

IMPACT OF TRIPHASIC TRAINING WITH TAPERING PACKAGE ON SELECTED PHYSIOLOGICAL AND PERFORMANCE VARIABLES AMONG MALE VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the impact of triphasic training with tapering package on selected physiological and performance variables among male volleyball players. To achieve the purpose of the study thirty male volleyball players have been randomly selected from various colleges in and around salem district in the state of Tamil Nadu, India. The age of subjects were ranged from 18 to 25 years. The subjects were randomly assigned into two groups of fifteen each, such as experimental and control groups. The experimental group participated in the triphasic training with tapering package for 3 days a week, one session per day and for 8 weeks each session lasted 45 minutes. The control group maintained their daily routine activities and no special training was given. The subjects of the two groups were tested on selected variables prior and immediately after the training period. The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significance difference, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance difference, if any between groups. The results of the study showed that there was significant differences exist between of triphasic training with tapering package group and control group. And also triphasic training with tapering package showed significant improvement on vital capacity, breath holding time and performance compared to control group.

Key words: triphasic training, tapering, vital capacity, breath holding time

Introduction

Volleyball-specific training activities depending on the athlete and their strengths, weaknesses and motivation. These activities could include speed work, endurance work, plyometrics, agility training, etc. I generally steer away from weight training during this time since they will enter a high-volume period when they begin the first off-season period. The volume and intensities of these activities would be at much lower levels than any other cycle during the year (Greg Brislin 2012). Many traditional training methods teach athletes how to expel energy; little time and effort are spent teaching them to absorb it. That is the entire point of the triphasic method—learning how to eccentrically and isometrically absorb energy before applying it in explosive dynamic movements. Athletes aren't power lifters. They must be strong, but only to the extent that it can benefit them in their sport. Every dynamic human movement has a limited amount of time in which the mover can produce as much force as possible. Ben was a world-class thrower because he could generate more explosive strength (defined as maximal force in minimal time) in the time it took to throw a shot. Triphasic Training is a method of applying specific stressors across the three phases of dynamic movement; eccentric, isometric and concentric, in order to drive specific adaptation. This training method delves deep into the

depths of efficient power production and focuses on the body's ability to absorb force before training the ability to expel it. The term 'Triphasic' refers to the three phases of a dynamic muscle action. Eccentric Phase a muscle action that occurs during the lowering phase of a movement, during which the muscle lengthens (Dietz and Peterson 2012). The eccentric force is responsible for controlling the deceleration of a load. Isometric phase a muscle action that occurs between the lowering and upward phase of a movement. Muscle length remains constant as the contractile force is equal to the resistive force. This is the point at which the load changes direction. Concentric Phase A muscle action that occurs during the upward phase of a movement where the muscle contracts, accelerating a load and shortening in length **Baechle & Earle (2000)**. According to Mujika & Padilla Tapering in athletics has been previously defined as a "progressive nonlinear reduction of the training load during a variable period of time, in an attempt to reduce the physiological and psychological stress of daily training and optimize sports performance".

The aim of the study was to determine how the selection of the triphasic training influenced speed, grip strength, leg strength and performance during an 8 week training intervention.

Material and Methods

Participants

To achieve the purpose of the study thirty male volleyball players have been randomly selected from various colleges in and around Salem district in the state of Tamil Nadu, India. The age of subjects were ranged from 18 to 25 years. The subjects had past experience of at least three years in volleyball and only those who represented their respective college teams were taken as subjects.

Design

The subjects were randomly assigned into two groups of fifteen each, such as experimental and control groups. The experimental group participated in the triphasic training with tapering package for 3 days a week, one session per day and for 8 weeks each session lasted 45 minutes. The control group maintained their daily routine activities and no special training was given.

Procedure

A series of physiological and performance variables was carried out on each participant. These include vital capacity assessed by spirometer in liters, breath holding time assessed by nose clip and performance assessed by subjective rating.

Statistical Analysis

The collected data were analyzed statistically through analysis of covariance (ANCOVA) to find out the significance difference, if any between the groups. The 0.05 level of confidence was fixed to test the level of significance difference, if any between groups.

TABLE – I
COMPUTATION OF ANALYSIS OF COVARIANCE ON PHYSIOLOGICAL AND
PERFORMANCE VARIABLES AMONG MALE VOLLEY BALL PLAYERS

Test	TPTWTG	CG	Sum of variance	Sum of squares	df	Mean square	F ratio
Vital capacity							
Pre-test	3.49	3.46	B.G.	0.005	1	0.005	1.17
SD (±)	0.07	0.04	W.G.	0.10	28	0.004	
Post-test	3.68	3.59	B.G.	0.06	1	0.06	6.23*
SD (±)	0.05	0.13	W.G.	0.30	28	0.01	
Adjusted means	3.68	3.59	B.S.	0.05	1	0.05	5.02*
			W.S.	0.28	27	0.01	
Breath holding time							
Pre-test	32.79	32.98	B.G.	0.24	1	0.24	0.81
SD (±)	0.48	0.61	W.G.	8.55	28	0.30	
Post-test	36.84	34.94	B.G.	26.97	1	26.97	8.26*
SD (±)	1.09	2.30	W.G.	91.32	28	3.26	
Adjusted means	36.79	34.99	B.S.	23.65	1	23.65	7.17*
			W.S.	89.01	27	3.29	
Performance							
Pre-test	4.96	4.94	B.G.	0.001	1	0.001	0.15
SD (±)	0.07	0.09	W.G.	0.21	28	0.007	
Post-test	5.59	5.15	B.G.	1.45	1	1.45	20.36*
SD (±)	0.30	0.22	W.G.	2.00	28	0.07	
Adjusted means	5.60	5.15	B.S.	1.47	1	1.47	19.92*
			W.S.	1.99	27	0.07	

TPTWTG- triphasic training with tapering package group CG- Control group

(The table values required for significance at 0.05 level of confidence for 1 & 28 and 1 & 21 are 4.20 and 4.21 respectively).

The table shows that the pre-test mean values on vital capacity, breath holding time and performance of experimental and control groups are 3.49, 32.79, 4.96 and 3.49, 32.98, 4.94 respectively. The obtained 'F' ratio 1.17, 0.81 and 0.15 for pre-test scores was less than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence on vital capacity, breath holding time and performance. The post-test mean values on vital capacity, breath holding time and performance of experimental and control groups are 3.68, 36.84, 5.59 and 3.59, 34.94, 5.15 respectively. The obtained 'F' ratio 6.23, 8.26 and 20.36 for post-test scores was greater than the table value 4.20 for df 1 and 28 required for significance at 0.05 level of confidence vital capacity, breath holding time and performance. The adjusted post-test means of experimental and control groups are 3.68, 36.79, 5.60 and 3.59, 34.99, 5.15 respectively. The obtained 'F' ratio of 5.02, 7.17 and 19.92 for adjusted post-test score was greater than the table value of 4.21 for df 1

and 27 required for significance at 0.05 level of confidence on vital capacity, breath holding time and performance. The results of the study indicated that there was a significant difference among the adjusted post-test means of experimental and control groups on vital capacity, breath holding time and performance.

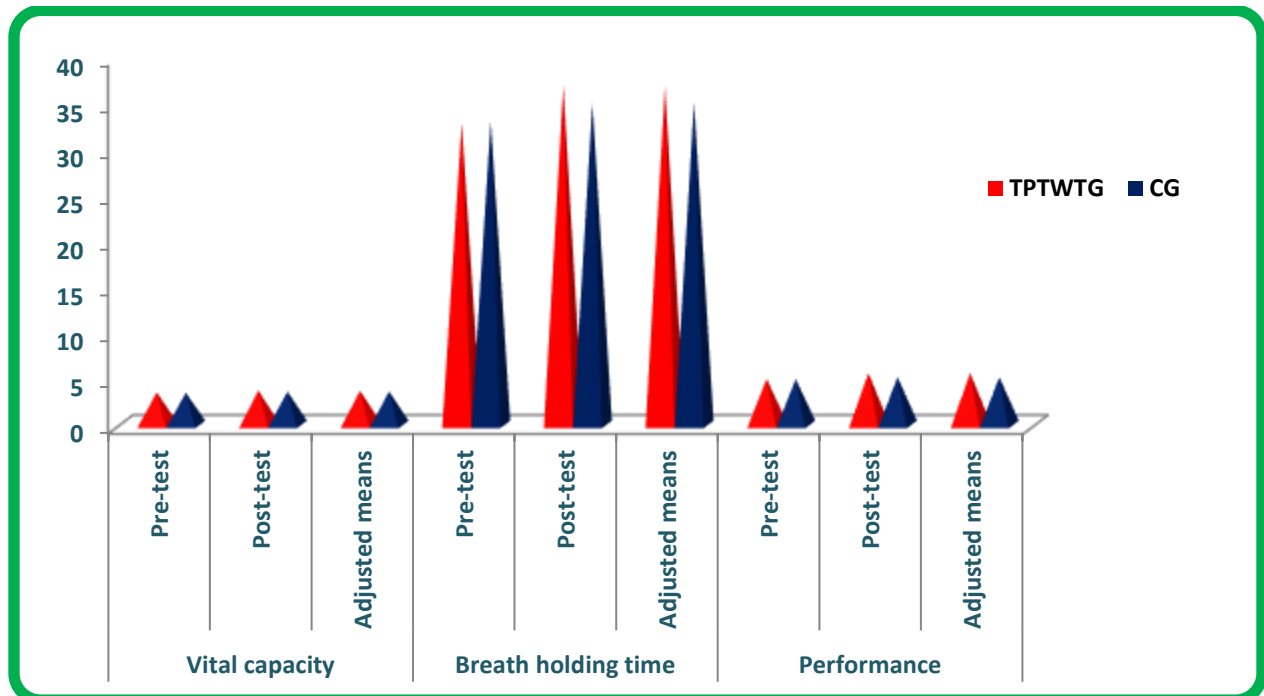


Figure-I The pre-test, post-test and adjusted post-test mean values of triphasic training with tapering package group and control group on vital capacity, breath holding time and performance.

Discussion of findings

The results of the study indicate that the experimental group which underwent triphasic training with tapering package group had showed significant improved in the selected variables namely such as vital capacity, breath holding time and performance when compared to the control group. The control group did not show significant improvement in any of the selected variables. The past studies on selected physiological variables reveals of Azeem and Mohammed (2019), Vishnu Raj (2017), Kaba Rosario (2016), Mohan and Kalidasan (2015), Ashkani et al (2014), Mohan and Kalidasan (2013), Manna et al (2012) & Girish and Manjunath (2011)

Conclusions

From the analysis of data, the following conclusions were drawn.

1. The experimental group volley ball players showed significant improvement in all the physiological variables such as vital capacity, breath holding time and performance variables.
2. The control group volley ball players did not show significant improvement in any of selected variables.

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