Effect of Circuit Training on Hand Strength Among male Floorball Players

Dr. Aniket Anil Ambekar
Assistant Professor, School of Education, Mahatma Gandhi, Antarrashtriya Hindi Vishwavidyalaya, Wardha, Maharashtra.
Dr. Rajani Janardan Murkute
Assistant Professor, Nagpur Sharirik Shikshan Mahavidyalya, Nagpur, Maharashtra

ABSTRACT

The purpose of the study was to find out the effect of circuit training on selected physical fitness components of male Floorball players. For the study, the research scholar selected 30 male floorball players randomly from Nagpur, aged 18 to 24 years. Thirty male Floorball players were divided into two groups experimental group (N=15) and control group (N=15). The experimental group participated in circuit training six days per week for three months and the control group did not participate in the training program. Pre and post-assessments of hand strength were conducted using standardized tests. Hand strength was measured with the help of the Medicine Ball Throw test. The result of the present investigation shows that the experimental group significantly improved hand strength compared to the control group due to participation in circuit training.

Keywords : Circuit training, hand strength, medicine ball throw, Floorball

Introduction

Floorball is a fast-paced team sport that requires a combination of agility, speed, and strength, particularly in the upper body. Hand strength is crucial in the sport for controlling the ball, shooting, and maintaining possession. In recent years, strength training has gained recognition as an essential component of athletic performance. Circuit training, which involves multiple exercises performed in succession with minimal rest, is a popular training method used to improve overall strength, endurance, and functional fitness. However, its specific impact on hand strength, especially for

sports like Floorball, has been understudied.

Hand and wrist exercises can improve mobility and decrease the chance of injury or reinjure. Various stretches can help with strengthening. Wrist stretches are easy to do at home or the office. When done properly, they can benefit a person's overall wrist and hand health. Anyone experiencing chronic pain or pain with numbness should visit a doctor for a thorough diagnosis.

Circuit training is a form of body conditioning that involves endurance training, resistance training, high-intensity aerobics, and exercises performed in a circuit, similar to high-intensity interval training. It targets strength-building and muscular endurance. An exercise "circuit" is one completion of all set exercises in the program. When one circuit is completed, one begins the first exercise again for the next circuit. Traditionally, the time between exercises in circuit training is short and often with rapid movement to the next exercise.

Statement of the problems

The study was undertaken to know the effect of circuit training on hand strength of male Floorball players.

Purpose of the study

The purpose of the study was to evaluate the effect of circuit training on the hand strength of male Floorball players.

Objectives of the study

To study the effect of circuit training on the hand strength of male Floorball players.

Hypothesis

It was hypothesized that circuit training significantly improves the strength of male Floorball players.

Delimitations

1. The study was delimited to thirty male Floorball players only.
2. The subject for the present study was randomly selected.
3. The subjects were divided into two groups: the experimental group (N=15) and the control group (N=15).

Limitations

1. The dietary habits of the experimental group and control group subjects were not under the control of the researcher.
2. The daily activities of the participants were not controlled.

Methodology

For the present study, thirty male Floorball players were selected with the help of a simple random sampling method. The age group of subjects was 18 to 24 years. The randomly selected subjects were divided into two groups. i.e. experimental group (N=15) and control group (N=15). The independent variable in the present investigation was circuit training and the dependent variables were hand strength. The pre-post assessment of hand strength was conducted using a standardized test. Hand strength was measured with the medicine ball throw test of both groups. The experiment group underwent circuit training for three months, practicing twelve repetitions of the complete sequence, six days per week. The control group continued with their usual physical activities.

Results

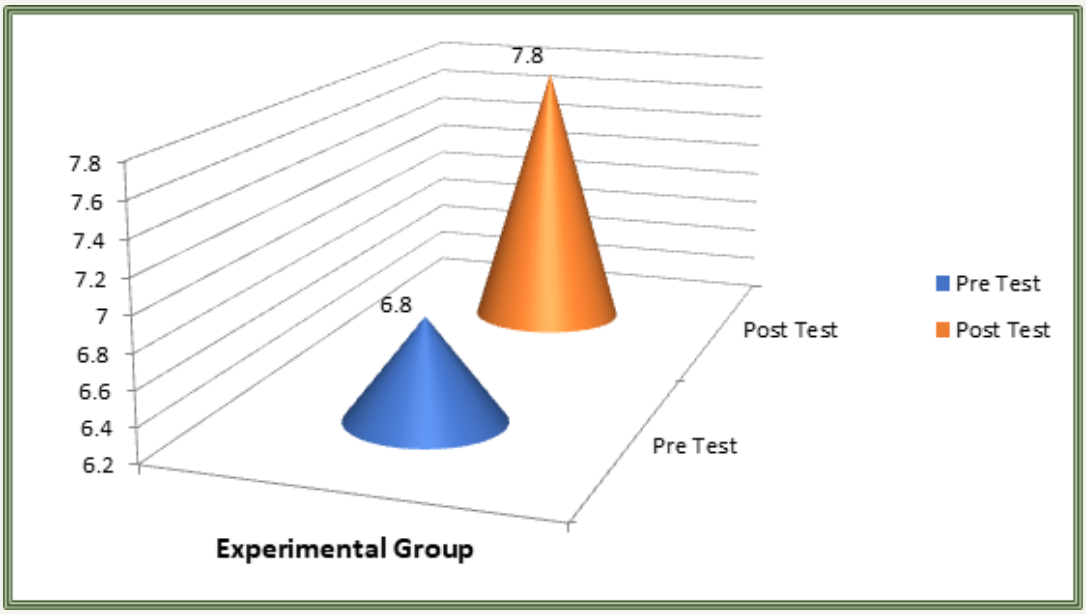
Analysis of data and interpretation of results was done by using descriptive statistics and comparative analysis was done by using the student 't' test. The level of significance was kept at 0.05 levels. It was hypothesized that there were significant changes found in the hand strength of male Floorball players if they did regular circuit training.

Table No. 1 : *shows the Pre-Test and Post Test Scores of Hand Strength of the Experimental Group of male Floorball Players*

Experimental Group	Mean	Mean Difference	Standard Error	't' ratio
Pre-Test	6.8	1	0.33	3.03
Post-Test	7.8			

The above table shows that the initial mean value of hand strength of the experimental group was 6.8 and the final main value was 7.8. The resultant meant difference between the pre-and Post-test was 1 and the standard error was 0.33. The calculated test value was 3.03, this value was significant at 0.05 level because the calculated 't' test value is greater than the table value of the 't' test i.e. 2.14. It was found that

the hand strength of the experimental group was statistically significant because of participation in circuit training.

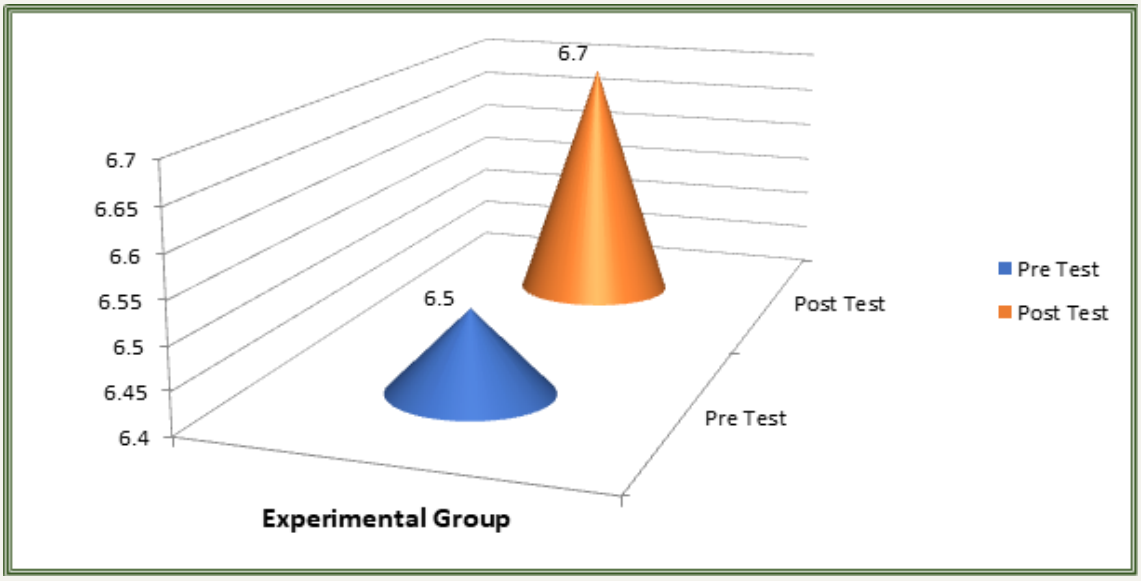


Graph showing the Pre-Test and Post Test Score of Hand Strength of the Experimental Group of Male Floorball Players

Table No. 2 : *shows the Pre-Test and Post Test Scores of Hand Strength of the Control Group of Male Floorball Players*

Control Group	Mean	Mean Difference	Standard Error	't' ratio
Pre-Test	6.5	0.2	0.49	0.41
Post-Test	6.7			

The Graph showing the Pre-Test and Post Test Score of Hand Strength of the Control group of male Floorball players



The above table shows that the initial mean value of hand strength of the control group was 6.5 and the final main value was 6.7. The resultant mean difference between the pre-and Post-test was 0.2 and the standard error was 0.49. The calculated 't' test value was0.41, this value was not significant at 0.05 level because the calculated 't' test value is smaller than the table value of the 't' test i.e. 2.14. It was found that the hand strength of the control group was not statistically significant because of no participation in circuit training.

Discussion

The results of the present study suggest that circuit training has a positive effect on hand strength in male Floorball players. The experimental group, which underwent a circuit training program, exhibited a significant increase in hand strength, whereas the control group showed minimal change. These findings align with previous research highlighting the effectiveness of circuit training in enhancing strength and endurance. The improvement in hand strength observed in the experimental group could be attributed to the specific exercises incorporated into the circuit training program. Exercises like grip squeezes, wrist curls, and kettlebell swings directly target the muscles responsible for grip strength, which is essential in Floorball.

Conclusion

This study proves that circuit training can significantly improve hand strength in male Floorball players. The results suggest that incorporating circuit training into a Floorball training treatment could be a valuable method for enhancing hand strength and potentially improving performance. Further research is needed to explore the long-term effects of circuit training on other aspects of athletic performance, such as endurance, agility, and shooting power.

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