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Impact of strength training with blood flow restriction training on maximum strength among college athletes

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Abstract

The purpose of the study is to find out the impact of strength training with blood flow restriction training on maximum strength among college athletes. To achieve the purpose of the study, 45 men athletes from Golden Athletic club, Trichy, Tamil Nadu were selected as subjects at random and their age was between 18 and 25 years. The subjects were divided into two groups namely strength training with blood flow restriction training and control group. Each group consisted of 15 subjects. The duration of the training was twelve weeks. The data will be collected on selected criterion variables prior and immediately after the experimental period as pre and post tests were tested. Maximum strength was measured by the leg dynamometers and the unit of measurement was recorded in kilograms. The results of the study also shows that strength training with blood flow restriction training have improved in maximum strength.

Keywords: Strength training with blood flow restriction training and maximum strength

Introduction

Athletics is a collection of sporting events that involve competitive running, jumping, throwing, and walking. The most common types of athletics competitions are track and field, road running, cross country running, and race walking.

Physiologically, the benefits of consistent strength training include an increase in muscle size and tone, increased muscular strength, increases muscular endurance and increases in tendon, bone, and ligament strength. Muscles quite literally utilize energy to produce movement. Lifting weights has also been shown to improve psychological health as well, by increasing self-esteem, confidence, and self-worth. Both our physical appearance and our physical performance can be improved by muscle gain or hampered by muscle loss.

Blood flow restriction (BFR) training has been reported to have significant benefits on local skeletal muscle including increasing local muscle mass, strength, and endurance while exercising with lower resistance. As a result, patients unable to perform traditional resistance training may benefit from this technique.

The maximum strength is a motor ability and involves force application during a voluntary movement. Normally muscles are capable of generating higher magnitudes of force, if stimulated electrically.

Statement of the problem

The purpose of the study is to find out the impact of strength training with blood flow restriction training on maximum strength among college athletes.

Methodology

To achieve the purpose of the study, 45 men athletes from Golden Athletic club, Trichy, Tamil Nadu were selected as subjects at random and their age was between 18 and 25 years. The subjects were divided into two groups namely strength training with blood flow restriction training and control group. Each group consisted of 15 subjects. The duration of the training was twelve weeks. The data will be collected on selected criterion variables prior and immediately after the experimental period as pre and post tests were tested. Maximum strength was measured by the leg dynamometers and the unit of measurement was recorded in kilograms.

Analysis of data: The data collected prior to and after the experimental periods on maximum strength on strength

training with blood flow restriction training and control group were analyzed and presented in the following Table-I.

Table 1: Analysis of covariance for maximum strength on strength training with blood flow restriction training and control group

| Variable Name | Group Name | Experimental group | Control group | F Ratio |
|------------------|--------------------------------|--------------------|--------------------|---------|
| Maximum Strength | Pre-test Mean \pm S.D | 184.55 \pm 0.511 | 184.44 \pm 0.318 | 0.241 |
| | Post-test Mean \pm S.D. | 186.73 \pm 1.387 | 184.42 \pm 0.319 | 20.241* |
| | Adj. Post-test Mean \pm S.D. | 186.70 | 184.50 | 43.987* |

* Significant at 0.05 level of confidence (The required Table value for significance at 0.05 level of confidence with degrees of freedom 1 and 27 is 4.21 and degree of freedom 1 and 28 is 4.20)

Results

The “F” ratio was used to find out the significant difference if any, among the experimental group and control group on selected criterion variables separately. In all the cases, 05 level of confidence was fixed to test the significance, which was considered as an appropriate.

Table-1 showed that the results of the study there was a significant difference between strength training with blood flow restriction training and control group on maximum strength. Further the results of the study showed that there was a significant increase on maximum strength after 12 weeks of strength training with blood flow restriction training. However the improvement was in favors of experimental group.

Conclusions

Within the limitations and delimitations of this study the following conclusions were drawn from the result. The results of the study also shows that strength training with blood flow restriction training have improved in maximum strength.

References

1. Akin M, Kesilmiş İ. The impact of blood flow restriction and plyometric training method on dynamic balance of Taekwondo athletes. *Pedagogy of Physical Culture and Sports*. 2020;24(4):1-11. <https://doi.org/10.15561/26649837.2020.0401>
2. Álvarez CB, Santamaría PIK, Matías FR, Martín PD, Ochoa AA, Carnero FS, *et al.* Comparison of blood flow restriction training versus non-occlusive training in patients with anterior cruciate ligament reconstruction or knee osteoarthritis: A systematic review. *J Clin Med*. 2021;10(1):68. <https://doi.org/10.3390/jcm10010068>
3. Bagley JR, Rosengarten JJ, Galpin AJ. Blood flow restriction training beneficial for athletes? *Strength Cond J*. 2015;37(3):1-13. <https://doi.org/10.1519/SSC.0000000000000132>
4. Biçer M, Özdal M, Akcan F, Mendes B, Patlar S. Impact of Strength Training Program with Maximum Band on Strength Parameters. *J Biol Exerc*. 2015;11(2):57-63. <https://doi.org/10.4127/jbe.2015.0095>
5. Cyrino LT, Cyrino ES, Silva ECDEAE, Avelar A, Trindade MCDEC, Silva DDRP. Impact of 16 weeks of resistance training on strength endurance in men and women. *Rev Bras Med Esporte*. 2019;25(5):381-85. <https://doi.org/10.1590/1517-869220192505126869>
6. Katsanis G, Chatzopoulos D, Barkoukis V, Lola AC, Chatzelli C, Paraschos I. Impact of a school-based resistance training program using a suspension training system on strength parameters in adolescents. *J Phys Educ Sport*. 2021;21(5):2587-2593. <https://doi.org/10.7752/jpes.2021.05349>
7. Manikandan S. Impact of different intensities of resistance training on selected strength parameters among

men handball players. *Int J Phys Educ Sports Health*. 2014;9(2):176-82.