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Influence of interval training on speed and selected speed parameters among college male students

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Abstract

The purpose of the study was to examine the influence of interval training on speed and selected speed parameters among college male students. To achieve these purpose thirty college male students were selected as subjects of which fifteen each as experimental group and control group. The subjects were taken in the age group between 19 and 25 years from faculty of agriculture, Annamalai University. The variable namely speed, stride length and stride frequency was tested. The experimental group underwent interval training programme for six days in a week for eight weeks. The data collected from two groups prior to and after experimentation on speed, stride length and stride frequency were statistically examined for significant differences, by applying the analysis of covariance (ANCOVA). It was concluded that, speed, stride length have been improved significantly, and stride frequency has not improved significantly due to the effect of interval training for eight weeks.

Keywords: Interval training, Speed, Stride length and Stride frequency

Introduction

Interval training involves a repeated series of exercises work bouts interspersed with rest or relief periods. Due to the discontinuous nature of this form of training the exercise intensity and the total amount of works performed can be greater than that of continuous training. Interval training also provides much facility for designing exercise programmes to develop speed, anaerobic endurance and aerobic endurance (Hayward, Vivian H. 1984) ^[5]. Speed is determined by the length of stride and stride frequency (speed of stride). Length of stride is depended primarily upon leg length and leg power. Leg speed and frequency mostly depended upon speed of muscle contractions and neuromuscular co-ordination. Researcher demonstrated that the length of stride, rather than the rate of acceleration of the leg, is the main limitation in sprinting. It is known that length of stride can be increased by increasing leg power, which is ability to apply more force rapidly and thereby project that body faster and further with each style. Sprinting speed has been achieved by the balance of cadence (leg speed) and stride length. Leg speed is innate, but stride length can be improved by increasing muscular strength and mobility. (Clayne R. Jensen and Fishes A. Garth, 1979) ^[2]. To improve the stride length, muscular strength, hip flexibility and once life play on importance role in sprinting. Athletic exercise chosen on these specific areas will naturally increase the stride length of the athlete. Allen Phillips and Sandra A. Street (1989) ^[1] stated that the sprinting assisted training was designed to decrease the resistance to forward motion while increasing stride length and frequency and length will carry over to flat surfaces and unaided sprinting. Stride consists of two steps during which there is a period of support and a period of flight. A stride is identified by the termination of contact of a foot with the ground and the subsequent contacting of the same foot with the ground thus the involvement of two steps. There are two periods of support and two periods of non support for each stride. (Cooper M. John and *et al.* 1982) ^[3]

Methodology

The purpose of the study was to examine the effect of interval training on speed and selected speed parameters among college male students. To achieve these purpose thirty college male students were selected as subjects of which fifteen each as experimental group and control group. The subjects were taken in the age group between 19 and 25 years from faculty of

agriculture, Annamalai University. The variable namely speed, stride length and stride frequency was tested. The experimental group underwent interval training programme for six days in a week for eight weeks. The running distance vary from 100m to 200m, seven repetition and two sets were given to the subject. The recovery between repetitions was 60

sec to 90 sec and recovery of 4 minutes was provided between sets. The data collected from two groups prior to and after experimentation on speed, stride length and stride frequency were statistically examined for significant differences, by applying the analysis of covariance (ANCOVA).

Results and discussion

Table I: Mean and standard deviation on speed, stride length and stride frequency of interval training group and control group.

Variables	Mean and standard deviation	Interval training group	Control group
Speed	Pre-test Mean	7.4927	7.5300
	SD	0.3663	11.41
	Post-test Mean	7.4613	7.5247
	SD	0.3576	0.4145
Stride length	Pre-test Mean	1.8387	1.9413
	SD	0.1006	0.1554
	Post-test Mean	2.0280	1.9140
	SD	0.2638	0.1518
Stride frequency	Pre-test Mean	5.1907	5.2548
	SD	0.3414	0.3550
	Post-test Mean	5.1087	5.2453
	SD	0.4210	0.3490

Table II: Analysis of covariance on speed, stride length and stride frequency of interval training group and control group

	Adjusted posttest mean		S o V	Sum of squares	df	Mean squares	'F' ratio
	Interval training	Control group					
Speed	7.4738	7.5241	B	0.0052	1	0.0052	35.241*
			W	0.0040	27	0.0002	
Stride length	1.9824	1.9257	B	0.1030	1	0.1030	4.439*
			W	0.6260	27	0.0232	
Stride frequency	5.1497	5.2489	B	0.0452	1	0.0452	3.826
			W	0.319	27	0.0118	

*The required table value for significance at 0.05 level of confidence with degree of freedom 1 and 27 is 4.21.

The adjusted post-test means on speed of interval training and control groups are 7.4738 and 7.5241 respectively. The obtained 'F' ratio value of 35.241 of adjusted post-test data on speed is greater than the table value of 4.21 required for significance at 0.05 level of confidence with degrees of freedom 1 and 27. The adjusted post-test means on stride length of interval training and control groups are 1.9824 and 1.9257 respectively. The obtained 'F' ratio value of 4.439 of adjusted post-test data on stride length is greater than the table value of 4.21 required for significance at 0.05 level of confidence with degrees of freedom 1 and 27. The adjusted post-test means on stride frequency of interval training and control groups are 5.1497 and 5.2489 respectively. The obtained 'F' ratio value of 3.826 of adjusted post-test data on stride frequency is less than the table value of 4.21 required for significance at 0.05 level of confidence with degrees of freedom 1 and 27.

Donati Alessandro (1995) [4], concluded a study on the development of stride length and stride frequency in sprinting of 25 high level sprinters. Each athlete was required to run a number of times over distance varying between 60 and 100 meters with adequate rest periods between the runs. Stride length was changed at each run and data were plotted in a graph. A point at which two lines meet was used to indicate the time and the number of strides that the athlete. Samples of effectiveness training methods to improve performance.

Conclusions

It was concluded that the speed and stride length have been improved significantly by means of interval training and

stride frequency has not improved significantly by means of interval training.

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