



## Effect of Plyometric Training and Functional Core Strength Training on Ankle Hold among Kabaddi Players

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### Abstract

*The purpose of the study was to find out the effect of plyometric training and functional core strength training on ankle hold among kabaddi players. To achieve the purpose of the present study, forty five male kabaddi players from Affiliated Colleges of Bharathidasan University, Tiruchirappalli, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into three equal groups of fifteen each. Experimental Group I was exposed to plyometric training, Experimental Group II was exposed to functional core strength training and control group underwent no training. The duration of experimental period was 12 weeks. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses. The experimental groups had shown significant improvement on ankle hold of male kabaddi players.*

**Keywords:** Plyometric Training, Functional Core Training, Kabaddi.

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### Introduction

Plyometrics has been a very popular training technique used by many coaches and training experts to improve speed, explosive power output, explosive reactivity and eccentric muscle control during dynamic movements. It is considered a high-intensity, physical training method, consisting of explosive exercises that require muscles to adapt rapidly from eccentric to concentric contractions. Functional training, if performed correctly, will lead to better joint mobility and stability, as well as more efficient motor patterns. Improving these factors decreases the potential for an injury sustained during an athletic endeavor. Performance in a sport. The benefits may arise from the use of training that emphasizes the body's natural ability to move in six degrees of freedom. In comparison, though machines appears to be safer to use, they restrict movements to a single plane of motion, which is an unnatural form of movement for the body and may potentially lead to faulty movement patterns or injury (Matheus et al. 2013).

### Methodology

The purpose of the study was to find out the effect of plyometric training and functional core strength training on ankle hold among kabaddi players. To achieve the purpose of the present study, forty five male kabaddi players from Affiliated Colleges of Bharathidasan University, Tiruchirappalli, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into three equal groups of fifteen each. Experimental Group I was exposed to plyometric training, Experimental Group II was exposed to functional core strength training and control group underwent no training. The duration of experimental period was 12 weeks. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences, whenever the 'F' ratio for adjusted test was found to be significant, Scheffe's post hoc test was used. In all cases 0.05 level of significance was fixed to test hypotheses.

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## Results

Table 1. Calculation of ANCOVA on ankle hold

	PTG	FCSTG	Control Group	Source of Variance	Sum of Squares	df	Means Squares	F-ratio
<b>Initial means</b>	55.66	56.20	56.73	<b>BG</b>	8.533	2	4.267	0.940
				<b>WG</b>	190.667	42	4.540	
<b>Final means</b>	61.40	62.60	56.86	<b>BG</b>	274.311	2	137.156	34.099*
				<b>WG</b>	168.933	42	4.022	
<b>Adjusted Final means</b>	61.47	62.60	56.78	<b>BG</b>	277.954	2	138.977	34.551*
				<b>WG</b>	164.919	41	4.022	

An assessment of table 1 point out that the pre test means of plyometric training, functional core strength training and control groups were 55.66, 56.20 and 56.73 respectively. The attained F-ratio for the pre-test was 0.940 and the table F-ratio was 3.22. Hence the pre-test mean F-ratio was insignificant at 0.05 level of confidence for the degree of freedom 2 and 42. This established that there were no significant difference between the experimental and control groups representing that the course of action of randomization of the groups was ideal while conveying the subjects to groups. The post-test means of the plyometric training, functional core strength training and control groups were 61.40, 62.60 and 56.86 respectively. The attained F-ratio

for the post-test was 34.099 and the table F-ratio was 3.22. Hence the post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 42. This confirmed that the disparity between the post test means of the focus were significant. The adjusted post-test means of the plyometric training, functional core strength training and control groups were 61.47, 62.60 and 56.78 respectively. The attained F-ratio for the adjusted post-test means was 34.551 and the table F-ratio was 3.23. Hence the adjusted post-test mean F-ratio was significant at 0.05 level of confidence for the degree of freedom 2 and 41. This established that there was a noteworthy difference among the means owing to the experimental trainings on ankle hold.

Table 2. The scheffe's test for ankle hold

Adjusted Final means			Mean Difference	Required CI
PTG	FCSTG	Control Group		
61.47	62.60	---	1.13	1.86
61.47	---	56.78	4.69*	
---	62.60	56.78	5.82*	

\* Significant at 0.05 level of confidence

The multiple comparisons showed in Table 2 proved that there existed significant differences between the adjusted means of plyometric training and control group (4.69), functional core strength training and

control group (5.82). There was no significant difference between plyometric training and functional core strength training (1.13) at 0.05 level of confidence with the confidence interval value of 1.86.

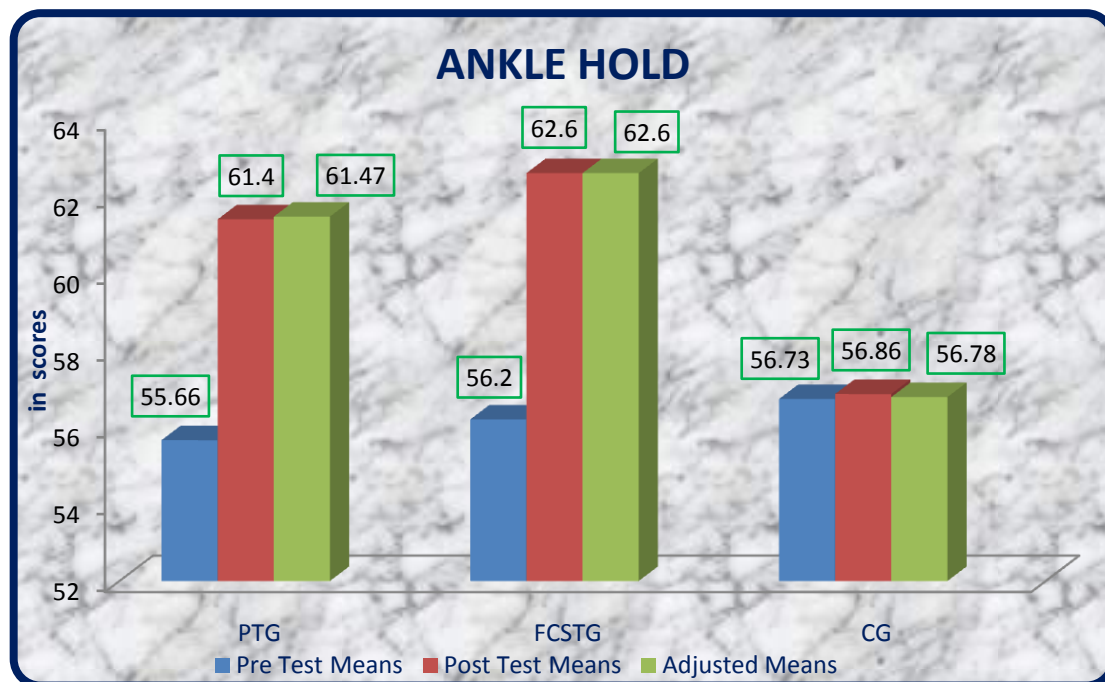


Figure I. Graphical illustration of ankle hold

### Conclusion

1. The plyometric training had shown significant improvement on ankle hold of male kabaddi players.
2. The functional core strength training had shown significant improvement on ankle hold of male kabaddi players.

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