

## PREVALENCE OF HIP AND GROIN MUSCLE INJURY IN FOOTBALLERS OF PAKISTAN AT UNIVERSITY LEVEL

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### Abstract

**Objective:** Groin injuries are common among football players and are characterized by pain and discomfort in the groin and thigh region. This study aims to determine the prevalence of groin muscle injuries among football players.

**Methodology:** A cross-sectional study was conducted over six months following the approval of the synopsis. The study included male and female football players aged 18 to 24 years, with a total sample size of 149 participants. A deliberate sampling technique was used. The frequency of groin muscle injuries was assessed using the Hip and Groin Outcome Score (HAGOS) questionnaire.

Participants with sportsman's hernia, inguinal and femoral hernias, malignant diseases, nerve entrapment of the ilioinguinal, genitofemoral, and lateral femoral cutaneous nerves, as well as bursitis of the hip or groin region, were excluded. Data were analyzed using SPSS software, and results were presented in tables and graphs, displaying percentages and frequencies. The statistical significance was determined using the p-value.

**Results:** The participants' scores ranged from a minimum of 37.14 to a maximum of 80. Statistical measures obtained were: Mean: 59.04, Standard Deviation:  $\pm 6.48027$  and Median: 58.90.

**Conclusion:** This study highlights the prevalence of groin muscle injuries among football players, providing valuable insights for injury prevention and rehabilitation strategies.

## INTRODUCTION

Groin pain ascribed to pubic area is defined in footballers with pitch-based, identifiable injury-pain

elicited by palpation of the anteromedial aspect of junctional bone (pubic symphysis/adjacent) line. . The

condition is infrequent, despite isolation and it usually happens along with the adductor induced groin pain. Recommendations for the classification of the entities included so far have not been based on evidence, only expert opinion (1). Standing pain in the groin is observed in many athletes who participate in sports with multidirectional movements as sprinting or kicking, football (2).

It is the most Common Elite sports Injury. The high friction and stresses that are created in the lower limbs during sudden turns and acceleration moment, like those that might be seen in sports such as soccer, basketball or hockey act to localize structural regions of increased forces. The possibilities of differential diagnoses are innumerable that include different clinical conditions, polyarticular and extra-articular lesions of the same joint muscular, tendinous and visceral (3). Football players play a sport which comprises running and kicking actions. In sports therapy practice, the identification of "groin pain syndrome" is widespread. It is believed that the stress of the pubic symphysis as well as its connective tissues is the origin of this long-term health condition that results in excessive tensile strength. It is believed that the overload of the pubic (4).

Herniation related to sports refer pain in the groin area, which usually arises at the point where abdominal muscles connect to the pubic bone. This kind of injury has attracted greater focus since it is clearly difficult to diagnose. Assessing and diagnosing the true reason of groin pain can be hard due to considerable indication overlaps with proximal thigh muscle disorders, hip joint intra-articular diseases, and abdominal muscle diseases (5).

The hip and groin are common sites of injury in elite juvenile football players, accounting for 7–33% of all time-loss injuries. Even so, a lot of professionals perform and prepare in spite of groin pain; in fact, nearly thirty percent of athletes say they never miss any time because of groin problems. A recent study discovered that football players complained about discomfort in groin area during the previous season, underscoring the need to identify modifiable risk factors to design effective prevention strategies and treat this prevalent issue. It could be able to lower the prevalence of groin discomfort and related injuries in this population by focusing on these risk factors (6).

Football player injuries vary by position, with goalkeepers experiencing the lowest rate at 5.3%, followed by wing/fullbacks at 11.6%, and center backs at 15.8%. Defensive midfielders and strikers, however, bear the brunt of injuries, accounting for 31.6% and 28.4% of cases, respectively. In contrast, attacking midfielders have a relatively lower incidence at 7.3% (7).

Groin pain is a prevalent issue among athletes, particularly in football, affecting 5–13% of male players and 4–5% of female players. This problem poses significant challenges in sports medicine due to its complex nature. While groin injuries may initially present as acute, they often progress to chronic pain with vague and widespread symptoms, making diagnosis and localization difficult. Accurate diagnosis is crucial for effective management and treatment, highlighting the need for precise evaluation and assessment to address this common and debilitating issue (8).

This study seeks to integrate cutting-edge developments in the assessment of athletes with groin pain, encompassing physical evaluation, medical imaging, and functional testing. Additionally, we will demonstrate how a comprehensive approach, combining accurate and reliable data from clinical examinations, diagnostic imaging, and performance assessments, can inform effective, evidence-driven treatment strategies for athletes experiencing groin pain. Football players frequently get groin muscle injuries, knowing how common these injuries are can assist prevent and treat them to improve players' health and performance. Our research emphasizes particularly on the hip and groin region, while previous studies lack a large sample size, have restricted features linked to the hip and groin, and focus on different joints. This study is special since it's the first to look at groin injuries among football players, a relatively new sport in Pakistan.

## MATERIAL AND METHODS

To determine the frequency of hip and groin pain injuries among college football players, a cross-sectional study was carried out. Six months utilized after synopsis. Using the non-Probability purposive sampling technique, the sample size was one hundred and forty nine. Research on university-level football players, both male and female, aged 18 to 24, experiencing

traumatic groin pain (9). Exclusion criteria include sportsman's hernia, inguinal and femoral hernia, malignant disease, ilioinguinal, genitofemoral, and lateral femoral cutaneous nerve entrapment, and bursitis of the hip or groin region (9). Football players were given a survey questionnaire called the HAGOS (Copenhagen Hip and Groin Outcome Score) as part of the study (10). It enquired specific questions on hip and groin pain. The data had been collected from

footballers from different academies clubs colleges and universities. Outcome measurement had explained the prevalence of groin injury in footballers. SPSS version 20.0 was used to evaluate the data, and tabular findings were displayed. Tables or graphs showing frequency and percentage had been created. The p-value had led to the conclusion (11).

## RESULTS

**Table 1 Do you feel that you have any problem related to groin?**

Frequency		Percent	Valid Percent	Cumulative Percent
Valid	No	11	7.4	7.4
	Yes	138	92.6	100.0
	Total	149	100.0	

Table 1 shows results about the problems related to groin. Out of total 149 respondents. The result shows

that 138 (92.6%) have groin problems and 11(7.4%) never feels any problem related to groin.

**Table 2**

Statistics		
N	Valid	149
	Missing	0
Mean		58.8942
Median		59.0476
Std. Deviation		6.48027
Range		42.86
Minimum		37.14
Maximum		80.00

Table 2 shows the Normalize score of all the footballer participants. The data shows that the maximum score achieved by participants is 80 and the minimum score achieved is 37.14. Mean, Median, Std. Deviation of the

study results are 58.90, 59.04 and  $\pm 6.48027$  respectively.

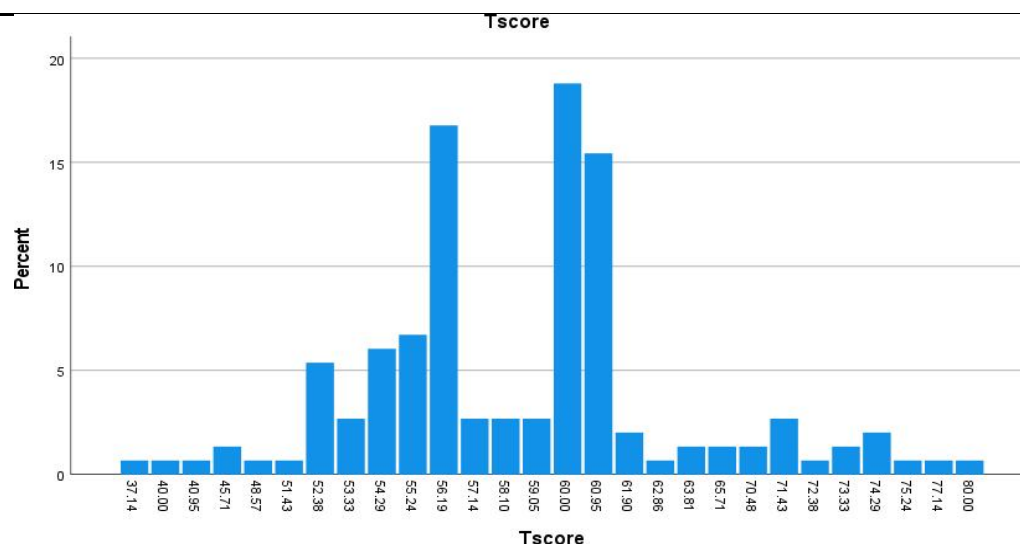


Figure shows the max score achieved my maximum participants. Most of the participants 20% has 60 score and 15-20% scored 50 and plus on HAGOS questionnaire, which suggests that mostly participants have moderate injuries of hip and groin. Very few less than 5% scored 80 and the 5-12% footballers scored between 50-75.

## DISCUSSION

Based on information gathered from football players using the HAGOS questionnaire, the bulk of the population received a score of 50–60 out of 100, indicating that most individuals had moderate hip and groin muscle injuries. The questionnaire includes subscales pertaining to hip and/or groin-related quality of life, as well as symptoms, stiffness, pain, and physical function in daily living, sport, and recreation. There are Likert scale-based items on every subscale.

The average score of symptoms domain is not very high, suggesting that participants experience minimal to moderate pain during their activities that can be managed by better interventional management. Meanwhile the stiffness domain average scores also shows minimal score stating mild level of stiffness in footballers in their hip/groin region. A study conducted by Harøy, J., Bache-Mathiesen, et al, states similar findings that athletes with hip and groin injuries have minimal scores on HAGOS in symptoms and stiffness domain (12). Meanwhile a study conducted in 2023 by Thorborg, k.reported better outcomes in management of mild to moderate symptoms of hip and groin with exercise and load training (13).

Average scores of pain domain were minimal suggesting mild to moderate pain due to groin injuries in represented population. A study conducted in Australia by Micheal k Drew reports a study conducted on athletes with groin injury which states that on HAGOS scale athletes reported minimal score in pain domain suggesting not severe level. But in Function of daily life and sports and recreational activities they score slightly high. These results also align with the results of this study as the average score of functions and sports and recreational activities is measures on moderate to severe level suggesting that footballers have moderate difficulty in performing tasks related to these domains (14).

The Domain quality of life scores are in moderate level which means that hip nd groin region problems can also effect the QOL of a footballers. The can feel mild to moderate level of disturbance in their QOL. According to a study by Verma et al., athletes may experience acute or overuse injuries to their hip and groin areas, which could negatively impact their quality of life. Early management of muscle strains and prevention protocols can be helpful in betterment (15). In the answer to question if footballers feel that they have any problem in their groin and hip region majority answer yes to this question. The overall scores are on moderate level suggests that prevalence of hip and groin injuries in football players is on mild to moderate level. The maximum score was 80 and the minimum score was 37. The results of the study conclude that majority of footballers have hip and groin related pain, symptoms and difficulties but at moderate level. The study conducted by Coburn et al.,

in 2024 states that hip/groin related issues and injuries are becoming common in athletes due to overtraining, overuse, detraining, improper training and delayed management (11).

## CONCLUSION:

The study found a high prevalence of groin injuries in footballers aged 18-24 years, with a 43.6% prevalence rate. These injuries significantly impact hip and groin function, with adductor strains being the most common. Players with previous groin injuries had higher chances of new injuries and lower HAGOS scores. The study recommends active prevention strategies and management approaches, using tools like the HAGOS questionnaire, and focusing on personalized attention for players.

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