



CHANGES IN PERFORMANCE RELATED FITNESS COMPONENTS DUE TO PACKAGE OF SPECIFIC FITNESS TRAINING AMONG VOLLEYBALL PLAYERS

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ABSTRACT

The purpose of the study was to find out the changes in performance related fitness components due to package of specific fitness training among volleyball players. To achieve the purpose of the study thirty higher secondary school male volleyball players from Thanthai Periyar Higher Secondary School, Karaikal Pondicherry were selected as subjects. The age of the subjects were ranged from 15-18years. They were divided into two equal groups, each group consists of 15 subjects. Group-I was underwent to specific volleyball fitness training for five days in a week for twelve weeks, Group –II acted as control group (CG). They didn't undergo for any specific training programme than the normal routine volleyball game. The performance related fitness components such as explosive power and muscular endurance were taken as the dependent variables for the study. The selected variables explosive power was assessed by vertical jump and muscular endurance was assessed by bent knee sit ups. The data were collected before and after twelve weeks of training. The data was analyzed by using analysis of covariance (ANCOVA). The level of significance was fixed at 0.05. The findings of the present study have strongly indicate that that package of specific fitness training shows significant changes on selected performance fitness variables namely explosive power and muscular endurance of higher secondary school level male volleyball players.

Keywords: Specific fitness training, Explosive Power, Muscular Endurance.

INTRODUCTION

Scientific training methods and application of basic principles of body mechanics in sports skill have been attributed to the higher level of performance in sports skills. The principles of specificity of training tend to have greater significance, especially for basic level volleyball. The specific training, when executed for the appropriate duration at the appropriate intensity, meets the criteria for developing performance of football, rugby etc (James Belay 2003). Over 50% percent of the injuries that resulted in time lost from competition occurred during traditional conditioning protocols. Specific training has been reported to offer a safe, effective method of conditioning for team-sport athletes that results in comparable (and, in some cases, greater) improvements in physical fitness and performance than traditional conditioning activities.

Volleyball involves frequent bouts of intense activities such as jumping, diving, and lateral movement, and these activities are coupled with short rest periods throughout a match duration that is

typically 60-120 minutes (Sheppard et al., 2009). Players are required to have good physical fitness and specific technical skills that will enable successful performance at the competitive level. The physical fitness of a player however can be a decisive determinant of success during competition (Stamm et al., 2001). Polgaze et al (1995) recommend that if a player wants to achieve reasonable success in competitions at higher level, improvements in physical fitness needs to be emphasized in addition to skill training. Sport specific training is simply fitness and performance training designed specifically for athletic performance enhancement. Training programs for athletic performance enhancement could include such areas as strength, speed, power, endurance, flexibility, mobility, agility, mental preparedness (including goal setting), sleep, recovery/regeneration techniques and strategies, nutrition, rehabilitation, pre-habilitation, and injury risk reduction.(www.finishfirstsports.com).

METHODOLOGY

The purpose of the study was to find out the changes in performance related fitness components due

to package of specific fitness training among volleyball players. To achieve the purpose of the study thirty higher secondary school male volleyball players from Thanthai Periyar Higher Secondary School, Karaikal Pondicherry. The age of the subjects were ranged from 15-18 years.

Training Procedure

The selected subjects were divided into two equal groups, each group consists of 15 subjects. Group-I underwent volleyball specific fitness training for five days in a week for twelve weeks, such as plyometric, speed, agility, strength and endurance which is specific to volleyball with a package consists of ankle hops in place, front to back hops over a single cone, side to side hops over a single cone, medicine ball toss for plyometric package, drills such as conditioning drills, on the line, scatterball, off the floor, up-off-the-floor drill, one leg front to back speed drill over a line for the speed package, drills such as such as zone movement, belly doubles, queen of the court, texas drill, rolling b4 digs, two foot scissors, dot mat drill, two foot round the world for agility package, drills such as arm curls, bench press, medicine ball fast

ANALYSIS OF THE DATA

The analysis of covariance on performance related fitness components of the pre and post test scores of control group with specific fitness training groups have been analyzed and presented in Table I and II.

TABLE –I Analysis of Covariance of Experimental Groups and Control Groups on Explosive Power

Test	Training group	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	27.26	27.06	Between	.300	1	.300	.222
S.D.	1.03	1.27	Within	37.86	28	1.35	
Post Test							
Mean	36.26	27.53	Between	572.03	1	572.03	130.57*
S.D.	2.68	1.24	Within	122.66	28	4.381	
Adjusted Post Test							
Mean	36.18	27.61	Between	545.51	1	545.51	155.13*
			Within	94.94	27	3.516	

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

TABLE –II Analysis of covariance of Experimental Groups and Control Groups on Strength Endurance

Test	Training group	Control Group	Source of Variance	Sum of Squares	Df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	31.73	30.93	Between	4.80	1	4.80	1.40
S.D.	2.25	1.33	Within	95.86	28	3.42	
Post test							
Mean	39.20	31.26	Between	472.03	1	472.03	25.54*
S.D.	5.97	1.09	Within	517.33	28	18.476	
Adjusted Post Test							
Mean	39.26	31.20	Between	464.72	1	464.72	24.37*
			Within	514.68	27	19.06	

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

catch with partners, medicine ball throws for strength package, drills such as consecutive attacks drill, wall blocks, attack approaches, block jump to ball, mirror blocking, block on box, ball exchanges, conditioning drills, 6 on 6 tip drill, three pile, four person pepper, coach-on-3 hitting the setter for volleyball endurance package. The experimental group underwent single package in a day for one hour in the morning including warming up and cool down down with fixed load and volume. Group –II acted as control group (CG) they didn't undergo for any specific training.

Statistical Procedure

The data were collected on selected performance fitness variables namely explosive power and muscular endurance which were assessed by vertical jump and bent knee sit ups respectively before and after twelve weeks of training. The data was analyzed by using analysis of covariance (ANCOVA). The level of significance was fixed at 0.05. The findings of the present study have strongly indicate that that package of specific fitness training shows significant changes of higher secondary school level male volleyball players.

The table I shows that the adjusted post-test means of explosive power of experimental group and control group are 36.181 and 27.61 respectively. The obtained "F" ratio of 155.132 for adjusted post-test means and the table II shows that the adjusted post-test means of strength endurance of experimental group and control group are 39.26 and 31.20 respectively. The obtained "F" ratio of 24.37 for adjusted post-test means is more than the table value of 4.21 for df 1 and 27 required for significance at .05 level of confidence.

DISCUSSIONS

Specificity is a method of training in a specific way to create a specific outcome. In many team sports, specificity may even be determined by player position. The results of the study showed that there was a significant improvement on selected strength endurance and explosive power between control and volleyball specific fitness training group. According to Hakkinen et al, (1996), that 4-5 weekly sessions for playing drills and competitive games and 2-3 weekly sessions for physical conditioning for strength and explosive strength training for volleyball players to improve their vertical jumping ability significantly as well as spike and block jumps during competitive season. Chittibabu (2013) that handball specific repeated sprint training for eight weeks is more effective in increasing aerobic capacity of men handball players. The training load adopted in repeated – sprint training with game specific which resulted in 11.79% of changes in aerobic capacity. Patrick (2008) conditioning and hypertrophy training along with specific volleyball conditioning is necessary in preseason for the development of the lower-body strength, agility and speed performance in volleyball players. Hence from the supporting evidences that specific volleyball fitness training will improve volleyball specific fitness such as explosive power and strength endurance.

CONCLUSIONS

Based on the results of the study it was concluded that specific volleyball fitness training programme has showed significant improvement on selected performance related fitness components such as explosive power and strength endurance.

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