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GRT Golden Research Thoughts

EFFECT OF PLYOMETRIC TRAINING ON SPIKE JUMP OF JUNIOR FEMALE VOLLEYBALL PLAYERS.

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ABSTRACT

Effect of eight weeks plyometric training on spike jump of junior female volleyball players for this present study a total of thirty female volleyball players (n=30) was 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 two groups experimental group and control group. For the purpose of the study the following performance related variables were selected explosive strength and speed. Explosive strength was tested by vertical jump and speed was tested by 50 yard dash. The data was statisticall analysed through applying dependent 't' –test. Through this study we found follwing results the Eight weeks of plyometric training had improved all the performance related variables of spike jump performance of female junior volleyball players, namely explosive strength and speed.

KEYWORDS : Plyometric training, Spike jump, Female volleyball players,Speed.

INTRODUCTION

Plyometrics (also known as "plyos") is a type of exercise training designed to produce fast, powerful movements, and improve the functions 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. Plyometrics is used to increase the speed or force of muscular contractions, providing explosiveness for a variety of sport-specific activities. There is a maximum amount of force with which a certain muscle can concentrically contract. However, if the muscle is lengthened while loaded (eccentric contraction) just prior to the contraction, it will produce greater force through the storage of elastic energy. The quick transition from the eccentric to the concentric phase is known as the stretch shortening cycle (SSC), and is one of the underlying mechanisms of plyometric training. The force created by the muscled-tendon during the SSC is determined by the muscle's length and compliance. These aspects include “a more rapid initial stretch, which generates more power in the muscle group moving in the opposite direction in the second phase of the action; and a shorter time between eccentric and concentric contractions (SSC)". Spiking smash or spike as it is sometimes called is the attacking weapon in volleyball. In initials a player jumping as high as possible into the air near the net and hitting the ball strongly down into his opponent court. It is very complex technique that requires athleticism good timing, quick thinking and plenty of practice. The main idea, is to have the ball in the air above and close to the net so that an attack player may jump and hit the ball with fore down into the opponent court.

REVIEW OF REALTED LITERATURE

VladanMilić (2008),In order to determine the effects of plyometric training on the explosive strength of cadet volleyball players, we studied the effects of a six-week plyometric training program during the second half of the preliminary period of the annual training cycle. The sample consisted of 46 subjects aged 16 (± 6 months). The experimental group consisted of 23 volleyball players, with an average height of 186.35 ± 8.52 and average weight of 70.57 ± 8.98. The control group consisted of 23 high school students, with an average height of 177.35 ± 4.80 and body weight of 68.91 ± 6.48, who had not been exposed to the plyometric method as part of their physical education classes. The sample of measuring instruments consisted of eight tests of explosive leg strength: the two-foot takeoff block jump, the right foot takeoff block jump, the left foot takeoff block jump, the two-foot takeoff spike jump, the right foot takeoff spike jump, the left foot takeoff spike jump, the standing depth jump and the standing triple jump. Using a multivariate and univariate statistical method, we were able to determine a statistically significant difference in explosive strength in favor of the experimental group. We determined an increase in explosive strength for the two-foot and single foot takeoff jumps.

Damon P. S. Andrew et al. (2007), Plyometric exercises increase muscular power and are most effective when designed to complement the specific movements required of the athletic activity. This study compared the effects of modified depth jump plyometric exercises versus a periodised weight training program on the following functional tests: one-legged vertical jump, two-legged vertical jump, 30-meter sprint, standing broad jump, and 1 RM of the seated single leg press. Sixty-four untrained participants (18-28yr) were randomly assigned to one of the following groups: hip depth jump (n = 12), knee depth jump (n = 13), ankle depth jump (n = 13), weight training (n = 13), or a control (n = 13). Experimental groups trained two days a week for 12 weeks. Statistically significant improvements were observed among the plyometric groups for functional tests of power and the weight training group for functional tests of strength and speed. Results indicate that modified plyometric depth jumps offer a greater degree of specificity related to power training in athletes.

METHODOLOGY

For the present study a total of thirty female volleyball players (n=30) was 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 two groups experimental group and control group. For the purpose of the study the following performance related variables were selected explosive strength and speed. Explosive strength was tested by vertical jump and speed was tested by 50 yard dash. The data was statistically analysed through applying dependent 't' –test. The 't' test brought out the significant mean differences between the initial and final scores of experimental and control groups The level of significance chosen was 0.05 level of confidence throughout the study to determine the significance different with 14 degree of freedom.

ANALYSIS OF DATA AND RESULTS OF THE STUDY

't' Ratio of Experimental and Control group on Explosive Strength

Control Factors	Pre test			Post test			t-ratio	Table Value
	N	Mean	SD	N	Mean	SD		
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

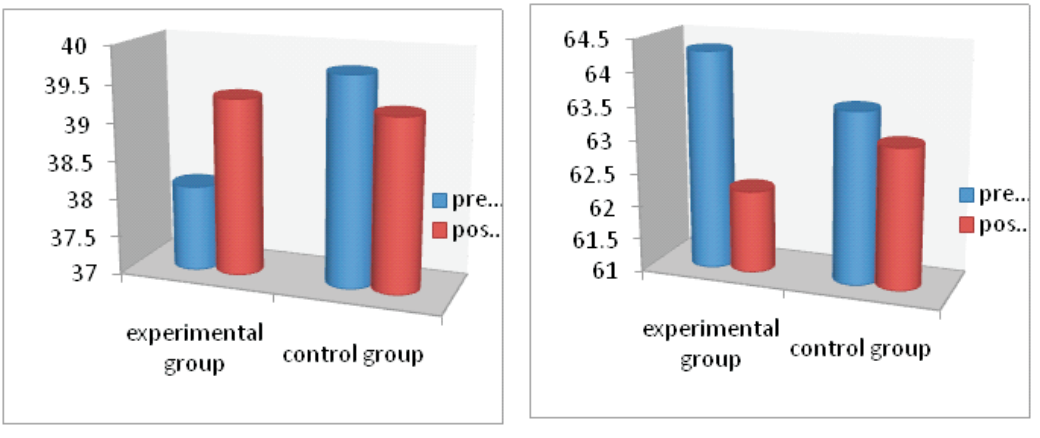
There was significant difference between the pre and post test scores on experimental group's explosive strength. The calculated 't' value 3.85 is greater than tabulated 't' value of 2.145 at 0.05 level of significance with 14 degree of freedom. In the case of control group there was no significant difference found in explosive strength

't' Ratio of Experimental and Control group on Speed

Control Factors	Pre test			Post test			t-ratio	Table Value
	N	Mean	SD	N	Mean	SD		
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

There was significant difference between the pre and post test scores on experimental group's speed. The calculated 't' value 4.38 is greater than tabulated 't' value of 2.145 at 0.05 level of significance with 14 degree of freedom. In the case of control group there was no significant difference found in speed.

Grapical Representation Of Explosive Strength And Speed



CONCLUSION &RECOMMENDATIONS

Based on the findings of the study and analysis of the data the following conclusion had been made Participation in eight weeks of plyometric training programme had improved the spike jump and block jump performance of female junior volley ball players.Participation in eight weeks of plyometric

training programme had improved the Explosive Strength of female junior volley ball players Participation in eight weeks of plyometric training programme had improved the Speed of female junior volley ball players. Awareness should be given to volley ball regarding the benefits of plyometric training.Plyometric training should be incorporated in the fitness training programme for the junior level volley ball players to develop performance related physical fitness.

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