e-ISSN 2320 –7876 www.ijfans.org
Vol.11, Iss.11, Nov 2022

EFFECT OF VARIED (PLYOMETRICTRAINING)TRAINING PROGRAM ON PHYSICAL FITNESS AMONG UNIVERSITY BASKET BALL PLAYERS AT HYDERABAD

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Abstract

Sports training is a special process of preparation of sports persons based on scientific principles aimed at improving and maintaining higher performance capacity in different sports activities. It is a particular type of training designed to improve fitness and abilities to perform in a given sport. The purpose of the study is to find out the effect of varied training (Plyometric Training) whether or not any significant difference found between pre-test and post-test on physical fitness among university basket ball players at Hyderabad and their performance. The following hypotheses are formulated for the study. There may not be any significant difference between pre – test and post on effect of Plyometric training program among university basket ball players in relation to their physical fitness. Methods & Materials The samples were collected from the 30 basket ball players of Jawaharlal Nehru Technological University Hyderabad in the age group of 18 to 22 years. The basketball players were divided in to two group's experimental group and control group. The Physical fitness variables are Speed, Agility and Explosive Strength. The discussion of the study reveals that the obtained mean values of per test and post-test of plyometric group for speed, agility and leg explosive power were 7.92 and 7.75, 21.62 and 20.48, 34.46 and 36.86 respectively. Conclusion Based on the findings and within the limitation of the study. Six weeks of plyometric training programmehave seen progressive improvement on theselected physical fitness variables such as speed, agility and leg explosive Strength of experimental group of Jawaharlal Nehru Technological University Hyderabad Basketball players. Keywords Speed, Agility and Explosive Strength.

Introduction

Sports training is a special process of preparation of sports persons based on scientific principles aimed at improving and maintaining higher performance capacity in different sports activities. It is a particular type of training designed to improve fitness and abilities to perform in a given sport. It includes strength in training, corrective and restorative exercises, conditioning and cardiovascular training.

The main objectives of sports training is to improve the physical fitness. The performance in sports generally depends upon physical fitness of a sports person. Every sport activity needs specific type of

physical fitness, and hence, the improvement of various components of physical and skills related fitness like strength, speed, coordination, endurance and flexibility is an important aim and objective of sports training.

Sports training, in a nutshell, means preparing for a performance. It helps the athlete build strength and endurance gradually, improves their skill levels, and strengthens confidence.Plyometric Training is a Plyometric or jump training includes exercises in which the body exerts apex force in short intervals of time and focuses on muscle extension and contraction swiftly. Some primary activities in this technique are plyo pushups, box jumps, bounding, and depth jumps. It aims at improving muscular power that transmutes into higher jumps and longer sprints.

Plyometric (also known as "ploys") 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 23 jump higher, run faster, throw further, or hit harder, depending on the desired training goal. Plyometric is used to increase the speed or force of muscular contractions, providing explosiveness for a variety of sport-specific activities. Plyometric has been shown across the literature to be beneficial to a variety of athletes. Benefits range from injury prevention, power development and sprint performance amongst others. Plyometric exercise refers to those activities that enable a muscle to reach maximal force in the shortest possible time. “Plyometric” is a combination of Greek words that literally means to increase measurement plyometric exercise is a quick, powerful movement using a pre-stretch or counter movement, which involves the stretch-shortening cycle (SSC). The purpose of plyometric exercise is to increase the power of subsequent movements by using both the natural elastic components of muscle and tendon and the stretch reflex. To effectively use plyometric as part of a training programme, it is important to understand:

- The mechanics and physiology of plyometric exercise
- Principles of plyometric programme Design
- Methods of safely and effectively performing specific

Plyometric exercises. Plyometric involve power jumping, repetitive bounding and quick force production. When your muscles eccentrically contract, or shorten, then immediately stretch and lengthen, they produce maximal power ideal for athletic situations. It is a fast movement that happens

over a short period. Plyometric are ideal for athletes or people looking to improve muscular power, speed and strength (Baechle, 2008).

Basketball is one of the fastest games in which high level conditioning and coordinative abilities with technical and tactical potentials are essential to perform every skill at desired or required level. In basketball is a same speed, leg explosive power and agile.

Objective of the study

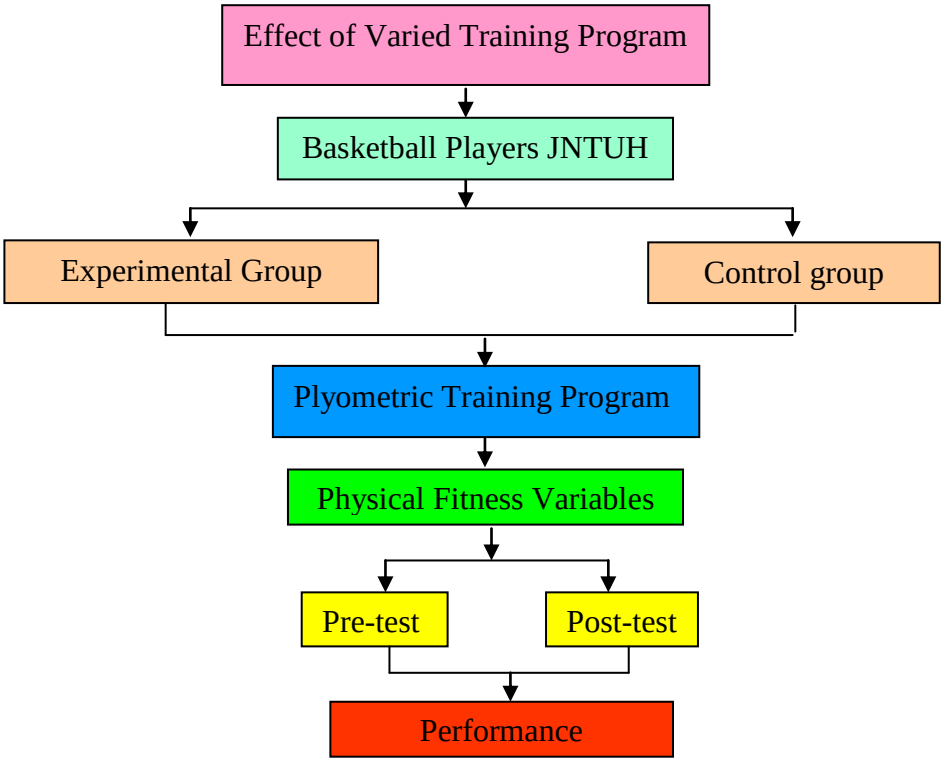
The purpose of the study is to find out the effect of varied training (Plyometric Training) whether or not any significant difference found between pre-test and post-test on physical fitness among university basket ball players at Hyderabad and their performance.

Hypotheses

The following hypotheses are formulated for the study. There may not be any significant difference between pre – test and post on effect of Plyometric training program among university basket ball players in relation to their physical fitness.

Design of the study

The diagrammatic presentation was presented hereunder.



Methods & Materials

The study was formulated based on the simple random sampling. The samples were collected from the 30 basket ball players of Jawaharlal Nehru Technological University Hyderabad in the age group of 18 to 22 years. The basketball players were divided in to two group's experimental group and control

group. The plyometric group was subjected to plyometric training (for weekly three days Monday, Wednesday, Friday) at evening session for six weeks. Speed, agility and leg explosive power was selected as dependent variable. After the collection of appropriate data, it was statistically analyzed by using paired 't' test. The level of significance was set at 0.05.

Tools Used

The following physical fitness variables were selected.

Sl.No	Variables	Test
1.	Speed	50 meters dash
2.	Agility	Shuttle run 4 x 10 mts
3.	Leg explosive power	Vertical Jump

Test Administration

The pre and post-test random group design was used as experimental design in which thirty men subjects were divided into two groups one experimental group and one control group of fifteen subjects each. For Experimental Group i.eplyometric group underwent their training programme as three days per week for six weeks. Training was given in the evening session. The training session includes warming up and cool down. Every day the workout lasted for 45 to 60 minutes approximately. The subjects underwent their trainingprogrammes as per the schedules such as side to side ankle hops, double leg hops, split jumps, lateral cone hops and single leg bounding under the strict supervision of the coach. During experimental period control group did not participate in any of the special training.

Results and Discussion

The collected data from the two groups prior to and immediately after the training programme on selected physical fitness variables were statistically analyzed with analysis of covariance (ANCOVA). In all cases 0.05 level of confidence was fixed as a level of confidence to test the hypothesis.

Table showing the Comparison of Mean, and 't'-Values of Physical Fitness Variables between Pre & Post Test among Plyometric and Control Group

Sl.No	Physical fitness Variables	Groups	Tests	Mean	't' Values
1.	Speed	Plyometric Group	Pre- Test	7.92	13.23
			Post- Test	7.75	
		Control	Pre- Test	7.81	0.48

		Group	Post- Test	7.82	
2.	Agility	Plyometric Group	Pre- Test	21.62	13.15
			Post- Test	20.48	
		Control Group	Pre- Test	20.77	1.75
			Post- Test	22.34	
3.	Leg Explosive strength	Plyometric Group	Pre- Test	34.46	15.04
			Post- Test	36.86	
		Control Group	Pre- Test	34.26	0.52
			Post- Test	34.13	

Discussion of the Study

Table-II reveals that the obtained mean values of per test and post-test of plyometric group for speed, agility and leg explosive power were 7.92 and 7.75, 21.62 and 20.48, 34.46 and 36.86 respectively; the obtained ‘t’ ratio were 13.23, 13.15 and 15.04 respectively. The tabulated ‘t’ value is 2.14 at 0.05 level of confidence for the degree of freedom 14. The calculated ‘t’ ratio was greater than the table value. It is found to be significant change in speed, agility and leg explosive power of the basketball players. The obtained mean values ofpre-test and post test scores of control group were 7.81 and 7.82, 20.77 and 22.34, 34.26 and 34.13 respectively, the obtained ‘t’ ratio was 0.48, 1.75 and 0.52. The required table value is 2.14 at 0.05 level of confidence for the degree of freedom 14. The calculated ‘t’ratio was lesser than the table value. It is found to be insignificant changes in speed, agility and leg explosive power of the basketball players.

Findings on the Study

The results of the study indicated that the selected physical fitness variables such as speed, agility and leg explosivepower were improved significantly after undergoingplyometric training program. The changes in the selected physical fitness variableswere attributed the proper planning, preparation and executionof the training program given to the players. The results of the present study indicates that the plyometric training methods isappropriate protocol to improve speed, agility and legexplosive power of school level boys basketball players. From the result of the present study it is very clear that the selected physical fitness variables such as speed, agility and legexplosive power improvement significantly due to plyometric training.

Conclusion

Based on the findings and within the limitation of the study. Six weeks of plyometric training programmehave seen progressive improvement on theselected physical fitness variables such as speed, agility and leg explosive power of experimental group of Jawaharlal Nehru Technological University Hyderabad Basketball players. Further, the results of the study provided the evidence, that the

plyometric trainingprogram is an effective method for developing thephysical fitness variables such as speed, agility and leg explosive power.

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