



Effect of Eccentric Contraction Exercise Training on Shoulder Abduction of Gymnast

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ABSTRACT:

The present study is conducted to investigate the effect of eccentric contraction training program on shoulder abduction ability of gymnast of 10 to 15 years age group. For the same eccentric exercise training was given to gymnasts for 12 weeks. The present study is carried out on the male gymnast of Marathwada Sanskritik Mandal's gymnastics centre, Aurangabad, Maharashtra. Total 30 samples who are at least state level gymnastics players are selected for the training from Marathwada Sanskritik Mandal's gymnastics centre, Aurangabad, Maharashtra. All 30 samples are experimental group. The 'Single group Pre-test Post-test design' is employed to conduct the experiment. Initially Shoulder abduction Pre-test is conducted for Experimental group. Experimental group are exposed to eccentric contraction training program for 12 weeks. Shoulder abduction Post-test is conducted for Experimental group, after 12 weeks of training. Mean, Standard deviation is employed for descriptive statistical analysis. Paired sample t-test, is employed for inferential statistical analysis. On the basis of statistical findings the present study concludes that eccentric contraction exercise training program improves shoulder abduction ability.

Keywords: Eccentric Contraction, Shoulder Abduction, Gymnast

INTRODUCTION:-

Eccentric contraction exercise training program is currently the fastest and most effective way known to increase strength. Eccentrics are a type of muscle contraction that occurs as the muscle fibres lengthen, such as when a weight is lowered through a range of motion, or when a person walks downhill. The contractile force generated by the muscle is weaker than an opposing force, which causes the muscle to stretch. Also known as “negative” contraction, eccentric muscle work provides unique Responses and benefits compared to conventional exercises Muscles resist force rather than produce it, requiring 80% less oxygen compared to Concentric work. Gymnastics is a highly technical game which required all motor qualities. Strength is one of the most important ability of gymnast,

All types of strengths like maximum strength relative strength, explosive strength, statics strength plays vital role in gymnast’s performance. So effective strength training is very important to improve gymnastics performance. In the present study effective eccentric contraction exercise strength training designed by researcher is applied to the gymnasts to see the development of strength among the gymnasts.

STATEMENT OF THE PROBLEM:-

“The Effect of Eccentric Contraction Exercise Training on Shoulder Abduction of Gymnast”

OBJECTIVES OF THE STUDY:-

1. To study the effect of eccentric contraction exercise training program on shoulder abduction of gymnast.

AREA OF THE RESEARCH:-

1. The present study is carried out on the state level gymnastics players of the Marathwada Sanskritik Mandal’s Gymnastics Centre, Aurangabad, and Maharashtra.
2. Only male gymnastics players are considered for the study.

HYPOTHESES:-

1. There is no difference in the shoulder abduction of the gymnast after imparting them for eccentric contraction training program.

Effect of Eccentric Contraction Exercise Training on Shoulder Abduction of Gymnast**METHODOLOGY:****SAMPLE:**

30 male state level gymnast of age group between 10 to 15 years practicing at Marathwada Sanskritik Mandal's Gymnastics Centre, Aurangabad, Maharashtra were considered for the present study.

VARIABLES:-

Independent Variables: - 1) Eccentric contraction training program.

Dependent Variable: - 1) Scores of Shoulder abduction test.

TOOLS OF COLLECTION OF DATA:-

1. Dynamometer.

EXPERIMENTAL DESIGN:

For the present study the Single Group Pre-Test Post-Test design is used.

PROCEDURE:

1. Pre-test is conducted to measure Shoulder abduction of the gymnast with the help of dynamometer.
2. All the gymnast then exposed to eccentric contraction exercise training program for 12 weeks.
3. Post-test is conducted to measure Shoulder abduction of the gymnast with the help of dynamometer after 12 weeks of eccentric contraction training program.
4. The raw scores on pre-tests and post-tests are tabulated for further statistical analysis.

STATISTICAL METHODS:

1. Mean, Standard deviation is employed for descriptive statistical analysis.
2. Paired sample t-test is employed for inferential statistical analysis.

ANALYSIS AND INTERPRETATION OF THE DATA:

Table : Showing the comparison between pre-test and post-test mean scores of the gymnasts for shoulder abduction test.

Variables	Groups	N	Mean	Standard deviation	Standard. error mean	Mean difference	't' value	df
Shoulder Abduction Test	Pre-test	30	9.84	5.07	.92	6.40	-8.072	29
	Post-test		16.25	6.14	1.12			

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Graph: Showing the comparison between pre-test and post-test mean scores of the gymnasts for shoulder abduction test.

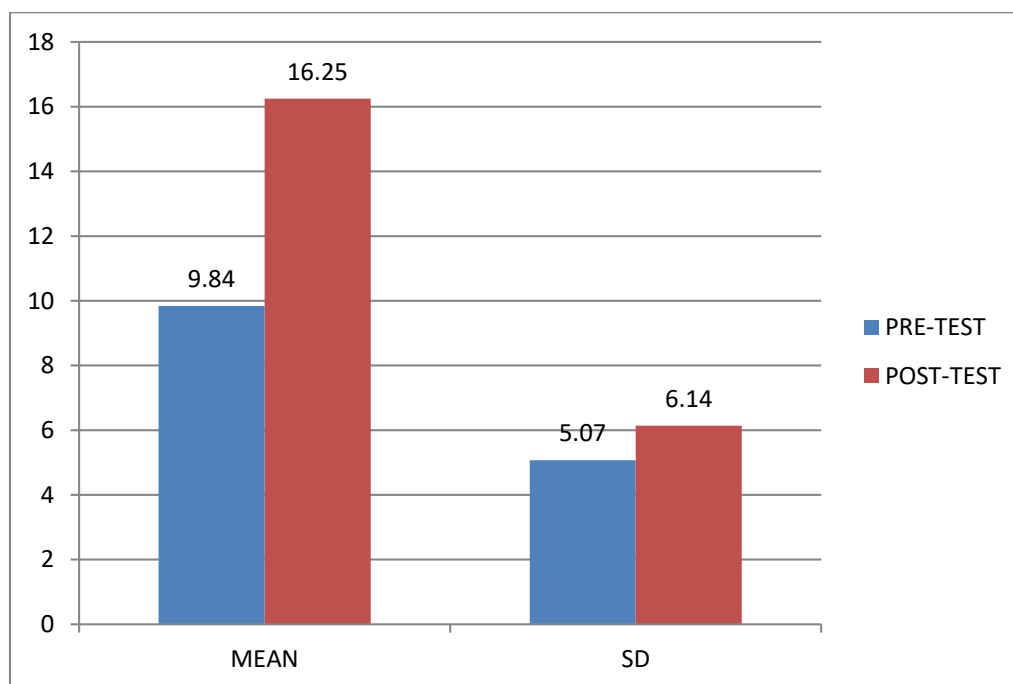
**INTERPRETATION:**

Table depicts the following facts regarding pre-test and post-test mean scores of the gymnasts for shoulder abduction test.

1. Mean score of the gymnast for the pre-test is 9.848 with standard deviation of 5.070.
2. Mean score of the gymnast for the post-test is 16.253 with standard deviation of 6.148.
3. The mean difference from pre-test to post-test is 6.405.
4. Paired sample t-test was used at 0.05 level of significance. The obtained t- value -8.027 at 29 degree of freedom was found significant at 0.05 level of significance further confirms that the mean difference is significant.

CONCLUSIONS:

1. Eccentric contraction training program has improved the Shoulder abduction of the competitive gymnasts.

RECOMMENDATIONS:

1. Further investigations may be made to study the effect of different types of strength training program to develop strength ability in non-competitive gymnast.
2. Present study is conducted on male players. Similar kind of study may be undertaken for girls.

REFERENCES:

- Gilbert J.A., "Researchers on the Mental and physical Development of school children, "Studies from the yare Psychological Laboratory,(1984),40-100.
- Jeffrey M. Willardson, Physical Education Department, Eastern Illinois University, Charleston, Illinois 61920 Core Stability Training: Applications To Sports Conditioning Programs *Journal of Strength and Conditioning Research*, 2007, 21(3), 979-985 © 2007 National Strength & Conditioning Association.
- Joshi M. S., Kote S.M. Research Methodology & Statistical Methods in Physical Education, Chhaya Publishing House, Aurangabad.(2006)
- Kansal D.K., A Practical Approach To Test Measurement and Evaluation, Sports and Spiritual Science Publication, New Delhi.
- Manilal K.P., Science of Strength Training, Sports Publication, New Delhi.