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Effect Of Plyometric Exercises On The Development Of Explosive Power Among Basket Ball Players

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Abstract:

The purpose of the study was to find out the effect of plyometric exercises on the development of explosive power among Basket Ball Players of Hyderabad District in Telangana State. For the present study the 30 basket ball players who were studying in Hyderabad and Telangana were selected at random and their age ranged from 18 to 22years. For the present study pretest – posttest random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of thirty (15) each and named as Experimental group and Control group. In which group – I (n=15) underwent plyometric exercises for three days per week for six weeks, group – II (n=15) act as a control group.The standing Broad Jump Test Pre and Post Test were conducted among two groups to assess the explosive power of legs. The results of the study it was found that there was a significant difference of performance due to Plyometric exercises when compared with the control group for development of Explosive Power. Key words: Sprinters, Plyometric, Explosive Power , Basket Ball etc.

Introduction:

Plyometric exercises are specialized, high intensity training techniques used to develop playerspower (strength & speed). Plyometric exercise involves high-intensity of explosive muscular contractions that appeal to the stretch reaction (stretching the muscle previous to it

contracts so that it contracts with greater power). The most ordinary plyometric exercises include hops, jumps and bounding actions. One popular plyometric exercise is jumping off a box and rebounding off the floor or ground and onto another, higher box. These exercises characteristically increase speed and strength and increase power. Plyometric training involve and uses practicing plyometric Training to strengthen tissues and train nerve cells to stimulate a exact pattern of muscle contraction so the muscle generate as strong a contraction as possible in the shortest quantity of duration. Benefits of Plyometric Training Plyometric training is a method of exercise designed to produce fast, powerful and quick movements, and improve the functions of the nervous system, in general for the use of improving performance in sports. Plyometric is used to generate an increase the speed or force of muscular contractions, provide explosiveness for a variety of sports and games-particular activities. Plyometric has been shown across the literature to be helpful to a variety of athletes.

Plyometric are training techniques used by athletes and players in all types of sports to increase strength and explosiveness. Plyometric consists of a rapid stretching of a muscle in eccentric action immediately followed by a concentric or shortening action of the same muscle and connective tissue. The stored elastic energy within the muscle is used to produce more force than can be provided by a concentric action alone. Researchers have shown that plyometric training, when used with a periodized strength-training program, can contribute to improvements in vertical jump performance, acceleration, leg strength, muscular power, increased joint awareness, and overall proprioception.

Purpose of the study: The purpose of the study was to find out the effect of plyometric exercises on the development of explosive power among Basket Ball Players of Hyderabad District in Telangana State

Methodology :

For the present study the 30 basket ball players who were studying in Hyderabad and Telangana were selected at random and their age ranged from 18 to 22years. For the present study pretest – posttest random group design which consists of control group and experimental group was used. The subjects were randomly assigned to two equal groups of thirty (15) each and named as Experimental group and Control group. In which group – I (n=15) underwent plyometric exercises for three days per week for six weeks, group – II (n=15) act as a control group.The standing Broad Jump Test Pre and Post Test were conducted among two groups to assess the explosive power of legs.

Results and Discussion:

Table No-1: Paired t-test is used to test the effectiveness of plyometric training on experimental group than control group on development of physical fitness variable,Power (Standing broad jump)among Basket ball Players.

Group	N	Pre test		Post test		Mean Differences	t	df	P-value
		Mean	**SD**	**Mean**	**SD**				
Experimental	30	2.209	0.059	2.513	0.090	0.303	19.993	29	0.000
Control	30	2.152	0.061	2.194	0.063	0.042	6.965	29	0.000

Table value is 2.045 at 29 df with 0.05 level of significance.

From the above table it is observe that Power (Standing broad jump) of the selected sample in Experimental Group, Pre-test mean is 2.209 with Standard Deviation is 0.059 and post-test mean is 2.513 with Standard Deviation is 0.090. The mean difference from pre-test to post test is 0.303. Here the 't' calculated value is 19.993 which is greater than table value 2.045 at 29 degrees of freedom with 0.05 level of significance. It shows that there is a significant difference

between pre-test to post-test seen. Whereas control Group, Pre-test mean is 2.152 with Standard Deviation is 0.061 and post-test mean is 2.194 with Standard Deviation is 0.063. The mean difference from pre-test to post test is 0.042. Here the calculated value 't' is 6.965 which is less than table value 2.045 at 29 degrees of freedom with 0.05 level of significance. It shows that there is no significance difference between pre-test and post-test seen. Which means there is no significant difference in control group, due to the control group did not underwent plyometric Training or any other specific training. Hence, there is no significant changes occurred in the control group.From the above table clearly reveals that there is a significant effect of plyometric training on development of Power (Standing broad jump) on experimental group better improvement than control group of college basketball players of Hyderabad

Conclusion:

It can be conclude that there is a significant difference between the pre-test to post-test because of the plyometric training effect of the selected players muscle strength, coordination was improved among young basketball players of Physical fitness variable Power (Standing broad jump) on experimental group . It was concluded that the results showed that six weeks of Plyometric Training significantly improved plyometric training effect of the selected players muscle strength, coordination was improved among young basketball players of Physical fitness variable Power

Recommendations:

Based on analysis of collected data, the investigators would like to recommend the research work to extend further more as mentioned below.

1.Similar research work should be done on similar set of sports to validate the results. Use a variety of training to develop physical strength, focusing on the development of ot her motivations through all methods that have to do with each quality to be created.

2.Further research, as well as the published findings, will contribute to the basket ball coaching.

The study also helps the physical educationists and coaches understanding the knowledge and performance of the players.

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