

INFLUENCE OF INTERVAL TRAINING ON LEG STRENGTH AND STRENGTH ENDURANCE AMONG COLLEGE MEN STUDENTS

Dr. R. Sudeepkumar

Assistant Physical Director of Physical Education, University College of Arts, Tumkur University, Tumkur, Karnataka

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Abstract:

The purpose of the study was designed to examine the effect of interval training on leg strength and strength endurance of college men students. For the purpose of the study, thirty men students from the University College of Arts, Tumkur University, Tumkur, Karnataka, India were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent interval 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 leg strength and strength endurance were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using leg lift with dynamometer and bend knee sit ups respectively 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 appropriate. The results of the study showed that there was a significant difference between interval training group and control group on leg strength and strength endurance. And also it was found that there was a significant improvement on leg strength and strength endurance due to twelve weeks of interval training.

Key Words: Interval Training, Leg Strength, Strength Endurance, College Men Students

Introduction:

Interval training is a dynamic and efficient exercise strategy that alternates between periods of high-intensity activity and periods of rest or lower-intensity recovery. This approach challenges the body to adapt to different intensities, leading to improvements in cardiovascular fitness, endurance, and overall performance. In interval training, the intensity and duration of both the work and rest periods can be customized to suit individual fitness levels and goals. For example, a typical interval session might involve sprinting at maximum effort for 30 seconds followed by a 1-minute recovery period of walking or jogging. One of the key benefits of interval training is its ability to maximize calorie burn and metabolic rate in a shorter amount of time compared to steady-state exercises. This makes it an attractive option for individuals with busy schedules who still want to achieve effective workouts.

Moreover, interval training can be adapted to various forms of exercise, including running, cycling, swimming, and strength training, making it accessible to people with diverse fitness interests and abilities. Overall, interval training offers a time-efficient and versatile approach to improving fitness levels, making it a popular choice among athletes, fitness enthusiasts, and individuals looking to optimize their workouts.

Methodology:

The purpose of the study was designed to examine the effect of interval training on leg strength and strength endurance of college men students. For the purpose of the study, thirty men students from the University College of Arts, Tumkur University, Tumkur, Karnataka, India were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent interval 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 leg strength and strength endurance were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables by using leg lift with dynamometer and bend knee sit ups respectively 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 appropriate.

Analysis of the Data:

Leg Strength:

The analysis of covariance on leg strength of the pre and post test scores of interval training group and control group have been analyzed and presented in table 1.

Table 1: Analysis of Covariance of the Data on Leg Strength of Pre and Post Tests Scores of Interval Training and Control Groups

Test	Interval Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	92.47	92.27	Between	0.30	1	0.30	0.41
S.D.	0.81	1.00	Within	20.67	28	0.74	
Post Test							
Mean	94.73	92.53	Between	36.30	1	36.30	16.67*
S.D.	0.85	0.81	Within	60.97	28	2.18	
Adjusted Post Test							
Mean	94.66	92.60	Between	31.29	1	31.29	59.66*
			Within	14.16	27	0.52	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 1 shows that the adjusted post-test means of interval training group and control group are 94.66 and 92.60 respectively on leg strength. The obtained "F" ratio of 259.60 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on leg strength.

The results of the study indicated that there was a significant difference between the adjusted post-test means of interval training group and control group on leg strength.

Strength Endurance:

The analysis of covariance on strength endurance of the pre and post test scores of interval training group and control group have been analyzed and presented in table 2.

Table 2: Analysis of Covariance of the Data on Strength Endurance of Pre and Post Tests Scores of Interval Training and Control Groups

Training and Control Groups							
Test	Interval Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	40.93	40.40	Between	2.13	1	2.13	0.56
S.D.	1.98	2.07	Within	106.53	28	3.80	
Post Test							
Mean	46.00	40.67	Between	213.33	1	213.33	18.06*
S.D.	1.78	1.89	Within	330.67	28	11.81	
Adjusted Post Test							
Mean	45.74	40.92	Between	170.66	1	170.66	259.60*
			Within	17.75	27	0.66	

* Significant at .05 level of confidence.

(The table values required for significance at .05 level of confidence for 2 and 28 and 2 and 27 are 3.34 and 3.35 respectively).

The table 2 shows that the adjusted post-test means of interval training group and control group are 45.74 and 40.92 respectively on strength endurance. The obtained "F" ratio of 259.60 for adjusted post-test means is more than the table value of 3.35 for df 1 and 27 required for significance at .05 level of confidence on strength endurance.

The results of the study indicated that there was a significant difference between the adjusted post-test means of interval training group and control group on strength endurance.

Conclusions:

- There was a significant difference between interval training group and control group on leg strength and strength endurance.
- And also it was found that there was a significant improvement on selected criterion variables such as leg strength and strength endurance due to interval training.

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