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EFFECT OF STRENGTH TRAINING ON SELECTED STRENGTH PARAMETERS AMONG COLLEGE MEN STUDENTS

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Abstract:

The purpose of the study was designed to examine the effect of strength training on leg strength and back strength among college men students. For the purpose of the study, thirty college men students from the colleges in and around Bangalore, Karnataka State, India were selected as subjects. They were divided into two equal groups. Each group consisted of fifteen subjects. Group I underwent strength 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 back strength were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables namely leg strength and back strength by using leg lift with dynamometer and back lift with dynamometer 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 strength training group and control group on leg strength and back strength. And also it was found that there was a significant improvement on selected criterion variables such as leg strength and back strength due to strength training.

Key Words: Strength Training, Leg Strength, Back Strength, College Men Students

Introduction:

Strength training can have significant effects on both leg strength and back strength, as it targets muscles in these areas and promotes overall muscular development and endurance. Strength training, particularly exercises like squats, lunges, leg presses, and deadlifts, can lead to muscle hypertrophy in the leg muscles, including the quadriceps, hamstrings, calves, and glutes.

Strength training enhances the power output of leg muscles, which can improve performance in activities such as running, jumping, and other athletic endeavors. Strengthening leg muscles contributes to better stability and balance, reducing the risk of falls and enhancing overall mobility. Many strength training exercises engage the muscles of the back, including the erector spinae, latissimus dorsi, and rhomboids. Strengthening these muscles improves core stability and helps maintain proper posture. A strong back can help prevent injuries related to poor posture, lifting heavy objects, and repetitive movements. Strengthening the back muscles provides support for the spine and reduces the risk of strains and sprains.

Back strength is essential for everyday activities such as bending, lifting, and twisting. Strengthening the back muscles enhances overall functional movement and reduces the likelihood of discomfort or injury during daily tasks. Incorporating a variety of exercises targeting the leg and back muscles, along with proper form and progressive overload, can maximize the benefits of strength training. It's important to tailor the training program to individual fitness levels, goals, and any pre-existing medical conditions to ensure safety and effectiveness. Additionally, combining strength training with adequate rest, nutrition, and flexibility exercises can further enhance overall muscular strength and performance.

Methodology:

The purpose of the study was designed to examine the effect of strength training on leg strength and back strength among college men students. For the purpose of the study, thirty college men students from the colleges in and around Bangalore, Karnataka State, India were selected as subjects. They were divided into two equal groups. Each group consisted of fifteen subjects. Group I underwent strength 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 back strength were selected as criterion variables. All the subjects of two groups were tested on selected dependent variables namely leg strength and back strength by using leg lift with dynamometer and back lift with dynamometer 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 strength 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 Strength Training and Control Groups

Test	Strength Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	92.67	92.47	Between	0.30	1	0.30	0.31
S.D.	0.87	1.24	Within	27.07	28	0.97	
Post Test							
Mean	94.93	92.80	Between	34.13	1	34.13	13.76*
S.D.	1.02	0.91	Within	69.47	28	2.48	
Adjusted Post Test							
Mean	94.85	92.89	Between	28.58	1	28.58	49.23*
			Within	15.68	27	0.58	

* 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 strength training group and control group are 94.85 and 92.89 respectively. The obtained "F" ratio of 49.23 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 strength training group and control group on leg strength.

Back Strength:

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

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

Test	Strength Training Group	Control Group	Source of Variance	Sum of Squares	df	Mean Squares	Obtained 'F' Ratio
Pre Test							
Mean	93.07	92.60	Between	1.63	1	1.63	1.50
S.D.	0.85	1.58	Within	30.53	28	1.09	
Post Test							
Mean	95.40	92.93	Between	45.63	1	45.63	12.51*
S.D.	1.14	1.12	Within	102.17	28	3.65	
Adjusted Post Test							
Mean	95.16	93.17	Between	28.19	1	28.19	30.87*
			Within	24.65	27	0.91	

* 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 strength training group and control group are 95.16 and 93.17 respectively. The obtained "F" ratio of 30.87 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 back strength.

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

Conclusions:

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

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