

Effect of Plyometric Training on Block Jump And Spike Jump of Female Junior Volleyball Players



Physical Education

KEYWORDS : Emotional Intelligence, Mental Imagery

Dr. Suresh Kutty K	Associate Professor School of Physical Education, Kannur University (Kerala)
Vijesh V.K	Research Scholar, Department of Physical Education, Kannur University (Kerala)
Neena Thekkan	Research Scholar, Department of Physical Education, Kannur University (Kerala)

ABSTRACT *To achieve this purpose of the study a total of thirty female volleyball players (N=30) were selected from St Mary's Higher Secondary School SulthanBathery. They had represented Kerala in the junior category. The age of the subjects ranged from 14 to 17 years. The subjects were equally divided (n=15) into an experimental group and control group. The subjects were tested on selected criterion variables such as explosive strength, Strength Endurance, Flexibility, Agility, and Speed was measured by standardized tests such as vertical jump test, push-up test, sit and reach test, shuttle run test, 50 yard sprint test respectively. Their spiking and blocking was also measured by spike jump and block jump tests. The data was statistically analysed by applying Dependent 't' -test. The level of significance was at 0.05 level. The result of the study revealed that there was a significant difference between experimental group and control group on explosive strength, strength endurance, flexibility, speed, agility, spike jump and block jump.*

INTRODUCTION

Volleyball has come a long way in the years it has been enjoyed by people over the world. Even though the sports had its humble beginnings in the United States. It is staggering to see the effect it had worldwide. The spiking is one of the most thrilling and exciting offensive aspect of the game of volleyball for both the participants and the spectators. The ability to execute a powerful, well placed spike is a vital offensive skill which is essential for successful individual and team performance in the game of volleyball. Performance is the combined result of the co-ordination, execution and integration of variety of movements. Genetic factors such as body height, lengthy legs, arms and the physical components like explosive power, agility etc. Play a major role in performance in the field of volleyball. The different techniques involved in volleyball have their own different physical requirements. The block is a team's first line of defense that serves several functions. Primary function of the block is to intercept the attacked ball, either returning to the opponent's court for a point or deflecting the ball upward and back to the court defense.

Plyometrics (also known as "plyos") is a type of exercise training designed to produce fast, powerful movements, and improve the function of the nervous system, generally for the purpose of improving performance in sports. Plyometric movements, in which a muscle is loaded and then contracted in rapid sequence, use the strength, elasticity and innervations of muscle and

surrounding tissues to jump higher, run faster, throw farther, or hit harder, depending on the desired training goal.

METHODOLOGY

To achieve the purpose of the study a total of thirty female volleyball players (N=30) were selected from St Mary's Higher Secondary School SulthanBathery. They had represented Kerala in the junior category. The age of the subjects ranged from 14 to 17 years. The subjects were equally divided (n=15) into an experimental group and control group. The experimental group had to undergo plyometric training for three days in a week i.e., on Monday, Tuesday and Friday for a period of eight weeks. The plyometric training included exercises for the whole body. The total duration of warm up plyometric exercise and cool down session is for 40-60 minutes. The intensity of the exercise was gradually increased by the use of more vigorous exercise after every two weeks. The subjects were tested on selected criterion variables such as explosive strength, Strength Endurance, Flexibility, Agility, and Speed was measured by standardized tests such as vertical jump test, push-up test, sit and reach test, shuttle run test, 50 yard sprint test respectively. The spiking and blocking ability too was measured by spike jump and block jump tests.

ANALYSIS AND DISCUSSION ON RESULTS

The data was statistically analysed by applying dependent 't' -test. The level of significance was set at 0.05 level. The analysis is presented in Table I

Table: I
Mean comparison of selected performance related variables, spike jump and block jump after the Plyometric training programme

variables	Control Factors	Pre test			Post test			t-ratio	Table Value
		N	Mean	SD	N	Mean	SD		
Explosive strength	Experimental	15	38.13	3.85	15	39.33	4.22	3.85*	2.145
	Control	15	39.73	3.84	15	39.26	4.00	1.45	2.145
Strength endurance	Experimental	15	21.73	3.19	15	25.26	4.72	4.76*	2.145
	Control	15	19.20	2.75	15	18.46	3.04	1.97	2.145
Flexibility	Experimental	15	9.06	3.73	15	10.33	3.37	2.39*	2.145
	Control	15	11.86	4.15	15	10.46	3.75	1.30	2.145
Agility	Experimental	15	12.16	0.67	15	11.87	0.60	3.39*	2.145
	Control	15	12.09	0.73	15	12.10	0.72	1.88	2.145
Speed	Experimental	15	7.41	0.39	15	7.30	0.46	4.38*	2.145
	Control	15	7.65	0.53	15	7.69	0.53	1.57	2.145
Spike jump	Experimental	15	14.73	4.94	15	42.60	5.59	4.40*	2.145
	Control	15	43.33	4.79	15	42.53	5.30	2.86	2.145
Block jump	Experimental	15	29.53	5.71	15	32.00	5.89	5.40*	2.145
	Control	15	28.66	5.12	15	28.06	5.03	1.71	2.145

*Significance at 0.05 level of confidence

Table I indicates that, there was a significant difference in the experimental group after the training period in all the selected performance related variables, spike jump and block jump. The graphical representation of the mean differences on these variables are presented in **Fig: I**

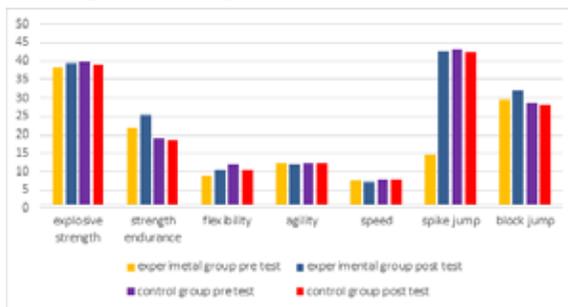


Fig: I
Illustration on mean scores of experimental and control group on the selected performance related variables, spike jump and block jump

DISCUSSION ON RESULTS

Eight weeks of plyometric training had improved all the performance related variables, spike jump and block jump performance of female junior volleyball players, namely explosive strength, strength endurance, flexibility, agility, Speed. The subjects selected for the study had no previous experience on plyometric training. They had been through their regular coaching schedule probably this could have been the reason for the improvement. The subjects had enthusiastically participated in the training program since they found the training to be interesting due to the freshness of the exercise, they did which was different from the usual routine ensured their whole hearted participation leading to the improvement in the performance related variables and also the spike jump and the block jump performance.

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