



EFFECT OF LOW INTENSITY INTERVAL TRAINING ON LEG STRENGTH AND STRENGTH ENDURANCE AMONG COLLEGE MEN STUDENTS

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Abstract:

The purpose of the study was designed to examine the effect of low intensity interval training on leg strength and strength endurance of college men students. For the purpose of the study, thirty men students from the Mahatma Gandhi College, Kesavadasapuram, Thiruvananthapuram, Kerala, India were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent low intensity 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 as an appropriate. The results of the study showed that there was a significant difference between low intensity 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 low intensity interval training.

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

Introduction:

Interval training is simply alternating short bursts (about 30 seconds) of intense activity with longer intervals (about 1 to 2 minutes) of less intense activity. For instance, if your exercise is walking and you're in good shape, you might add short bursts of jogging into your regular brisk walks. If you're less fit, you might alternate leisurely walking with periods of faster walking. For example, if you're walking outdoors, you could walk faster between certain mailboxes, trees or other landmarks. Interval training isn't appropriate for everyone. If you have a chronic health condition or haven't been exercising regularly, consult your doctor before trying any type of interval training. But it may be appropriate for people who are older, less active or overweight. Studies suggest that interval training can be safe and beneficial even in people with heart disease and type 2 diabetes. Also keep the risk of overuse injury in mind. If you rush into a strenuous workout before your body is ready, you may injure your muscles, tendons or bones. Interval training doesn't have to involve high-impact exercise, ballistic or jumping movements, or heavy weights. Instead, start slowly. Try doing just one or two higher intensity intervals during each workout at first. If you think you're overdoing it, slow down. As your stamina improves, challenge yourself to vary the pace".

Methodology:

The purpose of the study was designed to examine the effect of low intensity interval training on leg strength and strength endurance of college men students. For the purpose of the study, thirty men students from the Mahatma Gandhi College, Kesavadasapuram, Thiruvananthapuram, Kerala, India were selected as subjects. They were divided into two equal groups. Each group consisted of the fifteen subjects. Group I underwent low intensity 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 as an appropriate.

Analysis of the Data:

Leg Strength:

The analysis of covariance on leg strength of the pre and post test scores of low intensity interval training group and control group have been analyzed and presented in Table I.

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

Test	Low Intensity Interval Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	92.93	92.80	Between	0.13	1	0.13	0.11
S.D.	1.06	1.02	Within	35.33	28	1.26	
Post Test							
Mean	94.87	93.07	Between	24.30	1	24.30	11.94*
S.D.	1.11	1.06	Within	56.97	28	2.03	
Adjusted Post Test							
Mean	94.81	93.12	Between	21.35	1	21.35	65.84*
			Within	8.76	27	0.32	

* 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 low intensity interval training group and control group are 94.81 and 93.12 respectively on leg strength. The obtained "F" ratio of 65.84 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 low intensity 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 low intensity 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 Low Intensity Interval Training and Control Groups

Test	Low Intensity Interval Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	41.13	39.87	Between	12.03	1	12.03	3.08
S.D.	1.93	1.81	Within	109.47	28	3.91	
Post Test							
Mean	46.07	40.13	Between	264.03	1	264.03	20.16*
S.D.	1.89	1.89	Within	366.70	28	13.10	
Adjusted Post Test							
Mean	45.50	40.70	Between	156.29	1	156.29	256.11*
			Within	16.48	27	0.61	

* 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 low intensity interval training group and control group are 45.50 and 40.70 respectively on strength endurance. The obtained "F" ratio of 256.11 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 low intensity interval training group and control group on strength endurance.

Conclusions:

- There was a significant difference between low intensity 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 low intensity interval training.

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