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Effect of Plyometric Exercises on Abdominal Strength and Breath Holding Time Among Higher Secondary School Level Cricket Players

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Abstract

The purpose of the study was to find out the effect of plyometric exercises on selected abdominal strength and breath holding time among higher secondary school level cricket players. The selected 30 subjects were divided in to two groups, namely experimental group and control group. Each group consists of 15 players and each the subjects were pre tested for their abdominal strength and breath holding time. The data collected from the subject on selected variables was statistically analyzed by using 't' ratio, 0.05 level of confidence was fixed to test the level of significance. It was concluded that there was a significant improvement in Abdominal Strength and Breath Holding Time among Higher Secondary School, cricket players due to plyometric exercises.

Keywords: Plyometric Exercises, Abdominal Strength, Breath Holding.

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Introduction

Sport training is a systematic process extending over a long period. For best result the system of training has to be based and conducted on scientific factors and lines where it is not possible to do that, the training has to be based on the results successful practice which has withstood the test of time sport. Physical training aims at improving the performance of sports persons. The sports performance depends on several factors. The performance of sports primarily depends on his performance capacity, such as speed, strength and endurance. All these factors therefore are the principle aims of physical training. Sport training is a physical, technical, moral and intellectual participation of with the help of physical exercises. It is a planned process for the participation of athlete and players to achieve top level performance. Training is much like constructing a multistory building. One needs for the building such as aerobic, anaerobic running, comprehensive conditioning, flexibility, etc. several kinds of materials like training intensities and modalities should be utilized in an ongoing process to complete the goal of finished buildings or competitively fit athlete. Depending on the progress in the construction plan, the relative mix of all these materials will. As a training season develops, compressive conditioning work for strength of endurance

will gradually form a transition into an emphasis on power with a substitution of intensity of volume in determining the total load (De, 2004).

The ability to rapidly apply force (reactive force) is the major goal of plyometric training. Plyometrics are used to apply an overload to the muscles with speed strength as goal. Plyometrics should not be considered an end in themselves, but part of an overall program stretching, running, strength training, nutrition, etc. After the athlete has began a proper strength and conditioning program, plyometrics are used to develop speed strength. (Chu.D, 1984).

Methodology

The purpose of the study was to find out the effect of plyometric exercises on selected abdominal strength and breath holding time among higher secondary school level cricket players. The selected 30 subjects were divided in to two groups, namely experimental group and control group. Each group consists of 15 players and each the subjects were pre tested for their abdominal strength and breath holding time. An intentional programme of plyometric exercises to the experimental group and the control group was not given any experimental treatment. After the experimental period of six weeks, post-tests scores were obtained from all the two groups. The difference between initial and final scores on plyometric exercises physical and physiological variables considered the effect of plyometric exercises on selected abdominal strength and breath holding time among higher secondary school level cricket players. The data collected from the subject on selected variables was statistically analyzed by using 't'

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ratio, 0.05 level of confidence was fixed to test the level of significance.

Results

Table I. Analysis of T-ratio for the Pre and Post-test for Control and Experimental Group on Abdominal Strength

Variables	Group	Mean		SD		SD Error	df	't' ratio
		Pre	Post	Pre	Post			
Abdominal Strength	Control	26.33	25.93	2.25	2.43	0.23	14	0.11
	Experimental	26.66	27.60	3.95	3.79	0.20		4.52*

*Significance at .05 level of confidence

The Table I shows that the mean values of pre-test and post-test of control group on abdominal strength were 26.33 and 25.93 respectively. The obtained 't' ratio was 0.26 since the obtained 't' ratio 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 insignificant. The mean values of pre-test and post-test of experimental groups in abdominal strength were 26.66 and 27.60 respectively. The obtained

't' ratio was 4.52 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 significant difference between control group and experimental group in abdominal strength. It may be concluded from the result of the study that experimental group improved in abdominal strength due to six weeks of plyometric exercises.

Figure 1. Cylinder Diagram Shows the Mean Values of Pre and Post Tests of Control and Experimental group on Abdominal Strength

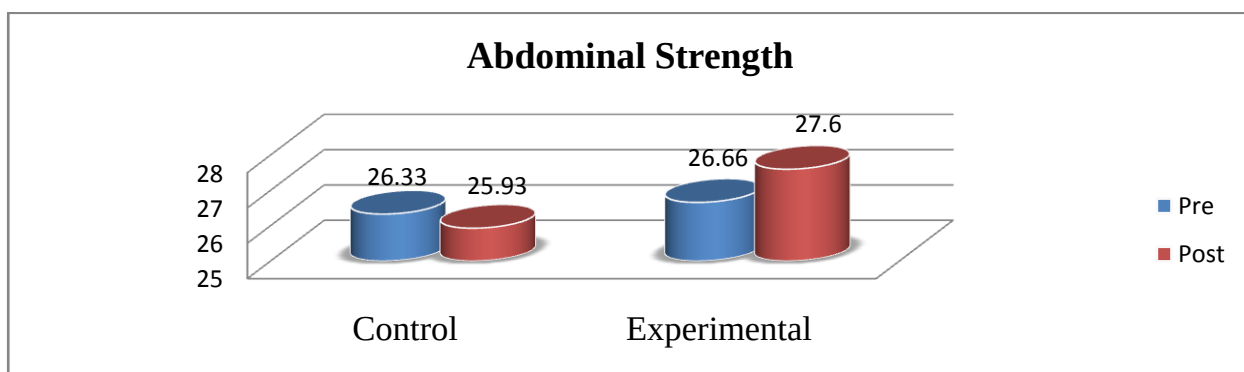


Table II. Analysis of T-ratio for the Pre and Post-test for Control and Experimental Group on Breath Holding Time

Variables	Group	Mean		SD		SD Error	df	't' ratio
		Pre	Post	Pre	Post			
Breath Holding Time	Control	23.11	22.87	5.25	6.54	1.14	14	0.21
	Experimental	23.12	24.76	8.48	7.94	0.42		3.82*

*Significance at .05 level of confidence

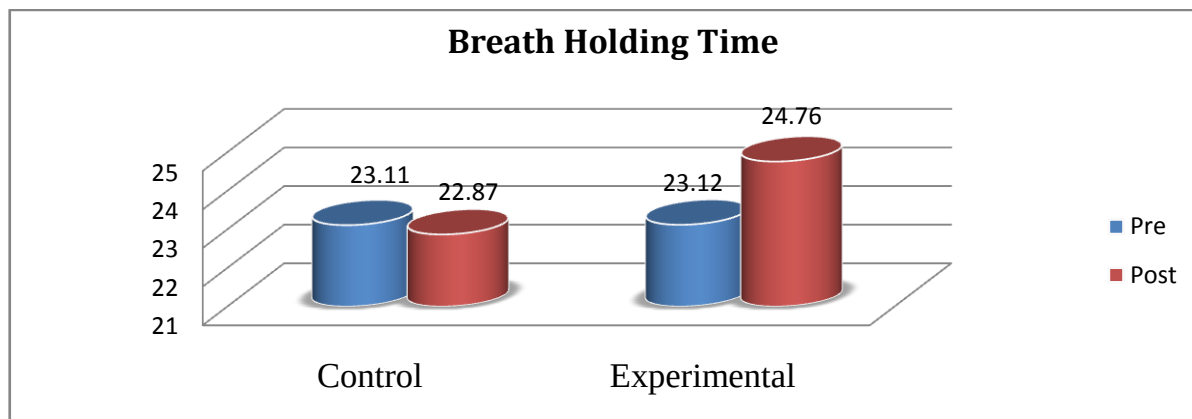
The Table II shows that the mean values of pre-test and post-test of control group on breath holding time were 23.11 and 22.87 respectively. The obtained 't' ratio was 0.21 since the obtained 't' ratio was less than the required table value of 2.15 for the significant at 0.05 level with 14 degrees of freedom, it was found to be statistically insignificant. The mean values of pre-test

and post-test of experimental groups in breath holding time were 23.12 and 24.76 respectively. The obtained 't' ratio was 4.04 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 significant difference between control

group and experimental group in breath holding time. It may be concluded from the result of the study that

experimental group improved in breath holding time due to six weeks of plyometric exercises.

Figure II. Cylinder Diagram Shows the Mean Values of Pre and Post Tests of Control and Experimental group on Breath Holding Time



Conclusion

It was concluded that there was a significant improvement in Abdominal Strength and Breath Holding Time among Higher Secondary School, cricket players due to plyometric exercises.

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