



EFFECT OF PLYOMETRIC TRAINING ON SELECTED POWER PARAMETERS

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Abstract

The purpose of the study was to find out the effect of plyometric training on selected power parameters namely elastic power and explosive power. To achieve this purpose of the study thirty men students studying in the Department of Physical Education, Annamalai University, Tamil Nadu were randomly selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent plyometric training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The subjects were tested on selected criterion variables such as elastic power and explosive power at prior to and immediately after the training period. The selected criterion variables such as elastic power and explosive power were measured through bunny hops and vertical jump respectively. The analysis of covariance (ANCOVA) was used to find out the significant difference, if any between the experimental groups on each selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate. The results of the study revealed that there was a significant difference between plyometric training group and control group on elastic power and explosive power. And also it was found that there was a significant improvement on selected criterion variables due to plyometric training.

Keywords: Plyometric Training, Power.

INTRODUCTION

Sports training is a pedagogical process, based on scientific principles, aiming at preparing sportsman for higher performances in sports competition. Sports training is a scientifically based and pedagogically organised process which through planned and systematic effect on performance ability and performance readiness aims at sports perfection and performance improvement as at the contest in sports competition. Some experts understand that sports training is basically doing physical exercise. For performing these physical exercises, the following factors essentials are sports equipment and implements, verbal instructions, means of recovery, means of assessment of performance capacity, nutrition, psychological means etc. Further advanced training of sports persons significantly supported by several sports persons significantly supported by several sports disciplines like sports medicine, sports psychology. Nutrition physiotherapy sports physiology sports biomechanics and other allied sciences. In addition, personality of the sportsman has to be improved in order to improve his performance. The personality of a person has several dimensions like physical, physiological social and psychic. Hence to improve sports performance in addition to physical and physiological characteristics the social and psychic capacities of the sports person also have to be improved.

METHODOLOGY

The purpose of the study was to find out the effect of plyometric training on selected power

parameters namely elastic power and explosive power. To achieve this purpose of the study thirty men students studying in the Department of Physical Education, Annamalai University, Tamil Nadu were randomly selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent plyometric training for three days per week for twelve weeks. Group II acted as control who did not undergo any special training programme apart from their regular physical education programme. The subjects were tested on selected criterion variables such as elastic power and explosive power at prior to and immediately after the training period. The selected criterion variables such as elastic power and explosive power were measured through bunny hops and vertical jump respectively. The analysis of covariance (ANCOVA) was used to find out the significant difference, if any between the experimental groups on each selected criterion variables separately. In all the cases, .05 level of confidence was fixed to test the significance, which was considered as an appropriate.

TRAINING PROGRAMME

For plyometric training group underwent their training programme for twelve weeks for three days per week. Training was given in the morning session. The training session includes warming up and limbering down. Every day the workout lasted for 45 to 60 minutes approximately. The subjects underwent their training programmes as per the schedules under the strict

supervision of the investigator. During experimental period control group did not participate in any of the special training.

ANALYSIS OF THE DATA

The influence of plyometric training on each criterion variables were analysed separately and presented below,

ELASTIC POWER

The analysis of covariance on elastic power of the pre and post test scores of plyometric training group and control group have been analyzed and presented in Table I.

TABLE I
ANALYSIS OF COVARIANCE OF THE DATA ON ELASTIC POWER OF PRE AND POST TESTS SCORES OF PLYOMETRIC TRAINING AND CONTROL GROUPS

Test	Plyometric training group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	10.68	10.70	Between	0.83	1	0.83	
S.D.	1.12	1.09	Within	30.17	28	1.078	0.769*
Post Test							
Mean	10.78	10.71	Between	45.66	1	45.66	
S.D.	0.99	1.08	Within	1.189	28	1.189	37.85*
Adjusted Post Test							
Mean	10.76	10.70	Between	1.87	1	1.87	
			Within	3.01	27	0.111	16.85*

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively)

The table I shows that the adjusted post-test means on elastic power of plyometric training group and control group are 10.76 and 10.70 respectively. The obtained "F" ratio of 16.85 for adjusted post-test means is more than the table value of 4.21 for df 1 and 27 required for significance at .05 level of confidence on elastic power. The results of the study indicated that there was a significant difference between the adjusted

post-test means of plyometric training group and control group on elastic power.

EXPLOSIVE POWER

The analysis of covariance on elastic power of the pre and post test scores of plyometric training group and control group have been analyzed and presented in Table II.

TABLE II
ANALYSIS OF COVARIANCE OF THE DATA ON EXPLOSIVE POWER OF PRE AND POST TESTS SCORES OF PLYOMETRIC TRAINING AND CONTROL GROUPS

Test	Plyometric training group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	0.40	0.41	Between	0.001	1	0.001	
S.D.	0.01	0.02	Within	0.14	28	0.005	0.20
Post Test							
Mean	0.45	0.41	Between	0.86	1	0.86	
S.D.	0.01	0.02	Within	0.49	28	0.175	49.14*
Adjusted Post Test							
Mean	0.45	0.41	Between	0.79	1	0.79	
			Within	0.52	27	0.02	39.50*

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence with df 1 and 28 and 1 and 27 were 4.20 and 4.21 respectively).

The table II shows that the adjusted post-test means on explosive power of plyometric training group and control group are 0.45 and 0.41 respectively. The obtained “F” ratio of 39.50 for adjusted post-test means is more than the table value of 4.21 for df 1 and 27 required for significance at .05 level of confidence on explosive power. The results of the study indicated that there was a significant difference between the adjusted post-test means of plyometric training group and control group on explosive power.

RESULTS

1. There was a significant difference among plyometric training group and control group on elastic power and explosive power.
2. And also it was found that there was a significant improvement on selected criterion variables such as elastic power and explosive power due to plyometric training.

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