

Frequency of shoulder pain among overhead throwing athletes

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Objective: To assess the pain in shoulder in overhead throwing athletes.

Methodology: This cross-sectional survey was conducted on 148 athletes of overhead sports like volleyball, basketball, cricket and rugby. Data were collected from 148 athletes of University of Lahore, HEC players, LDA sports complex and Raiwand volleyball club. Non-probability Convenient Sampling Technique was used. PASS Questionnaire was used.

Results: The prevalence of overhead throwing

pain was 41%. In these, 18.92% had mild pain, 16.22 % had moderate pain and 5.91% had severe pain while 59% had no pain.

Conclusion: Male athletes of average age 20 years had pain in 41% from mild to moderate severity. Mostly right handed players were suffering from pain. (Rawal Med J 202;45:227-229).

Keywords: Shoulder pain, overhead throwing, athletes, basketball players, volleyball, rotator cuff injury.

INTRODUCTION

Shoulder is exposed to extreme multidirectional forces while overhead throwing. Injuries are commonly observed in softball, tennis, football basketball and javelin throwers.¹ Continuous shoulder pain can result from inflammation of bursa and tendon, rotator cuff tear, impingement disorder, and different reasons for degenerative joint changes. In sports, the injury is mostly due to repetitive activity.² Glenohumeral joint provides more free movement other than any joint, with compromising decreased in stability.^{1,3}

There is high prevalence for shoulder injury, mostly rotator cuff related in physical sports.⁴ The upper trapezius, center trapezius, lower trapezius, and serratus front work as a power couple to give adjustment and upward pivot of the scapula and the serratus foremost is the essential stabilizer of the scapula.⁵ Effective unique adjustment and neuromuscular control of the glenohumeral joint is vital for overhead competitors to stay away from injuries.⁶

In ordinary subjects the ground, legs, and trunk go about as the power generator; the shoulder goes about as a channel and power controller; what's more, the arm act as force-delivery mechanism. Shoulder structures might be harmed by exorbitant or imbalanced powers. Variations from the shoulder

acquired and may lead to impairment of the physiological kinetic chain.⁷ In this study, we will find the prevalence of shoulder pain among overhead throwing athletes.

METHODOLOGY

This cross sectional study was carried out at University of Lahore, HEC players, LDA sports complex and Raiwind Volleyball Club from March to June 2019. Male individuals with age 10-24 who participated in sports activity like volleyball, basketball, cricket and rugby were included in the study. Diabetic patient, obese and with recent injuries were excluded from the study. Non-probability Convenient Sampling Technique was used. An informed written consent was taken from all subjects.

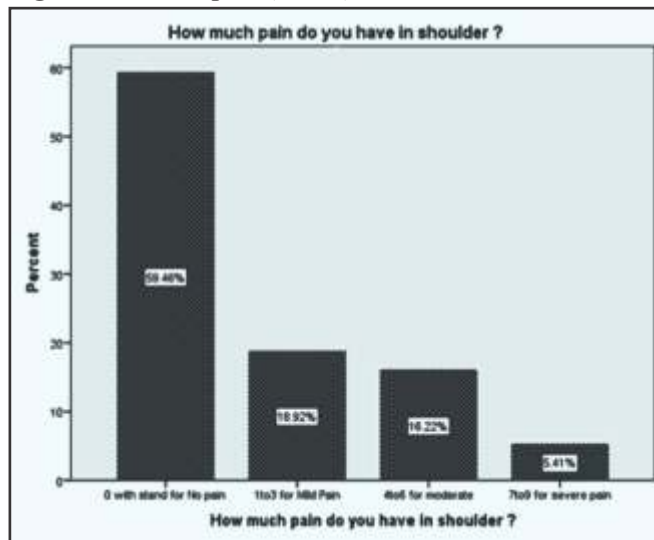
Strength was checked by asking the player to raise arm above head and to give a number from 1-10 about pain. Frustration level was asked that how to feel while suffering from pain from 1-10 scale. No BMI was taken. Data were collected through Questionnaire of PASS, Age reference and Shoulder survey.⁸

Statistical Analysis: Data were analyzed using SPSS version 21. Citation added by using endnote. All the qualitative variables are presented as percentages.

RESULTS

The total numbers of athletes were 148. Mean age was 20 years. The prevalence of overhead throwing sports was 41%. In which, 18.92% had mild pain, 16.22 % had moderate pain and 5.91% had severe pain while 59% had no pain (Fig.). 69 athletes were in the age of 19-21 more prone to shoulder pain whereas 32 athletes were from 15-18 and 47 players 22 to 24 in age. Right shoulder people had more shoulder pain with 23.65 percent. 109 out of 148 never had clicking or popping feeling and 29 had occasional clicking of shoulder.

Fig. Prevalence of pain (n=148).



24 athletes were mildly frustrated and 18 were mild moderate frustrated while 12 were moderate frustrated. 39 athletes with shoulder pain had mild disturbance in sleep while 91 had no problem at all. 115 out 148 had full strength where moderate athletes were 23 and with mild and least strength were 10.61% athletes were able to move their shoulder without difficulty whereas 4.7% can least move their shoulder. Right shoulder was involved in 23%, left in 7%, both in 9% and no shoulder was involved in 59 % subjects.

DISCUSSION

The total numbers of athletes were 148. With the help of this study we evaluated the frequency of overhead throwing sports was 41%. In these, 18.92% had mild pain, 16.22% had moderate pain

and 5.91% had severe pain while 59% had no pain.

In a previous study from Germany, handballs athlete were investigated to recognized shoulder pain as a substantial problems since last six months. They showed that 40% athletes lost their time from training due to problems occurring in shoulder. That study was on female handball players and showed that large number of players had shoulder pain.⁵ Another study also reported that the injury of some players was 37%.³

Our study showed that the pain in shoulder comparative to previous studies was same and overhead athletes do suffer from pain most. Most common expected cause can be not warming up body and no relaxation for a session of match.

CONCLUSION

Shoulder pain was commonly found in 20 years old athletes. Many athletes with overhead throwing activities were not suffering from pain but few participants were suffering from mild to moderate shoulder pain, most commonly right shoulder was involved. Those having pain had mild disturbance in sleep and limited social activities.

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Conception and design: Hassan Shaheen
 Collection and assembly of data: Hassan Shaheen, Munam Raza
 Analysis and interpretation of the data: Hassan Shaheen
 Drafting of the article: Hassan Shaheen
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REFERENCES

1. Mlynarek RA, Lee S, Bedi A. Shoulder injuries in the overhead throwing athlete. *Hand Clinics* 2017;33:19-34.
2. Dines JS, Bedi A, Williams PN, Dodson CC, Ellenbecker TS, Altchek DW, et al. Tennis injuries: epidemiology, pathophysiology, and treatment. *JAAOS* 2015;23:181-9.
3. Zaremski JL, Wasser JG, Vincent HK. Mechanisms and treatments for shoulder injuries in overhead throwing athletes. *Curr Sports Med Rep* 2017;16:179-88.
4. Myklebust G, Hasslan L, Bahr R, Steffen K. High prevalence of shoulder pain among elite Norwegian female handball players. *Scand Med Sci Sports* 2013;23:288-94.
5. Tucker WS, Armstrong CW, Gribble PA, Timmons MK,

- Yeasting RA. Scapular muscle activity in overhead athletes with symptoms of secondary shoulder impingement during closed chain exercises. *Arch Physical Med Rehabil* 2010;91:550-6.
6. Reinold MM, Gill TJ, Wilk KE, Andrews JR. Current concepts in the evaluation and treatment of the shoulder in overhead throwing athletes, part 2: injury prevention and treatment. *Sports Health* 2010;2:101-7.
 7. Edmonds EW, Bastrom TP, Roocroft JH, Calandra-Young VA, Pennock AT. The Pediatric/Adolescent Shoulder Survey (PASS): a reliable youth questionnaire with discriminant validity and responsiveness to change. *Orthop J Sports Med* 2017;5:2325967117698466. doi: 10.1177/2325967117698466.
 8. Sawyer SM, Azzopardi PS, Wickremarathne D, Patton GC. The age of adolescence. *The Lancet Child Adolescent Health* 2018;2:223-8.