Sarcouncil Journal of Internal Medicine and Public Health

ISSN(Online): 2945-3674

Volume- 04| Issue- 01| 2025

Research Article **Received:** 22-11-2024| **Accepted:** 11-12-2024 | **Published:** 21-01-2025

The Effect of Shoulder Sprains in Iraqi Athletes on the General Quality of Sports and Identifying Risk Factors in the Swimming Game

Karrar Yarreeb Kattoof

Assistant lecture, Al-Mustansiriya University Faculty of Physical Education

Abstract: This study aims to know The effect of shoulder sprains in Iraqi athletes on the general quality of sports and identifying risk factors In the swimming game where collect 100 sample of swimmers At 2024 where In this study, a statistically significant relationship was found between shoulder sprains and their impact on the quality of the athlete in terms of psychological factors, pain and required performance, as shoulder pain syndrome is highly prevalent among swimmers of different swimming styles, which is explained by the multiple risk factors that athletes are exposed to. The presence of pain and training time are determinants of sports practice and become important factors associated with the quality of the Iraqi athlete, which is accompanied by various changes such as dynamic instability of the joint complex, increased tissue load and deficits. Sensory nerves and proprioception.

Keywords: Shoulder sprains, athletes, swimming, quality.

INTRODUCTION

High-achievement swimming competitions have been shown to be a contributing factor to rotator cuff pathologies [Andersson, S. H. *et al*., 2017] Previous studies have documented a prevalence of this syndrome in swimmers ranging between 50 and 60% [Seminati, E. *et al*., 2013] Some authors claim that injuries to the shoulder joint complex are the main problem among swimmers, as this is the region that provides 75% of the propulsion in the four existing styles. Overload, incorrect technique, and external factors such as paddles can exacerbate shoulder injury, colloquially termed "swimmer's shoulder" [Walker, H. *et al*., 2012]Swimming-related injuries are more prevalent in the upper extremity, accounting for 66.67% of cases, compared to 33.33% in the lower extremity. Within the spectrum of sports injuries, those affecting the shoulder joint complex account for 4.44%. On average, 50% of swimmers will suffer shoulder pain of sufficient intensity to prevent swimming for at least three weeks at some point in their professional career, a figure that is higher for women. [Chase, K. I. *et al*., 2013] Documented factors contributing to an increased vulnerability for shoulder injuries include the size of the joint space, anatomical factors between the tendons and bursae, non-pathological ligamentous hyper laxity, the shape of the acromion, and narrowing of the space in abduction [Asker, M. *et al*., 2018; Tooth, C. *et al*., 2020; Wright, A. A. *et al*., 2021] Additionally, internal and external rotation, inadequate vascularisation in the supraspinatus muscle, the impact of the rotator cuff on the coraco-acromial arch, progressive tendon-muscle degeneration, and other factors such as repetitive microtraumas and weight lifting generated by the impact of water [Schwank, A. *et al*., 2020; Forthomme, B. *et al*., 2013] have been identified as contributing to shoulder injury susceptibility. The influence of swimming technique on performance and shoulder stability is a further consideration, with sport-specific demands including body mass index [Fares, M. Y. *et al*., 2020] increased range of motion of the shoulder joints, increased strength in internal rotation and adduction, and prolonged, tiring and intense swimming [Miller, A. H. *et al*., 2018; Bahr, R. *et al*., 2020]

In a study carried out by Nerin and Adamuz in 2006 [Hawkins, R. J. *et al*., 1980; Paley, K. J. *et al*., 2000] the importance of physiotherapy in the field of sports injury prevention and promotion is discussed. It is evident that knowledge of the mechanisms of injury and the physiology of tissues is paramount. and anatomy, serve as a basis for the creation of programs that are aimed at reducing the presence of injuries and the incidence of severity of these injuries. The development of all of the above mentioned is through strategies where the physiotherapist is the ideal person to carry them out. The onset of competitive swimming for young athletes typically occurs around the age of seven. These athletes frequently train and compete throughout the year, [Andrews, J. R. *et al*., 1985; Carvalho, C. D. *et al*., 2015] often representing multiple teams, and their training regimens are notably intensive, with an average of ten to eleven sessions per week, each spanning two or more hours. In addition to their aquatic training, the land-based training they undergo at this early age can contribute to the onset of pain in 15% of swimmers who present with this syndrome by the age of 18, potentially leading to diminished

***Corresponding Author:** Karrar Yarreeb Kattoof

DOI- https://doi.org/10.5281/zenodo.14713828

performance and early retirement from the sport. [Carvalho, C. D. *et al*., 2015] in 2013 revealed that 140 swimmers affiliated to the Madrid Swimming Federation, with an average age of 12 years, exhibited significant shoulder discomfort. In their study of 140 swimmers affiliated to the Madrid Swimming Federation in 2013, Bailón-Cerezo, J. Torres-Lacomba, M. and Gutiérrez-Ortega, C. [Wilbur, R. R. *et al*., 2022] reported that the annual incidence of shoulder pain in competitive swimmers has been estimated at 38%, with the prevalence ranging between 10% and 35%. Furthermore, the percentage of swimmers who have suffered from it during their sports career varies between 29.6% and 91%. Furthermore, it was observed that in the age ranges of 13 - 14, 15 - 16 and 19.5 years, the prevalence of shoulder pain was 13%, 26% and 18%, respectively [Fuller, C. W. *et al*., 2006; Durieux, N. *et al*., 2013; Sterne, J. A. C. *et al*., 2019].

METHODOLOGY

This descriptive quantitative study aims to address the subject by analysing an objective reality, employing statistics and measurement of phenomena. The cross-sectional design involves no intervention and a single measurement is taken at a certain time. The experimental and prospective analytical design involves data being taken from measurements and tests of athletes, with the objective of determining the number of cases of "swimmer's shoulder" syndrome present in the Iraqi swimming team for the year 2024. The results of this study will be obtained to estimate the prevalence of the syndrome and its associated factors in the population. The study population consists of 100 swimmers belonging to the Iraqi swimming team for the year 2024 who meet the inclusion criteria. The study will consider athletes from this team, aged between 14 and 28 years, as the universe population, while the reference population will consist of swimmers participating in the selection of swimming in Iraq for the year 2024. The entire reference population that meets the eligibility criteria will be taken into account.

A pilot test was conducted on 5 November 2024 with approximately 100 swimmers, who provided informed consent or approval, a process which took approximately 10 minutes.The next stage of the test involved the collection of socio-demographic data and swimming technique, as no problem was found with the assessment tool for collecting this information. In an effort to minimise potential researcher and information bias, the assessment tools undergo calibration and modification, with anthropometric measurements and performance in specific tests conducted by a single member to mitigate the risk of bias.It was observed during this stage of the test that participants who had recently undergone an assessment exhibited greater muscle fatigue when subjected to specific semiotic tests. This phenomenon can be attributed to the fact that the pilot test is conducted while the participants are undergoing training. Another key element introduced in the pilot test is the re-evaluation of shoulder flexibility assessments, as the original tests do not adequately address swimmer's shoulder syndrome. Consequently, it was determined to modify the flexibility assessment tests.Finally, the angle measurement of the shoulder is conducted, as this component is identified as the most time-consuming and labour-intensive aspect of the process. This is why it is undertaken by a single member of the group, thereby reducing the risk of bias. The assessment tool is designed to collect the necessary data for the study's development.

RESULTS

Table 1: distribution of sample according to age

Variable	F
18-20	40
21-23	30
24-26	30

Publisher: SARC Publisher

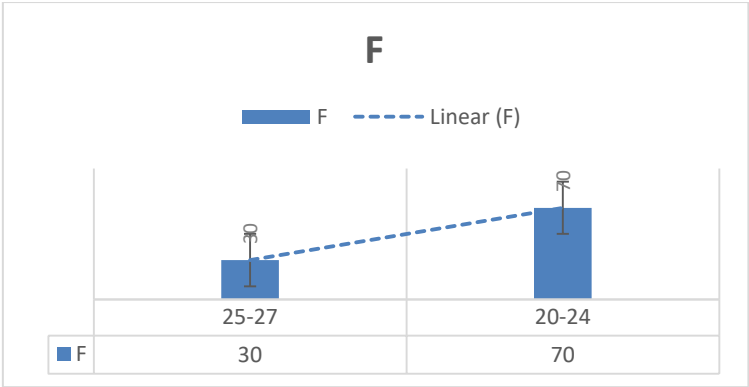

Fig 1: distribution of sample according to BMI

Table 2: Prevalence of shoulder sprains in swimmers according to their type

v	f
Simple sprain and joint bones remain	33
subluxation	50
Shoulder dislocations	17

Table 3:: distribution of sample according to Symptoms of shoulder sprains

Variable	f
Pain	45
Range of Motion Limitations	25
Weakness and Swelling	30

Table 4: Sample distribution according to diagnosis of shoulder sprains

v	Mean	Sd
18-20	17.3	2.44
21-23	18.9	1.1
24-26	20.2	2.23

Table 5: common mechanisms of injury that lead to shoulder sprains in athletic populations

v	f
falls or collisions	29
Body Checking	31
Repetitive Overhead Movements	25
Traction Injuries	15

Table 6: Outcomes according to different types of shoulder injuries impact the psychological well-being and quality of life of athletes

v	Mean	Sd
Depression	55	10.6
Fear of Re-injury	44.93	5.9
Kinesiophobia	39.8	8.8
Quality of Life	49.82	3.982
Overall Well-being	50.1	6.33

Table 7: Logistic assessment of risk factors

v	CS	OI	P VALUE
weakness	1.5	0.9-2.1	0.05
reduced endurance of the shoulder muscles,	2.44	1.66-4.4	<0.001
a lack of scapular stability	1.32	0.82-1.88	0.82
poor posture	1.73	0.981-2.2	0.724
reduced flexibility	2.2	1.66-3.5	<0.001
bony alterations.	1.88	1.43-3.1	<0.001

Publisher: SARC Publisher

DISCUSSION

This study examined the impact of shoulder sprains in Iraqi athletes on the overall quality of sports and identified risk factors in the context of swimming. A sample of 100 swimmers from Iraq was collected, ranging in age from 18 to 26 years, and the age distribution was as follows:

18-20 years: sample size of 40 where The study set out to determine the impact of shoulder sprains on the quality of sports and to identify the risk factors associated with them. The research team collected a sample of 100 swimmers from Iraq, ranging in age from 18 to 26 years. The sample was divided into four groups based on age: 18-20 years (40 participants), 21-23 years (30 participants), 24-26 years (30 participants), and The results, presented in Table 2, reveal the prevalence of shoulder sprains among swimmers according to their type. The data indicates that simple sprains and dislocations were more prevalent among the sample, while subluxations were observed less frequently.

Shoulder tendinitis is a prevalent cause of shoulder pain and stiffness, characterised by inflammation and irritation of the rotator cuff (the muscles that stabilize the shoulder) and the biceps tendon. This condition, medically termed "shoulder tendinitis," involves inflammation in a specific area of the shoulder joint. The symptoms of tendinitis manifest at the point of tendon attachment to the bone and include:

- A dull ache, especially when moving the shoulder, which is often worse after a period of rest and may even occur after exercise rather than during.
- Some swelling.
- Each movement may cause a creaking sound known as a tendon popping.

In the field of swimming, shoulder injuries are the most prevalent type of injury and have been the subject of the most research, due to their high incidence and frequency.In the present study, an association was identified between shoulder pain syndrome, training schedule and shoulder pain.Harrington *et al*. (29) found that very few factors were statistically associated with SHDN, despite taking into account demographic, clinical, anthropometric and training techniques. With regard to the variable of arcs of motion, a significant proportion of swimmers exhibit ranges that exceed the anatomical limits as defined by the AAOS. However, no statistical association was identified in this variable with SHDN, contrasting with the findings reported by Walker *et al* (2). This is in contrast to the findings of Walker *et al*. (2), who suggest that excessive ranges of motion in external rotation are a factor in predisposing to muscle injuries. Another study by Holt *et al*. (30) suggests that greater torsional angles of the humeral head generate excessive degrees of internal rotation and limits in external rotation. Various studies have been conducted in order to associate shoulder pain with different variables, such as the presence of musculoskeletal injuries, shoulder dyskinesia

Various risk factors for injury are likely to be due to shoulder overuse, shoulder instability, and muscle imbalance. The reason for this is still unknown, but it is likely due to decreased strength, muscle activity, and coordination, and ultimately increased fatigue (39). We agree with Liagat *et al*. (39). According to our results, there is a relationship between training schedule and shoulder pain syndrome, which could be a risk factor that increases fatigue and increases the likelihood of injury. Factors such as training schedules, dropout rates, place of residence, and musculoskeletal injuries did not allow for an assessment of the overall population, so it is suggested that studies with larger samples be conducted to obtain statistically significant data. A consensus needs to be reached regarding the specificity and sensitivity of semiotic tests, as there are differences between authors, which limits the research.

CONCLUSION

The potential consequences of exposure to the direct and indirect impacts of sporting activities can include various forms of injury, such as sprains, contusions, fractures, dislocations, and torn muscles or tendons. These injuries frequently manifest in a gradual manner over time, often occurring in joints and surrounding anatomical structures, including muscles, tendons, bones, cartilage, discs, spinal discs, and membranes, ligaments that cover joints, and nerves and blood vessels. Of particular note is the heightened susceptibility of the lower body to injury when compared to the upper body. It is therefore vital to be aware of which organs are susceptible to injury from exercise.

REFERENCES

1. Andersson, S. H., Bahr, R. and Clarsen, B, *et al*. "Preventing overuse shoulder injuries among throwing athletes: A cluster-

***Corresponding Author:** Karrar Yarreeb Kattoof

DOI- https://doi.org/10.5281/zenodo.14713828

randomised controlled trial in 660 elite handball players." *British Journal of Sports Medicine*, 51.8 (2017): 1073-1080.
2. Seminati, E. & Minetti, A. E. "Overuse in volleyball training/practice: A review on shoulder and spine-related injuries." *European Journal of Sport Science*, 13 (2013): 732-743.
3. Walker, H., Gabbe, B. and Wajswelner, H, *et al*. "Shoulder pain in swimmers: A 12-month prospective cohort study of incidence and risk factors." *Physical Therapy in Sport*, 13 (2012): 243-249.
4. Chase, K. I., Caine, D. J. and Goodwin, B. J, *et al*. "A prospective study of injury affecting competitive collegiate swimmers." *Research in Sports Medicine*, 21 (2013): 111-123.
5. Asker, M., Brooke, H. L. and Waldén, M, *et al*. "Risk factors for, and prevention of, shoulder injuries in overhead sports: A systematic review with best-evidence synthesis." *British Journal of Sports Medicine*, 52 (2018): 1312-1319.
6. Tooth, C., Gofflot, A. and Schwartz, C, *et al*. "Risk factors of overuse shoulder injuries in overhead athletes: A systematic review." *Sports Health*, 12 (2020): 478-487.
7. Wright, A. A., Ness, B. M. and Donaldson, M, *et al*. "Effectiveness of shoulder injury prevention programs in an overhead athletic population: A systematic review." *Physical Therapy in Sport*, 52 (2021): 189-193.
8. Schwank, A., Blazey, P. and Asker, M, *et al*. "2022 Bern consensus statement on shoulder injury prevention, rehabilitation, and return to sport for athletes at all participation levels." *Journal of Orthopaedic & Sports Physical Therapy*, 52 (2022): 11-28.
9. Forthomme, B., Wieczorek, V. and Frisch, A, *et al*. "Shoulder pain among high-level volleyball players and preseason features." *Medicine & Science in Sports & Exercise*, 45 (2013): 1852-1860.
10. Fares, M. Y., Fares, J. and Baydoun, H, *et al*. "Prevalence and patterns of shoulder injuries in major league baseball." *The Physician and Sportsmedicine*, 48 (2020): 63-67.
11. Miller, A. H., Evans, K. and Adams, R, *et al*. "Shoulder injury in water polo: A systematic review of incidence and intrinsic risk factors." *Journal of Science and Medicine in Sport*, 21 (2018): 368-377.
12. Bahr, R., Clarsen, B. and Derman, W, *et al*. "International Olympic Committee consensus statement: Methods for recording and reporting of epidemiological data on injury and illness in sport 2020 (including STROBE extension for sport injury and illness surveillance (STROBE-SIIS))." *British Journal of Sports Medicine*, 54 (2020): 372-389.
13. Hawkins, R. J. & Kennedy, J. C. "Impingement syndrome in athletes." *American Journal of Sports Medicine*, 8 (1980): 151-158.
14. Paley, K. J., Jobe, F. W. and Pink, M. M, *et al*. "Arthroscopic findings in the overhand throwing athlete: Evidence for posterior internal impingement of the rotator cuff." *Arthroscopy*, 16 (2000): 35-40.
15. Andrews, J. R., Carson, W. G. & McLeod, W. D. "Glenoid labrum tears related to the long head of the biceps." *American Journal of Sports Medicine*, 13 (1985): 337-341.
16. Carvalho, C. D., Cohen, C. and Belangero, P. S, *et al*. "Partial rotator cuff injury in athletes: Bursal or articular?" *Revista Brasileira de Ortopedia*, 50 (2015): 416-421.
17. Wilbur, R. R., Shirley, M. B. and Nauert, R. F, *et al*. "Anterior shoulder instability in throwers and overhead athletes: Long-term outcomes in a geographic cohort." *American Journal of Sports Medicine*, 50 (2022): 182-188.
18. Fuller, C. W., Ekstrand, J. and Junge, A, *et al*. "Consensus statement on injury definitions and data collection procedures in studies of football (soccer) injuries." *British Journal of Sports Medicine*, 40 (2006): 193-201.
19. Durieux, N., Vandenput, S. & Pasleau, F. "[OCEBM levels of evidence system]." *Revue Médicale de Liège*, 68 (2013): 644-649.
20. Sterne, J. A. C., Savović, J. and Page, M. J, *et al*. "ROB 2: A revised tool for assessing risk of bias in randomised trials." *BMJ*, 366 (2019): l4898.

Source of support: Nil; **Conflict of interest:** Nil.

Cite this article as:

Kattoof, K.Y. "The Effect of Shoulder Sprains in Iraqi Athletes on the General Quality of Sports and Identifying Risk Factors in the Swimming Game." *Sarcouncil Journal of Internal Medicine and Public Health* 4.1 (2025): pp 1-5.

Publisher: SARC Publisher