

## Prevalence of Shoulder Pain Among Male Weight Lifters in Quetta City

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**DOI: 10.5281/zenodo.13102068**

### ABSTRACT

Shoulder pain is a common symptom that have a lot of causes during weight lifting. I conducted this study to find out the prevalence of shoulder pain and its cause among the Male weight lifters of Quetta city, Pakistan, as the shoulder is the most mobile joint in human body and weak in stability, almost all of the gym exercises need shoulder joint to move somehow, which make it susceptible and prone to injury due to high load poor mechanics, poor diet, genetics, poor lifting technique, warm up and warm down. These injuries than lead to various from of deformities and also affect performance if not diagnose and treated on time. Shoulder long lever (type-III) activities mostly front raise and lateral raise as well as compressive glen humeral joint forces causes most of injuries. The most common form of injuries that causes shoulder pain is rotator cuff muscle strain, sub acromial bursitis, SLAP tear, sprain and neurological involvement.

**Keywords:** Shoulder, Mobile, Genetics, Lever, Rotator Cuff, Mechanics, Warmup & Warm Down, Sub Acromial Bursitis, Strain & Sprain, Slap Tear.

**Cite as:** Muhammad Ammar Kakar. (2024). Prevalence of Shoulder Pain Among Male Weight Lifters in Quetta City. *Mader E Milat International Journal of Nursing and Allied Sciences (MINAS)*, 2(2), 1–21. <https://doi.org/10.5281/zenodo.13102068>

### INTRODUCTION

shoulder pain is the most common cause of shoulder injuries among the weight lifters because it is the site which is most mobile, weight bearing but weak joint in human body (David J. Kennedy, MD, Ryan Mattie, et al in 2022), when a person lift weight the shoulder is necessary to move in almost all the exercises of upper limb .it consist of push and pull forces. so it is more prone to get injured, mainly the tissues that covers and stabilize the shoulder joint, further more secondary factor also contribute to the injury which include poor mechanics, lifting technique, poor diet, sleep, genetics, warm up and warm down, age, the long lever and smaller muscle anatomy of the stabilizer of shoulder joint as well as muscle trigger points (Carel Bron, Jan Dommerholt et al in 2022). As pain is the indication or alarm of any pathology, injury or deformity which indicate that there is some problem related to your joint capsule, rotator cuff & surrounding muscles ligament and tendons that around the glenohumeral joint (David J. Kennedy, MD, Ryan Mattie, MD et al in 2019). weight lifters or gym players either they are doing it for fitness or doing it for events professionally, if they lift it improperly or even properly it can cause pain because the weight they are lifting is itself a risk to develop injury and if it is performed with more repetitions ,poor techniques and high repetition sets it further increases the chance to get injured, further more if there is improper stretching or improper warm up and due to poor diet, due to joint disorders like OA(Travis J Menge, Robert E Boykin ,et all in 2018) it additionally increases the chance

to get injured ,moreover there are some joint pain even still is idiopathic(Carel Bron, Jan Dommerholt, at all in 2020).

The causes of shoulder injury can be due to injured rotator cuff, pectoral, latissimus dorsi, bicep and related muscle that insert the humerus, adhesive capsulitis, sub acromial and rotator cuff's bursitis, acromioclavicular fracture (Rebecca Freedman & Jasmin Harounian in 2019), humeral fracture, slap tear(Bynvant Sandhu, Sanjay Sanghavi, et all in 2021), osteoarthritis, nerve entrapment or nerve related pain(Paul C. Bucy, M.D.H. R. Oberhill, M.D. in 2023).

## LITRATURE REVIEW

Dynamic stretching before engaging in exercises or workouts prepares the shoulder muscles for physical stress, reducing the likelihood of injury during physical activities. By making a thoughtful selection and timing of stretching techniques, individuals can experience improved flexibility, strength, and injury prevention. For optimal results, dynamic stretching should be prioritized as a warm-up method before engaging in physical activities. Future research in this area should target on the long-term effects of these measures and explore additional interventions to strengthen the rotator cuff and surrounding structures. Ultimately, embracing a comprehensive approach to rotator cuff care will contribute to better musculoskeletal health and a higher quality of life for individuals across various age groups and physical activity levels. Prajyot Ankar , Pallavi Harj in (2024).

The prevalence of musculoskeletal pain in shoulders was 88.75%, elbow 84.58%, neck 84.16%, wrists/hands 84.16%, upper back and lower back 92.08%, hips 93%, knees 92.9% and ankles/foot 22.08% in weight-lifters of Lahore, Pakistan.,Zeeshan Asghar,Muhammad Jawad Tahir,et al in (2023). A percentage of 43.3% of powerlifters complained of problems during routine workouts. Injury rate was calculated as 0.3 injuries per lifter per year (1 000 h of training=1 injury). There was no evidence that intrinsic or extrinsic factors affected this rate. Most commonly injured body regions were the shoulder, lower back and the knee. The use of weight belts increased the injury rate of the lumbar spine. Rate of injury to the upper extremities was significantly increased based on age >40 years (shoulder/p=0.003, elbow/p=0.003, hand+wrist/p=0.024) and female gender (hand+wrist/p=0.045). The daily workout of a large proportion of powerlifters is affected by disorders which do not require an interruption of training. The injury rate is low compared to other sports. Siewe:J. Rudat, M. Röllinghoff et all in (2023).

The shoulder is the most commonly affected body region, followed by the lumbar spine, knee region, elbow, cervical spine, hand/wrist, sacroiliac joint, hip, thoracic spine, foot, and finally, the ankle joint. Notably, clear gender differences in the distribution of pain locations are evident. The data underscore a disconnect between the often-substantial training volume and the absence of professional guidance, which frequently results in injuries and pain among athletes. Addressing the causes of these pain symptoms should be a paramount objective of sports medicine to implement preventive measures against potential injuries. Maria A. Bernstorff, Norman Schumann ET all in (2023).

The prevalence of injuries among gym members was 29.2%. They also found that their study show less injuries comparing to other studies that has previously done, However, mostly male are affected. The most common sites of injury were the shoulder, foot, and back. The most common causes of injury were tearing, severe and stress. Furthermore, our study show that these injuries affect the quality of life. Alnasser, Suhad Alyamani, Anas AlDawod, Ibrahim Almujiil, Ahmad in (2022).

A total of 187 (19.1%) individuals completed the survey. Forty-four (23.5%) indicated that they had experienced a shoulder injury during CrossFit training over the previous 6 months. Of those who reported injury, 17 (38.6%) stated that this injury was an exacerbation of a previous injury sustained prior to starting CrossFit. There was no significant relationship between several demographic and training variables and shoulder injury. All shoulder injuries occurred at a rate of 1.94 per 1000 hours training, while “new” shoulder injuries occurred at a rate of 1.18 per 1000 hours training. The most commonly attributed causes of injury were improper form (33.3%) and exacerbation of a previous injury (33.3%). Twenty-five (64.1%) of those who experienced injury reported 1 month or less of training reduction due to the injury. (Ryan J. Summitt, Ryan A., and Emily J. Slaven, et al. 2022).

Shoulder pain and disability are very prevalent in bodybuilding reaching up to 67.2% in lifetime prevalence of bodybuilders. (Almalki, et al in 2022).

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16% of gym instructors suffered with injuries of shoulder, low back and knee. About 82% of gym instructors had pain in various body areas. The prevalence of pain and injuries was high in gym instructors which demands fitness industries to adapt prevention strategies. (Shinde , Priya et.al2021). The prevalence of musculoskeletal injury was 47.3% and the most injured body part was the shoulder (41.8%). There was significant association between the prevalence of injury and lack of supervision ( $p = 0.01$ ), and between the prevalence of injury and training multiple times a day ( $p = 0.03$ ). (Muonwe et.al in 2021).

Musculoskeletal shoulder injuries found to be quite common in weight lifters and both present with almost similar results, the frequency is more common in untrained weight lifters as compared to trained ones. (Nazir , Saeed et.al 2021).

A significant increase in the national estimate of weightlifting-associated shoulder injuries between 2000 ( $N= 8.073$ ; C.I. 6.309–9.836) and 2017 ( $N= 14.612$ ; C.I. 12.293–16.930) ( $p < 0.001$ ), with linear regression ( $R^2 = 0.87$ ,  $P < 0.001$ ) projecting 22.691 national cases by 2030. Patients were most often males (between 20–29 years of age (30.5 %; C.I. 28.2 %–32.8 %) sustaining a sprain, strain, or muscle tear (65.1%; C.I. 60.4–69.8%). Additionally, the average age of injury (34.33 years; C.I. 33.43–35.23 years) in the 2012–2017 period was significantly higher than in prior periods ( $p < 0.001$ ) ( Pirruccio, Kelly 2019).

Our study reflect older individuals more frequently participating in resistance training than in the past, and considered that contemporary fitness trends such as CrossFit might have higher injury rates. We believe increased awareness of this burden, coupled with focus on injury prevention strategies, could yield substantial national health and cost saving Pirruccio, Kelly 2019).

(73/104) of participants were currently injured, and 87% (83/95) had experienced an injury within the past 12 months. The lumbopelvic region, shoulder, and hip were the most commonly injured areas for both genders. Women experienced a significantly at higher frequency of injuries in the neck and thoracic region than men. Injuries occur during training, although only 16% (11/70) of those currently injured had to completely refrain from training. Risk factors are Training frequency, personal belt for dead lift, onset of injury during bench-press and dead-lift training, and dietary issues were associated

with current injuries., use of straps and alcohol consumption. Edit Stro,Ulrika Aasa, Kajsa Gilenstam et all in (2018).

Bodybuilding had the lowest injury rates (0.12–0.7 injuries per lifter per year; 0.24–1 injury per 1000 h), with strongman (4.5–6.1 injuries per 1000 h) and Highland Games (7.5 injuries per 1000 h) reporting the highest rates. The shoulder, lower back, knee, elbow, and wrist/hand were generally the most commonly injured anatomical locations; strains, tendinitis, and sprains were the most common injury type. Very few significant differences in any of the injury outcomes were observed as a function of age, sex, competitive standard, or bodyweight class. (Keogh Winwood, 2017).

weightlifting has low rate of injuries if it is compared with other type of sport. Juniors or children are mostly susceptible to fall of weight, whereas in adults more sprains and strains are reported. Whereas Shoulder girdle is the most common injured area with mostly involve more than other location like as lumbar spine, elbow, knee, hand, and wrist as well as bone develop osteolysis at the end of clavicle as causes micro trauma as a result of repeating bench press exercise. They also find out that players with short stretcher are at benefit biomechanically and are less susceptible to injury, (,Majed & Muaidi, Qassim in 2016).

Injury was defined fairly consistently across studies. Most studies were of low methodological quality. The spine, shoulder and the knee were the most common injury localisations in both sports. The injury incidence in weightlifting was 2.4–3.3 injuries/1000 hours of training and 1.0–4.4 injuries/1000 hours of training in powerlifting. Only one retrospective study had analysed possible risk factors. (Ulrika Aasa, Ivar Svartholm, Fredrik Andersson, in 2016).

Injuries among weightlifters and powerlifters: a systematic review | British Journal of Sports Medicine (bmj.com) (The risk of injury in both sports were similar to other non-contact sports also requiring strength/power, but low compared to contact sports. The severity of injuries differed in the included studies. Since little has been studied regarding possible risk factors to injuries, further research is therefore warranted to explain why athletes get injured and how to prevent injuries. Irika Aasa,Ivar Svartholm,Fredrik Andersson,Lars Berglund in (2016)resistance training causes shoulder pain mainly due to gym training (morey j. kolber, et al2010) the clinical features and management of pectoralis minor insertional tendinopathy, secondary to the bench-press type of weightlifting. A new pain site-based classification of shoulder pathology in weightlifters is suggested of the pectoralis minor muscle (Bhatia1,et.al 2007).

The back (primarily low back), knees, and shoulders accounted for the most significant number of injuries (64.8%). The types of injuries most prevalent in this study were strains and tendinitis (68.9%). Injuries of acute (59.6%) or chronic (30.4%) nature were significantly more common than recurrent injuries and complications. The recommended number of training days missed for most injuries was 1 day or fewer (90.5%). Injuries to the back primarily consisted of strains (74.6%). Most knee injuries were tendinitis (85.0%). The majority of shoulder injuries were classified as strains (54.6%). Rates of acute and recurring injuries were calculated to be 3.3 injuries/1000 hours of weightlifting exposure. (Gregg Calhoon et.al 1999)

## **Conceptual Framework**

### **Rotator Cuff Disease**

Is a partial tear of rotator muscle tendon or muscle itself which causes pain with rest and exacerbate with activity of same muscle and become swelled which constrict the sub acromial space further causes sub acromial impingement syndrome

### **Adhesive Capsulitis (Frozen Shoulder)**

Is swelling of joint capsule which causes Chronic pain and decreased ROM in the shoulder joint. Commonly seen at the age of 40s to 60s but is more common in young diabetic patient. It may recover itself over a period of years, but causes significant pain and functional limitations in the meantime)

### **Glenohumeral Joint Pain:**

Generally, shoulder pain causes due injection to the shoulder joint. Among 100% sample, 18% had neck pain and 6% had scapular pain. Pain radiate distally, with anterior forearm in 9%, posterior forearm in 8%, and hand pain in 9%. But not bellow elbow and neck (David J. Kennedy, MD, Ryan Mattie, et all)

### **Bursitis Relate Pain:**

Bursa present in between the tendons of rotator cuff muscle or sub acromial area are sometime inflamed and causes edema due to which the process of nociception is activated. Risk factor are heavy weight lifting, cumulative or repetitive activity.

### **Idiopathic and Muscular Pain:**

Shoulder pain is most common and can be recurrent or persistent despite medical treatment. The pathophysiology is still unknown. moreover, there is little evidence supporting the effectiveness of current treatment protocols. Although myofascial trigger points may be a cause of myofascial pain syndrome( Carel Bron,Jan Dommerholt,et,all).

High prevalence of shoulder girdle muscles with myofascial trigger points in patients with shoulder pain .

### **Osteoarthritis:**

Osteoarthritis of the acromioclavicular joint is a common cause of shoulder pain and causes significant degeneration . It is the most frequent disorder of the acromioclavicular joint and arise from a number of pathologic processes, including (degenerative), posttraumatic, inflammatory, and septic arthritis. Mostly pain occurs in the neck, shoulder, and/or arm, which further exacerbate the clinical scenario. (Menge, MD, Robert E. Boykin, et al).

### **Fracture:**

The most common broken bone in our body is clavicle. Scapular fractures are rare, clavicle are most commonly seen in young and middle-aged patients involved in high thrust activity and contact sports or road traffic accidents. Clinical examination reveals pain, swelling and decreased range of motion..(Miguel, Ruiz Ibán ,et.al).

### **Sub Acromial Impingement Syndrome**

a broad term which included rotator cuff tendinopathy, mild tears, and sub acromial bursitis. The Inflammation and pain are caused by compression of the supraspinatus tendon (most commonly), infraspinatus tendon, sub acromial bursa, biceps tendon, or other structures that pass through the space

between the lateral aspect of the acromion and the humeral head. Functionally impingement is problem with the mobility and stability of the rotator cuff muscles or the position and movement of the scapula. Risk factors for impingement include repetitive activity above the head, increasing age, stroke, Parkinson disease, poor mechanics or decreased strength and stability of the rotator cuff and other supporting muscles. pain of SIS is often chronic or with recurrent pain and dysfunction.

### **Neurological Causes of Shoulder Pain:**

Pain in the shoulder is mostly due to vertebral column, the brachial plexus, or the peripheral nerves of the upper extremity. Among spinal causes herniation of the intervertebral disk between the seventh cervical and first thoracic vertebrae is mostly seen in patient furthermore intraspinal neurofibroma at the level of the third and fourth cervical vertebrae, carcinoma of the pulmonary apex, in aneurysm of the subclavian artery, and in neurogenic sarcoma involving the radial nerve just above the elbow. Exquisite localization and sensitivity characterize small glomangiomas occurring in the subcutaneous tissues and small neurogenic sarcomas on subcutaneous nerves.. (Paul C. Bucy, M.D., Oberhill, M.D.)

### **Slap Tear:**

superior labrum anterior to posterior is the injury of the superior labrum begins posteriorly, spread anteriorly, stopping before or at the mid-glenoid notch and including the “anchor” of the biceps tendon to the labrum, this type of injury is called “SLAP lesion. The most common mechanism of injury was a compressive force to the Glenohumeral joint as a result of fall on an out-stretched arm, with the shoulder positioned in abduction and forward flexion at the time of the impact. The most common clinical complications were pain, greater with overhead activity, and a painful “catching” or “popping” in the shoulder.

### **Symptoms**

Symptoms vary patient to patient as a whole. Age, underlying medical conditions, body habitus and overall strength, and smoking status are all important considerations. Step by step history

1. Prior condition of shoulder
2. Location of current pain:
3. Localized or dispersed pain
4. Anterior, lateral, or posterior
5. Radiating pain patterns (radiation passes the elbow suggests a neurologic component)
6. Timing of pain onset: sudden onset or developed slowly? (clue: sudden onset suggests a tear)
7. Relative factors: cumulative stress or recent injury
8. Duration: acute =6 weeks, subacute =6–12 weeks, chronic = more than 3 months
9. Quality of pain: sharp, dull
10. Associated symptoms:
11. Weakness, Stiffness, Crepitus, Swelling (Clue: Fear of Recurrence Suggests Shoulder Instability)

Alleviating and exacerbating factors: pain at night, pain worse with overhead activities (pain at night is a classic symptom for tear but likelihood ratios [LRs] are not significant in systematic review).

Systemic factors: fever, numbness, weight loss, fatigue, dyspnea, chest pain.

### **Common Symptom Patterns**

- Rotator cuff injury: weakness, pain at night, sudden onset,
- Sub acromial impingement: lateral pain, subacute, worse with movement overhead
- Adhesive capsulitis: distal injury or chronic pain, progressive inability to reach over head, decreased mobility

## **METHODOLOGY**

### **Study Design**

Cross-Sectional Survey

### **Setting**

Data was collected from different Gyms of Quetta city.

### **Duration**

The Study was compiled in 2 and a half months

### **Sampling Technique**

Cross sectional study with Convenient Sampling Technique

### **Sample size/collection**

The sample size was taken as 200” from an assumed population of 8570 weight lifters from Quetta, Pakistan. Sample size was calculated through online sample size calculator

### **Inclusion Criteria**

Weight lifters male from age of 15- 50 years are included in this study

### **Exclusion Criteria**

Subjects with any history of Upper limb surgery or trauma were excluded. Subjects with upper limb deformities were excluded from the study.

Additionally, female was also excluded

My study also donot focuses on technique of exercise

### **Data collection tools**

Simple questionnaire

### **Ethical issues**

Every step was taken to ensure the privacy of subjects. The ethical committee and Department Nursing and Allied Medical Science Alhamd Islamic University, Quetta, approved to conduct the study in different gyms of Quetta city. The safety of collected data was ensured.

### **Data Analysis**

SPSS version 25. Frequency tables, pie chart & Percentages for categorical variables.

**DATA ANALYSIS AND RESULTS**

**Result**

**Statistics**

		do you feel pain after gym	which movement is painful	which exercises is painful	pain at night	flexion is painful
N	Valid	200	173	173	200	200
	Missing	0	27	27	0	0

**Statistics**

		is extension painful	is internal rotation painful	is external rotation painful	do you warm down yourself	number of glasses
N	Valid	200	200	200	200	200
	Missing	0	0	0	0	0

**Statistics**

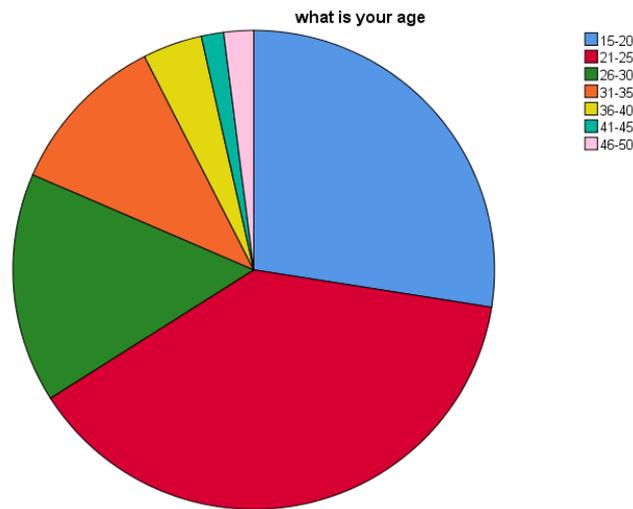
		do you warm up yourself
N	Valid	199
	Missing	1

**Frequency Table with Pie charts & descriptions:**

**what is your age?**

The age ranges from 15-50 years where 38.5% of respondents was among 21-25 years of age, 27% ranges from 15-20, 15.5% was 26-30, similarly 11.0 was from 31-35, 4% was from 36-40 ,2% was from 46-50 and 1.5% ranges from 46-50 years of age.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-20	55	27.5	27.5	27.5
	21-25	77	38.5	38.5	66.0
	26-30	31	15.5	15.5	81.5
	31-35	22	11.0	11.0	92.5
	36-40	8	4.0	4.0	96.5
	41-45	3	1.5	1.5	98.0
	46-50	4	2.0	2.0	100.0
	Total		200	100.0	100.0



**What is your weight?**

Around 39% were between 61-70kgs , 22.5 were 51-60 kgs & 71-80 ,3.5 were 81-90 kgs and only 2.5% were 40-50

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	40-50	5	2.5	2.5	2.5
	51-60	45	22.5	22.5	25.0
	61-70	78	39.0	39.0	64.0
	71-80	45	22.5	22.5	86.5
	81-90	27	13.5	13.5	100.0
	<b>Total</b>		<b>200</b>	<b>100.0</b>	<b>100.0</b>



**What is your height?**

Height of these individuals ranges from ,90% was in between 5-6 feet, 6.5% ranges from 6-7 feet and only 3.5% was in between 4-5 feet tall

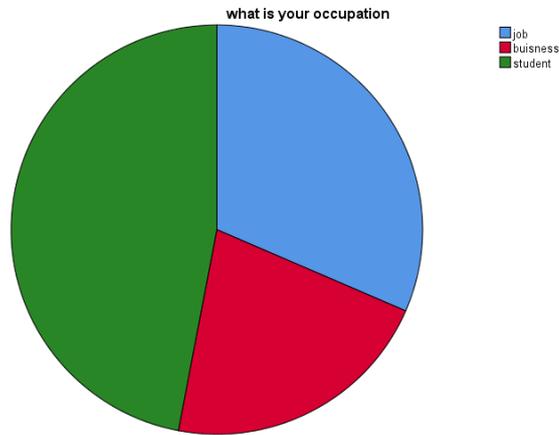
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	4-5	7	3.5	3.5	3.5
	5-6	180	90.0	90.0	93.5
	6-7	13	6.5	6.5	100.0
	Total	200	100.0	100.0	



**What is your occupation?**

Occupationally 47% were students ,31.5% was employs and 21.5% was businessmen.

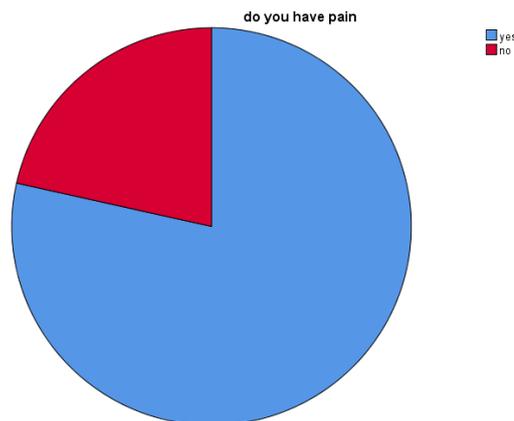
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	job	63	31.5	31.5	31.5
	business	43	21.5	21.5	53.0
	student	94	47.0	47.0	100.0
	Total	200	100.0	100.0	



**do you have pain?**

78.5% have shoulder pain on the spot and 21.5% do not. but 63% have pain after gym and 37% do not

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	157	78.5	78.5	78.5
	no	43	21.5	21.5	100.0
	Total	200	100.0	100.0	



**Do you feel pain after gym?**

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	126	63.0	63.0	63.0
	no	74	37.0	37.0	100.0
Total		200	100.0	100.0	

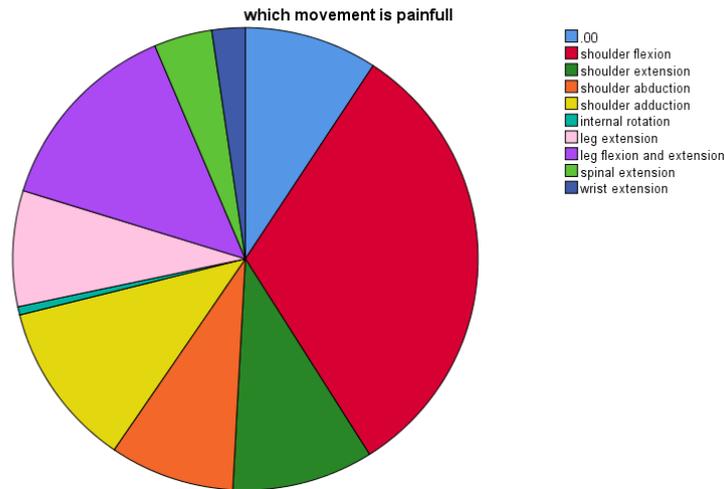


**which movement is painful?**

Pain always causes due to some noxious/causative factors here shoulder flexion was the most prominent factor which causes around 31.8% of pain, leg flexion and extension together causes 13.9%, shoulder adduction was 11.6%, shoulder extension was 9.8%, 9.2% don not have pain from any movement, shoulder abduction was 8.7%, leg extension was 8.1%, internal rotation of shoulder was 6%, 4% was spinal extension, and wrist extension was 2.3%.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	16	8.0	9.2	9.2
	shoulder flexion	55	27.5	31.8	41.0
	shoulder extension	17	8.5	9.8	50.9
	shoulder abduction	15	7.5	8.7	59.5
	shoulder adduction	20	10.0	11.6	71.1
	internal rotation	1	.5	.6	71.7
	leg extension	14	7.0	8.1	79.8
	leg flexion and extension	24	12.0	13.9	93.6
	spinal extension	7	3.5	4.0	97.7

	wrist extension	4	2.0	2.3	100.0
	Total	173	86.5	100.0	
Missing	System	27	13.5		
Total		200	100.0		

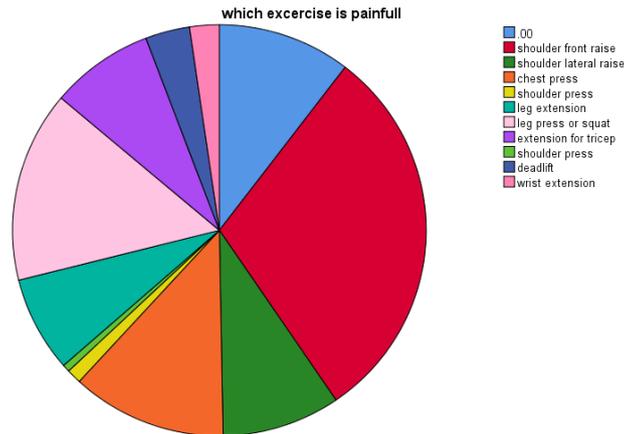


**which exercise is painful?**

These movements were result of some exercises where 30.1% of shoulder front raises were painfull,15% was leg press or squatting,12.1% was chest press,10.4 do not have any exercise painfull,9.2% was shoulder lateral raises,7.5 were leg extensions,7% tricep shoulder extension and5+ 1.2% were shoulder press exercise,3% were deadlift and only 2% were wrist extension.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	18	9.0	10.4	10.4
	shoulder front raise	52	26.0	30.1	40.5
	shoulder lateral raise	16	8.0	9.2	49.7
	chest press	21	10.5	12.1	61.8
	shoulder press	2	1.0	1.2	63.0
	leg extension	13	6.5	7.5	70.5
	leg press or squat	26	13.0	15.0	85.5
	extension for tricep	14	7.0	8.1	93.6
	shoulder press	1	.5	.6	94.2
	Deadlift	6	3.0	3.5	97.7
	wrist extension	4	2.0	2.3	100.0

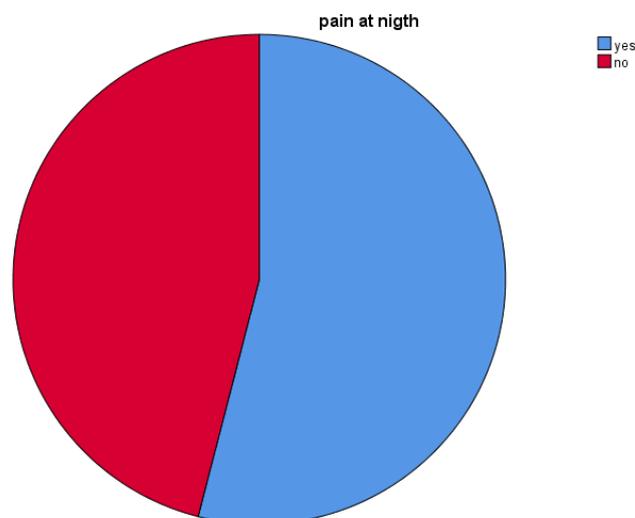
Total		173	86.5	100.0
Missing	System	27	13.5	
Total		200	100.0	



**Pain at night?**

54 % have nocturnal pain after gym and 46% do not.

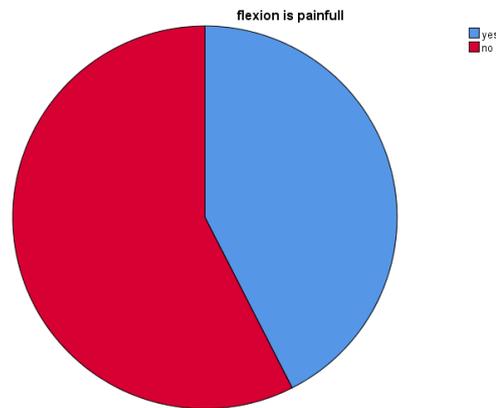
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	108	54.0	54.0	54.0
	no	92	46.0	46.0	100.0
	Total	200	100.0	100.0	



**Active flexion is painful?**

Active Shoulder flexion was painful in 42.5% and 57.5% individual's Active flexion was not painful

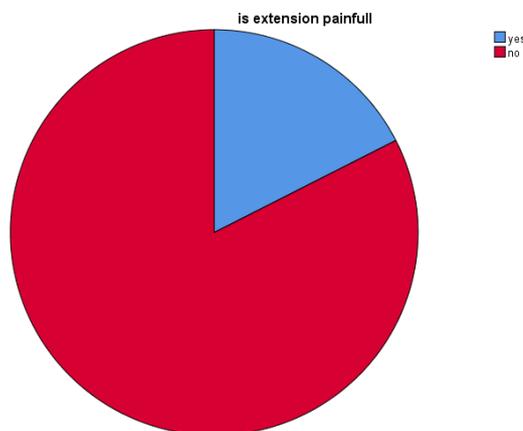
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	85	42.5	42.5	42.5
	no	115	57.5	57.5	100.0
	Total	200	100.0	100.0	



**Is active extension painful?**

17.5% active extension of shoulder was painful and 82.5% was not

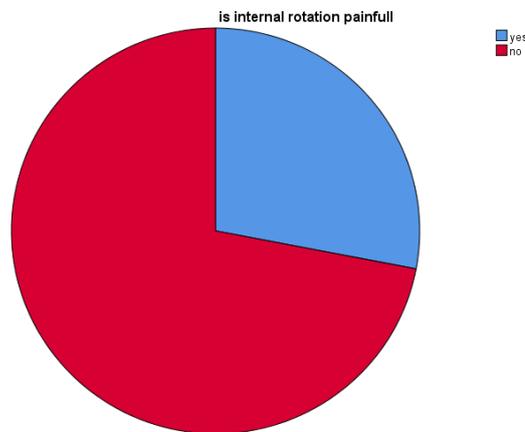
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	35	17.5	17.5	17.5
	no	165	82.5	82.5	100.0
	Total	200	100.0	100.0	



**Is internal rotation painful?**

active internal rotation of shoulder was painful in 28% individuals and 72% was not.

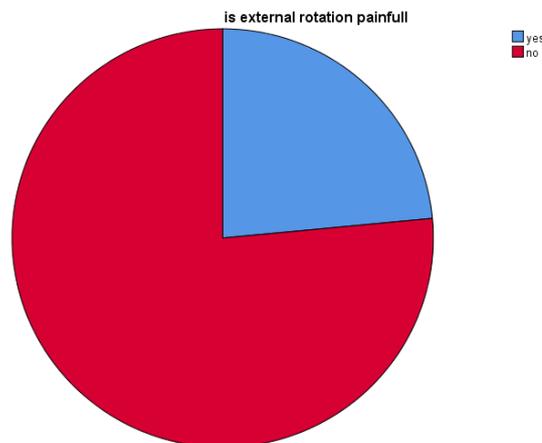
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	56	28.0	28.0	28.0
	no	144	72.0	72.0	100.0
	Total	200	100.0	100.0	



**Is external rotation painful**

23.5% of individuals shoulder active/isometric external rotation was painful but 76% individual was not.

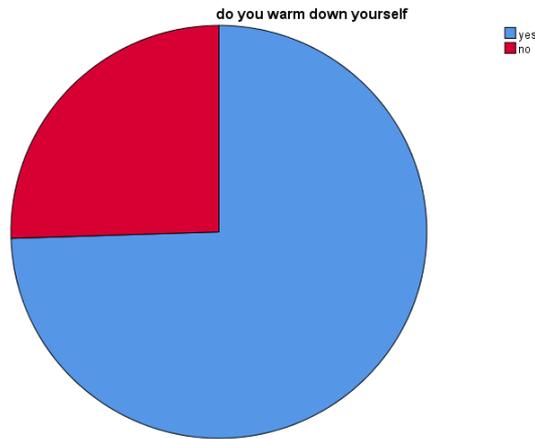
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	47	23.5	23.5	23.5
	no	153	76.5	76.5	100.0
	Total	200	100.0	100.0	



**Do you warm down yourself?**

74.5% individuals follow warming down and maintaining circulation after strenuous activity ,while 25.5% do not

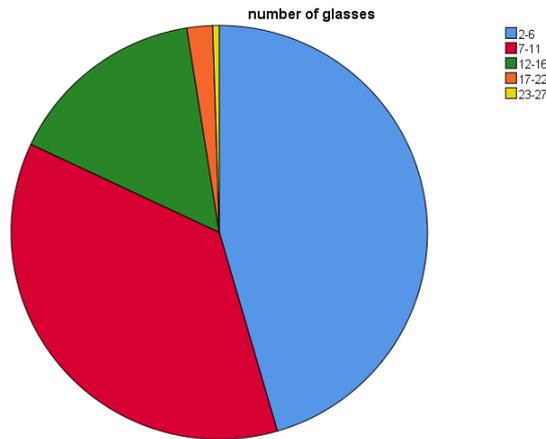
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	149	74.5	74.5	74.5
	no	51	25.5	25.5	100.0
Total		200	100.0	100.0	



**Number of glasses?**

Among them 45.5% took 2-6 glasses of water daily ,36.5 took 7-11 glasses,15.5% took 12-16 glasses ,5% was 23-27 and only 2% ranges from 17-22 glasses of water per day.

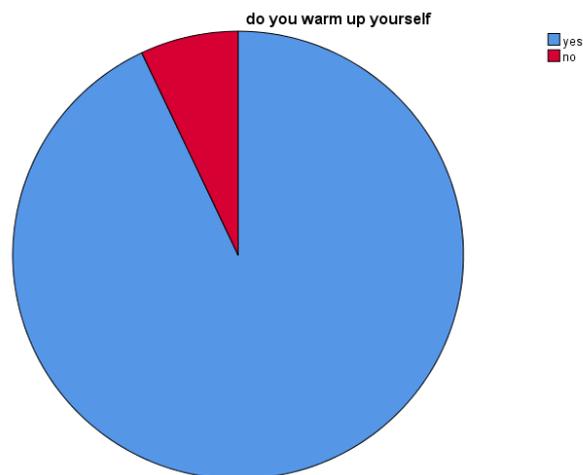
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2-6	91	45.5	45.5	45.5
	7-11	73	36.5	36.5	82.0
	12-16	31	15.5	15.5	97.5
	17-22	4	2.0	2.0	99.5
	23-27	1	.5	.5	100.0
Total		200	100.0	100.0	



**Do you warm up yourself?**

warmup is also important to prevent injury where 92.5% individuals follow warmup where 7. % do not.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	185	92.5	93.0	93.0
	no	14	7.0	7.0	100.0
	Total	199	99.5	100.0	
Missing	System	1	.5		
Total		200	100.0		



### **Analysis**

A total number 200 male gym players were studied from Quetta city, among 78.5% were having shoulder pain on the spot but 63% were having pain after gym and 54% have pain at night where the most affected age group, where 38.5% were among the age of 21-25, and 39% individual's weight was 61-70 kgs, 90% of them was 5-6 feet tall, where 47% among them was students and the most painful movement was shoulder flexion around 31.8% and shoulder front raise was the most risky and exacerbating exercise which causes around 30.1% of pain due to weight lifting. Among them 74.5% individuals warm down their selves after exercise and 92.5% individuals warm up their self before starting exercise, similarly the hydration status of most of individuals was 2-6 glasses of water per day around 45.5% of individuals.

## **CONCLUSION AND RECOMMENDATIONS**

### **Conclusion**

This study concludes that most of the gym going individual feel shoulder pain the most during and after gym (at night) and other area were low back, wrist & knee. Most of them were students around the age 21-25 years of age 61-70 kg of weight and height of 5-6 feet, the most painful movement during weight lifting was shoulder flexion, abduction and horizontal adduction, these are the movement that mostly pressurize the rotator cuff muscles and joint internal structures, while painful exercises were shoulder front, lateral raises, arm extension for triceps and chest press. It was also noted that, most of these individual are unable to take proper amount of water but many of them do proper warm up and cool down before starting gym and after ending session. The weather of Quetta was cold which may also affect the status of injury.

### **Recommendations**

Using Proper, technique of lifting weight, proper ergonomics (using belts, grips and gloves), diet with high intake with proper RDA according to their weight, age and height (protein, carbohydrate, lipids, vitamins and mineral) hydration (8-12 glasses), sleep of 8 hours, warm up before starting exercise, warm down after ending session and proper diagnosis with treatment and rest can reduces the risk of injury.

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