

Research Paper :

Effects of isolated and combined effects of concurrent plyometric and circuit based plyometric training on selected physical and physiological variables among college men students

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Accepted : September, 2010

ABSTRACT

The purpose of the study, 80 college men students were selected randomly from Ananda College, Devakottai, Tamilnadu as subjects. Their age ranged from 18 to 21 years. They were divided into four equal groups namely, Experimental group I, Experimental group II, Experimental group III and Control group. In a week, three days, the Experimental group I underwent concurrent plyometric training, Experimental group II underwent circuit based of plyometric training, Experimental group III underwent combination of both the training and control group was not given any specific training. The variables chosen were namely, leg explosive power, cardio respiratory endurance, resting pulse rate and Vo_2 max. They were assessed before and after the training period of 12 weeks. The analysis of covariance was used to determine of any significant difference was present among the four groups of the dependent variables. The study showed that the selected physical and physiological variables were significantly improved due to the influence of isolated and combined effect of concurrent plyometric training and circuit based plyometric training.

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Key words : Plyometric training, Leg explosive power, Resting pulse rate, Vo_2 max

Sports science generally aims at identifying and developing performance variables essential for competitive excellence. In addition to other indices like muscle endurance and power, muscle strength plays a cardinal role in achieving the athletic excellence. The final common denominator in athletic events is what the muscles can do for you - what strength they can give when it is needed, what power they can achieve in the performance of work and how long they can continue in the fit activity. Plyometric consists of a number of steps jumps, depth jumps and complex jumps at different volume. In this study, an attempt was made to find out the effects of concurrent plyometric and circuit based plyometric training on selected physical and physiological variables among the college men students.

METHODOLOGY

In a week three days the experimental group I underwent concurrent plyometric training, (plyometric and weight, plyometric and continuous run, plyometric and circuit training) experimental group II underwent circuit based plyometric training (lateral jump with single leg, Lateral Jump over barrier, standing long jump, standing triple jump, standing jump and reach, standing jump over barrier, 1-2-3 drill). Experimental group III underwent combination of both the training and the control group

was not given any specific training. The leg explosive power, cardio respiratory endurance, resting pulse rate and Vo_2 max were chosen as criterion variables. They assessed before and after the training period of 12 weeks. The analysis of covariance was used to determine of any significant difference was present among the four groups of the dependent variables

OBSERVATIONS AND DISCUSSION

Table 1 shows the analyzed data on leg explosive power. The pre-test, post-test and adjusted post test means of the leg explosive power were (1.413, 1.438, 1.403, 1.403), (1.415, 1.697, 2.031, 2.343) and (1.414, 1.685, 2.037, 2.349) for the control group and experimental group I, II, III, respectively. The obtained 'F' ratio in the sequence was for pre-test 0.18, post-test 350.708 and adjusted post-test 786.8424. The obtained 'F' ratio was greater than the Table 'F' ratio. Therefore, it was proved that experimental group III has been better than the other three groups.

Table 2 shows the analyzed data on cardio respiratory endurance. The pre-test, post-test and adjusted post-test means of the cardio respiratory endurance were (1275.000, 1257.500, 1267.500, 1275.000), (1280.000, 1887.500, 2127.500, 2735.000) and (1275.000, 1894.435, 2128.271, 3181.148) for the control group and