

EFFECT OF DROP JUMP TRAINING ON SELECTED PERFORMANCE RELATED FITNESS VARIABLE AMONG FOOTBALL PLAYERS

K.Boopathi Rajan*, D.Jim Reeves Silent Night**

** Ph.D Scholar, Department of Physical Education and Sports, Manonmaniam Sundaranar University, Tirunelveli*

*** Director of Physical Education (SG), Aditanar College of Arts and Science, Tiruchendur*

ABSTRACT

The purpose of the study was to find out the effect of drop jump training on selected performance related fitness variable among football players. A total of thirty men football players from virudhunagar districts were selected randomly as subjects. The age of the students ranged from 18 to 21 years. The selected subjects were divided into two groups namely drop jump training group and control group, Group A underwent drop jump training for eight weeks of two days per weeks. Group B acted as control group, who were not engaged in any special activities other than their daily routine. The Selected performance related fitness variable namely speed and power were measured by 50 yards dash and vertical jump test. The data were collected from each subject before and after the training period and statistically analyzed by dependent 't' test which is used to find out the significant improvement on selected criterion variables and Analysis of Covariance (ANCOVA) was used to find out the significant difference between the experimental and control groups on each variables separately, All the cases 0.05 level of confidence was fixed as a level of confidence to test the hypotheses. It was found that there was a significant improvement in drop jump training group on selected performance related fitness variable among football players. It was found that there was a significant difference between the drop jump training and control groups on selected performance related fitness variable.

Keywords: Drop jump, Speed, power and football players.

INTRODUCTION

A variety of training regimens are commonly used to improve power and work output of the athlete. Whether in sprinting, jumping, or throwing, the ability of the athlete to accelerate one's own body, an opponent, or an implement is crucial to sport performance. Plyometric exercises are a commonly used type of exercise in the development of power. Performing plyometric exercises makes use of the stretch-shortening cycle. In the stretch- shortening cycle, a muscle is stretched directly before it is explosively contracted. This has been shown to allow the muscle to produce higher force and power outputs.

One commonly performed plyometric exercise is the drop jump. In executing a drop jump, the athlete drops down from a height and directly on landing performs an explosive vertical jump. In the literature, drop jumps have been examined regarding various drop heights (5, 7, 13 and 17 cm) and differences in jump parameters regarding jump technique (1, 5, 11 and 12cm).

In sport training, the terms "Depth Jump" and "Drop Jump" are usually understood as synonyms and both of them are used to name the same exercise: a jump executed by dropping from a height with vertical rebound. It is well known that this exercise was invented by Verkhoshansky at the end of the 1950's for Track & Field jumpers and sprinters, and was also successfully used in many other Olympic sports. These coaches recognized it as the most powerful training means for increasing explosive Power. "The way drop jumping has become popular is typical of how training methods evolve. It is rumoured that the Russian athlete who won the 100 and 200m dash in the 1972 Olympics, Valery Borzov, utilized plyometric drills as part of his training.

METHODOLOGY

Subjects and Variables

Thirty men football players from Virudhunagar Districts were selected randomly as subjects. The age of the students ranged from 18 to 21 years. The selected subjects were divided into two groups namely drop jump training group and control group, Group A underwent drop jump training for eight weeks of two days per weeks. Group B acted as control group, who were not engaged in any special activities other than their daily routine. The Selected as criterion variable namely speed and power were measured by 50 yards dash and vertical jump test.

Training Programme

The training program was scheduled for one session a day each session lasted between forty five minutes to one hour approximately. Training programme was administered to the football players for eight weeks with two training units per week.

Statistical Technique

The data were collected from each subject before and after the training period and statistically analyzed by dependent 't' test which is used to find out the significant improvement on selected criterion variables and Analysis of Covariance (ANCOVA) was used to find out the significant difference between the experimental and control groups on each variables

Table –I: The Summary of Mean and Dependent 'T' Test for the Pre and Post Tests on Speed and Power of Drop Jump Training and Control Groups

S.N	Variable	Test	Drop jump Training group	Control group
1.	Speed	Pre test mean	7.55	7.621
		Post test mean	7.45	7.622
		't' test	7.26*	0.07
2	Power	Pre test mean	42.93	41.8
		Post test mean	49.13	41.6
		't' test	8.19*	0.31

* Significant at 0.05 level. (The table value required for .05 level of significance with df 14 is 2.145).

The Table-I show that the pre-test mean value of performance related fitness variable namely speed and power in drop jump training group and control group are 7.55 & 7.621 and 42.93 & 41.8 respectively and the post test means are 7.45 & 7.622 and 49.13 & 41.6 respectively. The obtained dependent t-ratio values between the pre and post test means of speed and Power in drop jump training group are 7.26 and 8.19. The obtained dependent t-ratio values between the pre and post test means of speed and Power in control group are 0.07 and 0.31 respectively. The table value required for significant difference with

separately. All the cases 0.05 level of confidence was fixed as a level of confidence to test the hypotheses.

ANALYSIS OF THE DATA

The analysis of dependent 't' test on the data obtained for speed and power of the pre-test and post-test means of drop jump training and control groups have been analysed and presented in table I.

df 14 at 0.05 level is 2.145. Since, the obtained 't' ratio value of experimental group is greater than the table value, it is understood that drop jump training group had significantly improved the speed and Power. However, the control group has not improved significantly because the obtained 't' value is less than the table value, as they were not subjected to any specific training.

The analysis of covariance on speed and Power of drop jump training and control groups have been analysed and presented in Table II

Table-II: Analysis of Covariance of Drop Jump Training and Control Groups on Speed and Power

S.No	Variable	Adjusted post test mean		Source	SS	df	MS	F
		APTC	CON					
1.	Speed	7.48	7.58	SSB	0.08	1	0.08	35.35*
				SSW	0.06	27	0.0022	
2.	Power	48.64	42.09	SSB	319.85	1	319.85	49.34*
				SSW	175.04	27	6.48	

*Significant at .05 level of confidence (The table values required for significance at .05 level of confidence with df 1 and 27 is 4.21)

The table II shows that the adjusted post test means of speed and agility of drop jump training and control groups are 7.48 & 7.58 and 48.64 & 42.09 respectively. The obtained 'F' ratio value of speed and agility are 35.35 and 25.08 which are higher than the table value of 4.21 with df 1 and 27 required for significance at 0.05 level. Since the value of F- ratio is higher than the table value, it indicates that there is significant difference among the adjusted post test means of drop jump training and control groups on selected performance related fitness variable namely

speed and power. The results of the study showed that there was a significance difference between the adjusted post test mean of drop jump training group and control group on speed and power among football players.

DISCUSSION

A wide variety of training studies shows that plyometric can improve performance in vertical jumping, long jumping, sprinting and sprint cycling. It also appears that a relatively small amount of

plyometric training is required to improve performance in these tasks. Just one or two types of plyometric exercise completed 1-3 times a week for 6-12 weeks can significantly improve motor performance (Blackey & Southard, 1987; Gehri et al., 1998; Matavulj et al., 2001). In addition, several studies on plyometric training have demonstrated that a significant increase in vertical jump height of ~10% was accompanied with similar increase in sport-specific jumping, (Bobbert, 1990; Little, Wilson & Ostrowski, 1996) sprinting (Chimera et al., 2004; Kotzamanidis, 2006) and distance-running performance. Also consistent with previous studies Abass (2009) found that plyometrics exercises (BWT) with depth jumping and rebound jumping characteristics are best used in developing muscle strength of the lower extremities.

CONCLUSION

There was a significant improvement on speed and power due to the effects of the drop jump training among college football players. There was a significance difference between drop jump training group and control group on speed and power among college football player.

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