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Impact of Resistance Workout on Physical Fitness Components of Hockey Players

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Abstract: ***The intension of this study which was accomplished on 30 hockey players of randomly selected from different colleges of district Rohtak with the age group of 20 to 23 years originate a significant improvement in the strength endurance (sit ups) and strength endurance (pull ups) aspect of the shoulder assemblage of muscles after 8 weeks of resistance workout training for the experiment group. There was significant improvement in the agility (shuttle run 4 × 10 yards), significant improvement in speed 50 yards dash and endurance (12 minutes run) and explosive strength standing broad jump aspect of the experimental group after 8 weeks of resistive training. The physical fitness variables such as strength endurance (sit ups), strength endurance (pull ups), agility 4 × 10 yards shuttle run, speed (50 yard dash) and endurance (12 minutes run) and explosive strength (standing broad jump) aspect of control groups were originated to be improved in post exercising period.***

Keywords: Hockey players, Resistance Workouts, Physical Fitness, Exercising Methods.

1. Introduction

Field hockey, or simply hockey, is a team sport of the hockey family. The earliest origins of the sport date back to the middle Ages in Scotland, the Netherlands, and England. The game can be played on a grass field or a turf field as well as an indoor board surface. Each team plays with eleven players including the goalie. Players use sticks made out of wood or fibre glass to hit a round, hard, rubber like ball. The length of the stick depends on the player's individual height. There are no left hand sticks in field hockey, and only one side of the stick is allowed to be used. The uniforms consist of shin-guards, cleats, skirts or shorts, and a jersey. At the turn of the 21st century, the game is played globally, with particular popularity throughout Western Europe, the Indian subcontinent, and Australasia. Hockey is the national sport of Pakistan, and is sometimes assumed to be India's national sport as well, although officially India does not have a national sport. The term "field hockey" is used primarily in Canada, the United States, Eastern Europe and other regions of the world where the sport of ice hockey is more popular.

During play, goal keepers are the only players who are allowed to touch the ball with any part of their body (the player's hand is considered 'part of the stick'), with this only applying within the shooting circle (also known as the D, or shooting arc, or just the circle), while field players play the ball with the flat side of their stick. The team that scores the most goals by the end of the match wins. If the score is tied at the end of the game, either a draw is declared or the game goes into extra time and/or a penalty shootout, depending on the competition's format.

The governing body of hockey is the International Hockey Federation (FIH), with men and women being represented internationally in competitions including the Olympic Games, World Cup, World League, Champions Trophy and Junior World Cup, with many countries running extensive junior, senior, and masters' club competitions. The FIH is also responsible for organising the Board and developing the rules for the sport.

A popular variant of field hockey is indoor field hockey, which differs in a number of respects while embodying the primary principles of hockey. Indoor hockey is a 5-a-side variant, with a field which is reduced to approximately 40 m × 20 m (131 ft × 66 ft). With many of the rules remaining the same, including obstruction and feet, there are several key variations – Players may not raise the ball unless shooting on goal, players may not hit the ball (instead utilising pushes to transfer the ball), and the sidelines are replaced with solid barriers which the ball will rebound off.

Resistance exercise can benefit your body in many ways. It can bring about an increase in the levels of high-density lipoprotein, or good cholesterol, and this will contribute to better cardiovascular health. It also affects your body composition in a positive way. Since muscles can burn calories, an increase in muscle mass will reduce body fat and enhance your metabolic rate. As such, resistance exercise is an effective way to lose and maintain weight.

It is also known that resistance exercise can increase the amount of bone minerals in your body, and this can make you less susceptible to osteoporosis. If you are above the age of 35, your body will experience gradual loss of muscle mass, and you will become weaker as you grow older. If you perform resistance exercise on a regular basis, you can slow down the loss of muscle mass. In a study, men and women who were in their 70s and 80s underwent resistance training for 10 weeks, and researchers noticed that their muscle strength, agility and mobility had increased dramatically after the training. Many physicians order their elderly patients to do resistance exercise at least two times a week.
Studies have also shown that resistance exercise may be more effective than aerobic exercise in improving body image and self esteem. One reason for this is that resistance training provides more immediate results. After training for

a short period of time, you will notice that your muscles have grown and become more toned.

Physical fitness is a general state of health and well-being or specifically the ability to perform aspects of sports or occupations. Physical fitness is generally achieved through correct nutrition, exercise, hygiene and rest. It is a set of attributes or characteristics that people have or achieve that relates to the ability to perform physical activity.

Before the industrial revolution, fitness was the capacity to carry out the day's activities without undue fatigue. However with automation and changes in lifestyles physical fitness is now considered a measure of the body's ability to function efficiently and effectively in work and leisure activities, to be healthy, to resist hypo kinetic diseases, and to meet emergency situations. Hence, there was a require felt by the scholar to carry out the study on the successful resistance workouts on physical fitness components of Hockey players.

2. Objectives of the Study

The following were the objectives of the study: –

- To identify students participation in resistance workouts on physical fitness components.
- To assess the physical fitness components district Rohtak college's students.
- To estimate the effect of resistance workouts on physical fitness components.

3. Delimitations

The study was delimited to 20 – 23 young hockey players. The study was delimited to 30 hockey players who participated in various colleges, inter-college level competitions from the M.D University, Rohtak. The study was also delimited to the variables in AAHPER Youth Physical Fitness Test and it was also delimited to resistance workouts training curriculum of 24 comprehensive over 8 weeks duration.

4. Methodology

For the intention of this study, 30 hockey players from different colleges of district Rohtak with the age group of 20 to 23 years have been randomly selected as the subjects. All the subjects have contributed and having a hockey playing ability up to inter-university level i.e. they have played Hockey at least up to district and inter-college level. These subjects were separated into two groups. One is experimental group and other control group. It has appeared for the pre test. After the pre test which was performed according to AAPHER Physical Fitness, one group i.e. experimental group was specified resistance workouts training for 8 week with the assist of other Hockey coaches working at the centres. The control group was solicited to go for their everyday physical training as per their programme specified by their coaches.

The figures composed from the two groups specifically experimental and control group were administered by AAHPER Youth Fitness Test variables. Statistical analysis was completed to discover out whether or not any difference between means of the two group tests i.e. pre and post test. 'T'-test were applied among the pre and post test of experimental and control group to discover out any significant difference in mean existed after the experimental period. The hypotheses were tested at 0.01 levels.

5. Discussion and Findings

The figures has been engaged to prove that the impact of resistance physical workout on the physical fitness components of the hockey players. The researcher has originated t-ratio for the both groups to discover out the level of significant development. The Tables and figure shows significant development made by the Hockey players after attending 8 weeks resistance workout training programme.

Table 1: To check Strength Endurance of (U-19 Boys) Hockey Players through pull-ups

TEST		Experimental Group	
	Mean	S.D	T - Ratio
Pre Test	19.57	2.15	2.46
Post Test	21.86	2.93	

Test		Control Group	
	Mean	S.D	T - RATIO
Pre Test	19.69	2.21	0.39
Post Test	19.96	2.32	

The difference between pre-test and post-test for the push up is specified in Table 4.1. It is significant at 0.1 levels. This means that there is a momentous difference in pre-test and post-test score for both the groups. Further, the means in post-test are higher than that of pre-test as players have enhanced the pull-ups. This is in the direction of the accomplishment of the necessary aspiration, because strength endurance is value superiority in hockey. This is necessary in mostly all the situation of the hockey game.

The findings pertaining to motor performance variables such as speed, explosive strength and trunk and shoulder strength, agility endurance revealed the following results:

In all the investigation substance, there was significant improvement in the strength endurance (pull ups) aspect of the shoulder group of muscles after 8 weeks of resistance workout training for the experiment group. There was significant development in the strength endurance (sit ups), agility (shuttle run 4 × 10 yards), and significant development in speed 50 yards dash and endurance (12 minutes run) and explosive strength standing broad jump aspect of the experimental group after 8 weeks of resistance workout.

It is significance mentioning here that after the pre-test when control group was prepared free to go for physical workout as per their ordinary programme in the hockey wing and when the post test of control group along with experimental group was measured, it was established that the control

group has also enhanced in the physical fitness variables such as strength endurance (pull ups), strength endurance (sit ups), agility 4 × 10 yards shuttle run, speed (50 yard dash), endurance (12 minutes run) and explosive strength (standing broad jump) aspect of control groups. Though they have achieved enhance than experimental groups but they have significant modify/improvement in their physical fitness variables.

6. Suggestion

Relationship with other sports activities should be occupied into explanation. In the last, but not the least, physiological principles should acquire full concentration in the direction of workout curriculum, allegedly designed to expand the prospective highest capacity for nourishing physical efforts. These features should be measured in planning such curriculum to construct more meaningful and successful curriculum recommendations.

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