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PREVALENCE AND FUNCTIONAL IMPACT OF HIP AND GROIN PAIN AMONG RECREATIONAL ATHLETES

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Abstract

Background

Pain in the hip and groin region decreases the performance level of athletes, and it may affect the strength of the muscles in this region, cause changes in movement patterns, and also cause restrictions in performing their recreational activities. In Pakistan, the rate of prevalence of hip pain is around 15.1 percent, while groin region of strain arises in up to 31.3 percent of athletes.

Objective

To determine the prevalence and functional impact of hip and groin pain among recreational athletes.

Methodology

A cross-sectional study was conducted among athletes from March 2026 to September 2026. The subjects were selected from sports clubs and multiple gyms in Karachi. The sampling technique was non-probability convenience sampling. The sample size was 241. In

this study, a validated tool was used, i.e., the Copenhagen Hip and Groin Outcomes Score questionnaire. The analysis of data was done through SPSS version 23.0 software.

Result

A total of 241 research participants were recruited for the study. The level of pain felt in the hip or groin area, as rated on the visual analog scale rating around 73 (30.29%); participants reported a moderate to severe level of pain. Around 96 (39.83%) felt difficulty walking upstairs, and around 86 (35.68%) said they felt difficulty in doing heavy domestic duties.

Conclusion

The conclusion of the study is that hip and groin pain is presented with limitation of movement, which affects the quality of life of individuals who participate in sports.

INTRODUCTION

Hip and groin pain is a major problem in sports or recreational activities which involves the rapid acceleration, sprinting, and sudden direction changes. Pain and injuries can give the bad impact on the performance of the player. [1] Pain in the hip and groin region decreases the performance level of the athletes, and it may affect the strength of the muscles in this region, cause changes in movement patterns, and also cause restrictions in performing their recreational or sports activities. [2] Injuries in the groin area may affect the adductor muscle of the hip, iliopsoas, inguinal, pubic, and hip-related issues that cause the pain. Hip-related groin pain in athletes results from impingement of the femoroacetabular joint and labral tears. [3] Most athletes have facing the issues with deep inguinal region pain during internal rotation and sprinting. The main causes of hip and groin includes degeneration of the joints, muscle strain, structural impingement, tears in the labrum, inflammation of the tendons and bursa, etc. [4] Most of the time, people feel pain in the groin and hip region, and the reason is a hernia and referred pain from the spine. [5] When we consider the prevalence, only pain in the groin region is about seventy to ninety percent. To minimize the injury risk, it's better to understand the ergonomics and posture of the participants during play. [6]

In Pakistan, the rate of prevalence of hip pain is around 15.1 percent, while groin region of strain arises in up to 31.3 percent of athletes. [7] Overall, the annual prevalence ratio up to 55 percent to 61 percent in sports teams. And the specifically estimated amount of hip and groin pain is around 5 to 6 percent of all sports-related injuries. [8] Recent research of the studies evaluating the pathologies of athletes and non-athletes was on the same page regarding prevalence rates with or without pain. [9] Chronicity of symptoms is associated with greater difficulties in activities of daily living, reduced quality of life, and impaired athletic performance. [10]

The functional impact of hip and groin pain affects sports and exercise by decreasing the range of motion through pain and stiffness, reducing muscle strength, which affects the person's performance and overall endurance, and symptoms of different conditions like labral tears or impingement cause catching, locking, or popping in the joint. [11] Hip and groin pain severely limits physical mobility, making basic daily tasks like walking, sitting, and climbing stairs difficult or painful. [12] In people withlong–standing hip and groin pain, the symptoms may vary, limiting an individual's ability to take part in physical activities and also reducing the quality of life of an individual. [13] Treatment of hip-related groin pain involves education, modification of activity level, and exercise-based therapy, with the potential benefit of arthroscopic hip surgery. Otherwise, most of the patients were referred for consideration of surgery. [14] The study aim is to determine the prevalence and functional impact of hip and groin pain among the recreational activity participants.

METHODOLOGY

A cross-sectional study was conducted among the athlete population of Karachi from March 2026 to September 2026. The subjects were selected from the sports clubs and multiple gyms of Karachi. The sampling technique was non-probability convenience sampling. The sample size of 241 was calculated through Raosoft.com software at a confidence level of 95% with a 5% margin of error. Inclusion criteria: both male and female athletes, age group between 16 years and more than 31, athletes who engaged in long-distance running, Cycling, Yoga/Pilates, and Swimming and those who have groin pain and symptoms exist from: Less than 3 months, 3-6 months, Greater than 6 months In the exclusion criteria, any athlete who have comorbid disease or pathological condition and those who were not willing to participate in the study were excluded. All the patients were previously informed about the protocols of the study, and the written consent form was taken before the collection of data. In this study a there were a validated tool was used i.e., the Copenhagen Hip and Groin Outcomes Score questionnaire that ha 6 subscales for the assessment of Pain (10 items), Symptoms (7 items), Physical function in daily routine (5 items), Physical function in Sports and Recreation (8 times), Physical Activities participation (2 items) and Quality of Life related to groin or hip region (5 items). The analysis of data was done through SPSS version 23.0 software. The frequencies and percentages were calculated, and the P value ≤0.05 was considered as the level of significance.

RESULT

A total of 241 research participants were recruited for the study. The demographic data of the research participants, based on age between 16 years and more than 31 years old, showed that around 79(32.78%) research participants were aged 21 to 25 years; the gender of the research participants, in which around 157(65.14%) males were included in this study; and most of the research participants were doing long-distance running, around 92(38.17%), as shown in Table No.1:

Table No.1: Demographics of the Research Participants

S.No.	Variables	Frequency (%)
1.	**Age in years**	
	16-20	53 (21.99%)
	21-25	79 (32.78%)
	26-30	63 (26.14%)
	>31	46 (19.08%)
2.	**Gender**	
	Male	157 (65.14%)
	Female	84 (34.85%)
3.	**Recreational Activity**	
	Long distance running	92 (38.17%)
	Cycling	45 (18.67%)
	Yoga/Pilates	67 (27.8%)
	Swimming	37 (15.35%)
4.	**Duration of Symptoms**	
	Less than 3 months	95 (39.41%)
	3-6 months	64 (26.55%)
	Greater than 6 months	82 (34.02%)

When we asked the research participants about the level of pain felt in the hip or groin area by following the visual analog scale rating, around 73 (30.29%) participants reported a moderate to severe level of pain, as shown in Figure No.1:

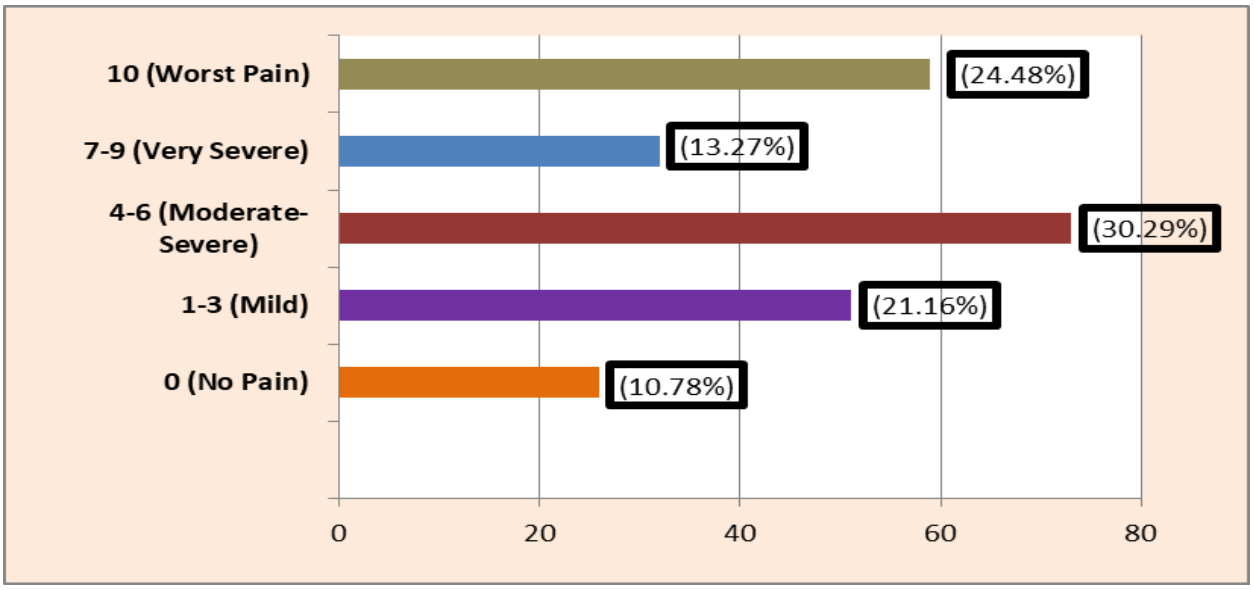


Figure No.1: Visual Analog Scale (VAS)

We asked the research participants about hip or groin pain and disability using the Copenhagen Hip and Groin Outcome Score (HAGOS) questionnaire. This questionnaire is designed for young to middle-aged, physically active patients who had a complaint of hip and groin pain.

When asked the research participants about the symptoms of hip and groin pain during the past week. They replied that around 89 (36.92%) felt a stabbing sensation, and around 72 (29.46%) replied that they heard a clicking sound often, as shown in Figure No.2:

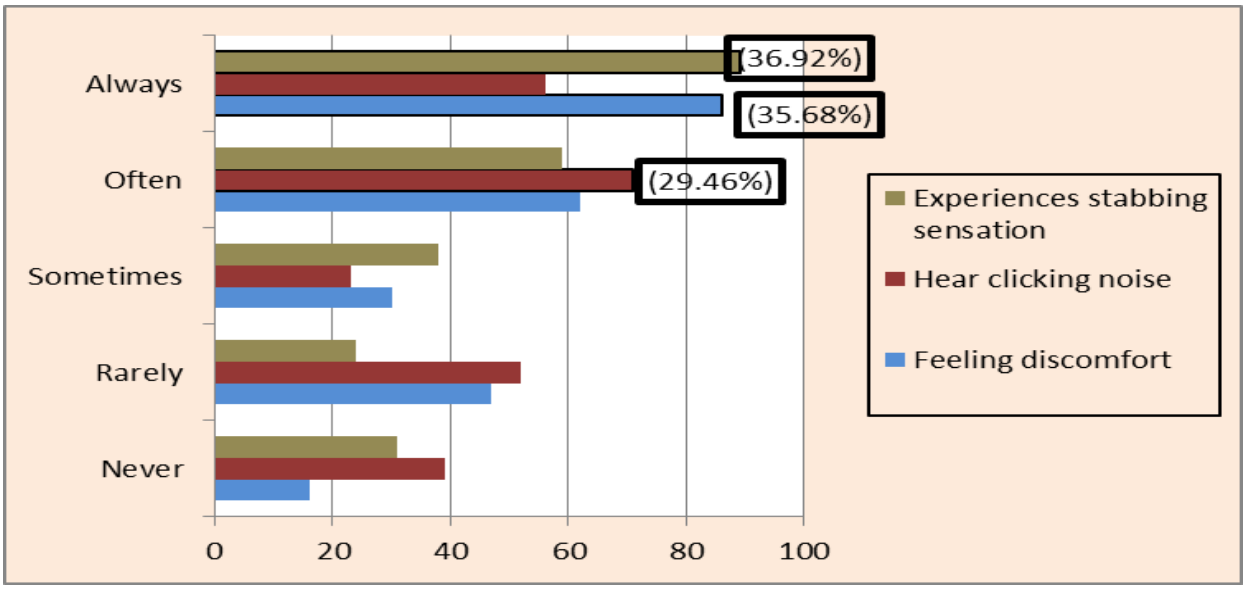


Figure No.2: Hip and/or Groin Symptoms During Past Week

The researchers asked the participants whether they felt stiffness in the hip and groin region. They felt stiffness after sitting, lying later in the day, in around 94 (39.00%), and they felt stiffness after first awakening in the morning in around 83 (34.43%), as shown in Figure No.3:

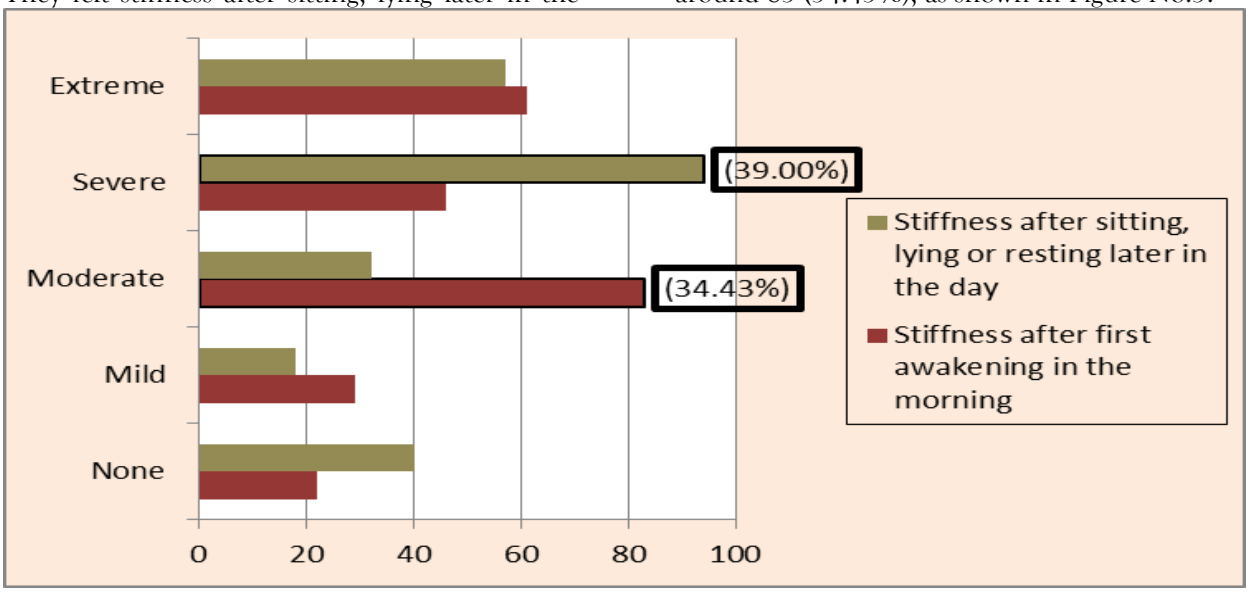


Figure No.3: Stiffness During Past Week

When asked about the pain during the past week, most of the research participants, around 81 (33.60%), said they felt pain daily around the hip or groin pain as shown in Figure No.4:

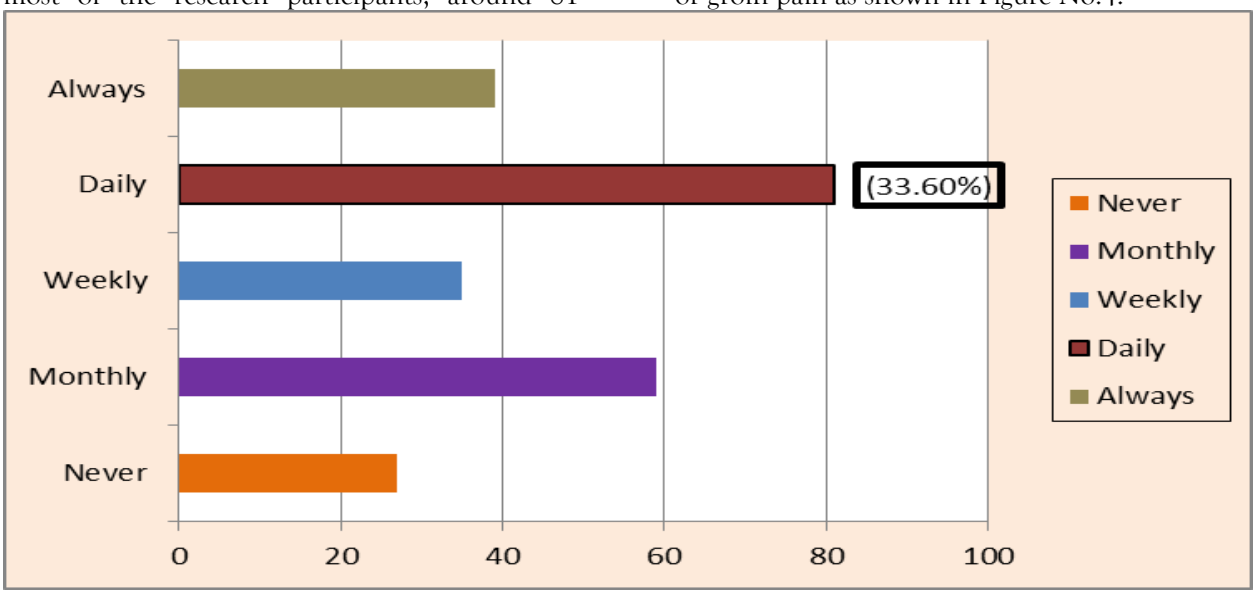


Figure No.4: Pain During the Past Week

When asked about the degree of difficulty they experienced in the past week. The research participants replied that around 96 (39.83%) felt difficulty in walking upstairs, and around 86 (35.68%) said they felt difficulty in doing heavy domestic duties, as shown in Figure No.5:

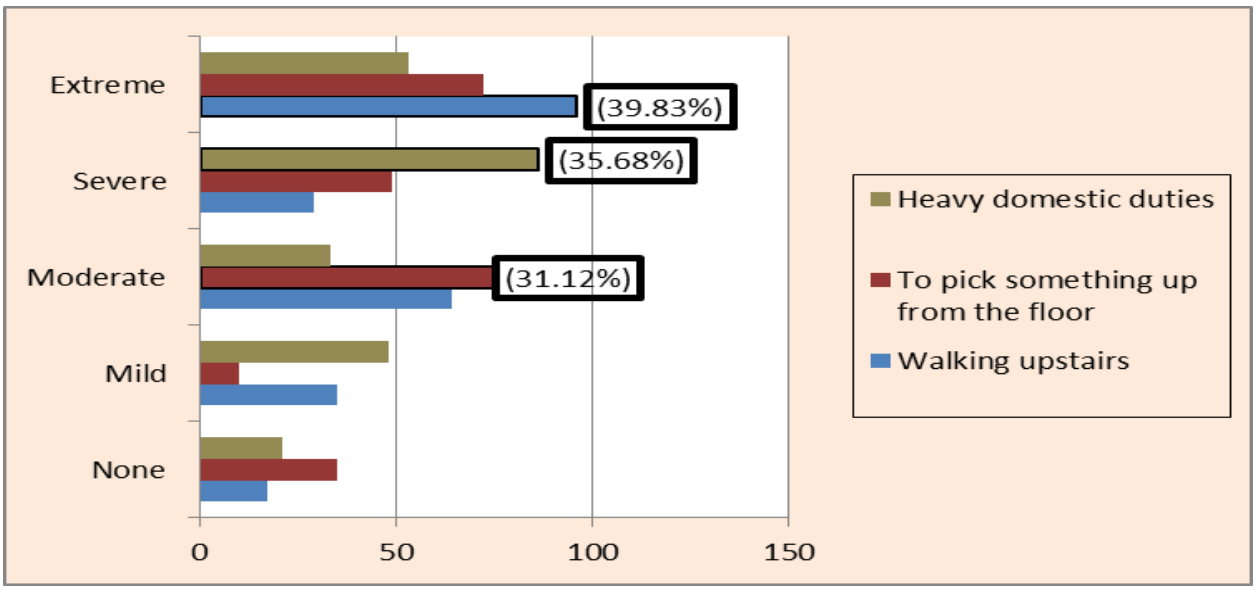


Figure No.5: Degree of Difficulty Experienced in the Past Week

When asked, the research participants felt difficulty in performing sports and recreational activities in the past week. Around 108 (44.81%) replied that they felt difficulty in bringing the leg forward forcefully, as shown in Figure No.6:

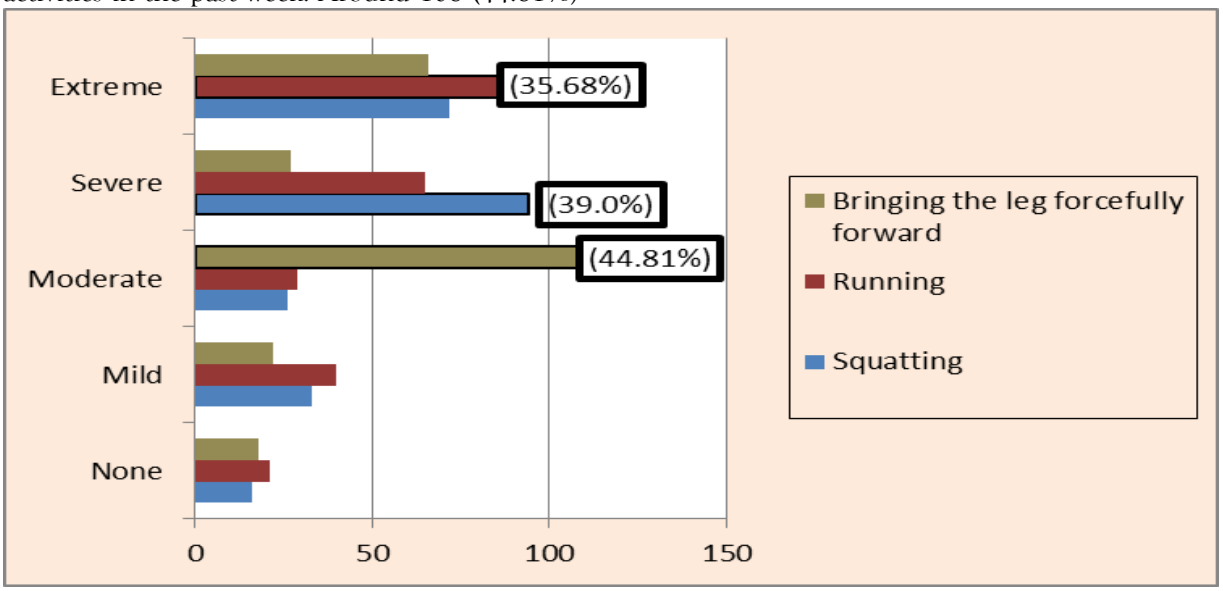


Figure No.6: Difficulty in Performing Sports Activity in Past Week

When asked the research participants whether they participated in physical activities during the past week. Around 102 (42.32%) participants said that they were able to participate in physical activities at a normal performance level, as shown in Figure No.7:

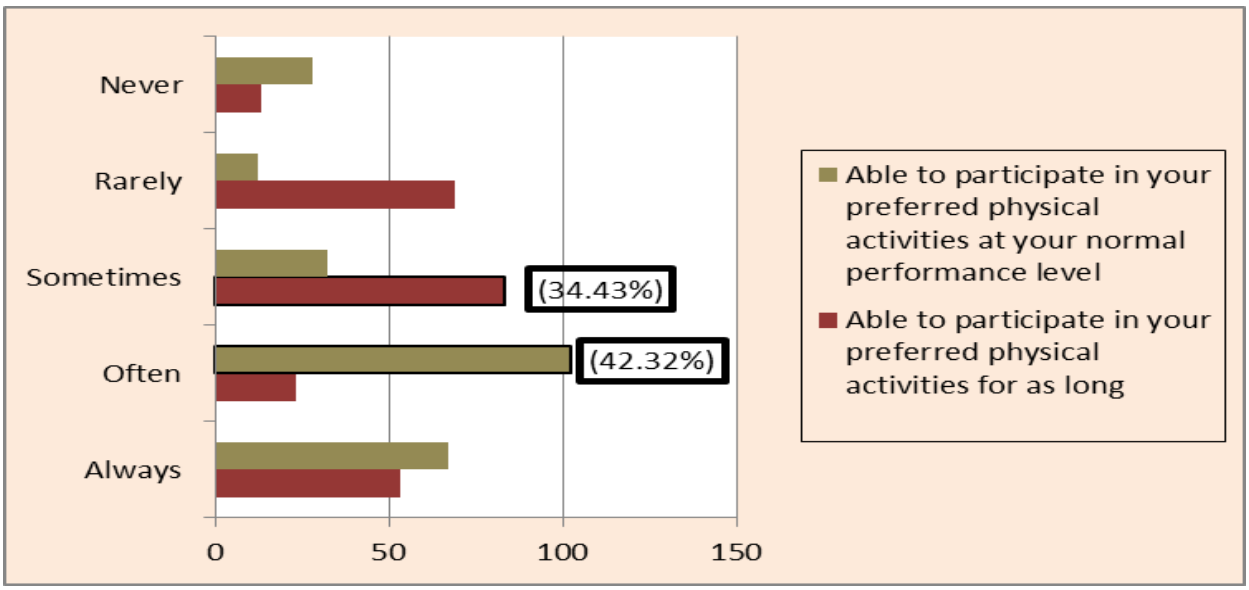


Figure No.7: Participate in Physical Activities During the Past Week

When asked the research participants about the quality of life. They replied that around 90 (37.34%) reported that the mood affects negatively at an extreme level, as shown in Figure No.8:

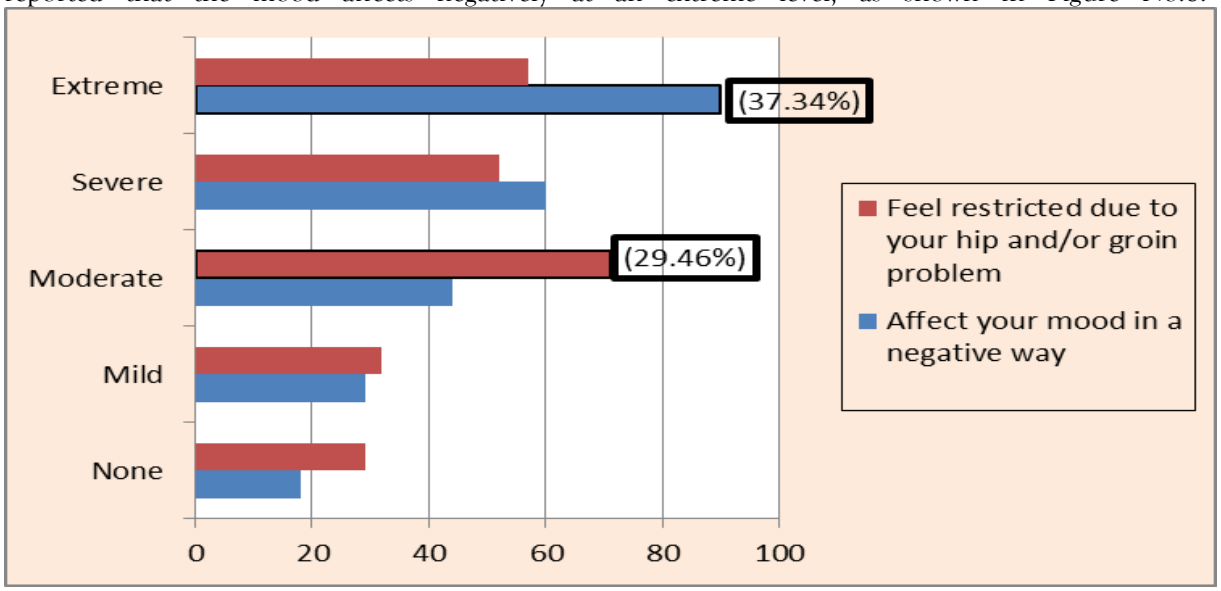


Figure No.8: Quality of Life (QOL)

DISCUSSION

Groin and Hip pain have a high prevalence rate among people who engage in sports activities, which can cause limited movement and affect their performance because these two regions are working as the major weight-bearing areas of the lower region and are engaged in repetitive activities which can lead to sports-related injuries.[15] The groin pain is classified into three main types of pain such as: iliopsoas pain, which is more common in female athletes and caused by repetitive flexion of the hip; adductor pain is common in hockey, running, and soccer players, and the patient complains of pain during adduction and the adductor squeeze test is positive.[16] Another common pain is hip-related groin pain, which can be associated with femoroacetabular impingement syndrome and common cause of chronic illness.[17] The current study was done to determine the prevalence and functional impact of hip and groin pain among recreational activities.

According to the research, the ranges of VAS in pre- and post-ultrasound of intra-articular hip injection decreased by up to 50%, and they reported that the primary symptom of patients was hip joint pain [17]; as compared to this, in our research participants, the level of pain according to the VAS (Visual Analogue Scale) was observed at around 30.29%, a moderate to severe level of pain.

A research reported, stabbing sensation is a main symptom which is usually comes along with hip and groin pain, which can cause irritation and nerve compression during hip movement. They also observed that actual hip pain is always felt from the front of the groin area as compared to the outer part of the hip joint. Additionally, the sensation of stabbing could be felt when the hip joint moves in a particular position or a certain nerve is triggered. [18] In our study, the symptoms of hip and groin pain among the research participants during the past week was around: 36.92% felt a stabbing sensation, and 29.46% heard a clicking sound.

Stiffness usually comes along with hip pain, and the causes of pain are hip osteoarthritis, labral tear of the acetabulum, and femoral impingement.[19] Because of the location of the hip, which is around the pelvis, deep and sharp pain within the groin area occurs.[20] In our study, a feeling of stiffness during and after sitting and lying is reported in around 39.00% of research participants; furthermore, they felt stiffness after first awakening in the morning in around 34.43%, and the complaint of hip or groin pain during the past week among the research participants was around 33.60%

The degree of difficulty in walking upstairs in the past week among the research participants was around 39.83%, and around 35.68% had difficulty in doing heavy household activities. Previously a research suggested Hip pain while walking upstairs is usually due to hip osteoarthritis, bursitis, impingement syndrome, etc. [21] While we climb the stairs, biomechanically the pressure and weight on the hip joint

increase by 6 to 8 times; this causes pain and irritation of the nerve and other connective tissues in the area.[22]

According to the study, the ratio of sports injuries was 5 to 6 percent. As the hip is the largest weight-bearing joint of our body, the main barrier to hip joint pain is the participation of an affected person in sports and recreational activities.[23] In our study, the question related to sports performance and recreational activities like long-distance running, Cycling, Yoga/Pilates, and swimming in the past week: around 44.81% felt difficulty in bringing the leg forward forcefully, while about 42.32% of research participants were able to participate in physical activities with normal performance

Research reported that the quality of life of the affected individual can be affected by the impairment in daily mobility, sleep disturbance, increased mental stress, anxiety, and depression.[24] In our study, a negative effect on quality of life was seen in around 37.34% who reported that their mood was at an extreme level.

CONCLUSION

The study concluded that hip and groin pain generally comes along with functional limitation and a reduction in quality of life in those individuals who engaged in recreational activities and sports. The majority of research participants complained of moderate to severe pain, difficulty climbing stairs, limitation in the performance of sports activities. In addition, hip and groin pain can affect the mood of a person. These observations show the importance of early detection of the problem, which can help to make a specific treatment plan and preventive measures to reduce disability and enhance the participation of an individual in sports and recreation activities.

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