

Effect of maximal power training on selected strength parameters among university players

Dr. Manikandan S

Assistant Professor, Dept. of Physical Education and Sports Sciences, Annamalai University, Chidambaram, Tamil Nadu, India

Abstract

The purpose of the study was to find out the effect of maximal power training on leg strength of university men players. To achieve this purpose of the study, thirty men players from different games in the Department of Physical Education and Sports Sciences, Annamalai University, Annamalai Nagar, Tamil Nadu, India were selected as subjects at random. The selected subjects were divided into two equal groups of fifteen subjects each, such as maximal power running group and control group. The group I underwent maximal power training programme for three days per week for twelve weeks. And Group II acted as control group who did not participate any special training programmes apart from their regular physical education activities as per their curriculum. The following variable namely leg strength was selected as criterion variable and it was measured by using leg dynamometer. All the subjects of two groups were tested on selected criterion variable at prior to and immediately after the training programme. The analysis of covariance was used to analyse the significant difference, if any between the groups. The level of significance to test the 'F' ratio obtained by the analysis of covariance was tested at .05 level of confidence, which was considered as an appropriate. The results of the study revealed that there was a significant difference between maximal power training group and control group on leg strength. And also it was found that there was a significant improvement on leg length due to maximal power training.

Keywords: Maximal Power Training, Strength Parameters and Leg Strength

1. Introduction

The modern age is an age of computer. Man has been running over, since he had to hunt for survival. Computer was invented by man for the comforts of his life. He has caused man to depend on it completely. This has lead man to reduce his physical efficiency. Training in sports is essentially on education process. The athlete is instructed and educated by the trainers the physical education teachers and coaches. Training depends upon the various aspects and is a positive quality closely related to exercise and good health habits. It is an important and valuable pulse in modern society. For the last few decades, research has been conducted to develop a better training method to improve motor fitness components.

2. Methodology

The purpose of the study was to find out the effect of maximal power training on leg strength of university men students. To achieve this purpose of the study, thirty men students in the Department of Physical Education and Sports Sciences, Annamalai University, Annamalai Nagar, Tamil Nadu, India were selected as subjects at random. The selected subjects

were divided into two equal groups of fifteen subjects each, such as maximal power running group and control group. The group I underwent maximal power training programme for three days per week for twelve weeks. And Group II acted as control group who did not participate any special training programmes apart from their regular physical education activities as per their curriculum. The following variable namely leg strength was selected as criterion variable and it was measured by using leg dynamometer. All the subjects of two groups were tested on selected criterion variable at prior to and immediately after the training programme. The analysis of covariance was used to analyse the significant difference, if any between the groups. The level of significance to test the 'F' ratio obtained by the analysis of covariance was tested at .05 level of confidence, which was considered as an appropriate.

3. Analysis of the Data

The analysis of covariance on leg strength of the pre and post test scores of maximal power training group and control group have been analyzed and presented in Table 1.

Table 1: Analysis of Covariance of the Data on Leg Strength of Pre and Post Tests Scores Of Maximal Power Training and Control Groups

Test	Maximal Power Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean squares	Obtained 'F' Ratio
Pre Test							
Mean	92.46	92.49	Between	3.12	1	3.12	1.11
S.D.	1.04	1.01	Within	78.43	28	2.801	
Post Test							
Mean	94.62	92.52	Between	16.11	1	16.11	4.75*
S.D.	0.99	1.03	Within	94.81	28	3.386	
Adjusted Post Test							
Mean	94.13	92.41	Between	18.48	1	18.48	4.30*
			Within	116.02	27	4.297	

*Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 1 and 28 and 1 and 27 are 4.20 and 4.215 respectively).

The table shows that the pre-test mean values on leg strength of maximal power training group are 92.46 and 92.49 respectively. The obtained 'F' ratio of 1.11 for pre-test scores is less than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on leg strength. The post-test mean values on leg strength of maximal power training group and control group are 94.62 and 92.52 respectively. The obtained "F" ratio of 4.75 for post-test scores is more than the table value of 4.20 for df 1 and 28 required for significance at .05 level of confidence on leg strength.

The adjusted post-test means of maximal power training group and control group are 94.13 and 92.41 respectively. The obtained "F" ratio of 4.30 for adjusted post-test means is greater than the table value of 4.215 for df 1 and 27 required for significance at .05 level of confidence on leg strength.

The results of the study indicated that there was a significant difference between the adjusted post-test means of maximal power training group and control group on leg strength.

4. Conclusions

Based on the results of the study the following conclusions were drawn.

1. There was a significant difference between maximal power training group and control group on leg strength.
2. There was a significant improvement on leg strength due to maximal power training.

5. References

1. Cabri J, De Profit E, Dufour W, Clarys J. The Relation between Muscular Strength and Kick Performance, Science and Football, eds. Reilly T., Lees A., Davies K. and Murphy, W.J., 1988.
2. Donald Chu A. Jumping into Plyometric, New York: Human Kinetics Publishers, 1998, 1.
3. Fatouros IG *et al.* Evaluation of Plyometric Exercise Training, Weight Training and their Combination on Vertical Jumping Performance and Leg Strength, Journal of Strength and Conditioning Research. 2000; 14:4.
4. Haddock BL *et al.* The Effect of Varying Resistance Training Programs on Strength, Lean Body Mass, and Metabolism, Medicine and Science in Sports and Exercise. 2002, 34(5). Supplement Abstract.
5. Hass CJ *et al.* Effects of Training Volume on Strength and Endurance in Experienced and Endurance in Experienced Resistance Trained Adults, Medicine and Science in Sports and Exercises; 1998, 30(5). Supplement Abstract.
6. Manolopoulos E *et al.* Strength Training Effects on Physical Conditioning and Instep Kick Kinematics in Young Amateur Soccer Players During Preseason, Percept Mot. Skills, 2004, 99(2).
7. Oberg BM, Moller J Gillquist, J Ekstrand. Isokinetic Torque Levels for Knee Extensors and Knee Flexors in Soccer Players, International Journal of Sports Medicine. 1986, 7.
8. Walter Winter Bottom, Soccer Coaching, 2nd ed., London: The Naldreft Press, 1954, 54-67.
9. Wilf and Evelyn Freeman, *Plyometrics*, IOWA: Championship Books, 1984, 1.
10. www.bobycharltonsoccerschoolofaustralia.com.