	0.07	0.66	0.21	1.02

* Significant at 0.05 level

Table II shows the obtained 't' ratios for pre and post test mean difference in the selected variable of breath holding time (0.59) and vital capacity (1.02). The obtained ratios when compared with the table value of 2.09 of the degrees of freedom (1, 19) 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 cardio respiratory parameters.

Figure 2: Comparisons of pre – test means and post – test means for control group in relation to cardio respiratory parameters



Conclusions:

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

- ✓ The short hill training had positive impact on breath holding time and vital capacity among college men players.
- ✓ The experimental group showed better improvement on breath holding time and vital capacity among college men players than the control group.

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