



# International Journal of Physical Education, Sports and Health

P-ISSN: 2394-1685  
E-ISSN: 2394-1693  
Impact Factor (ISRA): 5.38  
IJPESH 2016; 3(6): 125-127  
© 2016 IJPESH  
www.kheljournal.com  
Received: 23-09-2016  
Accepted: 24-10-2016

**Muhammad Tariq Rafiq**  
Department of Sports Sciences,  
The University of the Punjab  
Lahore, Pakistan

## Rehabilitation of shoulder injury in field hockey players

**Muhammad Tariq Rafiq**

### Abstract

The purpose of the present study was to find the rate of shoulder muscle injury, causing factors and rehabilitation techniques related to it, in field hockey players. Twenty five (25) male field hockey players between the age of twenty (20) to thirty five (35) years were taken as subjects from the National Hockey Stadium, Lahore, Pakistan. Convenience sampling technique was used. SPSS was used to analyze the data. All the quantitative variables were presented in the form of mean  $\pm$  standard error (S.E) along with standard deviation (S.D). There was a strong relationship between the shoulder muscle strength and the cause of injuries. In the current study it was concluded that Supraspinatus injury of the shoulder joint in field hockey players was more common. Players with weak muscles were more injured than others. Players with repetitive injury had the previous history of rehabilitation. Players were satisfied with the rehabilitation techniques.

**Keywords:** Shoulder injury, rehabilitation techniques, muscle strength, muscle weakness

### 1. Introduction

Pakistan is too far back in the field of sports as we compare with developed countries. Pakistan is a developing country in the world and Field Hockey is the National Sport in Pakistan. Hockey is a fast, aggressive and physically-demanding sport involving both fitness and controlled aggression. According to Boro (2002) Injuries are related to direct trauma (80%) with high puck velocities, aggressive stick use and body checking (collisions) accounting for most of these. Most of the injuries occur during the actual game, rather than during a practice. Aggressive checking into the boards usually injured the upper extremities. These include shoulder dislocations, separations and fractures. Shoulder tendinitis occurs due to overuse during shooting drills. A less common injury is a shoulder burner, which occurs due to a crosscheck.

This study will help the therapists, trainers, and field hockey players to know the muscles involved in the shoulder injury and their treatment techniques. The study is limited due to time and availability of injured players.

### 2. Material and methods

#### 2.1 Population

Population is the aggregation of the subjects involved in any study. Players entered into the National Hockey Stadium, Lahore, were the main population of interest for the research which was based on the topic rehabilitation of shoulder injury in field hockey players. The focus of the research was to find the rate of shoulder injury and rehabilitation techniques related to it. The subjects were taken without discrimination of gender, age and area. The researcher used the convenience sampling technique to collect the data.

#### 2.2 Sample Size

The sample for this study was consisted of twenty five (25) male field hockey players between the ages of twenty (20) to thirty five (35) years.

#### 2.3 Research Tools

Convenience sampling technique was used. A convenience sampling chooses the individuals that are easy to reach or sampling that is made easy. Convenience sampling does not represent the entire population, so it is considered bias.

**Correspondence**  
**Muhammad Tariq Rafiq**  
Department of Sports Sciences,  
The University of the Punjab  
Lahore, Pakistan

Players (from the Clubs of Lahore) entered into the National Hockey Stadium, Lahore, were the sample of interest for the research which was based on the topic rehabilitation of shoulder injury in field hockey players. Field hockey players that involve the shoulder injury were the target population in Lahore.

**2.4 Data Collection Technique**

Direct personal interview method was used in the study. In this method the researcher approaches to the players directly and interview them. The information collected by this method is considered to be accurate and reliable.

**2.5 Data Analysis Technique**

The researcher used the SPSS to analyze the data. All quantitative variables were presented in the form of mean ± S.E along with S.D. The qualitative variables were shown in the form of frequency tables, percentages and graphs. Chi-square test was used to analyze any association in the data.

**2.6 Statistical Analysis**

All data was entered into SPSS 11.5 and was analyzed using the same software. The quantitative data like age was presented in the form of meaning S.D along with mode (most frequent value), minimum and maximum values. The qualitative data like (marital status, cause of injuries, muscle involved, shoulder muscle strength and rehabilitation technique etc.) was presented in the form of frequency table, percentages, bar and pie-charts. Chi-square test was used to find out the association of different factors with the cause of injuries. A p-value less than 0.05 was considered as significant.

**3. Results & Discussions**

**Table 1:** Statistics for Age of players

Mean	28.4000 (years)
Std. Deviation	3.53553 (years)
Mode	32 (years)
Minimum	23.00 (years)
Maximum	35.00 (years)

There were fourteen (56%) unmarried and eleven (44%) were married players in this study. According to the cause of injury eight (32%) players had trauma and seventeen (68%) players

had repetitive injury. Twenty (80%) of the players had weak muscles and the rest of players had strong muscles. There were fifteen (60%) players who had the previous history of rehabilitation and all players were satisfied with the rehabilitation. There was a strong association (relationship) between the shoulder muscle strength and the cause of injuries. The value of Chi-square 13.28 and p-value = 0.000 showing a significant association. There was an association (relationship) between the rehabilitation technique and cause of injuries. The Chi-square = 9.06 and p-value = 0.011 shows the significant association.

**Table 2:** Frequency table of muscles involved

Muscle	Frequency	Percent
Supraspinatus	16	64.0
Lateral Rotators	4	16.0
Medial Rotators	5	20.0
Total	25	100.0

**Table 3:** Frequency Table for Rehabilitation techniques

Rehabilitation technique	Frequency	Percent
RICE	11	44.0
Heating modalities	1	4.0
Heating modalities and light Exercise	13	52.0
Total	25	100.0

**Table 4:** Cause of injury vs. muscles involved

	muscles involved			Total
	Supraspinatus	Lateral Rotators	Medial rotators	
Trauma	1	2	5	8
Repetitive	15	2	0	17
Total	16	4	5	25

**Table 5:** Cause of injury vs. Rehabilitation techniques

	Rehabilitation techniques			Total
	RICE	Heating modalities	Heating modalities and light exercise	
Trauma	7	0	1	8
Repetitive	4	1	12	17
Total	11	1	13	25

**Table 6:** Cause of injury vs. shoulder muscle strength

	shoulder muscle strength		Total
	Strong muscles(G-5)	weak muscles (G-4 or below)	
Trauma	5	3	8
Repetitive	0	17	17
Total	5	20	25

Roberts *et al.* (1995) [3] found that 2.36 injuries per player were sustained over a 5-month playing period by undertaking a prospective survey of 50 Australian amateur hockey players. Freke and Dalglish (1994a) [1] found a career total of 2.37 injuries per elite Australian female player. The Roberts *et al.* (1995) [3] study reported one injury for every 37.5 hours of amateur hockey training and competition. The current study indicated that eight (32%) players had trauma and seventeen (68%) players had repetitive injuries according to the cause of injury.

The published research indicated that the emergency care of soft tissue injuries includes immediate rest, ice, compression,

elevation and referral (RICER). The RICER method of treatment is believed to reduce the possibility of further damage to the injured soft tissue by reducing the swelling in the area. The goal of a rehabilitation program is for the athlete to be free from pain and for the muscle strength and joint flexibility to return to pre-injury levels. It is important for a player to undergo a full recovery before returning to play. A premature return to play may exacerbate the injury and result in further time off the field (Sherker S. & Cassell E. 1998) [4]. The current study also favors the above concept of using the RICER method of rehabilitation in acute stage of hockey soft tissue injuries.

Another study indicates that the injury to the supraspinatus muscle is usually caused, not by a single event, but by slight to moderate trauma repeatedly to the same anatomic area. The term repetition strain injury is used to describe this form of micro trauma. Repetition strain injury of the supraspinatus muscle is not an isolated event, but rather a form of micro trauma that affects the entire shoulder girdle. This functional unit must be evaluated and considered in the treatment plan. The authors discuss the diagnosis of this pain syndrome, which is based on the field hockey player's history, motion and strength testing and palpation for trigger points. They also provide instruction in treatment involving manipulation with functional and counter strain techniques combined with home exercise and modification of work posture (Jacobson, 1989) [2]. The current study favors the concept of Jacobson repetitive injury of supraspinatus in hockey players and found that the most frequent muscle involved was supraspinatus i.e. sixteen (64%). Lateral rotators and medial rotators were found out in 16% and 20% respectively.

#### **4. Conclusion**

Supraspinatus injury of the shoulder joint in hockey players was more common than any other shoulder injuries. After the repetitive shoulder injury heating modalities and light exercises within pain free range were recommended. After the acute shoulder injury RICE (Rest, Ice Therapy, Compression and Elevation) was recommended. Players with weak muscles were more injured than others. Players with repetitive injury had the previous history of rehabilitation. Players were satisfied with the rehabilitation techniques.

#### **5. References**

1. Freke M, Dagleish M. Injuries in Women's Hockey: Part One. Sport Health Canberra, Aust. 1994a; 12(1):41-42.
2. Jacobson EC, Lockwood MD, Hoefner VC. Chronic Inflammation and Degenerative Tendonitis of the Supraspinatus Muscle. The Journal of the American Osteopathic Association. 1989; 89(8):1037-40, 1043-5.
3. Roberts PDT, Geljon AC, Kolt GS. A Comparison of Retrospective and Prospective Injury Data in Australian Rules Football and Field Hockey Participants. Australian conference of science and medicine in sport. Canberra, Australia: Sports Medicine Australia. 1995, 2.
4. Sherker S, Cassell E. A Review of Field Hockey Injuries and Countermeasures for Prevention. Monash University Accident Research Centre, Report. 1998, 14.