

## Effect Of Plyometric Training And Combination Of Weight And Plyometric Training On Selected Psychological Variables Of College Men Football Players



### Physical Education

**KEYWORDS :** Plyometric training, Combination of Weight and Plyometric Training, Psychological variables, Stress and Anxiety

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### ABSTRACT

*The purpose of the study was to find out the effect of plyometric training and combination of weight and plyometric training on selected psychological variables of college men football players. To achieve this purpose, 45 male students studying in the various colleges of Madurai, Tamilnadu, were selected. They were divided into three equal groups and each group consisted of 15 subjects. Group-I performed plyometric training, group-II performed combination of weight and plyometric training and group-III acted as control group. Anxiety and Stress were selected as criterion variables and they were tested prior to and immediately after the 12 weeks of yogic programmes by using Stress Inventory Scale and State and Trait Anxiety Scale (Questionnaire method) respectively. The collected data were statistically examined for significant difference if any, by applying Analysis of Covariance (ANCOVA). Since three groups were involved, Scheffe S test was used as post-hoc test to find out any difference between the groups. The result of the study shows that there was significant improvement for plyometric training and combination of weight and plyometric training of college men football players on selected criterion variables such as Stress and Anxiety.*

### INTRODUCTION

Physical activity is any bodily activity that enhances or maintains physical fitness and overall health. Physical fitness is functioning of the blood vessels, heart, lungs and muscles at optimum efficiency. Regular physical exercises maintain our body healthy and prevent from diseases.

Plyometric is a method of developing explosive power, an important component of the athletic performance as plyometric movements are performed in a wide spectrum of sports. In football, it can be played more skillfully when players have the power that combines with strength and speed to develop explosive power for participating in various sports activities. To give top quality performances for the full playing time over a whole series of football matches in addition to all that we have outlined above, outstanding physical condition and a high standard of physical capabilities are necessary. The plyometric exercises improve significantly in developing physical fitness variables and skill performance of football players.

Weight training, also called as resistance training or strength training, is pitting muscles against a resistance such as a weight or other type of resistance, to build the strength, anaerobic endurance, and or size of skeletal muscles. A well-rounded program of physical activity includes strength training, to improve bone, joint function, bone density, muscle, tendon and ligament strength, as well as improves heart and lung fitness. These activities should work all the major muscle groups of our body (legs, hips, back, chest, abdomen, shoulders, and arms).

The fundamental principles of resistance training are that exercise should be brief, infrequent, and intense. Exercises are performed with a high level of effort, or intensity, where it is thought that it will stimulate the body to produce an increase in muscular strength and size. Advocates of progressive resistance training believe that this method is superior for strength and size building than most other methods. As strength increases, progressive resistance training techniques will have the weight/resistance increased progressively where it is thought that it will provide the muscles with adequate overload to stimulate further improvements progressive resistance training, training schedules should allow adequate time between workouts.

### Methodology

The purpose of the study was to find out the effect of plyometric training and combination of weight and plyometric training

on selected psychological variables of college men football players. To achieve this purpose, 45 male students studying in the various colleges of Madurai, Tamilnadu, were selected. They were divided into three equal groups and each group consisted of 15 subjects. Group-I performed plyometric training, group-II performed combination of weight and plyometric training and group-III acted as control group. after the 12 weeks of yogic programmes by using Stress Inventory Scale and State and Trait Anxiety Scale (Questionnaire method) respectively. The ANCOVA was applied to find out the significant difference in each criterion variables, if any, among the groups. Since, three groups were compared, whenever the obtained 'F' ratio for the adjusted post test means was found to be significant, the Scheffe's post hoc test was applied to determine the paired mean differences, if any, was used.

### Training Programme

The experimental group-I performed plyometric training, group-II performed combination of weight and plyometric training and group-III acted as control group who did not participate any special training apart from the regular curricular activities. The subjects of experimental group-I performed plyometric training with the training intensity of 65-80% of their 1RM and the subjects of experimental group-II performed combination of weight and plyometric training with the training intensity of 65-80% of their 1RM. After assessing the 1 RM of experimental group subjects, the training load was fixed accordingly. Then the experimental group underwent respective training programmes for 3 days per week for 12 weeks under the instruction and supervision of the investigator.

### Statistical Technique

The data were collected on selected criterion variables such as anxiety and stress assessed at before and after the twelve weeks of plyometric training as pre and post test. Analysis of covariance (ANCOVA) was applied to find out significant difference if any between the experimental and control group.

### results and discussions

The data collected prior to and after the experimental period on selected psychological variables such as anxiety and stress of plyometric training and combination of weight and plyometric training and control group were analysed and presented in Table-I.

**Table – I:Analysis of covariance of data on anxiety and stress between pre and post test of Plyometric training and combination of weight and plyometric training group and control group**

Test	Plyometric training Group	C W P TG	CG	SV	S S	df	Mean Squares	Obtained 'F' Ratio
<b>ANXIETY</b>								
Pre-test								
Mean	20.3	19.4	21.9	B	32.067	2	16.033	2.617
SD	2.71	2.37	2.33	W	165.4	27	6.126	
Post-test								
Mean	8.5	11.2	22.8	B	1154.47	2	577.233	217.368*
SD	1.08	1.87	1.81	W	71.7	27	272.656	
Adjusted Post-test								
Mean	8.585	11.615	22.3	B	919.464	2	459.732	241.133*
				W	49.57	26	261.907	
<b>STRESS</b>								
Pre-test								
Mean	22.2	19.1	22.2	B	112.067	2	56.033	3.13
SD	4.34	4.81	2.53	W	436.1	27	16.152	
Post-test								
Mean	16.5	18.7	23.6	W	1110.86	2	555.433	111.08*
SD	3.4	0.82	1.65		135.1	27	5.00	
Adjusted Post-test								
Mean	12.45	17.78	23.55	B	920.54	2	460.272	88.904*
				W	134.66	26	5.177	

\* Significant at .05 level of confidence.

(The table value required for significance at .05 level with df 2 and 27 & 2 and 26 are 3.35 and 3.37)

Table I shows that the obtained “F” ratio value 241.133\* for adjusted post test mean values on Anxiety which was greater than the required table value of 3.37 for significance with df 2 and 26. The results of the study showed that there was a significant difference among three groups on Anxiety.

Table I shows that the obtained “F” ratio value 88.904 for adjusted post test mean values on Stress which was greater than the required table value of 3.37 for significance with df 2 and 26. The results of the study showed that there was a significant difference among three groups on Stress.

Since three groups were involved, the Scheffe’s post hoc test was applied to find out the paired mean differences, if any, and it is presented in the Table II

**Table II :Scheffe’s post hoc test for the difference between six paired adjusted post test means of anxiety and stress :-**

Variables	Plyometric Training Group	CWPTG	Control Group	Mean Difference	Confidence Interval

ANXIETY	8.585	11.65	-	3.65*	2.53
	8.585	-	22.3	13.71*	2.53
	-	11.65	22.3	10.65*	2.53
STRESS	12.45	17.82	-	5.35*	4.17
	12.45	-	23.55	11.11*	4.17
	-	17.82	23.55	5.73*	4.17

\*Significant at 0.05 level of confidence.

Table II shows that the obtained confidence interval value were greater than the confidence interval value of 2.53 at .05 level which indicates that there was significant different among plyometric training and combination of weight and plyometric training group , plyometric training group and control group and combination of weight and plyometric training group and control group were 3.065, 13.75 and 10.65 respectively on anxiety.

Table II shows that the obtained confidence interval value were greater than the confidence interval value of 4.17 at .05 level which indicates that there was significant different among plyometric training and combination of weight and plyometric training, plyometric training group and control group and combination of weight and plyometric training group and control group were 5.323,11.10 and 5.78 respectively on stress.

conclusion

1. Psychological Variables such as Anxiety, Stress were significantly improved due to 12 weeks of plyometric training and combination of weight and plyometric training group as compared to control group.
2. The result of the study shows that, there was a significant differences among the group. Combination of plyometric training group was better than the plyometric training group.

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