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Effect of various muscle specific resistance training on cardio respiratory endurance and hand eye coordination among inter-collegiate hockey players

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Abstract

The study was to find out the effect of various muscle-specific resistance training on cardiorespiratory endurance and hand-eye coordination among inter-collegiate hockey players. For this purpose, sixty intercollegiate hockey players were selected from participants of the district-level inter-collegiate tournaments. The subject's age ranged from 18 to 25 years. The subjects were divided into two equal groups of thirty each. Group-I underwent Various Muscle Specific Resistance Training Group (VMSRTG), Group – II acted as a control group. The duration of the training period was restricted to twelve weeks and the number of sessions per week was confined to three. Analysis of Variance (ANOVA) was applied to determine whether the programs of training produced significant improvements in selected variables after twelve weeks of training. After twelve weeks of various muscle-specific resistance training, the experimental group showed significant improvement in cardiorespiratory endurance and hand-eye coordination.

Keywords: Resistance training, cardio-respiratory endurance & hand-eye coordination

Introduction

Resistance training is a form of exercise for the development of strength and size of skeletal muscles. Resistance training, also known as weight training is for everyone. According to the American Sports Medicine Institute (ASMI) resistance training is a “specialized method of conditioning designed to increase muscle strength”. Resistance training can be performed in a variety of ways with resistance machines, free-weights (dumbbells and barbells), rubber tubing, or own body weight, as in doing pushups, squats or abdominal crunches.

Benefits of resistance training

As the goal of resistance training, the ASMI says, is to “gradually and progressively over load the musculoskeletal system so it gets stronger”. Regular resistance training will strengthen the bones, and strengthen the muscles. According to Keith Cineia, any fitness programme should include resistance training, along with aerobic exercise and flexibility training. Aerobic workouts, which strengthen the cardiovascular system, focus primarily on the large muscle groups of the lower body. Strength training offers a way of balancing that out by challenging all the major muscle groups, including those in the chest, arms, back and abdomen. According to medical research, generally the resistance training strengthens the muscular system, strengthens the skeletal system, and improves bone density (decreases the chance of osteoporosis) and increases metabolism. So a well -planned resistance training program should be a part of everyone's health, fitness and lifestyle regardless of age, gender or goals.

Cardio Respiratory Endurance

The ability to maintain long-term activity relies on cardiovascular respiratory tolerance. These mechanisms tend to provide the active muscle with oxygen during competitive sports. Most of this oxygen is used to generate energy for muscle contraction. Any activity which for twenty minutes or longer continually uses large muscle groups uses these systems. The training methods can be in wide range for this motive to strengthen cardiovascular endurance. Physical strength is the type of stamina associated with the cardiovascular system and related to the

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wind phenomenon. In this case, there is enough exercise length and speed to stress circulatory and respiratory systems. This endurance allows the individual to sustain mild skeletal muscle contraction over a reasonably long time period. Practice may enhance the tolerance of the above cardiac, respiratory and circulatory processes. Long-distance running and using the treadmill are the best methods to assess this component of motor efficiency. A healthy person has a cardiovascular system that can accommodate tissue demands under intense exercise conditions.

Eye-Hand Coordination

This ability involves the integration of the eyes and hands to function as a unit. The eyes must assist the body to execute the correct motor response. It is a perceptual motor skill requiring the synthesis and storage of visual information in the central nervous system in order to make purposeful muscle movements. (Abernethy, 1987). It can be a sure of the ability of an athlete to accurately and quickly respond to a stimulus (Ferreira, 2001). This is not just about the skill, but how fast the athlete can complete the movement.

Statement of the Problem

The present study was to find out the effects of various muscle specific resistance training on Cardio Respiratory Endurance and Hand eye coordination among inter-collegiate hockey players.

Methodology

Acharya Nagarjuna University the age of the subject were in the range between 18 – 25 years. Cardio Respiratory

Endurance and Hand eye coordination was selected as the study variables. All the subjects were divided into two equal groups each group consist of 30 subjects. The pre-test (initial) vertical jump for explosive power and visual reaction time was conducted and the performance was recorded for both the group. Group I underwent various muscle specific resistance training (VMSRTG) for 12 weeks and group II control group (CG) was not given any treatment after 12 weeks the post-test was conducted for group I and group II.

The subjects were assembled at the rear line. At the starting signal, they run or walk as far as possible within the 12 - minute's time limit. At the signal to stop, performers or the subjects should remain where they finished long enough for test administrators to record the distance covered.

There are nine holes in this equipment with each successive one is smaller than the previous one. I want you to insert this stylus into the holes one after another. Insert at least one inch deep but see that the stylus does not touch the edges. If you touch the edges you will hear the clicking sound, stop as soon as you hear it as it an error. Boy should not sound not have any support to your hand while inserting. With these instructions 3 trails are given and in every trail the number of holes correctly inserted by the subject is noted down

Statistical Technique

Analysis of Variance (ANOVA) was applied to determine whether the programmes of training produced significant improvements in selected variables after twelve weeks of training.

Results

Table I: Computation of Analysis of Variance of Initial and Final Means On Cardio Respiratory Endurance

| Variables | | Group I | Group II | Sources | SS | DF | MS | F-ratio |
|------------------------------|---------------|---------|----------|--------------|------------|----|-----------|---------|
| Cardio Respiratory Endurance | Initial Means | 2036.7 | 2088.3 | Between sets | 40041.67 | 1 | 40041.67 | 2.35 |
| | | | | Within sets | 988083.33 | 58 | 17035.92 | |
| | Final Means | 2316.7 | 2088.3 | Between sets | 782041.67 | 1 | 782041.67 | 28.17* |
| | | | | Within sets | 1610083.33 | 58 | 27760.06 | |

*significant at 0.05 level (4.01)

The table I shows the pre and post-test mean of cardio respiratory endurance for the both groups. The pre-test means of the group I and group II were 2036.7 and 2088.3 respectively. The obtained F value on the pre-test score 2.35 was lesser than the table value 4.01 significant at 0.05 level. It proved that there was no significant difference between the

group at the initial stage and randomization at the initial stage was equal post-test mean for the group I and group II were 2316.7 and 2088.3 respectively. The obtained F value on the post test score 28.17 was greater than the table 4.01 and was significant at 0.05 level. Post test score analysis proved that there was significant difference between the groups.

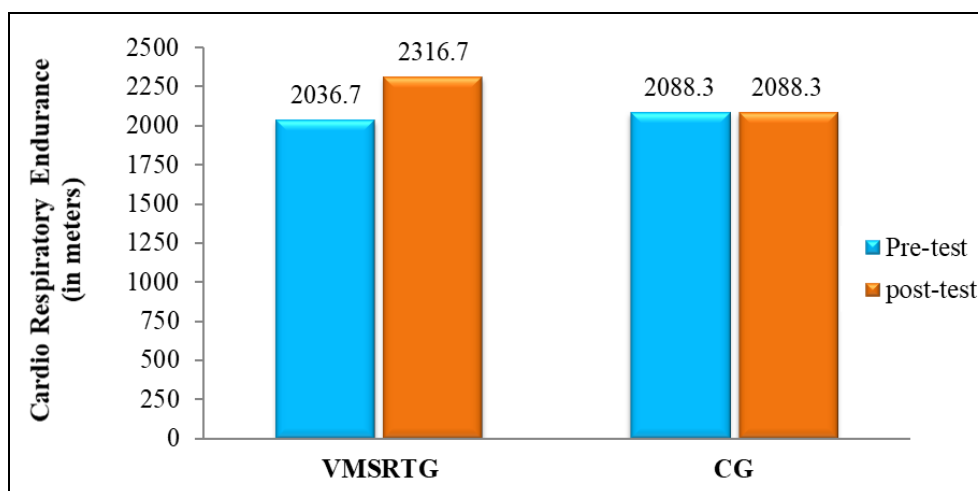


Fig I: Bar diagram showing the mean values of pre-test and post-test on Cardio Respiratory Endurance of VMSRTG and CG

Table II: Computation of analysis of variance of initial and final means on hand eye coordination

| Variables | | Group I | Group II | Sources | SS | DF | MS | F-ratio |
|-----------------------|---------------|---------|----------|--------------|---------|----|--------|---------|
| Hand Eye Coordination | Initial Means | 51.57 | 50.53 | Between sets | 16.02 | 1 | 16.02 | 0.77 |
| | | | | Within sets | 1210.83 | 58 | 20.88 | |
| | Final Means | 45.33 | 50.36 | Between sets | 380.02 | 1 | 380.02 | 23.26* |
| | | | | Within sets | 947.63 | 58 | 16.34 | |

*significant at 0.05 level (4.01)

The table II shows the pre and post-test mean of the hand eye coordination for the both groups. The pre-test means of the group I and group II were 51.57 and 50.53 respectively. The obtained F value on the pre-test score 0.77 was lesser than the table value 4.01 significant at 0.05 level. It proved that there was no significant difference between the group at the initial

stage and randomization at the initial stage was equal post-test mean for the group I and group II were 45.33 and 50.36 respectively. The obtained F value on the post test score 23.26 was greater than the table 4.01 and was significant at 0.05 level. Post test score analysis proved that there was significant difference between the groups.

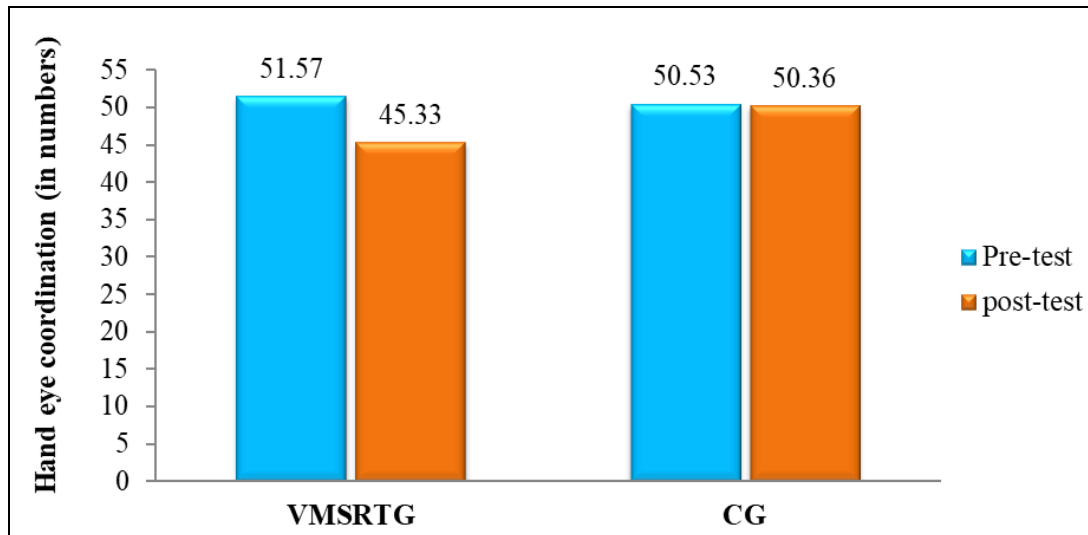


Fig II: Bar diagram showing the mean values of pre-test and post-test on Hand Eye Coordination of VMSRTG and CG

Conclusions

1. It was concluded that the experimental group made a significant changes on selected physical fitness variables namely cardio respiratory endurance and hand eye coordination from base line to post test.
2. The control group did not show any significant difference in this study.

Recommendations

1. From the present study, it may be concluded that the improvement on selected physical variables cardio respiratory endurance and hand eye coordination. Hence, Trainers and Physical Educators could adopt such training to improve specific resistance training group among their athletes.
2. A similar study may be conducted by selecting on physiological and other performance factors as criterion variables.
3. A similar study may be attempted by selecting the school level hockey players as subjects.
4. A similar study may be conducted on female as subject.
5. A similar study may be undertaken to analyze the hematological factors.

References

1. Baechle TR, Earle RW. Essentials of Strength Training and Conditioning, 2nd Edition, Champaign, IL: Human Kinetics 2000.
2. Baechle, Thomas R, Groves, Barney R. Weight Training Step ton Success, Champaign Illinois: Human Kinetics

Publishers Inc 1992.

3. Cinea K. Rest and recovery: The forgotten training component. National Strength and Conditioning Tactical Strength and Conditioning Report 2007.
4. Cochran, Sean, Tom House. Stronger Arms and Upper Body, Champaign Illinois: Human Kinetics Publishers Inc 2000.
5. Dick, Frank W. Sports Training Principles. London: Kim pones Publishers 1980, 87.
6. Dintiman, George Blough, *et al.* Sports Speed. (2ndED), Champaign Illinois: Human Kinetics Publishers Inc. 1998.
7. Hoffman, Jay. Physiological Aspects of Sports Training Performance, Champaign Illinois: Human Kinetics Publishers Inc 2002.
8. Johnson, Barry L, Nelson, Jack K. Practical Measurements for Evaluation in Physical Education (3rd ED), Delhi: Surjeet Publications 1988.