

# Effect of Turbulence Training and Combination of Weight – Plyometric Training on Explosive Power of Men Kabaddi Players

Mr. Gowree Sankara Rao Meesala<sup>1\*</sup> Dr. P. Johnson<sup>2</sup>

<sup>1</sup> PhD Research Scholar, Acharya Nagarjuna University, AP

<sup>2</sup> Associate Professor, University College of Physical Education and Sports Sciences, Acharya Nagarjuna University, AP

**Abstract –** The present study was undertaken to analyze the effect of turbulence training [TTGKP], combination of weight – plyometric training and combined turbulence training and Weight - Plyometric training [CTWPTGKP] on explosive power of kabaddi players. total N=60 male intercollegiate level participated men kabaddi players age ranging from 18-25 years selected from various colleges from Vizianagaram district of Andhra Pradesh . The kabaddi players chosen for the study were randomly divided into four groups each group n=15 kabaddi players i.e. one empirical group: Turbulence training group kabaddi players [TTGKP], second empirical group: combined weight - plyometric training group kabaddi players [CWPTGKP], three empirical group: combined turbulence training and weight - plyometric training group kabaddi players [CTWPTGKP] and one control kabaddi players group [CKPG]. CKPG were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training by conducting standing broad jump. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels. The results of the study showed that turbulence training treatment [Package I], combined weight - plyometric training treatment [Package II] and combined turbulence training and weight - plyometric training [Package III] significantly improved explosive power of the kabaddi players when comparative with control group.

**Keywords:** – Turbulence Training, Plyometric Training – Weight Training.

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## INTRODUCTION

Turbulence training workout is method of performing strength training and interval training in one work out. It is most efficient and effective training for fast burning fat and muscles building. The best fat loss workouts are designed in turbulence training that train multiple muscles groups at the same time by changing the training intensity and using a variety of repetition of your lifting and including interval training for burning more fat. In a 2006 study in the journal of applied physiology, researchers found that in two weeks of turbulence training style workouts, whole body fat burning increased by 36% after exercise. A turbulence style workout boosted fat melting hormones by 450% (Stokes 2002). When inactive people start doing turbulence style workouts, it produces immediate changes in their body's fat burning capacity (Egan 2012).

In fact that Kabaddi is a highly active sport same as wrestling with explosive movements, great clashes shears, and rapid movements among the players, in

which trunk area has an important role in rapid transfer of strength and proper function in the prevention of the risk of injury. Whereas muscular strength and muscular endurance of kabaddi players enhance with various physical exercises mainly with weight training exercises on muscular strength and core stabilization exercises on endurance to reduce the risk of injury (Zohreh et al., 2019). Research studies found the positive relationship between physical fitness and core stabilization performance, which its disregard can cause injury (Buchanan 2008). Kabaddi player's ability to produce maximal strength levels in the shortest period of time (muscular power) has been considered as essential to obtain high sport performance levels in kabaddi (Dey et al., 1993).

## STATEMENT OF THE PROBLEM:

The purpose of the study was to investigate the "Effect of turbulence training, combination of weight – plyometric training and combined turbulence

training and Weight - Plyometric training on explosive power of kabaddi players.

**HYPOTHESIS:**

- It was hypothesis that there will be a significant improvement on explosive power of kabaddi player after the twelve weeks of turbulence training, combination of weight – plyometric training and combined turbulence training and weight - plyometric training when compared with control group kabaddi players.
- It was hypothesis that combined turbulence training and weight - plyometric training group kabaddi players will be superior than the turbulence training and combination of weight – plyometric training group kabaddi player.

**METHODOLOGY:**

The purpose of this study was to find out the effect of turbulence training, combination of weight – plyometric training and combined turbulence training and Weight - Plyometric training on explosive power of kabaddi players. The kabaddi players chosen for the study were randomly divided into four groups each group n=15 kabaddi players i.e. one empirical group: Turbulence training group kabaddi players [TTGKP], second empirical group: combined weight - plyometric training group kabaddi players [CWPTGKP], three empirical group: combined turbulence training and weight - plyometric training group kabaddi players [CTWPTGKP] and one control kabaddi players group [CKPG]. CKPG were restricted to participate in any activities. The trainings were given for a period of twelve weeks. The data were collected before and after the training by conducting standing broad jump. The obtained data's were analyzed by Analysis of Covariance (ANCOVA). The level of significant was fixed at 0.05 levels.

**Table – I**

**Analysis of Covariance for explosive power on Pre Test and Post Test Data of Experimental groups and Control Groups kabaddi players (In meters)**

GROUPS	TTGKP	CWPTGKP	CTWPTGKP	CKPG	SOURCE OF VARIANCES	SUM OF SQUARES	df	MEAN SQUARES	OBTAINED 'F'
Pre Test	1.95	1.96	2.00	1.97	Between	0.034	3	0.011	0.979
Mean	0.096	0.126	0.088	0.11	Within	0.639	56	0.011	
Post Test	2.32	2.47	2.51	1.92	Between	3.28	3	1.09	107.55*
Mean	0.00	0.12	0.09	0.09	Within	0.57	56	0.01	
Adjusted	2.32	2.47	2.51	1.92	Between	3.27	3	1.09	106.49*
Post Test					Within	0.56	55	0.01	
Mean Diff	+0.37	+0.51	+0.51	-0.05					

Table F-ratio value at 0.05 level of confidence for 3 and 56 (df) =2.77, 3 and 55 (df) =2.77  
\*Significant

The above table-I shows that there is a significant difference on over all playing ability among the four groups such Turbulence training group kabaddi players [TTGKP], combined weight - plyometric training group kabaddi players [CWPTGKP], combined turbulence training and weight - plyometric training group kabaddi players [CTWPTGKP] and control kabaddi players group [CKPG]. Since the calculated 'F' value required being significant at 0.05 level for 3, 56 d/f and 3, 55 are 2.77 and 2.77, but the calculated values of kabaddi over all playing ability post and adjusted posttest 'F' values are 14.86 and 80.98 respectively. Which are higher than the tabulated value? Since the obtained 'F' ratio is found significant.

**Table – II**

**The Scheffes Test for the Mean Differences between Paired Mean of Groups on explosive power**

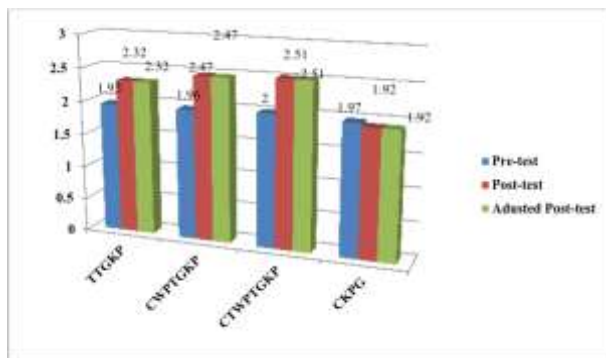
ADJUSTED MEANS VALUES					Mean Difference	Required " CI"
TTGKP	CWPTGKP	CTWPTGKP	CKPG			
2.32	2.47	-	-	0.15*	0.040	
2.32	-	2.51	-	0.19*	0.040	
2.32	-	-	1.92	0.40*	0.040	
-	2.47	2.51	-	0.04*	0.040	
-	2.47	-	1.92	0.55*	0.040	
-	-	2.51	1.92	0.59*	0.040	

\*Significant at 0.05 level of confidence

Table:-II shows adjusted means values differences between two group's kabaddi players on arms explosive power to choose best training between TTGKP [Turbulence training group kabaddi players] and CWPTGKP [Combined weight - plyometric training group kabaddi players], TTGKP [Turbulence training group kabaddi players] and CTWPTGKP [combined turbulence training and weight - plyometric training group kabaddi players], TTGKP [Turbulence training group kabaddi players] and CKPG [control kabaddi players group], CWPTGKP [Combined weight - plyometric training group kabaddi players] and CTWPTGKP [combined turbulence training and weight - plyometric training group kabaddi players], CWPTGKP [Combined weight - plyometric training group kabaddi players] and CKPG [control kabaddi players group] and CTWPTGKP [combined turbulence training and weight - plyometric training group kabaddi players] and CKPG [control kabaddi players group] were 0.15, 0.19, 0.40, 0.04, 0.55 and 0.59 respectively which were higher than the confidence interval value 0.040 on legs explosive power of kabaddi players at 0.05 level of confidence.

The graphical illustration of the pre-test, post-test and adjusted post-test mean values of the

experimental groups and control group on explosive power were presented in figure 1.



**Figure 1: Graphical Illustration Showing the Pre-Test Post-Test and Adjusted Post-Test Mean Values on explosive power**

### DISCUSSION ON HYPOTHESIS:

- In the first hypothesis it was stated that there will be a significant improvement on explosive power of kabaddi player after the twelve weeks of turbulence training, combination of weight – plyometric training and combined turbulence training and weight - plyometric training when compared with control group kabaddi players. The result of the study found that experimental groups kabaddi player’s explosive power performance increase when compared with control group. Hence the research hypothesis is accepted.
- In second hypothesis mention that combined turbulence training and weight - plyometric training group kabaddi players will be superior than the turbulence training and combination of weight – plyometric training group kabaddi player. The study found superiority. Hence research hypothesis accepted.

### DISCUSSION AND FINDINGS:

The analysis report on arms and legs explosive power performance stated that turbulence training treatment [Package I], combined weight - plyometric training treatment [Package II] and combined turbulence training and weight - plyometric training [Package III] schedule is positively effective to increase arms and legs explosive power performance level of kabaddi players. The studies in consonance with arms and legs explosive power performance were Tilak (2019) the study concluded that resistance training programme followed by plyometric training programme increases arm and leg explosive strength of Kabaddi players. Gummalla and Srinivasan (2018) obtained data’s analyzed report showed that plyometric exercises, resistance exercises and combined exercises significantly improved explosive power performance of legs level

of women volleyball players. Firas et. al., (2019) study showed that a 7-week combined plyometric and resistance exercises and isolated plyometric training significantly increased their jump height of soccer players. Blakeyl et. al., (1987) concluded that participated subjects in plyometric exercises and combined with weight training improved dynamic leg power. Avinash et. al., (2017) research strongly believes that combined training program (weight training and plyometrics) improved upper and lower extremities explosive strength level of taekwondo players. Ganesh (2016) within the limitation result showed that explosive power can be improve through plyometric and resistance exercises.

### CONCLUSIONS:

It was concluded that turbulence training, combined weight - plyometric training and combined turbulence training and weight - plyometric training had significant impact to increase the legs explosive power of kabaddi players. The study proved that combined turbulence training and weight - plyometric training had more impact to increased the legs explosive power of kabaddi players than turbulence training and combined weight - plyometric training. Further study confirmed that combined weight - plyometric training is more effective than that turbulence training to gain legs explosive power of kabaddi players.

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#### Corresponding Author

**Mr. Gowree Sankara Rao Meesala\***

PhD Research Scholar, Acharya Nagarjuna University, AP