Impact of Ladder Training on Selected Physical and Physiological Variables among College Men Kho–Kho Player

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Abstract

The purpose of the study was to find out the impact of ladder Training on Selected Physical and Physiological Variables among College Men kho-kho Player. To achieve the purpose of the study, 30 kho-kho players from Arul Anandar colleges from karumathur were selected. The selected subjects' age group was ranging from 18 to 24 years. The subjects were randomly divided into two groups and each group consisted of 15 subjects. Group I acted as ladder Training, Group II acted as control group.The random group design was employed. Experimental Group one underwent for ladder Training six weeks. The control group did not participate in any experimental treatment except of their regular activities. The subjects were tested of their physical and physiological variables prior to and after the experiment. The data collected were tested for the differences which were considered. The normality of the data was found through mean, standard deviation and F ratio and the data collected was found to be normal. The data collected on selected criterion variables were subjected to statistical analyze using analysis of covariance (ANCOVA) to find out the significant difference if any, between the groups on selected criterion variables separately. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as appropriate

Keywords: *ladder Training, Leg Explosive Strength, Cardio Respiratory Endurance, Speed, Agility, Resting heart rate, Breath holding time.*

Introduction

The word Training has been a part of human language since ancient times. It denotes the process of preparation for some task. This process invariably extends to a number of days

and even months and years. The term Training is widely used in sports. There is, however, some disagreement among sports coaches and also among sports scientists regarding the exact meaning of this word. Some experts, especially belonging to sports medicine, understand sports training as basically doing physical exercises.

Sports' training is done for improving sports performance. The sports performance, as any other type of human performance, is not the product of on single system or aspect of human personality. On the contrary, it is the product of the total personality of the sports person. The personality of a person has several dimensions e.g., physical, physiological, social and psychic. In order to improve sports performance the social and psychic capacities of the sports person also have to be improved in addition to the physical and physiological ones. In other words the total personality of a sportsman has to be improved in order to improve his performance. Sports' training, therefore, directly and indirectly aims at improving the personality of the sportsman. No wonder, therefore, sports training is an educational process.

Methodology

The purpose of the study was to find out the impact of ladder Training on Selected Physical and Physiological Variables among College Men kho-kho Player. To achieve the purpose of the study, 30 kho-kho players from Arul Anandar colleges from karumathur were selected. The selected subjects' age group was ranging from 18 to 24 years. The subjects were randomly divided into two groups and each group consisted of 15 subjects. Group I acted as ladder Training, Group II acted as control group. The random group design was employed. Experimental Group one underwent for ladder Training six weeks. The control group did not participate in any experimental treatment except of their regular activities. The subjects were tested of their physical and physiological variables prior to and after the experiment. The data collected were tested for the differences which were considered. The normality of the data was found through mean, standard deviation and F ratio and the data collected was found to be normal. The data collected on selected criterion variables were subjected to statistical analyze using analysis of covariance (ANCOVA) to find out the significant difference if any, between the groups on selected criterion variables separately. In all the cases, 0.05 level of confidence was fixed to test the significance, which was considered as appropriate

Independent variable

1. ladder Training

Dependent variables

Physical Variables

1. Leg Explosive Strength
2. Cardio Respiratory Endurance

Physiological Variables

1. Resting heart rate.
2. Breath holding time.

Selection of Variables & Tests Measures

S. No	Physical variables	Test	Unit of measure
1	Leg explosive strength	Standing Broad Jump	Meters
2	Cardio Respiratory Endurance	Cooper12Minutes Run and walk	Meters

S. No	Physiological Variables	Test Instruments	Score
1	Resting Heart Rate	Digital pulse Monitor	Beats/Per minutes
2	Breath Hold Time	Manual	Seconds

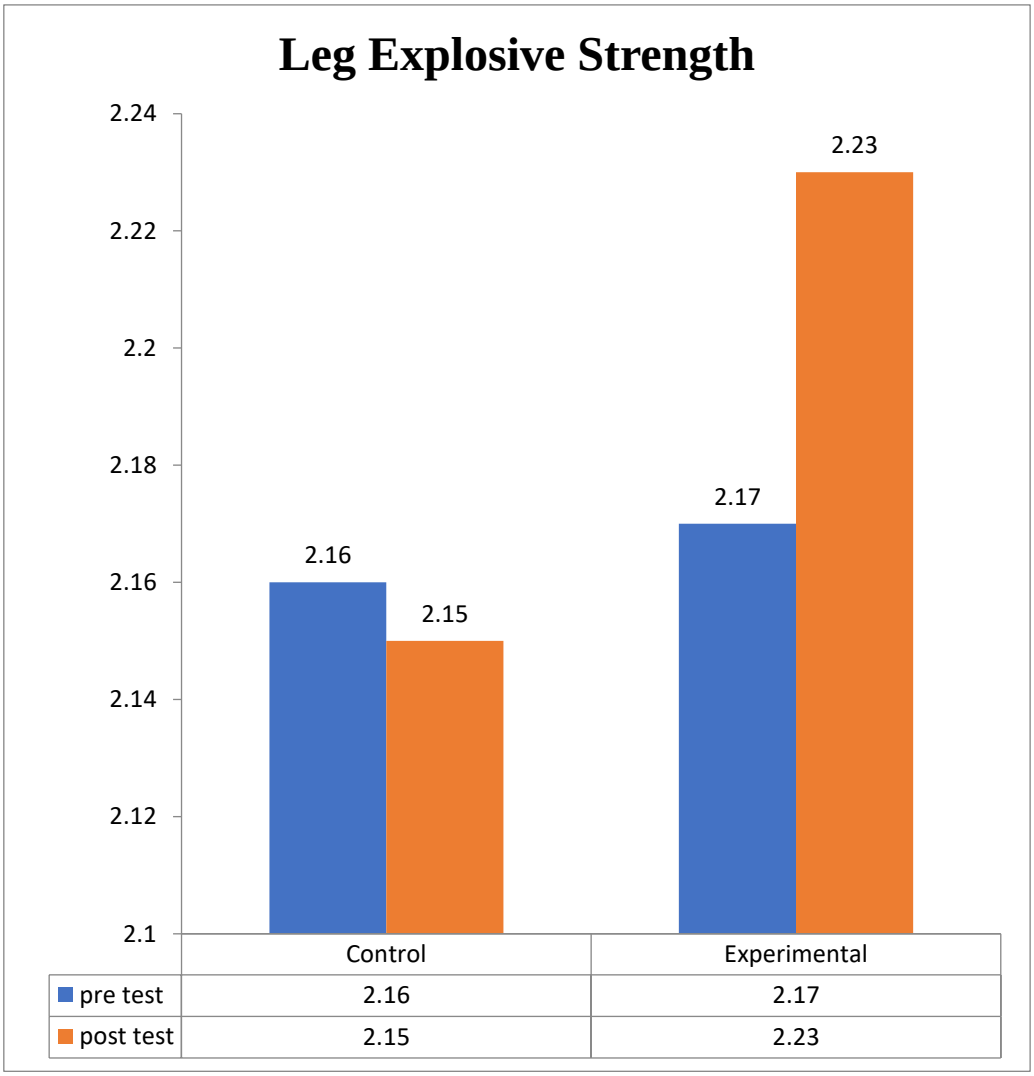
Analysis of 't' Ratio for the Pre and Post tests of Control and Experimental group on leg explosive strength

Variables	Group	Mean		SD		Std Error	df	't' ratio
		Pre	Post	Pre	Post			
Leg Explosive Strength	Control	2.16	2.15	0.19	0.17	0.007	14	0.25
	Experimental	2.17	2.23	0.22	0.18	0.015		**3.90***

Significance at 0.05 level of confidence 2.15

The Table - 4.1 shows that the mean values of pre-test and post-test of control group on leg explosive strength were 2.16 and 2.15 respectively. The obtained 't' ratio was **0.25**, was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically not significant. The mean values of pre-test and post-test of experimental groups on leg explosive strength were 2.17 and 2.23 respectively. The obtained 't' ratio was **3.90*** since the obtained 't' ratio was greater than the required table value of **2.15** for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a not significant control group in leg explosive strength. It may be concluded from the result of the study that experimental group improved leg explosive strength in due to six weeks of Ladder training.

Bar Diagram Shows the mean values of Pre and Post-tests of Control and Experimental Group on Leg Explosive Strength



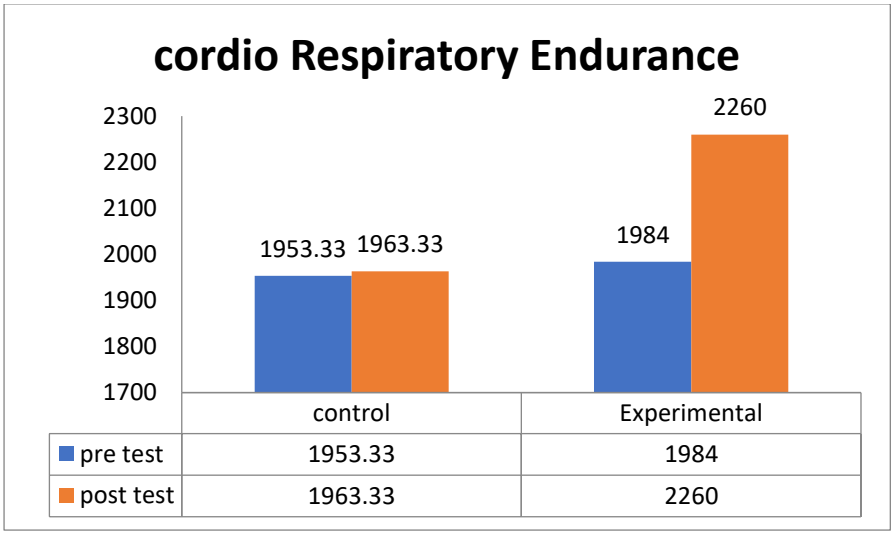
Analysis of 't' Ratio for the Pre and Post tests of Control and Experimental group on Cardio Respiratory endurance

Variables	Group	Mean		SD		Std Error	df	't' ratio
		Pre	Post	Pre	Post			
Cardio Respiratory Endurance	Control	1953.33	1963.33	101.53	111.48	5.79	14	1.73
	Experimental	1984	2260	239.51	98.12	66.64		**4.14***

Significance at 0.05 level of confidence 2.15

The Table - 4.2 shows that the mean values of pre-test and post-test of control group on Cardio Respiratory Endurance were 1953.33 and 1963.33 respectively. The obtained 't' ratio was **1.73**, was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically not significant. The mean values of pre-test and post-test of experimental groups on Cardio respiratory Endurance were 1985 and 2260 respectively. The obtained 't' ratio was **4.14*** since the obtained 't' ratio was greater than the required table value of 2.15 for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a not significant control group in Cardio Respiratory Endurance. It may be concluded from the result of the study that experimental group improved Cardio Respiratory Endurance in due to six weeks of Ladder training.

Bar Diagram Shows the mean values of Pre and Post-tests of Control and Experimental Group on Cardio respiratory endurance

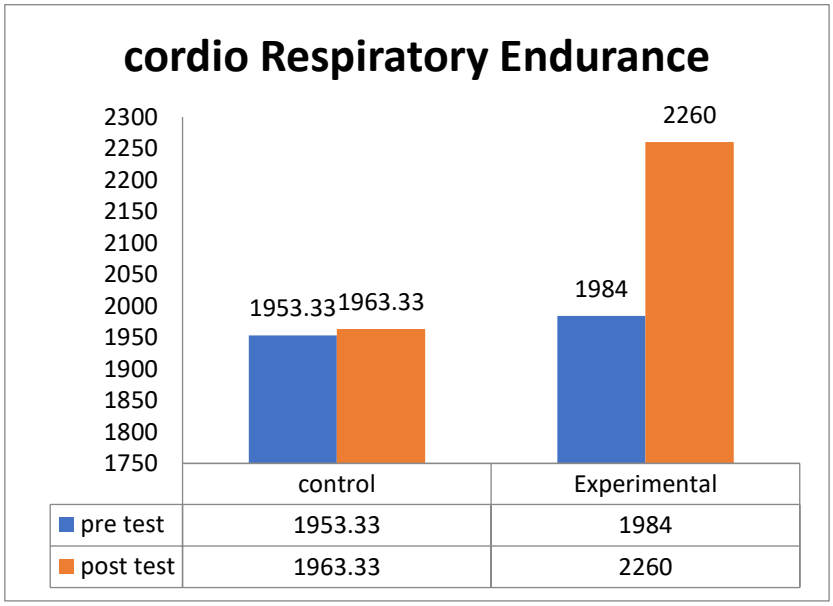


***Significant at 0.05 level of confidence**

The table 5 shows that the significant difference of paired adjusted post test means of plyometric training group, mobility exercise group and control group on Resting Heart Rate. The obtained mean differences between plyometric training group and control group, mobility exercise group and control group and plyometric training group and mobility exercise group were 3.32, 3.59 and 0.27 respectively. The required confidence interval value was 2.10

Since the obtained mean differences between experimental groups and control group are greater than the obtained critical interval value on Resting Heart Rate, It was concluded that the plyometric training group, mobility exercise group and control group.

The adjusted post mean values of plyometric training group, mobility exercise group and control group on Resting Heart Rate are graphically represented in the Figure 4.6



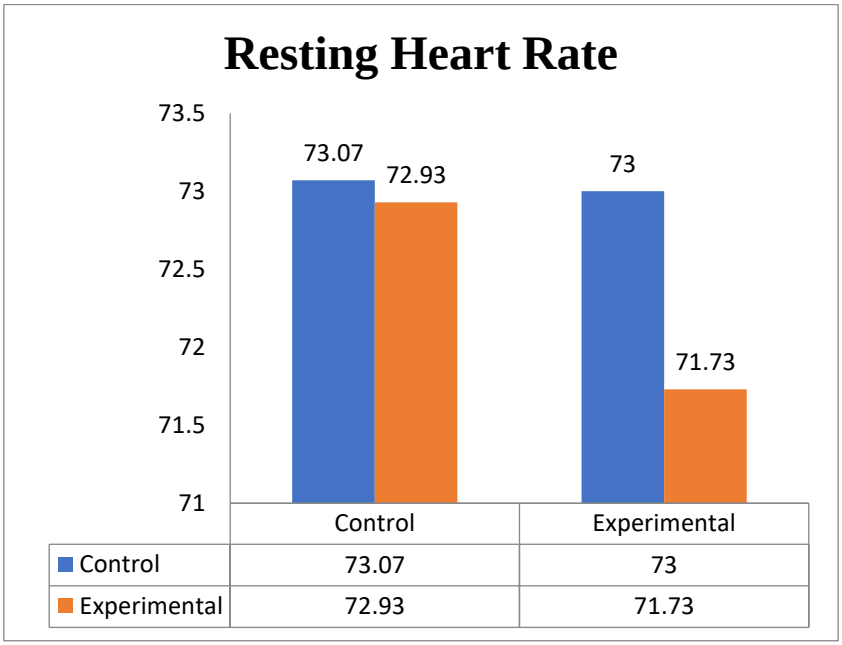
Analysis of 't' Ratio for the Pre and Post tests of Control and Experimental group on Resting Heart Rate

Variables	Group	Mean		SD		Std Error	Df	't' ratio
		Pre	Post	Pre	Post			
Resting Heart Rate	Control	73.07	72.93	0.88	1.68	0.38	14	1.41
	Experimental	73.00	71.73	0.84	0.80	0.27		**4.75***

Significance at 0.05 level of confidence 2.15

The Table - 4.5 shows that the mean values of pre-test and post-test of control group on Resting Heart Rate were 73.07 and 72.93 respectively. The obtained 't' ratio was **0.52**, was less than the required table value of **2.15** for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically not significant. The mean values of pre-test and post-test of experimental groups on Resting Heart Rate were 73.00 and 71.73 respectively. The obtained 't' ratio was **4.75*** since the obtained 't' ratio was greater than the required table value of **2.15** for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a not significant control group in Resting Heart Rate. It may be concluded from the result of the study that experimental group improved Resting Heart Rate in due to six weeks of Ladder training.

Bar Diagram Shows the mean values of Pre and Post-tests of Control and Experimental Group on Resting heart rate



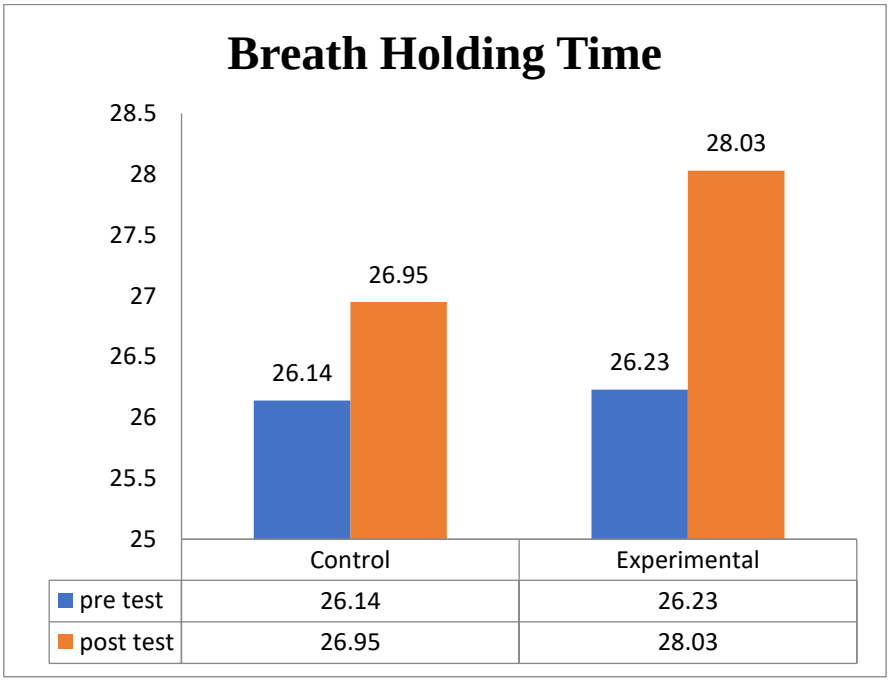
Analysis of 't' Ratio for the Pre and Post tests of Control and Experimental group on Breath Holding Time

Variables	Group	Mean		SD		Std Error	df	't' ratio
		Pre	Post	Pre	Post			
Breath Holding Time	Control	26.14	26.23	0.74	0.91	0.14	14	0.64
	Experimental	26.95	28.03	1.47	1.51	0.12		**8.97***

Significance at 0.05 level of confidence 2.15

The Table - 4.5 shows that the mean values of pre-test and post-test of control group on Breath Holding were 26.14 and 26.23 respectively. The obtained 't' ratio was **0.64**, was less than the required table value of **2.15** for the significant at 0.05 level with 14 degrees of freedom it was found to be statistically not significant. The mean values of pre-test and post-test of experimental groups on Breath Holding Time were 26.95 and 28.03 respectively. The obtained 't' ratio was **8.97*** since the obtained 't' ratio was greater than the required table value of **2.15** for significance at 0.05 level with 14 degrees of freedom it was found to be statistically significant. The result of the study showed that there was a not significant control group in Breath Holding Time. It may be concluded from the result of the study that experimental group improved Breath Holding in due to six weeks of Ladder Training.

Bar Diagram Shows the mean values of Pre and Post-tests of Control and Experimental Breath holding time



Conclusion

Within the limitations and delimitations of this study, the following conclusions were drawn,

1. It was concluded that there was significant improvement in selected physical and physiological variables of leg explosive strength, Cardio Respiratory Endurance, Speed, Agility, and Resting heart rate, Breath holding time due to ladder training among college men kho-kho players.

2. The result of the study reveals that ladder training would improve College men kho-kho Players physical and physiological variables significantly.

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