FACTORS CONTRIBUTING TO SHOULDER GIRDLE INJURIES AMONG ADULTS PATIENTS ATTENDING NAKURU COUNTY HOSPITAL

BY

NGENO AMOS KIPROTICH

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ORTHOPEADIC AND TRAUMA MEDICINE

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# **DECLARATION**

This proposal is my original work and has not been presented for a diploma in any other institution

Signature………………………………………. Date………………………

NGENO AMOS KIPROTICH

D/DOTM/18001/094

**Supervisor**

This proposal has been submitted for review with my approval as college supervisor.

Signature …………………………………………………….……... Date ……………………

MR. RICHARD OTIENO

DCM, B.Sc. CM & Surgery & Community Health

HOD - ORHOPAEDIC AND TRAUMA MEDICINE

# ABBREVIATIONS AND ACRONYMS

AC- ACROMIOCLAVICULAR

KMTC –KENYA MEDICAL TRAINING COLLEGE

HOD –HEAD OF DEPARTMENT

# DEFINITIONS OF TERMS

DISLOCATIONS – It’s a total displacement of a joint on its articulation

BURSA –A fluid filled saclike cavity

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# ABSTRACT

The study will be the factors contributing to shoulder girdle injuries among patients attending Nakuru level five hospital .Broad objectives of the study is to establish the factors contributing to shoulder girdle injuries among patients in Nakuru level five hospital from March to June and specific objectives will be to determine the factors contributing to shoulder injuries, to determine the management of shoulder injuries and to identify the complication of shoulder girdle injuries .Study design is a descriptive cross-sectional study which will utilize quantitative research method .Simple random sampling will be used to get the desire sample size of 44 respondents determined by formulae Yomane will be used to calculate the sample size detrminant and the data will be collected through administered questionnaires.The dependent variable will be patients with shoulder girdle injuries while the independent will the gender, age, occupation and level of education. The data will be presented will through usage of tables, graphs, and chart. Permission to carry out the study will be sought from Kenya Medical Training college by Director of KMTC through Principal Nairobi KMTC,HOD Orthopedic and Trauma Medicine and Medical superintend of Nakuru of Nakuru county hospital. The informed consent will be obtained from patients who will be participating in the study. The research will identify the gap treatment to prevent further complication. At end of the study appropriate findings, conclusion and recommendation will be made.

**CHAPTER I – INTRODUCTION**  
1.1 Background to the study  
 the shoulder or pectoral girdle is made of the bones that connect the upper extremity to the axial skeleton. Two bones comprise the shoulder girdle are the clavicle and scapula it consists of the sternoclavicular, acromioclavicular glenohumeral joints, and the scapulothoracic articulation. These allow, as a whole, universal mobility by way of a shallow glenoid fossa, the joint capsule, and the suspension muscles and ligaments. The shoulder is a ball-and-socket joint it is freely movable and lacks a close connection between its articular surfaces.  
The shoulder complex is composed of many different tissue types and it is the connective tissue that provides the supportive framework for the function of shoulder. Types of connective tissues in the shoulder are bone articular cartilage, ligaments, joint capsules, and bursa. The shoulder ligaments are conveniently named for the bones that they connect or for the shapes they resemble. Medially, the sternoclavicular joint is stabilized by the costoclavicular ligaments, infraclavicular ligaments, and the anterior and posterior portions of the sternoclavicular capsular ligaments. The medial aspect of the clavicle is connected by the interclavicular ligament. Laterally at the acromioclavicular joint, the coracoclavicular ligaments, the conoid, and the trapezoid are strong stabilizing tissues. The coracoacromial ligament functions somewhat like a seatbelt under which some muscles of the shoulder travel. Additionally, because it is a bridge between two portions of the scapula, it can remain intact and provide stability when other bones of the shoulder are compromised. The superior acromioclvicular ligament provides lateral stability to the likewise named joint. Its counterpart, the inferior acromioclavicular ligament, also provides stability but is thinner and less strong. The coracohumeral ligament is a broad connection between the coracoid and humerus provides support to the superior glenohumeral joint. The glenohumeral ligaments, comprised of the superior, middle, and inferior portions, reinforce the glenoid capsule anteriorly by connecting the glenoid of the scapula to the head of the humerus. The glenoid ligament is less of a ligament and more of a soft-tissue extension of the shallow socket portion of the ball and socket shoulder joint. It functions to create a deeper but more forgiving pocket for the humeral head. The labrum is important not only because it is part of what allows such diverse movement in the shoulder joint but also because its injury can be a source of pain and joint instability .The muscles of the shoulder joint are composed of skeletal muscle the latissimus dorsi and pectoralis major muscles insert on the humerus, facilitating adduction and internal rotation of the shoulder. The biceps contributes to forward flexion, abduction, or adduction, depending on the degree of internal or external rotation of the shoulder. They also contribute to joint stabilization. The anatomically of shoulder offers little to resist violent shoulder depression, and the shoulder tip itself has little protection from trauma. The length of the arm presents a long lever with a large head within a relatively small joint. This allows a great range of motion with little stability.Acute or chronic injury to the rotator cuff can lead to significant pain, decreased range of motion, and functional deficits. Shoulder injuries involving fractures of the clavicle, scapula, proximal humerus and glenohumeral or acromiaclavicular dislocation .shoulder pain can are due to some condition, inflammation of the tendons and ligaments injury

1.2 Problem statement the annual prevalence and incidence of people consulting for a shoulder condition was 2.36% [95% confidence interval 2.32–2.40% and 1.47%, 95%, 1.44–1.50, respectively. Prevalence increased linearly with age whilst incidence peaked at around 50 years then remained static at around 2%. Around half of the incident cases consulted once only, while 13.6% were still consulting with a shoulder problem during the third year of follow-up. Shoulder problems are a significant cause of morbidity and disability in the general population. The overall prevalence of shoulder pain in the UK population is estimated to be around 7%, rising to 26% in the elderly. Shoulder problems can lead to an inability to work and perform domestic and social activities, as well as leading to serious economic hardship for affected individuals and their families. During 1995, musculoskeletal disorders accounted for 9.9 million days of sick leave in the UK, of which 4.2 million, 42% were related to the upper limb and neck area. The incidence and causes of major injuries involving fractures of the clavicle, scapula, or proximal humerus and glenohumeral or acromioclavicular dislocations were investigated in children, adults, and the elderly. Seventy-five shoulder injuries occurred in children. Sixty-five of them were fractures of the clavicle. In this age group no sex-related differences were seen in incidence, and 37 of 73 injuries were related to sports or playing. One hundred eighty-one injuries occurred in adults. Sixty fractures of the proximal humerus, 67 fractures of the clavicle, and 31 primary glenohumeral dislocations were seen. The injuries in this group were significantly more frequent in men, with most of them caused by traffic and sport injuries. Two hundred forty-eight injuries occurred in elderly people. Two hundred one were fractures of the proximal humerus. The incidence was significantly higher in women; 147 of 247 injuries were caused by an indoor fall. The variations among age groups are probably attributable to age-related differences in activity, mobility, and fragility.  Population-based study of all shoulder injuries seen at Malmö General Hospital during 1987. Incidence in both Africa and world reported [4.5 million shoulder injuries](https://www.anationinmotion.org/value/rotator-cuff/" \t "_blank) are reported each year and occur primarily in a gym setting. Incidences reported in Kenya and locally 29%, 781 of 2650 registered shoulder injuries were reported to be sports-related, with the highest proportion in acromioclavicular injuries >50%. Patients with sports injuries were younger than those injured during other activities median age 28 and 43 years, respectively, and more often male 78% and 52%. There was a strong gender disparity in incidence of sports-related shoulder injuries in adolescents and young adults, which was not observed in non-sports shoulder injuries. Football soccer 6–29 years, cycling 30–49 years, skiing 50–69 years and martial arts were the dominating sports activities. Fractures were more common in skiing and cycling than in other major sports in the study. 104 fractures following mountain bike accidents between 2008 and 2011. Fractures of the upper limb were the most common (88.5%) with the clavicle being the most commonly fractured bone (28.8%).

## **1.3** Justification

In shoulder girdle injuries in Nakuru as per the record in website is the most commonly recorded and referrals from the neighboring Health centers referring to county referrals for more management. This study aims determining the factors contributing to shoulder girdle injuries among patients attending Nakuru county referral hospital .This will help to provide information on shoulder girdle injuries to the researcher, government and health practitioner .This will be a future reference in the factors, management and factors of shoulder injuries among the learners and medical personnel

1.4Research questions 1.what is the factors contributing to shoulder girdle injuries? 2. What is the management of shoulder girdle injuries? 3. What are the complications of shoulder girdle injuries?

## **1.5 Objectives**

1.5.1 Broad objective  
To establish factors contributing to shoulder girdle injuries among patients attending Nakuru county hospital

1.5.2 specific objectives   
i)To determine the factors contributing to shoulder girdle injuries among patients   
ii)To determine the management of shoulder girdle injuries among patients iii) To identify complication shoulder girdle injuries

## 1.6 Scope and limitation

Scope

The research will be done at Nakuru county hospital among the in-patients and out-patients

**Limitations**

i) language barrier amongst the patients

ii) Biasness

iii) financial constraints

# CHAPTER II: LITERATURE REVIEW

## **2.1Introduction**

In obtaining epidemiological data relevant to the shoulder a number of difficulties exist.  
According to Bjelle et.al 2007 there are four methodological problems associated with  
epidemiological study of the shoulder: criteria and classification, diagnostic procedure, study design, methods of measuring risk factors Concern is the lack of homogenous terminology in identifying specific shoulder disorders in the literature. One disorder will often have several names or another too few. This also relates to the complex structure of the shoulder and close functional biomechanical association with adjacent areas, including the spine. These differences in the reporting of pain prevalence are, at least in part, a consequence of the different definitions of pain used in individual studies. However, other variability can be explained by differing  
study methodologies and groups, or pools of participants studied. A common finding from the literature is the use of a diagram that incorporates the anterior, posterior and lateral aspects of the shoulder including the cervical spines and scapulae in order to define shoulder injuries. Some further causes of variability in reporting relate to that fact that the shoulder may be a primary or secondary source of pain, so many authors and clinicians tend to summarize such a presentation simply as shoulder pain syndrome or just shoulder pain. In order to properly define the anatomical source of pain a thorough history is required including a detailed physical and orthopedic examination and possibly the use of diagnostic imaging. As a consequence by following these standard clinical procedures it becomes impractical for large-scale epidemiological studies mainly due to questionable repeatability and validity of certain orthopedic diagnostic procedures and the cost to image everyone. Therefore many clinicians and researchers generally use the all-encompassing term of shoulder injuries in studies of shoulder pain occurrences. Many studies have asked directly about the presence of pain in the shoulder. This relies on the respondents’ perceptions as to the anatomical origin of their symptoms. Pain can arise from structures around the shoulder complex and can be felt in a wider area, for example the neck, upper arm or upper trunk, and thus may be undetected with a ‘self-perceived’ definition.

## **2.2 Factors contributing to shoulder girdle injuries**

Factors that may be associated with the development of a health problem are represented by the term “risk factors”. The presence of risk factors may predispose a person to developing a particular problem and continuing to suffer from it over a long period of time. A number of risk factors that may predispose a person to developing shoulder pain have been cited and studied in the literature. Risk factors for shoulder pain are usually subdivided in to personal risk factors, work-related physical risk factors and work-related psychosocial risk factors

### **2.2.0 Personal factors**

### **2.2.1 Age and gender**

Age and gender represent personal risk factors that may be associated with shoulder injuries, with the presence of pain increasing with an advancing age. Shoulder injuries are particularly factor in the adolescent age group. A recent study that examined chronic pain  
factors (regardless of location) in children and adolescents (age birth to 18 years)   
reported that prevalence increased with age, peaking in the 12–15-year-old group, with 33%  
of adolescents reporting chronic pain.  
***Siivola et al. (2012***) conducted a longitudinal study to estimate the prevalence and incidence of neck and shoulder injuries in young adults based on a seven year follow up. In the study a  
random sample of 826 high school students investigated when they were 15 to 18 years  
old and again at 22 to 25 years of age. They found a participants of 394 (48%) patients participated in both surveys. The outcome variable was weekly neck and shoulder pain during the past 6 months in adulthood and the explanatory variables included some sociodemographic factors, leisure time activities, self-assessed physical condition, psychosomatic stress symptoms, and symptoms of fatigue and sleep difficulties. In 7 years found the prevalence of weekly neck and shoulder pain increased from 17% to 28%. Among those who were asymptomatic at baseline, 6-month incidence of occasional or  
weekly neck and shoulder injuries is 59% 7 years later. In females, neck and shoulder injuries in adolescence was associated with prevalent neck and shoulder pain in adulthood. The onset of shoulder pain has a strong correlation with adult age, possibly due to the fact that aging is associated with degenerative processes and changes of the shoulder and rotator cuff tendon, which may explain the increase in symptom reporting as we age. With age repetitive shoulder injuries episodes may lead to the accumulation of symptoms and therefore the development of chronic pain. Gender also plays a prominent role in the prevalence of shoulder injuries and pain in the upper  
extremity in general with the presence of shoulder symptoms more prevalent in females as  
opposed to men. Data from a recent population-based survey showed an increase in  
shoulder injuries prevalence with age especially in the middle-age group but also a strong  
gender correlation. ***Chard et al.(2009)*** conducted a hospital-based survey and found that 21% of patients presenting to an acute care geriatric clinic had a symptomatic shoulder disorder.[46] A later study by ***Chard et al.,[2010]*** was based on a community survey to try to discover the true prevalence of shoulder disorders in the elderly. A random sample of 644 individuals over the age of 70 was selected from two general medicine practices. The conditions diagnosed after examination included rotator cuff tendinitis, ‘frozen shoulder’ (adhesive capsulitis), chronic  
rotator cuff rupture or impingement, A-C joint arthritis, glenohumeral joint rheumatoid or  
osteoarthritis, and shoulder pain without obvious shoulder pathology that represented  
referred pain. Of the participants, 27 % reported shoulder injuries with 21% having an  
identifiable disorder present. The gender differences were male17% and female 25%. This  
study also confirmed that the female gender appears to be a risk factor associated with the  
development of a shoulder problem in the elderly age group. Immigrant status is another factor that can be 160 Pain in Perspective associated with shoulder injuries, which was demonstrated by ***Ekberg et al.(20009)*** in an epidemiological survey conducted in 2009. A small amount of evidence is emerging in the literature demonstrating a correlation between race, ethnicity and pain. A study from the US demonstrated when Caucasian populations are compared with participants from African American and Hispanic groups they report more severe pain levels have a lower tolerance to pain stimuli, and are more likely to seek health care for their symptoms. All these personal risk factors associated with the development of shoulder pain. The cited publications demonstrate a correlation with age and gender with respect to the onset of shoulder injuries with prevalence densities increasing with age especially in the age bracket above 40 years. Women appear to be more affected by shoulder pain — often due to jobs characterized by static loads on shoulder musculature, monotonous and repetitive tasks, but also due to additional stresses from unpaid work such as child minding and household duties

2.2.2 Occupation factors numerous studies in an occupational setting have demonstrated work-related physical risk  
factors associated with the development of shoulder pain. The transition from no or minor  
pain to more severe pain was influenced by physical and psychosocial workplace factors  
together with individual and health-related factors.[52] Work-related risk factors associated  
with the onset of shoulder pain have been cited in the literature including: repetitive work,  
high force demand and vibration, work-related posture, computer work and psychosocial  
factors.  
2.2.3 Repetitive work  
the correlation between repetitive work and the onset of shoulder pain has been cited in a  
number of studies. In ***2010, Leclerc et al (2010).*** Conducted a study to determine the productiveness of personal and occupational factors for the onset of shoulder injuries in occupations requiring repetitive work from a sample of workers in five activity sectors who completed a self-administered questionnaire and again three years later. Both questionnaires  
included questions about shoulder injuries. The associations between various factors at  
baseline and subsequent shoulder injuries were studied among participants free from shoulder  
pain at baseline. The results show the incidence of shoulder pain was associated with  
several independent risk factors; depressive symptoms, low level of job control, and  
biomechanical constraints. After adjustment for other risk factors, the presence of depressive  
symptoms predicted occurrence of shoulder pain. A low level of job control was also  
associated with the onset of shoulder pain in both sexes. For men, repetitive use of a tool  
was a strong predictor, while the two most important biomechanical risk factors for women  
were use of vibrating tools and working with arms above shoulder level. The results  
confirm the role of several biomechanical constraints in developing shoulder pain with  
psychological symptoms and a low level of job control also playing an important role. Two  
systematic reviews also demonstrate a significant relationship between repeated movements  
and upper extremity disorders in general and also a consistent relationship specifically  
between neck or shoulder pain and repeated movements.[54,55]  
***Van der Windt et al.(2009*)** systematically reviewed the literature for occupational risk factors of shoulder injuries. The review determined potential risk factors related to physical load and included heavy work load, awkward postures, repetitive movements, vibration and  
duration of employment, with consistent findings found for the latter three items. Nearly all  
studies that assessed psychosocial risk factors reported at least one positive association with  
shoulder pain, but the results were not consistent across studies for either high psychological demands, poor control at work, poor social support, or job dissatisfaction. The authors conclude that it seems likely that shoulder pain is the result of many factors, including physical load and the psychosocial work environment.

2.2.4 Sport  
The prevalence of shoulder injuries in sport is quite high, especially in overhead sports that  
require the repetitive overhead use of the shoulder such as swimming, baseball, tennis and  
overhead athletes. Overhead sports subject the shoulder to stress, fatigue, micro trauma,   
laxity of static stabilizers, and muscular imbalances of shoulder dynamic stabilizers that can  
create altered mechanical functioning of the shoulder and predispose it to injury.  
Numerous sports have been studied in the literature including swimming and activities  
involving overhead throwing. The cause of shoulder pain in the athlete involved in  
overhead sports in tennis and volleyball or throwing in cricket and baseball maybe due to  
the repetitive and high-energy forces going through the shoulder, leading to chronic stresses  
placed on the stabilizing structures of the shoulder. When the stresses are applied to the  
shoulder at a rate that exceeds repair this will result in progressive damage to stabilizing  
structures. With continued stress, the static stabilizer’s of the shoulder become hyperplastic,   
enabling anterior glenohumeral subluxation. Initially the dynamic stabilizers can  
compensate for this mild instability with increased muscle activity. However, with increased  
activity fatigue results, which in turn leads to overloading of these compensatory  
mechanisms. Consequently, the humeral head may sublux anteriorly come in contact with  
the coracoacromial arch ultimately leading to subacromial impingement. This form of  
athletic injury is known as anterior glenohumeral instability of the shoulder and as such  
can be a secondary cause of impingement. This mechanism of injury was first described by  
***Jobe et al.(2011)***

2.3 Management of shoulder girdle injuries to present a achieved understanding on the role of shoulder parts play in the mechanisms of shoulder functions and specialized technique for management of injuries around the shoulder girdle and there are types of management conservative ,operation and medications

### **2.3.1 Conservative management**

Early or first emergency care commonly for dislocations is necessary to avoid persistent step deformity and very higessary to avoid persistent step deformity and very high and post traumatic arthritis .careful evaluation of articulation is necessary to choose alignment .Dislocation is the total displacement of a joint and management by reduction .before any reduction technique is utilized the integrity of the circumflex nerve should be established by checking dermatomes c5 with pin and pulses. As a role early reduction of a shoulder dislocation may not require anesthetic except highly apprehensive patients method of management describe by *wilkins et.al (2012)*

Kocher’s method is to apply gentle downward traction to the flexed elbow and press it closely to the patient sode, mostly be careful ease the arm into the possible external rotation by moving patient away from the trunk while maintaining the external rotation, carry elbow well anterior and superior as gentle adduct the elbow across the patient’s chest the reduction can be felt when adduction is complete.

Hippocratic method for sitting placing a shoeless foot in the supine patient axilla for counter pressure and apply straight axial traction with both hands on the patient arm, the gentle pull is toward the inferior and slightly lateral never upward and outward as there is danger of lacerating vessels, after long steady pull the muscle yield and allow the head of the humerus to slip back into the socket as the arm is slowly internally rotated.

Stimson method a gentle alternative is to place the patient in prone on a coach or table with the affected limb hanging towards the floor, fix a 10lb weight to the wrist tape, frequently this gentle continuous traction will reduce dislocation within 20 minutes study by *Wilkins et.al (2009)*

Fractures for shoulder injuries mostly managed conservative by sling for fracture clavicle and fracture dislocations and positively is useful in pain control with gradual progression of range of motion initiated over the next one to two weeks and instructed to avoid heavy lifting which directly stress the joint by Anglen Jo et.al(2009)

### **2.3.2 Operative management**

This is when there is more injury to the shoulder in some cases of permanently loose joint, surgical fixation is the only solution .Sports which may subject the shoulder to constant severe stress and aspiration and steroids is necessary in stubborn cases. In surgically repairing comminuted and displaced fractures as their rates of non-union have been higher in more current studies by *Deirdre, et.al (2010)*

### **2.3.3 Medication treatment**

This is mostly drugs to manage pain and inflammation ,analgesics ,anti-inflammatory and antiseptic drugs have all used to treat shoulder injuries .simple analgesic and NSAIDS drugs should be tried first .Braus,et.al 2008 conducted a trial on some patients with shoulder injuries In a places controlled ,non-branded trial they forward of the patients loss dose oral corticosteroids .Dekker et.al2013 investigated the effects of intrarticular trimcilone acetomide on pain and passive range of motion in patients with painful shoulder significant reduction in pain and tere was improvement I range of motion.

## **2.4Complication of shoulder girdle injuries**

This is the negative outcomes after the patients sustain injury. After a period of about five years,Barra Ja et .al 2013 study and made a review of all patients registered at the center, eighty cases of closed traumatism of scapulohumeral belt with vascular injury injury associated 0.2%of all closed traumatism were reported, six patients presented also a osteoarticular injury associated .Complication which appear later sometime after the initial accident. There were false aneurysm of the axillary artery at the forth to sixth day after a fracture of the upper humeral diaphysis with elongation of the brachial plexus.

Acute ischemia of upper limb three years after a dislocation of shoulder, one case of thrombosis with gangrene of the hand twelve years after fracture dislocation of the head of humerus

Nerve injury *Byrd RG et.al2009* study on the cases of axillary nerve occur frequently with dislocation of the shoulder and fracture

Post-traumatic arthritis, J.R Rudzki et .al2013 carried out a study regarding long term outcomes of non-operative treatment for AC joint injuries contra version .Ac joint may lead to residual instability, degenerative changes, pain and disability.

**CHAPTER III -MATERIALS AND METHODS (METHODOLOGY)** 3.1 Study area  
The study will be done at Nakuru county located in the city of Nakuru ,Rift Valley Kenya, located 20 km from the city center ,road C86linking the city central Kenya. The Eldoret –Nairobi highway passes through this city linking uasin gishu the capital of Nairobi, Nakuru –Sigor road London to Nakuru level five hospital. Nakuru is well known enjoying the warm temperature climate throughout the year but temperatures fall significantly at night and during the cold season of June and august the city is warm –summer. It lies 1850 meters above sea level in rift valley Kenya. Railway passes nakuru which improves on means of transport in the city, the Rifty Valley railway narrow gauge track run through the city with railway station located on the edge of the CBD. Its connects to cities of Nairobi and Mombasa to the west of Kisumu and Eldoret.Nakuru county has social facilities schools for educations primaries ,highschools,colleges and universities .we have higher education centers Egeton ,kabarak,MKU,RVST,KMTC,KIM,KITI,secondary schools there is Nakuru high, shiners ,kabarak ,and primary schools both public and private .There is a well-stocked public library ran by the Kenya national library service. There are medical facilities run by Nakuru County to improve on the health there private and public hospital health centers in every sub-county, dispensary in every location referring to county hospital for further medication. Nakuru offer housing facilities affordable around the hospital, railways and in afraha and on many areas ,it has a population of approximately 2m from the whole Kenya and from many region ,the city has sizeable population and in rural and is cosmopolitan county of mainly kikuyu and kalenjins .Nakuru is well known economy of agriculture and tourism are the backbone of Nakuru county ,supply of potatoes, maize ,beans, barley and wheat and dairy farming ,maintaining industry, and national parks which bring more tourist domestic and foreign .  
3.2 Study design the study design is a descriptive cross-sectional study will be carried out to establish the factors of shoulder injuries

## **3.3 Study population**

The study will target both adults’ males and female’s patients who will be attending nakuru county hospital with shoulder girdle injuries

### **3.3.1 Incision criteria**

The included participants will be the willing one, patients who shall visits the orthopedic and trauma department

### 3.3.2 Exclusion criteria

All those who will not be willing

## **3.4 Variables**

3.4.1 Dependent  
patients with shoulder girdle injuries

### **3.4.2 Independent Variable**

* Age
* Gender
* Occupation
* Level of study

3.5 Sampling techniques  
Simple random sampling procedure will be use selecting patients with shoulder girdle injuries for the study

## **3.6 Sample size determination**

The study will adopt ***Yomane et.al 1967*** which provides a simple formula to calculate sample size

n=N/1+N (e) 2

Where n=sample size

N=Estimated population

e=Estimated errors (+/-0.05)

n=N/1+N (e) 2

n=50/ (1+50(0.0025)

n=50/ (1+0.125)

n=50/1.125

n=44  
3.7 Development of data collection tools/instruments

The study will be used is structured closed questionnaire and observation 3.8 Data collection process

Closed structured questionnaire will be distributed to the study population to obtain the data

## **3.9 Pre-testing /piloting**

To find out the effectiveness of the tool of data collection the questionnaire, piloting and pre-testing will be distributed to my fellow colleagues to be trial at Kenyatta national hospital ward, casualty I January 2020

## **3.10 Validity**

After piloting I will be able to know if the questionnaire will be effective

## **3.11 Reliability**

The method is reliable since it is simple, straight to the point and clear

## **3.12 Data collection techniques**

After random selection the questionnaire will be distributed with the consent form for the respondent to fill the appropriate field

## **3.13 Data analysis**

The data collected will be analyzed manually by use of scientific calculators and the findings put in a clear way are easily understood. The data will be presented using pie charts, graphs and tables

## **3.14 Ethical considerations**

Permission to conduct the study is to be sought from Kenya medical training college by the director through principal, head of department of orthopedic and trauma medicine and medical superindentof nakuru level five hospital for the fulfillment in diploma in orthopeadic and trauma medicine .The informed consent will be obtained from patients who will be a participating in the study .confidentially if the patients will be respected and research will be conducted in willing the respondents will be free to withdraw from the study.

# APPENDICES

## **Research appendix 1: Consent form**

My name is Amos Kiprotich Ngeno a student at Kenya medical training college –Nairobi undertaking Diploma orthopedic and trauma medicine .Am carrying out a study on FACTORS CONTRIBUTING TO SHOULDER GIRDLE INJURIES AMONG THE PATIENTS ATTENDING NAKURU COUNTY REFERAL HOSPITAL .The research appeals to you to take honest response

Confidentiality

The information on this questionnaire will be taken with high level of confidentiality .The participation to this survey is voluntary thus; withdrawal may be you will with no penalty.

Consent

I have read this information on this questionnaire concerning the study and I fully understood the aim and what will be required of me

Signature ………………………………….Date………………..

## **APPENDIX 2: QUESTIONNAIRE**

Questionnaire on the factors contributing to shoulder girdle injuries, management and complication regarding shoulder injuries at Nakuru county referral hospital in orthopedic and trauma department

Instructions

1. Do not write your name on this document
2. The information obtained from you is private and confidentially and will be highly appreciated
3. Put tick ( ) or cross ( ) and fill the space provided on the correct response

This instrument is divided into four parts ,the first section concerned with social demographic information ,second third and fourth section are concerned with the study specific objectives.

SECTION A: SOCIAL DEMOGRAPHIC DATA

1. In which of the following age bracket do you belong?
2. Below 18 years [ ]
3. 19-29 years [ ]
4. 30-49 years [ ]
5. Above 50 years [ ]
6. Gender?
7. Male [ ]
8. Female [ ]
9. What is your level of education?
10. Non-formal education [ ]
11. Primary level [ ]
12. Secondary level [ ]
13. College/university [ ]
14. What is your marital status?
15. Single [ ]
16. Married [ ]
17. Separated [ ]
18. Widow [ ]
19. Widowed [ ]
20. What is your religion?
21. Christian [ ]
22. Islamic [ ]
23. Hinduism [ ]
24. None of the above [ ]
25. What is your occupation?
26. Student [ ]
27. Self-employed [ ]
28. Employed [ ]
29. None of the above [ ]

SECTION B: FACTORS CONTRIBUTING TO SHOULDER GIRDLE INJURIES

1. I) what is related to your injury?
2. Road traffic accident [ ]
3. Fall [ ]
4. Sports [ ]
5. Other [ ]

ii) If, road traffic accident what were you doing?

1. Walking/ pedestrian [ ]
2. Passenger [ ]
3. Other [ ]

iii) Whom do you think to be blamed for the incident?

1. Driver [ ]
2. Me [ ]
3. Other [ ]
4. What type of injury did you get?
5. Shoulder dislocation [ ]
6. Fracture upper arm [ ]
7. Fracture clavicle [ ]
8. Fracture scapula [ ]
9. Other [ ]
10. If, fall at what height?
11. 1-10 meters [ ]
12. 11-20 meters [ ]
13. 21-30 meters [ ]
14. Above 31 meters [ ]
15. If, sports which type?
16. Football [ ]
17. Volleyball [ ]
18. Handball [ ]
19. Others [ ]

SECTION C: MANAGEMENT OF SHOULDER GIDLE INJURIES

1. I) after you sustained an injury to your shoulder did you received any treatment?
2. Yes [ ]
3. No [ ]

ii) If yes how was it treated?

1. Surgery [ ]
2. Non-operative [ ]
3. Drugs [ ]

SECTION D: COMPLICATION OF SHOULDER GIRDLE INJURIES

1. After treatment how do you describe you state of injury?
2. Good [ ]
3. Poor [ ]
4. Worsening [ ]
5. Are there any unpleasant results /complications?
6. Recurrent shoulder dislocation [ ]
7. Joint stiffness [ ]
8. Osteoarthritis [ ]
9. Others [ ]

## **APPENDIX 3: WORK PLAN**

Work plan year 2019-2020

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Plan | Period | | | |  |  |
| September | October | November | January |  |
| Proposal topic |  |  |  |  | |
| Proposal writing |  |  |  |  | |
| Proposal submission |  |  |  |  | |

## **APPENDIX 4: BUDGET**

|  |  |  |  |
| --- | --- | --- | --- |
| Items | Quality | @kshs | Total cost |
| Fullscaps | 4 Booklets | 60 | 240 |
| Writing pens | 2 Pieces | 25 | 50 |
| Pencils | 2 pieces | 30 | 60 |
| Flash disk | 1 | 800 | 800 |
| Internet services | 2Hrs | 120 | 1000 |
| Printing and typing | 2 copies | 700 | 1400 |
| Binding | 2 | 50 | 100 |
| Transport | - | - | 5000 |
| Accommodation | 3months | 2500 | 7500 |
| Meals | 3 months | 1500 | 4500 |
| TOTAL |  |  | KSHS 20,650 |

## **APPENDIX 5: MAP**



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