International Journal of Scientific Research and Modern Education (IJSRME)
Impact Factor: 6.225, ISSN (Online): 2455 – 5630
(www.rdmodernresearch.com) Volume 2, Issue 2, 2017

EFFECT OF RESISTANCE EXERCISES ON QUADRICEPS STRENGTH AMONG HOCKEY PLAYERS

Dr. M. Sathish* & Dr. K. Rajeshkumar**
* Anthanakurichi Nadu Street, Thiruvaiyar, Thanjavur, Tamilnadu
** Assistant Professor, Department of Physical Education, Tamilnadu Physical Education and Sports University Chennai, Tamilnadu

Cite This Article: Dr. M. Sathish & Dr. K. Rajeshkumar, "Effect of Resistance Exercises on Quadriceps Strength among Hockey Players", International Journal of Scientific Research and Modern Education, Volume 2, Issue 2, Page Number 102-103, 2017.

Abstract:

The purpose of the study was to find out the effect of resistance exercises on quadriceps strength among hockey players. To achieve the purpose of the present study, thirty hockey players from Tamilnadu Physical Education and Sports University, Chennai were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into two equal groups at random. The subjects were divided into two equal groups of fifteen players each. Group I acted as Experimental Group (resistance exercises) and Group II acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The pre test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences. In all cases 0.05 level of significance was fixed to test hypotheses. The experimental group had achieved significant improvement on quadriceps strength than the control group.

Key Words: Resistance Exercises, Quadriceps Strength.

Introduction:

Resistance exercise is a type of exercise that has gained popularity over the last decade. Resistance training is any exercise that causes the muscles to contract against an external resistance with the expectation of increases in strength, tone, mass and endurance. The external resistance can be dumbbells, rubber exercise tubing, own body weight, bricks, bottles of water or any other object that causes the muscles to contract. This training works the muscles of the body and is most beneficial when all the ranges of motion are included. The resistance training is done two to three times a week with an average of 8 to 12 repetitions of a series of different resistance based exercises (Avery & Faigenbaum, 2007).

Methodology:

The purpose of the study was to find out the effect of resistance exercises on quadriceps strength among hockey players. To achieve the purpose of the present study, thirty hockey players from Tamilnadu Physical Education and Sports University, Chennai were selected as subjects at random and their ages ranged from 18 to 25 years. The subjects were divided into two equal groups at random. The subjects were divided into two equal groups of fifteen players each. Group I acted as Experimental Group (resistance exercises) and Group II acted as Control Group. The requirement of the experiment procedures, testing as well as exercise schedule was explained to the subjects so as to get full co-operation of the effort required on their part and prior to the administration of the study. The pre-test and post test scores were subjected to statistical analysis using Analysis of Covariance (ANCOVA) to find out the significance among the mean differences. In all cases 0.05 level of significance was fixed to test hypotheses.

Results and Discussion:

Table 1: Computation of Mean and Analysis of Covariance Quadriceps Strength of Experimental and Control Groups

	Experimental Group	Control Group	Source of Variance	Sum of Squares	df	Mean Square	F
Pre Test Mean	102.06	102.96	BG	24.30	1	24.30	1.42
			WG	478.66	28	17.09	
Post Test Mean	115.06	103.86	BG	1020.83	1	1020.83	74.72*
			WG	382.53	28	13.66	
Adjusted Post Mean	115.29	103.17	BG	1049.24	1	1049.24	80.58*
			WG	351.57	27	13.02	

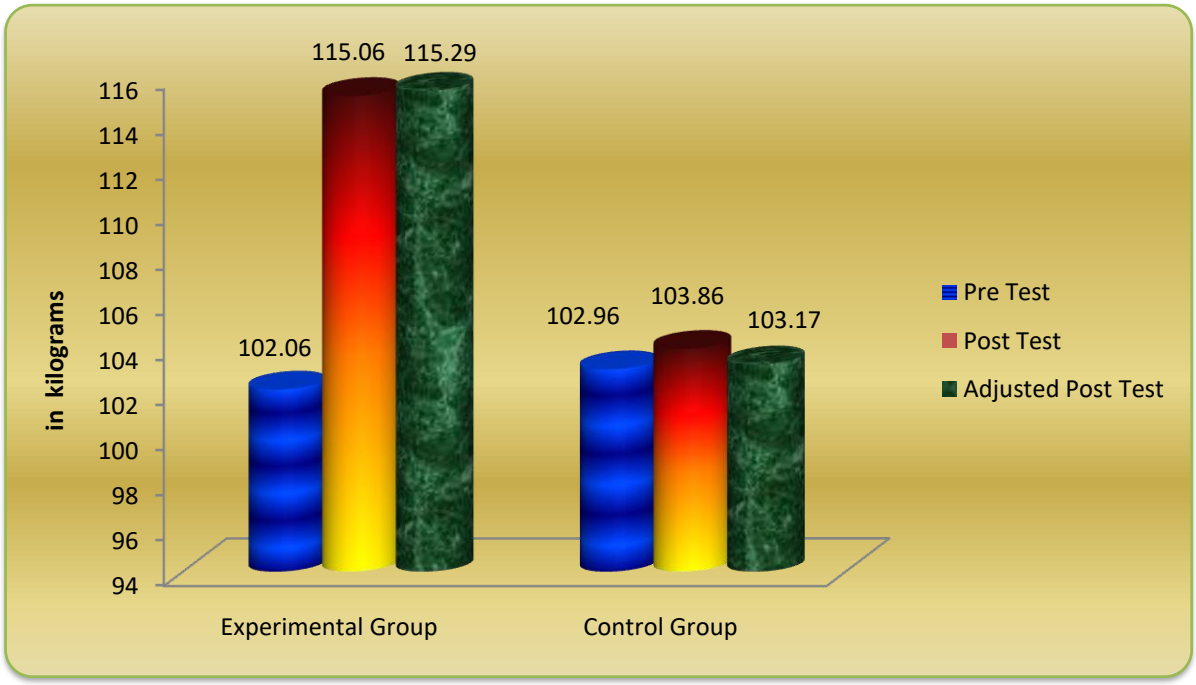
* Significant at 0.05 level

Table value for df 1, 28 was 4.20, df 1, 27 was 4.21

The above table indicates the adjusted mean value on quadriceps strength of experimental and control groups were 115.29 and 103.17 respectively. The obtained F-ratio of 80.58 for adjusted mean was greater than

the table value 4.21 for the degrees of freedom 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was a significant difference among experimental and control groups on quadriceps strength. The above table also indicates that both pre and post-test means of experimental and control groups differ significantly. The pre, post and adjusted mean values of quadriceps strength of both experimental and control groups are graphically represented in the figure 1.

Figure 1: Shows the Mean Values on Quadriceps Strength of Resistance Training and Control Groups



Conclusion:

The experimental group had achieved significant improvement on quadriceps strength than the control group.

References:

1. Avery, D., & Faigenbaum (2007).Resistance Training for Children and Adolescents. American Journal of Lifestyle Medicine, 1, 3, 190-200.
2. Barrow, H. M., & Mc, Gee. (1979). A Practical Approach to Measurement in Physical Education, New York: The C.V. Mosby company.
3. Bird, S. P., Tarpenning, K, .M. & Marino, F.E. (2005). Designing Resistance Training Programmes to Enhance Muscular Fitness: A Review of the Acute Programme Variables. Sports Medicine. 35(10): 841-851.
4. Bissas, A.I., & Havenetidis, K. (2008). The use of various strength-power tests as predictors of sprint running performance. J Sports Med Phys Fitness. 48(1):49-54.
5. Cadore, E.L., Lhullier, F.L.R., Brentano, M.A., Silva, E.M., Ambrosini, M.B., Spinelli, R., Silva, R,F. &Kruel, L.F.M. (2008). Hormonal responses to resistance exercise in long-term trained and untrained middle-aged men. J Strength Cond Res. 22(5): 1617-1624.
6. Mikel, I., Keijo, H., Javier, I., William, J, K., & Esteban, M, G. (2005). Effects of combined resistance and cardiovascular training on strength, power, muscle cross-sectional area, and endurance markers in middle-aged men. Eur J Appl Physiol.94: 70–75.
7. Mota, M.R., Pardono, E., Lima, L.C.J., Arsa, G., Bottaro, M., Campbell, C.S.G., &Simoes, H.G. (2009). Effects of treadmill running and resistance exercises on lowering blood pressure during the daily work of hypertensive subjects. J Strength Cond Res. 23(8): 2331-2338.
8. Nagasawa, T. (2008). Resistance exercise increases post exercise oxygen consumption in non exercising muscle. Eur J Appl Physiol. 104(6):1053-9.