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Effects of interval training on speed related parameters among football players

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Abstract

The purpose of the study was to find out the effects of interval training on speed related parameters among football players. To achieve this purpose of the study twenty men football players were selected randomly from the Department of physical education and sports sciences, Annamalai University, Chidambaram. They were divided into two equal groups of each ten players. Group I underwent interval training for three days per week for eight weeks and Group II act as control group who did not underwent any special training programme apart from their regular physical education curriculum. The following variables such as speed and speed endurance were selected as criterion variables. The speed rate was assessed by 50 meters dash and speed endurance was assessed by using 110 meters. All the subjects of two groups were tested on selected criterion variables at prior to and immediately after the training programme. Analysis of covariance (ANCOVA) was used to find out the significant difference if any, among the groups on each selected criterion variables separately. In all the cases, 0.05 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 interval training group and control group on selected criterion variables such as speed and speed endurance. And there was significant improvement as selected criterion variables namely speed and speed endurance.

Keywords: football players, speed endurance, interval training on speed

Introduction

As knowledge and information proliferated through experience, scientific research and philosophical enquiry, an identifiable body of knowledge evolved in physical education.

Defines physical education as a system of education where the educative values are being acquired through participation in a planned physical activity programme conducive to the society resulting in physical, mental and social development of the participants.

The physical work done by an individual depends upon the duration, nature and the purpose of activity. The physiological systems switch over from one energy source to another as the activity changes. If the activity is highly intensive and performed under anaerobic conditions, glucose is the main source of energy, but this may not be continued to supply energy for a prolonged period due to the accumulation of lactic acid which could not be removed from the muscle due to lack of adequate oxygen. Accumulation of lactic acid causes feeling of uneasiness and fatigue in the muscle. If the activity is aerobic, there will be constant supply of oxygen and the energy for the working muscles will be supplied by the lactic acid system, the 'Kreb's cycle' and ultimately fat will also be used as energy.

Exercise is not a single entity, there are many kinds of exercises which vary in intensity, frequency and duration and having variable effects on the body systems. Exercise may favorably modify the natural history of a number of chronic diseases. It confers increased physical abilities and improves the quality of life. The purpose of the study was to find out the effects of interval training on speed related parameters among football players.

Methodology

Selection of Subjects

Twenty men football players were selected randomly from the department of physical education and sports sciences, Annamalai University, Chidambaram. They were divided into two equal groups of ten player's students each.

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The groups are namely interval training group and control group. Group I underwent interval training for three days per week for eight weeks and Group II act as control group who did not underwent any special training programme apart from their regular physical activities.

Selection of variables and tests

The variables such as speed and speed endurance as criterion variables. The speed was assessed by 50 meters dash and speed endurance was assessed by using 110 meters. All the subjects of two groups were tested on selected criterion variables at prior to and immediately after the training programme.

Training Programme

During the training period, group I underwent interval training, for three days per week for eight weeks in addition to their regular physical education activity, every day workout

lasted about 45-60 minutes including warm-up and warm down exercises. Group II act as control group who did not participate any specific training, however, they perform regular physical education programme.

Statistical Analysis

The data was collected from two groups at prior to and after completion of the training period on selected criterion variables, were statistically examined for significant difference if any, by applying analysis of covariance (ANCOVA) if they obtained ‘F’ ratio was significant, In all cases 0.05 level of confidence was utilized to test the significance.

Result of Study

The data collected prior and after the experimental period on speed of interval training and control group were analysed and presented in table-I

Table I: Analysis of covariance for the data on speed between pretest and post test scores of interval training group and control group

Test	Experimental Group	Control Group	Sources of Variance	Sum of Square	df	Mean Squares	‘F’ Ratio
Pre Test							
Mean	7.26	7.24	Between	0.003	1	0.003	1.69
S.D	0.04	0.03	Within	0.028	18	0.002	
Post Test							
Mean	7.23	7.26	Between	0.002	1	0.002	1.58
S.D	0.04	0.036	Within	0.028	18	0.002	
Adjust Post							
Mean	7.22	7.27	Between	0.008	1	0.008	21.91*
			Within	0.006	17	0.00004	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 1 and 18 and 1 and 17 are 4.45 and 4.41 respectively).

Table I shows that the pretest means on speed of experimental group and control group are 7.26 and 7.23 respectively and the obtained F ratio of 1.69 for pre-test scores is less than the required table value of 4.41 for df 1 and 18 required for significance at 0.05 level of confidence on speed.

The post test means on speed of experimental group and control group are 7.23 and 7.26 respectively and the obtained F-ratio of 1.58 for post-test scores is less than the required table value of 4.41 for DF 1 and 18 required for significance at 0.05 level of confidence on speed.

The adjusted post-test means on speed of experimental group and control group are 7.22 and 7.27 respectively and the obtained F ratio was 21.91 for adjusted post-test means scores is more than the required table value of 4.41 for DF 1 and 17 required for significance at 0.05 level of confidence on speed. The result of the study indicates that there is statistically significant difference between the adjusted post-test means of experimental group and control group on speed.

Speed Endurance

The data collected prior and after the experimental period on speed endurance of interval training and control group were analysed and presented in table-II

Table II: Analysis of covariance for the data on speed endurance between pretest and post test scores of sports loading programme group and control group

test	Experimental Group	Control Group	Sources of Variance	Sum of Square	Df	Mean Squares	‘F’ Ratio
Pre Test Mean	15.48	15.37	Between	0.065	1	0.065	2.05
S.D	0.18	0.16	Within	0.568	18	0.032	
Post Test Mean	15.27	15.46	Between	0.173	1	0.173	4.35
S.D	0.19	0.20	Within	0.715	18	0.040	
Adjust Post Mean	15.26	15.48	Between	0.225	1	0.225	5.84*
			Within	0.653	17	0.038	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 1 and 18 and 1 and 18 are 4.41 and 4.45 respectively).

Table II shows that the pre test means on speed endurance of experimental group and control group are 15.48 and 15.37 respectively and the obtained F ratio was 2.05 for pre-test scores is less than the required table value of 4.41 for df 1 and 18 required for significance at 0.05 level of confidence on speed endurance.

The post test means on speed endurance of experimental group and control group are 15.27 and 15.45 respectively and the obtained F-ratio was 4.35 for post-test scores is more than the required table value of 4.41 for df 1 and 18 required for significance at 0.05 level of confidence on speed endurance. The adjusted post-test means on speed endurance of experimental group and control group are 15.26 and 15.48 respectively and the obtained F ratio was 150.43 for adjusted post-test means scores is more than the required table value of

4.45 for df 1 and 17 required for significance at 0.05 level of confidence speed endurance.

The result of the study indicates that there is statistically significant difference between the adjusted post-test means of experimental group and control group on speed endurance.

Conclusions

The following conclusions were drawn based on the analysis of the study,

- There was a significant improvement in the performance of speed after the interval training when compared with the control group.
- There was a significant improvement in the performance of speed endurance after the interval training when compared with the control group.
- There was a significant difference between the interval training group and control group on selected speed and speed endurance.

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