

EFFECT OF OWN BODY JUMP TRAINING ON HORIZONTAL JUMP PERFORMANCE OF ATHLETES

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ABSTRACT: The aim of this study was to find out the effect of own body jump training on horizontal jump performance of athletes (jumpers). To achieve the purpose of this study, twenty male athletes were randomly selected as participants from Anna stadium, Palayamkottai Tirunelveli, Tamilnadu, India. Their age were ranged from 15 to 17 years. The selected participants were randomly divided into two groups such as Group 'I' underwent own body jump training group (n=10) and Group 'II' acted as control group (n=10). Only those who represented their respective interschool competition were taken as subjects were participated in the jumping events only. Group 'I' underwent own body jump training for alternate three days and one session per day and each session lasted for an hour for six week periods. Group 'II' was not exposed to any specific training but they were participated in regular activities. The data on selected criterion variable on horizontal jump performance was measured by distance of long jump performance (meters). The pre and post-tests data were collected on selected criterion variable prior to and immediately after the own body jump training. The pre and post tests scores were statistically examined by the dependent 't' test and Analysis of Co-Variance (ANCOVA) for each and every selected variable separately. It was concluded that the own body jump training group were improved selected criterion variable on horizontal jump performance when compared to the control group. However the control group had not shown any significant improvement on selected criterion variable.

Index Terms: *Own Body Jump Training, Horizontal Jump Performance, Athletes*

I. INTRODUCTION

"Sports performance can be improved through sports training. Like any other type of human performance, sports performance is also a product of the total personality of the sports person. Sports training are a basic preparation of sportsman for better performance through physical exercise [1].

The training load should be increased in order to improve the performance load must be increased from time to time for improvement of the continuous performance. Training load can be increased gradually or step by step is result in strong and faster adaptation process and more effective reaction from the organism. Step by step of increase of load gives time to the organism to adapt to the increased demands. Beginning lesser load is greater improvement but latter higher load is necessary to produce even a small increase in performance [2].

Jumping is a very unique exercise and it brings something different, while being challenging and entertaining as well. Jumping is three times more effective than jogging and involves more than 400 muscles working at the same time. It is a great high-intense training, which releases a tremendous amount of endorphins after the class. The benefits of rebounding itself are known as a great way to improve your overall health. The intensity of our program simply multiplies all those effects, giving you the best workout ever [3].

Long jump is one of the most important events in track & field competitions, as it has a long history and is involved in multiple event competitions [4]. Although long jump may seem the most simple jump discipline as compared to high jump, triple jump or pole vault, the correct technique is challenging and the physical requirements are high. All jump competitions including long jump require a maximum take-off velocity in order to move the centre of mass as far as possible in horizontal or vertical direction [5].

Over the years, the standing long-jump test has been adopted by a variety of sports and organizations, both professional and amateur, to evaluate and predict athletic success. Although physical training regimens have been researched and debated, what has not been considered is the influence of verbal instruction on standing long-jump performance. Although strength and conditioning professionals continually seek out new techniques and strategies to develop and test athletic performance, it is critical for coaches to identify the differential effects that various types of verbal instructions have on standing jump performance [6].

Long jump is a moving event and requires a participant to have speed, explosive leg strength as well as suitable coordination of distance, strides and bounce action of the body at take-off stage level [7].

Specific areas to be considered in long jump are; the approach run, the take-off, the action in the air (the flight phase), and the landing. It is thought that is important to determine the predictors of long jump performance [8].

II. PURPOSE OF THE STUDY

The purpose of the present study was to find out the effect of own body jump training on horizontal jump performance of athletes (jumpers).

III. METHODOLOGY

To achieve the purpose of this study, twenty male athletes were randomly selected as participants from Anna stadium, Palayamkottai Tirunelveli, Tamilnadu, India. Their age were ranged from 15 to 17 years. The selected participants were randomly divided into two groups such as Group 'I' underwent own body jump training group (n=10) and Group 'II' acted as control group (n=10). Only those who represented their respective interschool competition were taken as subjects were participated in the jumping events only. Group 'I' underwent own body jump training for alternate three days and one session per day and each session lasted for an hour for six week periods. Group 'II' was not exposed to any specific training but they were participated in regular activities. The data on selected criterion variable on horizontal jump performance was measured by distance of long jump performance (meters).

3.1 Experimental Design and Statistical Procedure:

The pre and post-tests data were collected on selected criterion variable prior to and immediately after the own body jump training. The pre and post tests scores were statistically examined by the dependent 't' test and Analysis of Co-Variance (ANCOVA) for each and every selected variable separately. It was concluded that the own body jump training group were improved selected criterion variable on horizontal jump performance when compared to the control group. However the control group had not shown any significant improvement on selected criterion variable.

3.2 Training Protocol:

The own body jump training group was scheduled for one session an alternate three days each session lasted between an hours. During the training period, the experimental group underwent own body jump training an alternate three days a week for six weeks. The training programme was conducted during the morning sessions between 6.30 a.m. to 7.30 a.m.

IV. RESULT AND DISCUSSIONS

4.1 Horizontal Jump Performance

The analysis of dependent 't' test on the data obtained for horizontal jump performance of the pre-test and post-test means of experimental and control groups have been analysed and presented in Table 1.

Table 1: Computation of 't' - ratio between pre and post test means of experimental and control groups on horizontal jump performance (meters)

Tests		Pre Test	Post Test	't' - Value
Experimental Group	Mean	4.28	4.49	7.81*
	SD	0.19	0.17	
Control Group	Mean	4.26	4.32	1.26
	SD	0.24	0.20	

*Significant at 0.05 level. (Table value required for significance at .05 level for 't'-test with df 9 is 2.26)

The table 1 shows that the pre-test mean values of experimental and control groups are 4.28 and 4.26 respectively and the post test means are 4.49 and 4.32 respectively. The obtained dependent t-ratio values between the pre and post test means of experimental and control groups are 7.81 and 1.26 respectively. The table value required for significant difference with df 9 at 0.05 level is 2.26. Since, the obtained 't' ratio value of experimental group was greater than the table value, it was understood that experimental group had improved on horizontal jump performance. However, the control group has not improved. The 'obtained t' value is less than the table value, as they were not participated to any specific training.

The analysis of covariance on horizontal jump performance of experimental and control groups have been analysed and presented in Table 2.

Table 2: Analysis of covariance on horizontal jump performance of experimental and control groups

Adjusted Post Test Means		Source of variance	Sum of squares	df	Mean square	F-ratio
Experimental Group	Control Group					
4.48	4.33	Between	0.111	1	0.111	8.63*
		Within	0.219	17	0.013	

* Significant at 0.05 level. Table value for df 1, 17 was 4.45

Table 2 shows that the adjusted post test means of experimental group and control groups are 4.48 and 4.33 respectively. The obtained F-ratio value is 8.63 which are greater than the table value 4.45 with df 1 and 17 required for significance at 0.05

level. Since the value of F-ratio is greater than the table value, it indicates that there is a significant difference among the adjusted post-test means of experimental group and control groups on horizontal jump performance.

The pre, post and adjusted post test means values of experimental and control group on horizontal jump performance were graphically represented in the figure 1.

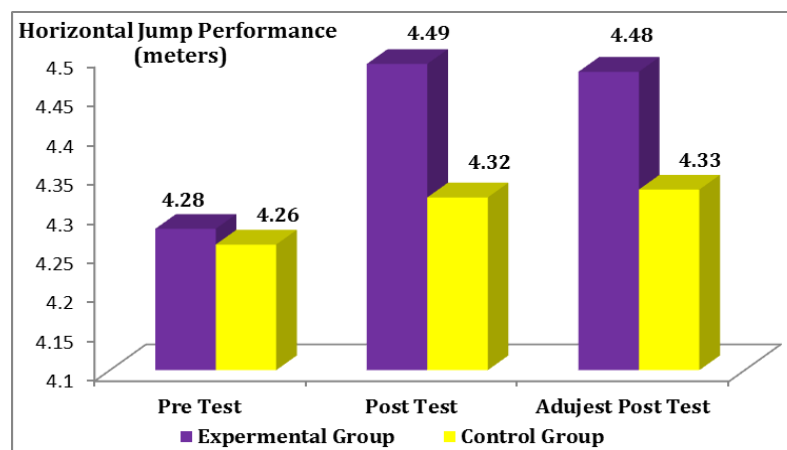


Figure 1: Pre, post and adjusted post tests mean values of own body jump training and control groups on horizontal jump performance.

V. DISCUSSION ON FINDINGS

The result of the study indicates that the experimental group namely own body jump training groups had shown significant improvement on horizontal jump performance when compared to control group among the Athletes. The following studies are supported as result of the present study such as Arumugam & Kalimuthu (2018)[9], Peng, Khuat, Kernozek, Wallace, & Song, (2017)[10], Walsh, Arampatzis, Schade, & Brüggemann, (2004)[11] and Struzik, Juras, Pietras zewski, & Rokita, (2016) [12].

VI. CONCLUSIONS

On the basis of the interpretation of the data, the following conclusions were drawn.

1. There was a significant improvement takes place on horizontal jump performance due to six weeks own body jump training programme.
2. There was a significant difference exists between experimental and control groups on horizontal jump performance due to six weeks own body jump training programme.

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