EFFECT OF RESISTED SPRINT TRAINING ON MUSCULAR STRENGTH AND MUSCULAR ENDURANCE AMONG INTERCOLLEGIATE ATHLETES

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ABSTRACT

The purpose of the present study was to investigate the effect of resisted sprint training on muscular strength and muscular endurance among intercollegiate athletes. To achieve the purpose of the study fifteen college level male athletes were selected from Government Degree College, karvetinagaram, Chittoor District, Andhra Pradesh, India during the year 2022. The athletes, who has taken as a subjects age ranged from 18 to 25 years. The selected athletes were underwent Resisted Sprint training for twelve weeks. In this study Muscular strength and muscular endurance were taken as criterion variables. The selected athletes were tested on muscular strength was measured through modified sit ups test and muscular endurance was measured through bend knee sit ups test. Pre-test score was taken before the training period and post- test score was measured immediately after the eight weeks training period. Statistical technique‘t’ ratio was used to analyse the means of the pre-test data and post test data of selected subjects. The results were showed that there was a significant difference found on the criterion variables.

Keywords: Resisted Sprint Training, Muscular strength, muscular endurance and‘t’ ratio.

Introduction:

Assisted and resisted training are specific training types of facilitation and overload. They are concepts that they are widely used in other types of training such as whole body vibration (facilitation) and weight lifting (overload). Speed of movement can best be attained by practicing speed with lighter weight; where as improved strength can best be attaining with a maximum overloading of strength. Sprinting can be defined as the capability to run at maximum speed for a short period. Maximum running speed is an important factor for achieve in many sports. Different modalities of training have been employed in the development of maximum running speed. Two usually used forms of speed training are assisted (or over speed) and resisted sprinting. During assisted sprinting, the athlete runs while being pulled along by some type of device, often an elastic cord or a rope-and-pulley system. Advantage of sprinting under struggle is increased kinaesthetic feedback, allowing the athlete to better improve technique (Korchemny, 1992).

Hills will give a contrast training stimulus, but they should never be so sudden as to transform the dynamics of the sprinter's movements. Hill running, although undeniably harder than sprinting on flat ground, requires that the mass of the sprinter be raised to a higher level with each step. If maximum velocity mechanics are maintain, the sprinter strikes the ground sooner than would be the case on a flat track. As the dispose increases

even as little as one or two degrees, the athlete must have sufficient strength and power to maintain correct maximum velocity mechanics.

Methodology:

To achieve the purpose, fifteen male intercollegiate athletes studying in Government degree college, Karvetinagaram, were selected randomly as subjects. The age of the athletes ranged from 18 to 25 years. They were assigned randomly underwent resisted sprint training for three days per week for twelve weeks. The resisted sprint training was selected as an independent variable and the criterion variable and the selected dependent variables were assessed by their standardized test items. Muscular strength was assessed by modified sit-ups and the units of measurement in numbers, and muscular endurance was assessed by bent knee sit-ups and the unit of measurement in numbers. The experimental design selected for this study was static pre and post test design. The data were collected from every subject before training and after training and statically analyzed dependent‘t’ test

Results and discussion:

The data pertaining to the variables in this study were examined by using dependent‘t’ test to search out the numerous improvement for every variables singly and tested as 0.05 level of significance. The analysis of dependent ‘t’ test on data obtained for muscular strength and muscular endurance of the pre test and post test means of experimental group has analyzed and presented in table-I

Table-I

Analysis of t-ratio for the pre and post test scores of intercollegiate athletes on Muscular strength and muscular endurance
(Scores in numbers)

Variable	Group	Mean		Standard Deviation		df	‘t’ ratio	P value
		pre	post	Pre	post			
Muscular endurance	Experimental	39.13	41.80	1.35	1.56	14	7.67	0.001**
Muscular Strength		38.73	41.60	1.70	1.45	14	8.91	0.001**

***Significance at 0.05 level of confidence.**

The obtained ‘t’ ratio value of experimental group is higher than the table value (2.14), it shows that resisted sprint training had significantly improved the performance of muscular strength and muscular endurance.

Conclusion:

It can be concluded from the existing data that the Resisted Sprint training program of this study improved muscle strength and muscular endurance of the intercollegiate athletes. The training program could be used to get better physical fitness of the intercollegiate athletes

References:

1. Ihsan Abdul Patah1(2021) The importance of physical fitness for pencak silat athletes: Home-based weight training tabata and circuit can it work? Published 22 February 2021 Ed 2021; 6(1): 86-97

2. Ahmad, A. M. (2019). Moderate-intensity continuous training: is it as good as high-intensity interval training for glycemic control in type 2 diabetes?. Journal of Exercise Rehabilitation, 15(2), 327–333. https://doi.org/10.12965/jer.1836648.324

3. Akınoğlu, B., & Kocahan, T. (2018). Comparison of muscular strength and balance in athletes with visual impairment and hearing impairment. Journal of Exercise Rehabilitation, 14(5), 765–770.

4. Cardozo, D. C., DE Salles, B. F., Mannarino, P., Vasconcelos, A., Miranda, H., Willardson, J. M., & Simão, R. (2019). The Effect of Exercise Order in Circuit Training on Muscular Strength and Functional Fitness in Older Women. International Journal of Exercise Science, 12(4), 657.

5. Statista.com (hompage on the Internet). Total number of health and fitness clubs worldwide 2009 to 2015. (cited 2016 Jan 11). Available from:http://www.statista.com/statistics/275056/total-number-of-healthclubs-worldwide/

6. American College of Sports Medicine. Position Stand: progression medals in resistance training for healthy adults. Med Sci Sports Exerc 2009, 41, pp.687-708.

ABSTRACT

The purpose of the study was designed to examine the effect of super circuit training on breath holding time and resting pulse rate among college men students. For the purpose of the study, thirty men students from the Department of Physical Education and Sports Sciences, Annamalai University were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent super circuit 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 following variables namely breath holding time and resting pulse rate were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables at prior to and immediately after the training programme. The analysis of covariance was used to analyze the significant difference, if any among the groups. The .05 level of confidence was fixed as the level of significance to test the 'F' ratio obtained by the analysis of covariance, which was considered as an appropriate. The results of the study showed that there was a significant difference between super circuit training group and control group on breath holding time and resting pulse rate. And also it was found that there was a significant improvement on selected criterion variables such as breath holding time and resting pulse rate due to super circuit training.

KEYWORDS : SUPER CIRCUIT TRAINING, BREATH HOLDING TIME AND RESTING PULSE RATE

INTRODUCTION

The greatest benefit of a regular exercise program is an improvement in overall fitness. As discussed above, appropriate exercise improves muscular strength and endurance, body composition, flexibility, and cardiorespiratory endurance. The level of maximal oxygen intake or cardiorespiratory endurance is not by itself of great importance to most individuals. What is important is that one's sustained energy-spending ability is directly related to maximal levels of performance. Super circuit weight training refers to a program in which running or other aerobic exercises are performed between sets; this training produces aerobic as well as strength benefits.

METHODOLOGY

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ANALYSIS OF THE DATA

Breath Holding Time

The analysis of covariance on breath holding time of the pre and post test scores of super circuit training group and control group have been analyzed and presented in Table I.