ISSN: 2349 - 4891

International
Journal of Recent Research and Applied Studies
(Multidisciplinary Open Access Refereed e-Journal)

Effects of Medicine Ball Training on Selected Fitness Performance of Physical Education Students

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Received 21st May 2015, Accepted 7th July 2015

Abstract

The purpose of the study was to investigate the effects of medicine ball training on selected fitness performance of physical education students. To achieve this purpose of the study thirty men students from Bharathidasan University, Department of physical education were selected randomly as subjects. Their age ranged from 17 to 25 years. The subjects (N=30) were randomly assigned equally into two groups, in which group I underwent medicine ball training (N=15) and group II (N=15) acted as control. The medicine ball training was given for six weeks. Flexibility was evaluated by the stand and reach test. Power was evaluated by the standing broad jump and Abdominal strength was measured by a medicine ball abdominal curl. The pre-test and post test data were statistically examined with dependent' t'- test, In all cases 0.05 level of confidence was fixed as the level of significance difference. There was a significant improvement on selected fitness performance due to medicine ball training.

Keywords: Medicine Ball Training, Power, Abdominal Strength.

Introduction

The ability to generate strength and power is a very important component for success in many sports, particularly in those involving explosive movements. Medicine ball training, in conjunction with a program of weight training and circuit training, can be used to develop strength and power. Certain medicine ball exercises can also be used as part of a plyometric training program to develop explosive movements. Medicine ball training is appropriate to all levels of ability, age, development and sport. To be most effective the program should contain exercises that match the pattern of movements of the sport. Medicine ball training provides the opportunity to strength their bodies through dynamic movements that require balance and coordination. Furthermore, body weight resistance exercises such as chin-ups may be too challenging for some youth who are sedentary and overweight. In that regard, medicine ball training programs that involve throwing, catching, and rotational movements can be structured in a way that is appropriate for all students.

An effective workout with medicine balls can be achieved in about 30 to 40 minutes, if the athlete works efficiently. Carry out two or three sessions per week with a recovery period of 36 to 48 hours between sessions. Each session should be made up of 8 to 10 exercises with the athlete performing 2 to 3 sets of each exercise. If the athlete is to develop strength and muscular endurance then conduct 6 to 12 repetitions of each exercise. If the athlete is to develop muscular endurance rather than strength then conduct 12 to 30 repetitions.

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Methodology

The purpose of the study was to investigate the effects of medicine ball training on selected fitness performance of physical education students. To achieve this purpose of the study thirty men students from Bharathidasan University, Department of physical education were selected randomly as subjects. Their age ranged from 17 to 25 years. The subjects (N=30) were randomly assigned equally into two groups, in which group I underwent medicine ball training (N=15) and group II (N=15) acted as control. The medicine ball training was given for six weeks. Flexibility was evaluated by the stand and reach test. Power was evaluated by the standing broad jump and Abdominal strength was measured by a medicine ball abdominal curl. The pre-test and post test data were statistically examined with dependent' t'- test, In all cases 0.05 level of confidence was fixed as the level of significance difference.

Results

The effects of medicine ball training on selected fitness performances were analysed separately and presented below.

Table I. The summary of mean, standard deviation dependent 't' test of pre and post test data on power, flexibility, abdominal strength of medicine ball training and control groups

Variables	Group	Pre	Post	Mean difference	't' Test
Lower Body Power (cm)	**Control**	1.76	1.74	0.02	.708
	Mb exercise	1.97	2.22	0.25	7.2*
Flexibility (cm)	**Control**	25.8	25.6	0.2	1.3
	Mb exercise	29.3	31.0	1.7	14.8*
Abdominal strength	**Control**	39.2	38.6	0.6	1.4
	Mb exercise	39.9	43.2	3.3	14.2*

Significant at *.05 level of confidence*
(Table value required for significance at .05 level for 't' ratio with df 14 is 2.14).

The table II shows the 't' ratio values of control group are .708, 1.3, 1.4 which is less than the required table value 2.14 at .05 level of confidence (df. 14), it is concluded that control group did not improve selected fitness performance. The 't' ratio values of exercise group are 7.2, 14.8, 14.2. Since 't' ratio values are greater than the required table value 2.04 at .05 level of confidence (df, 14), it is conclude that Medicine ball training programme has significantly improved the selected fitness performance.

Discussion

The group that participated in the medicine ball training program made significantly greater gains in the power, flexibility and abdominal strength, as compared to the control group ($p < .05$). The primary finding of this investigation was that regular participation in a progressive medicine ball training program produced greater magnitudes of improvement in fitness performance. (Faigenbaum et al. 1996; Guy & Micheli, 2001). In general, it seems that boys and girls can increase their strength by about 30-50% during the first eight weeks of resistance training (Falk & Tenebaum, 1996). The present results are comparable with these findings as the progressive training program that included explosive types of medicine ball exercises resulted in gains in upper body strength and abdominal strength of 42% and 34%, respectively.

Conclusion

There was a significant improvement on selected fitness performance due to medicine ball training.

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