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**Prevalence, patterns and factors associated with sports injuries among
players in the 2012 – 2013 Federation of Uganda Football Association
Super League**

BY

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BSP (MAK)

**A dissertation submitted in partial fulfilment of the requirement for the
award of the degree of Master of Science in Clinical Epidemiology and
Biostatistics of Makerere University.**

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DECLARATION

I Mwaka Edwin John, declare that the work submitted in this dissertation is my own compilation. It has not been submitted for another degree in this or any other university or institution of higher learning. All work is original unless otherwise acknowledged.

Sign..... Date

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DEDICATION

This study is dedicated to all the players who have sustained injuries in the effort to earn a living while entertaining others and the nation.

To my beloved wife Rosette and children Ashley, Chelsea, Angelo and Elijah.

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All this work would not have been possible without the support and direct involvement of a number of individuals and institutions with the Lord God Almighty leading the way.

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ACRONYMS

BMI	Body Mass Index
CI	Confidence Interval
CTS	Computerised Tests
EPL	English Premier League
FC	Football Club
FIFA	Federation of International Football Association
FMARC	Federation Internationale de Football Association Medical Assessment and Research Centre
FUFA	Federation of Uganda Football Association
KCCA	Kampala City Council Authority
LC	Local Council
MoE&S	Ministry of Education and Sports
MOH	Ministry of Health
MRI	Magnetic Radiological Imaging
mTBI	mild Traumatic Brain Injuries
NHSSRISS	National High School Sports-Related Injury Surveillance Study
PI	Principle Investigator
RDC	Resident District Commissioner
ROM	Range Of Motion
SRS	Simple Random Sampling
STI	Soft Tissue Injury
UEFA	Union of European Football Association
UHSC	Uganda Health and Safety Council
USL	Uganda Super League
URA	Uganda Revenue Authority

OPERATIONAL DEFINITIONS

An **injury** is physical damage that results when a human body is suddenly or briefly subjected to intolerable levels of energy. It can be a bodily lesion resulting from acute exposure to energy in amounts that exceed the threshold of physiological tolerance, or it can be an impairment of function resulting from a lack of one or more vital elements (i.e. air, water, warmth), as in drowning, strangulation or freezing/is physical damage or harm done to or suffered by a person/damage to a person's body in a physical sense such as a graze, bruise, sprain, strain, broken bone etc (Krug 1999).

Sports injury is defined as any physical complaint sustained by a player during a scheduled match or training session resulting in the inability to fully partake in the next football training or match or cause stoppage in play or require medical attention (Dvorak and Junge 2000).

An **overuse injury** is defined as an injury caused by repeated micro trauma without a single, identifiable event responsible for the injury (Injury with insidious onset and no known trauma) as opposed to **Traumatic injury**; Injury with sudden onset and known cause.

Recurrent injuries shall be defined as an injury of the same diagnosis and at the same site, which occurred after a player's full return to participation from the same injury within a two month period.

Training exposure is defined as each team-based or individual physical activity under the control or guidance of the team's coaching or fitness staff aimed at maintaining or improving players' football skills or physical condition.

Season is the period in the sporting calendar that covers 12 months but doesn't necessarily start in the same calendar year; football season starts in September and ends in May.

Playground/pitch is an area of demarcated/marked land on which the game of soccer is played.

Training session; Team training that involves physical activity under the supervision of the coaching staff.

Match; Competitive or friendly game against another team.

Wound Injury that breaks the skin, including cuts, scratches and puncture wounds.

Sprain: A traumatic injury to the fibres of a supporting ligament.

Strain: An acute distraction injury of muscles and tendons.

Contusion Injury that does not disrupt the integrity of the skin caused by a blow to the body

Fracture: Traumatic break in the continuity of bone.

Foul play: In the laws of the game, foul play is when you maliciously repossess or possess the ball and in the process violate the law(s) of association soccer by letter and action.

Dislocation/Subluxation: Displacement or misalignment of bone(s) from its normal position in a joint cavity.

A **concussion** occurs with a sudden impact or blow to the head leading to temporary loss of consciousness.

Tackling is a method of repossessing/dispossessing of the ball from an opponent and involves methods such as heading, sliding, blocking the ball with the foot/feet and shielding as per the FIFA laws of the game.

Injury severity will be determined by the number of days absent from games or training sessions due to injury and classified as **Minimal injury** (Injury causing absence of 1–3 days from training and/ match play) **Mild injury** (Injury causing absence of 4–7 days from training and/ match play) **Moderate injury** (Injury causing absence of 8–28 days from training and/ match play) and **Severe injury** (Injury causing absence of over 28 days from training and/ match play) (Ekstrand, Hägglund et al. 2009).

Pattern of sports injury is the distribution of sports injuries.

Association football, commonly known as **football** or **soccer**, is a sport played between two teams of eleven players with a spherical ball (Wikipedia and Association 8 March 2013).

Soft Tissue Injury is damage to any biological tissues except for bone tissue (Damage to bone tissue is classed as a "hard tissue injury").

NB: the above terms are derived from (Arliani, Belangero et al. 2011) with the exception of those individually acknowledged.

ABSTRACT

Introduction

Association football is the most popular sport played globally. Soccer involves several skills that require complex movements that expose athletes to injuries. Several studies have been done on soccer injuries and reported them as the commonest injuries in the modern societies. Treating these injuries is difficult because their mechanisms are not understood. An increased incidence (10-35%) has been reported as compared to other sporting activities. Risk factors identified in association football have been extensively studied in high resource countries however; little is known on the prevalence, patterns of injury and associated factors in Uganda a low resource setting.

Objective

To determine the prevalence, patterns and factors associated with sports injury among players in the 2012 – 2013 FUFA super league season.

Method

Cross sectional study design where a sample size of 250 registered FUFA super league players (N=396 players) from 13 clubs based in the central region (radius of 200km from Kampala) of Uganda was studied within three months using simple random sampling technique. Data was collected by trained team medical personnel. A semi-structured assisted questionnaire was used to obtain information on the dependent variable; injury status and independent variable; socio-demographic characteristics, clinical factor, competition type, environmental conditions, injury location, injury body part, injury type and BMI. Descriptive study data were summarised in means (SD) for continuous data while median (IQR) and proportions for categorical variables. Any statistically significant variable at $p < 0.2$ were considered for multivariate analysis. Dropped variables were assessed for confounding at 10% cut-off. Statistically significance

Results

A total of 250 players were enrolled with a mean age 23.4years \pm 4.1years and mean weight 71.5kgs \pm 6.2kgs. The prevalence of sports injuries reported, 64% (160 players). The significant categorical variable were previous injury and recurrence of injury within the same season OR 3.33, (95% CI: 1.72 – 6.47), OR 6.18 (95% CI: 2.36 – 16.17) and OR 3.57 (95% CI: 1.32 – 9.70) respectively.

Conclusions

The prevalence of sports injuries among the 2012 – 2013 super league players was high at 64%. A super division player reporting a single history of sports injury within the season had thrice an increased injury risk than a player with no history of previous injury. Players with a history of two or more injuries within the 2012 -2013 season had a 6 time risk increase of sports injury than those who did not have an injury during the season. Players with recurrence of injury within the season are thrice more at an injury risk than those with no injury occurrence within the 2012 – 2013 season.

CHAPTER ONE

1.0 INTRODUCTION

Association football globally is the most popular sport cutting across all ages, both urban and rural communities. There are 200,000 professional athletes and 240 million amateur players globally; approximately 80% of these players are male (Timpka, Risto et al. 2008; Arliani, Belangero et al. 2011). Studies have shown that overall level of injury among professional soccer players is 1000 more increased injury risk than industrial employees (Hawkins and Fuller 1999). Association football known as soccer is a sporting activity that demands a combination of endurance, physical and mental fitness, running and discontinuous sprinting. The ultimate beauty of soccer does lie in the individual technique, though group and team tactics are important too. The sport specific skills used in soccer include quick turns (agility), pivots, jumps in air and both backward and forward running. These complex manoeuvres normally done at higher momentum expose or create stress to both bone and soft tissues (Twomey, Finch et al. 2009). In light of the above, successful performance requires certain minimum levels of fitness for the individual athletes involved.

Globally, sports injuries in soccer players are one of the most common injuries in modern day societies (Marwan, Behbehani et al. 2012). Since all contact sports have an inherent risk of injury, soccer is no exception. Soccer players have the highest rate of injuries amongst lower limb contact sports injuries specifically the frequency of football injuries estimated at approximately 10 to 35 per 1000 playing hours (Dvorak and Junge 2000; Carter, Westerman et al. 2011). Injuries in soccer players are relatively common and differ in severity depending on the nature of the game and level of experience of the players. (Hawkins and Fuller 1999; Dvorak and Junge 2000; Hawkins, Hulse et al. 2001; Fuller, Smith et al. 2004; Dvorak, Junge et al. 2011).

In Uganda soccer the darling game of millions of Ugandans dates back to 1954 when it was first introduced especially in the central region. As a sport, soccer has evolved down the years due to the increased physical demand and match activity pattern which is characterised by repeated bouts of high intensity intertwined with lower intensity or passive recovery (Andersen, Essendrop et al. 2004; Arliani, Belangero et al. 2011). These activities are accompanied with the increased risk of soft tissue injuries. The nature of the playgrounds further exposes the players to injury occurrence (Soligard, Bahr et al. 2012; Twomey, Finch et al. 2012). Considering the growth of soccer both internationally and nationally among athletes, it is important that injury prevention programs are initiated and implemented pre-season, during the season and post-season. Treating these sports injuries is often difficult because the mechanisms of these injuries are not well understood (Arnason, Sigurdsson et al. 2004), expensive to treat and time consuming for the players, teams and even their families especially in low resource setting. Thus finding preventative measures would require basic understanding of the most common injuries sustained by these soccer athletes and ensure safe participation for soccer players. However, little is known on the prevalence, patterns and factors associated with sports injuries among players in the Federation of Uganda Football Association super league.

1.1 PROBLEM STATEMENT

In Uganda soccer is the most popular sport played on several soccer playgrounds strategically located around the country. Re-known soccer pitches are Namboole, Nakivubo, Kakyeeeka, Pece, Kakindu and Mbale stadia among other natural tuft plus Njeru sports complex an artificial tuft recently completed. However, the quality of the pitches greatly predispose players to injury with the seemingly persistent perennial presence of ragged holes, uneven playing surfaces, and bare ground let alone the waterlogged nature when it rains. More to that, cattle waste is littered around some playgrounds while other grounds form paths or roads for pedestrian or cyclist or even motorists' parking or learning the art of driving. This creates

a greatly hardened or unsuitable pitch to accommodate proper sporting activities especially football. Some grounds are temporary/ permanent dumping sites or being multi-purposes; concerts or politically or culturally or religiously held rallies tend to leave dangerous litter on these pitches in form of broken bottles, holes or attract stinging insects. Amidst all this, the players innocently continue actively participating in large unrelenting numbers in their preferred clubs of choice. Association football is a contact sport associated with body contact normally at high momentum characterised by repeated bouts of high intensity intertwined with lower intensity or passive recovery of physical activity increasing the risk of injury among the athletes especially as they tend to fatigue. The human resource geared at averting or alleviating the injuries that have occurred are either absent, ill-trained or insignificant in the basic medical treatment guidelines for the acute macro- or chronic micro-trauma in relation to the soccer population. Due to the inadequate or ill-trained personnel in the basic medical treatment guidelines, injuries are likely to occur and pass unnoticed. This increases the risk of injuries reverting into a chronic state or complications that may prolong healing or require advanced medical interventions or sadly cause permanent disability to the athlete. Given the nature of low resource settings, the athlete is bound to prematurely be stopped affecting his individual and family livelihood. Furthermore, since soccer as a sport is a source of national income, an economic loss for the country is too bound to occur since athletes are unable to buy merchandise or spend the money earned. Therefore it is on this background that the oblivion of the prevalence, patterns and factors associated with sports injuries among players participating in soccer in the Federation of Uganda Football Association super league of Uganda has prompted the study.

1.2 JUSTIFICATION OF THE STUDY

A health and safety policy in sports was adopted in 2004 by the Ministry of Education and Sports (MoE&S), Uganda. In the policy, Ministry of Health (MOH) as a stakeholder has a role in the guidelines of promotion and implementation of the health safety of the players.

This includes among others the creation of a department of physical education and sports medicine to oversee all the health safety issues. However, this department is non-operational and its operational guideline not clear as stipulated in the institutional framework for the implementation of the policy guidelines. This study is an advocacy tool that exposes areas in the system that require strengthening or creation in form of play grounds, emergency facilities, human resource and a national athletic injury database especially those entailing an injury surveillance and athlete management system to record, track and report on the team injury by documentation of the injuries. An understanding of the sports injury trend and associated factors in the league advocacy tool for the development of an injury report form and also provide MoH and MoE&S evidence to support formulation of a clear policy to minimise soccer injuries. The findings obtained in this study will further contribute to the volume of knowledge and in so doing, form a benchmark reference for future scholars or researchers interested in the prevalence, pattern and factors associated with sports injuries among soccer players participating in the FUFA super league.

1.3 RESEARCH QUESTIONS

The study was meant to answer the following questions;

- 1) What is the prevalence of sports injuries sustained by soccer athletes participating in the Federation of Uganda Football Association super league 2012 – 2013 season?
- 2) What is the pattern of sports injuries sustained by soccer athletes in the Federation of Uganda Football Association super league 2012 – 2013 season?
- 3) What factors are associated with injury occurrence among players participating in the Federation of Uganda Football Association super league 2012 – 2013 season?

1.4 OBJECTIVE

To determine the prevalence, patterns and factors associated with sports injury occurrence among players participating in the FUFA super league 2012 – 2013 season.

1.4.1 SPECIFIC OBJECTIVES

PRIMARY OBJECTIVES

- 1) To determine the prevalence of injuries among the players participating in the Federation of Uganda Football Association super league 2012 – 2013 season.
- 2) To describe the patterns of injuries among the players in the Federation of Uganda Football Association super league 2012 – 2013 season.

SECONDARY OBJECTIVE

- 3) To determine the factors associated with injury occurrence among players participating in the Federation of Uganda Football Association super league 2012 – 2013 season.

1.5 HYPOTHESIS

H₀ : Injury rates do not vary between player positions.

1.6 THE SCOPE OF THE STUDY

The study was limited to the following independent intrinsic factors that include; mechanism of injuries, limb dominance, socio-demographic [age (yr), weight (kg), educational level, marital status, ethnicity and religion], player position and clinical factor (previous injury) while extrinsic factors include; environmental conditions (ground and weather conditions), playing surface (tuft) and competition type (training/match). However, the consequences of the sports injuries, clinical factors (acute complaints, poor health awareness and inadequate rehabilitation), rule violation, match exposure, attire, training methods, decision of officials, body size, behavioural characteristics, anatomical variations, environmental conditions(temperature), nutritional status (calories consumed/day), aerobic fitness and skill level were not included in the study.

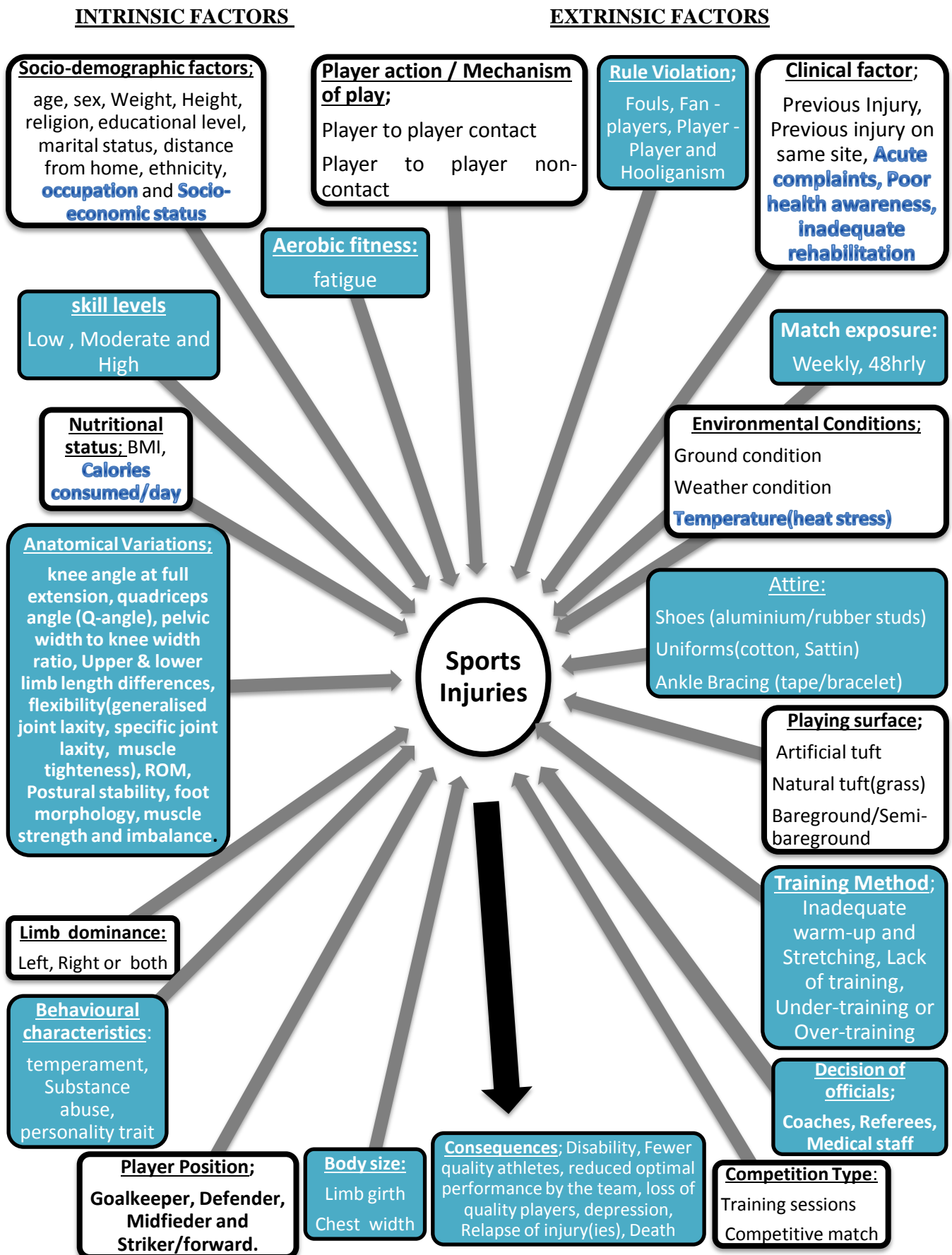


Figure 1: Conceptual framework showing the relationship between sports injuries and associated factors.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

Soccer is the most popular sport in the world and most widely growing sport nationally and internationally. Hagglund et al (2006), Azubuiké & Okojie (2009) and Walden et al (2005), defined injuries as time-loss while other studies regarded injuries as an event which leads to loss equal to or greater than one game or withdrawal equal to or greater than 10 days. They considered injury which prevents the return at the same or following days or confirmed by a doctor and an absence of equal to or greater than 2 days or injury during a game or practice which causes withdrawal of the player. Injury severity (days) was categorised into 4 major groups as mild (1-3 days), minor (4-7 days), moderate (8-28 days) and severe/major (greater than 28 days) (Giza, Fuller et al. 2003). They only deferred in allocating number of days to the different categories except older studies that grouped them into three.

2.1 Prevalence and patterns of injuries sustained by players

Injuries in soccer range from closed to open injuries and are categorised as traumatic (acute) or chronic (cumulative) injuries. Injury classification is by either soft tissue namely; bruises, muscle strains, ligament sprains, contusions, abrasions, nerve injury and the more traumatic types as; lacerations incision wounds or skeletal tissue namely fractures, dislocation/subluxation and meniscus/cartilage tears. Furthermore, chronic injuries include shin splints, tendon injury (Achilles tendonitis), blisters, synovitis/effusion and stress fractures.

The commonest locations prone to injury among soccer athletes are shown below;

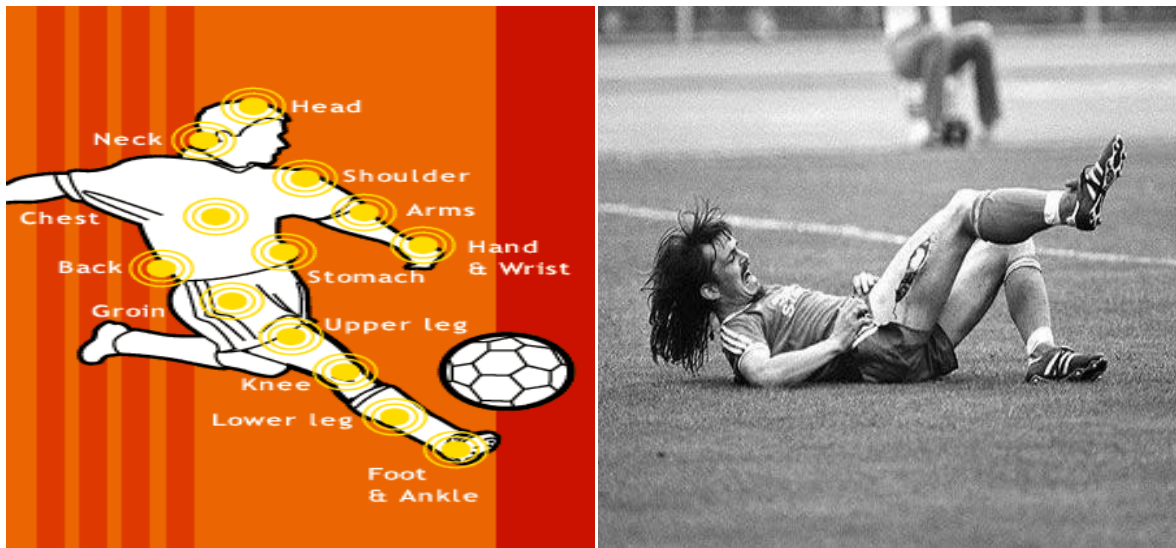


Figure 2: Commonest body parts prone to injury. Figure 3: Open injuries – laceration (Elst 2009)

Thigh strain was reported to be the single most common injury type, which is in agreement with other studies on English, Swedish, and Danish elite football (Arnason, Sigurdsson et al. 2004; Hagglund, Walden et al. 2005). In English professional football, Walden and colleagues, 2005 reported that between 64–67% of thigh strains have been located in the Hamstrings. However, it is not clearly stipulated in the literature whether the risk of injuries are increasing or decreasing down the years. Other studies reported muscle strains to represent between 20% to 37% of all time-loss injuries at men’s professional level and 18% to 23% at men’s amateur level depending on whether there are functional or structural-mechanical injuries by definition. All types of head injuries including not only concussions but also facial fractures, dental, lacerations and eye injuries accounted for 2% of all injuries (Ekstrand, Hagglund et al. 2011). A total of 88 concussions were observed in 78 players in a prospective study of 1015 players. Concussion-associated symptoms lasted an average of 48.6 hours (95% CI, 39.5-57.7hrs) with delayed return to sport correlated with 4 or more symptoms, headache lasting 60 or more hours, or self-reported ‘fatigue’. Delayed return to sport was associated with initially greater symptom load, prolonged headache, or subjective concentration deficits (Pellman, Viano et al. 2005; Frommer, Gurka et al. 2011). A total of 137 tendinopathies were captured accounting for 1.5% of all injuries in a prospective study of elite European clubs. On average in each season, 2.4% of players were affected, with most

injuries (61%) resulting in absence of up to 1 week or less. Recurrent complaints had 20% (137) tendinopathies. Exposure to artificial turf did not increase the prevalence or incidence of injury. High total amount of exposure was identified as a risk factor for patella (Hagglund, Zwerver et al. 2011) though commonly known of all ankle injuries are ankle sprains that were reported to commonly occur among players (Giza, Fuller et al. 2003). Re-injuries (15% of the total injuries) mainly comprised of muscle strains that were associated with a higher severity than new injuries. With the high overuse and recurrence rates of injuries especially in muscle strains despite the different environmental, social and cultural setting, no significant difference was noted when compared with previous data from European club football (Eirale, Farooq et al. 2012). Studies on wound injuries are not specifically identified but reflected in other classifications of injury types as shown in figures 2 and 3 (Furin 2011). Blood exposure and precaution measures are not properly established especially in a country with an HIV/AIDS burden at a prevalence of 7% and other epidemic outbreaks. Several studies reported that traumatic injuries tend to predominate in matches (91.5%) rather than in training (84%), when compared with non-traumatic injuries. This tends to suggest the competitive nature of matches, which increases the injury risk of various actions in the field of play. Previous studies have also confirmed that “overuse” (non-traumatic) injury was associated more with training than with matches (Ekstrand, Hagglund et al. 2011).

Among the traumatic injuries, tackling appeared in several studies as the most common mechanism of traumatic injury. In a retrospective study of frequency of injury, a total of 8572 tackles were assessed, of which 3464 (40.4%) were fouls (Fuller, Smith et al. 2004). It is reported on average, that about 48% of total soccer injuries are a result of tackles, particularly tackles from behind.

All body regions were subject to injury however, knee injury ranked higher than ankle injury as the level of professionalism increased in the leagues. Body sites most commonly injured were the ankle/foot (21.9%), head/face (18.9%), and knee (16.9%). Most common diagnoses

reported were ligament sprains 32.5% (Kerr, Collins et al. 2011). Several studies have described the ankle as the most affected site (Akkaya, Serinken et al. 2011; Akodu, Owoeye et al. 2012; Faude, Rossler et al. 2013). However, previous studies have attributed over 60% of soccer injuries to the lower extremity especially the hamstring injuries as being the single most common injury in elite football representing 90% of the lower four major muscle groups; quadriceps, gastrocnemius and adductors (Woods, Hawkins et al. 2004; Ekstrand, Hagglund et al. 2011; Ekstrand, Healy et al. 2012; Eirale, Farooq et al. 2013). They further reported that injury risk increased with time in each half of a match. Seventy per cent of hamstring injuries seen in professional football were of radiological grade 0 or 1, meaning no signs of fibre disruption on MRI, but still caused the majority of absent days. However, the reported prevalence in the various codes of football, to which most literature pertains, is generally between 8% - 25%, with each injury resulting in a 2-6-week sporting absence (Goldman and Jones 2010; Carter, Westerman et al. 2011; Ekstrand, Hagglund et al. 2011; Ekstrand, Healy et al. 2012). In a descriptive epidemiological study of Gaelic footballers, fractures were the least reported injuries at 4.4% (1014 Gaelic football injuries) (Murphy, O'Malley et al. 2012). Stress fractures in the leg are often the result of overuse or repeated impacts on a hard surface. The commonest location was the lower extremities especially the 5th metatarsal accounting for 78% leading to time-loss/absence of 3-5month. A team of 25 players expected on average a stress fracture every 3rd season with those sustaining the fractures being significantly younger than those who did not. Younger age and intensive pre-season training was reported to be a risk factors (Ekstrand and Torstveit 2012).



Figure 4: Ankle injury



Figure 5: Dislocated knee joint

In the period between 2001 – 2009, a prospective study was carried out having a total of 54 football clubs (2379 players) in UEFA followed for 189 team seasons. In total, 51 stress fractures occurred during 1,180,000 hr of exposure, giving an injury incidence of 0.04 injuries/1000 hr. However, among 57 male elite European teams prospectively studied between 2001 and 2011, (2,914 players and 6,215 player seasons). In total 11,750 injuries were recorded, 3% constituted upper extremities accounting for an incidence of 0.23/1000hrs of football. The incidence in match play was recorded at 7 times higher than in training (0.83 vs.0.12 injuries/1,000h, rate ratio 6.7, 95% CI, 5.5-8.3). They concluded that upper extremity injuries are uncommon among male elite football players. Goalkeepers, however, were prone to upper extremity injury, with a five times higher incidence compared to outfield players (Ekstrand, Hagglund et al. 2012). Studies report the rate of injuries in male soccer players estimated to be approximately 10-53 injuries/1000 hours of practice. However, this statistic varies widely among studies depending on the injury definitions used and the differing study designs used.



Figure 6: Dislocation(Elst 2009)



Figure 7: Fracture-dislocation(Elst 2009)

In Benin, Nigeria, a study was drawn from all levels of football divisions; seven clubs (196 players) were studied using a descriptive cross-sectional study design. A total of 204 injuries were recorded registering a prevalence rate of 81.6%. Most injuries were recorded during matches (46.1%) than during training (36.8%). The most injured body part reported was the ankle (25%) while the commonest type of injury were sprains at 33.3% (Azubuike and Okojie 2009). A study done between periods 2001- 2007, had sport and active recreation related major trauma cases and deaths extracted from the Victorian State Trauma Registry (VSTR) and the National Coroners Information System. A total of 1019 non-fatal major trauma cases and 218 deaths with an incidence of 6.3 per 100,000 participants per year and an annual increase of major trauma of 10% noted in all sports inclusive of football. However, fatalities from soccer related injuries are associated with collision with the goal post sustaining internal haemorrhage (Dvorak and Junge 2000; Feeley, Kennelly et al. 2008; Ekstrand, Hagglund et al. 2011; Andrew, Gabbe et al. 2012; Ekstrand, Hagglund et al. 2012).

In a study conducted in Kuwait among the elite male football league, the prevalence was lowest among football (soccer) athletes at 69% (452). The overall prevalence at 12-month and lifetime of sports injuries were 73.8 and 89.8%, respectively. Lower limbs (73.1%) were the most common site of injuries and joint injuries (43.6%) were the most common type (Marwan, Behbehani et al. 2012). However, the severity of injuries differs in different studies. Other studies have reported a high prevalence of 81.6% (Azubuike and Okojie 2009).

However, other studies reported a player sustained on average 2.0 injuries per season, and a team with typically 25 players can thus expect about 50 injuries each season (Ekstrand, Hagglund et al. 2011). Injury incidence in soccer is high as compared to other ball games though the injury incidence in low resource countries; Uganda has not yet been studied in addition to other exploratory variables mainly in the elite league.

The time-lost match injury incidence in amateur football of different playing levels is reported to be between 11.9 and 16.9 injuries per 1000 match hours. The mean time lost per injury in professional football was 22.3 days and 34.3 days reported in some studies (Arliani, Belangero et al. 2011).

2.2 Risk factors associated with injuries

2.2.1 Socio-demographic characteristics:

Literature has reported an increasing risk of injury above 25 years of age, and injury types as differing by age (Arnason, Sigurdsson et al. 2004; Braham, Finch et al. 2004; Gabbe, Finch et al. 2005; Dompier, Powell et al. 2007). Several studies have found significant associations between age and hamstring strain prevalence. The potential significant age at risk was between 23 – 25yrs. Age greater than 23yrs reported an OR 1.3 – 3.9 and those >25yrs was 2.8 – 4.4 times more likely to suffer injury. Age differences were significant between ≤ 20 yrs and >25yrs in respect to BMI and weight (Gabbe, Finch et al. 2005; Hagel 2005; Gabbe, Bennell et al. 2006; Gabbe, Bennell et al. 2006). However, other studies failed to identify any significant association between age and injury occurrence or between age and severity of injury (Walden, Hagglund et al. 2005; Feeley, Kennelly et al. 2008).

Race and ethnicity were strongly associated with injury, with black athletes significantly more likely to suffer hamstring strains (Woods, Hawkins et al. 2004). A study conducted on the English Premier League, involving team medical staffs at 91 professional football clubs annotated player injuries over two seasons. They reported that groups of players sustaining

higher than expected rates of hamstring injury were black ethnic origin ($p < 0.05$) among other factors (Woods, Hawkins et al. 2004).

The evidence for weight and Body Mass Index (BMI) as risks for hamstring strain injury is conflicting. Two studies identified no significant association between BMI and the rate of initial or recurrent hamstring strains injuries (Arnason, Sigurdsson et al. 2004). However, Gabbe and colleagues, 2006 identified a significant relationship with hamstring strain incidence. They studied BMI of 25 kg/m^2 or less, players with increased BMIs were nearly 2.5 times more likely to suffer a hamstring strain in a given season (RR, 2.41; 95% CI: 1.25 – 4.66).

Quadriceps muscle injuries were more common in shorter players and were more likely when there had been less rainfall at the match venue in the previous week. Quadriceps muscle injuries were significantly more common in the dominant kicking leg, while hamstring and calf muscle injuries showed no difference in frequency between the dominant and non-dominant legs (Orchard 2001). The attire worn by players especially boots are reported to be a source of injury (Villwock, Meyer et al. 2009; Bentley, Ramanathan et al. 2011).

2.2.2 Player position, pitch and weather condition

Azubuiké et al (2009), reported a highly significant association between experience and mechanism of injury in this study is supported by many reports that the less skilled the player, the higher the injury occurrence. More experienced players tend to acquire skills relevant to avoiding injury-prone actions (Azubuiké and Okojie 2009).

Defenders usually defend the goal area, which is the area of the pitch that is highly prone to injury (Rahnama 2011). A very significant association was found between players' position and mechanism of injury ($p\text{-value} < 0.05$). Certain role-associated actions may suggest that certain positions may be more associated with some mechanisms of injuries. Defenders are usually known for their hard tackling, strikers are glorified in precise shots, while the

“wingers” are marked by their overlapping runs. The commonest injury prone position reported was the striking and midfielders’ roles. Fatalities from soccer related injuries are associated with collision with the goal post sustaining internal haemorrhage (Dvorak and Junge 2000; Feeley, Kennelly et al. 2008; Ekstrand, Hagglund et al. 2011; Andrew, Gabbe et al. 2012; Ekstrand, Hagglund et al. 2012). However, in a separate study conducted in Benin, the defenders’ role reported the highest injuries sustained (Azubuiké and Okojie 2009).

The highly significant association found between experience and mechanism of injury in a study conducted among footballers, is supported by many reports that the less skilled the player, the higher the injury occurrence. More experienced players tend to acquire skills relevant to avoiding injury-prone actions. The higher injury experience of defenders followed by strikers lends credence to several past works (Azubuiké and Okojie 2009). More highly skilled players have been shown to suffer more injuries in good (dry) weather, where as those with lower skill levels suffer more injuries in bad (rain or snow) weather conditions. Traumatic injuries have been associated with rough or slippery surfaces caused by rain, snow, or ice among Swedish amateur players studied (Meyers 2010). Williams and colleagues (2011) identified that the risk could be the artificial turf specifically third and fourth generation artificial compared to natural turf with ankle injuries risk ratios at 0.7 – 5.2 (Ekstrand, Timpka et al. 2006; Villwock, Meyer et al. 2009; Williams, Hume et al. 2011). The most common injury types in the dirt field were skin injuries (abrasion and laceration) and in the artificial turf were sprain and ligament injury followed by haematoma/contusion/bruise. Most injuries were acute (artificial turf 89%, dirt field 91%) and resulted from player-to-player contact (artificial turf 59.2%, dirt field 51.4%). Most injuries were slight and minimal in dirt field cohort but in artificial turf cohort the most injuries were mild (Kordi, Hemmati et al. 2011; Soligard, Bahr et al. 2012).

Referee standards and decisions have been evaluated in a few recent studies, but the influence of regional differences in referee decisions and rule interpretation is so far unclear. Formal

monitoring and implementation of ground safety polices and guidelines is done periodically and only left to match official on match day (Swan, Otago et al. 2009). They run a risk of conflict of interest since match officials' decisions are subjective and not based on policy. In the 2000 season, a prospective cohort study on 174 of 182 matches from the Norwegian elite soccer league with 3 referees from the league did a retrospective blinded evaluation of the 406 incidents. The agreement between decisions made by the match referee and the expert referee panel agreed in 85% of the situations in which injury occurred since 10% of the decisions led to an award of yellow or red cards (Andersen, Engebretsen et al. 2004). Therefore rule changes to reduce aggressive contact and increased ball control may hold the potential to decreasing injury rates as athletes are still mastering the skills and under developmental coaches.

Most of the studies are in agreement about rule violation as the principal cause of injuries in soccer players (Giza, Fuller et al. 2003; Andersen, Engebretsen et al. 2004). However other studies have found that being tackled as opposed to tackling accounts for 60% of the injuries in soccer players. Though, the player positions were generalised to all sports under study and not specific to soccer (Arnason, Tenga et al. 2004). These findings have not been tested in the FUFA super league.



Figure 8: Tackle on a player(Elst 2009)

2.3 Strength

An investigation into all possible sports injury occurrences in all sports was done. The risk factors were thoroughly investigated and treatment procedures described with the study protocol adhered to in the manner of ethical considerations. However, gaps in the study were identified namely; they were unable specifically identify soccer injuries and were only able to generalise their finding to all sports hence making it difficult to draw up a specific injury prevention program (Gabbe, Finch et al. 2007; O'Rourke, Quinn et al. 2007). The different tournaments were not categorised to identify the commonest injury occurrence by type. They were able to conclude that injuries were more common in soccer as compared to other sports. The decline in the incidence could be as a result of injury definition differences.

It has been shown that several studies have noted that most injuries are to the soft tissues and occur most frequently in the lower extremities with the majority of soccer injuries in prospective studies involving lower limbs (74% - 93%), less in retrospective studies having (64%-86%) injury prevalence, an agreement on the many types of sports injuries reviewed. However, the type of injuries in the literature does not ascertain that similarities do occur in the FUFA super league athletes. Several studies have conducted research through two or more seasons and tournaments with different facilities and human resource. The injury definitions in the studies differ as reported making generalisation of the findings difficult to ascertain. Most of the studies generally seem to concentrate on the lower limb injuries and leave out the head and upper trunk injuries (Twomey, Finch et al. 2009; Akkaya, Serinken et al. 2011). The studies reviewed are in agreement that there is a high prevalence (70 - 81.6%) of injuries in soccer. The injury risk in soccer is high, but little is known on the mechanisms of injury occurrence. Soft tissue injuries; strains, sprains, are regarded as the most common soccer injuries among the athletes. However, several areas of literature studies are inconclusive and require extensive research in low resource countries especially Uganda as

follows; there is need to determine the injury distribution pattern and frequency by the FUFA super league players.



Figure 9: Namboole stadium tuft (2012)

CHAPTER THREE

METHODS

3.1 STUDY DESIGN

A cross-sectional study was carried out among athletes registered in the Federation of Uganda Football Association super league during the 2012 – 2013 season.

3.2 STUDY SETTING

It was a community based study that involved a finite homogenous population of male active football players based in the central region (radius of 200 kms from Nakivubo stadium, Kampala) of Uganda during the period of study. There were 396 male players registered for the FUFA super league and distributed unevenly among the 16 clubs namely; Bidco FC, URA FC, Express FC, Villa FC, Victors FC, KCCA FC, Kiira young, Victoria united, Entebbe FC, Aurum Roses, Vipers FC, Simba FC, Police FC, Masaka LC, Proline Academy and Water FC. Basing on the official home grounds, of the FUFA super league clubs all fell within the radius of 200 kms.

3.3 POPULATION

3.3.1 TARGET POPULATION

All registered male active soccer athletes who participated in the Federation of Uganda Football Association super league and were based in the central region of Uganda.

3.3.2 ACCESSIBLE POPULATION

All registered male active soccer athletes who played for clubs based in the central region of Uganda and participated in the Federation of Uganda Football Association super league in the second half of the 2012 – 2013 seasons.

3.3.3 STUDY POPULATION

Inclusion Criteria

Registered male active soccer athletes who played for clubs based in the central region of Uganda and fully participated in the FUFA super league between periods February 2013 – May 2013. The respondents were players who gave written informed consent to participate in the study and were present on the day of data collection.

Exclusion Criteria

Any injury sustained outside training or match situations and not under the guidance of the respective club manager/coach. A video review or a lecture with the team was not considered training. Individual training sessions were also not registered.

3.4 SAMPLING PROCEDURE

Selection of respondents from the 13 clubs was by simple random sampling with replacement. All the clubs were alphabetically listed. Using the order of registration in FUFA for the 2012 – 2013 seasons, a coded list was created having all players. The list was as per the registration of player names in the FUFA competitions committee season 2012 – 2013. Then using an electronic random number generator with a minimum value set at 001 and maximum at 396 as per the FUFA competitions committee list provided for the 2012 – 2013 season, a sample of 310 players was drawn from a finite population of 396. The process of data collection among the respondents using the questionnaire did not follow the list provided by the competitions committee.

3.4.1 SAMPLE SIZE

To determine sample size sufficient to estimate the prevalence of sports injuries among players in the 2012 – 2013 FUFA super league, Kish Leslie formula (1965) was used to estimate the required number of respondents as shown below;

$$N = \frac{z^2 pq}{d^2} \quad \text{Where} \quad N = \text{sample size}$$

z = z-score corresponding to 95% confidence limit [1.96]

p = Expected proportion of sports injuries = 0.758

q = $[1 - p] = [1 - 0.758] = 0.242$

d = Degree of accuracy = 0.05

p is the estimated average prevalence of sports injuries among football players being $(81.6 + 70/2=75.8)\%$ (Azubuike and Okojie 2009; Ekstrand, Hagglund et al. 2011).

$q = (1 - p) = (100 - 75.8) = 24.2\%$ (0.242)

d = Precision = 5% (0.05)

Sample size = $281.875 = 282$

To cater for a 10% loss due to non-response, we obtained $N = 282 \text{ respondents} \times 0.1 = 28$ respondents.

Total sample size for prevalence study is 310 including the continuity correction.

3.5 VARIABLES

Dependent variable; sports injury status; defined as the presence of any sports-related injury.

Independent variables; age (yrs), ethnicity, weight (kg), height (cm), Body Mass Index (BMI), residence, previous injury, injury recurrence, injury types, injury locations, player position, severity, treatment, field condition, injured body part, injury type, mechanism of injury, competition type and weather condition.

3.6 DATA COLLECTION

Data were collected between periods of February 2013 to May 2013. Trained research assistants under the supervision of the PI administered a pre-tested semi-structured assisted questionnaire to the respondents under the guidance of the recommendations of the Injury Consensus Group of the Federation Internationale de Football Association Medical

Assessment and Research Centre (FMARC) an association of FIFA (Hagglund, Walden et al. 2005). Each club selected had a research assistant allocated on the basis of fluency in the three common languages (Swahili, Luganda and English), residents based within or regular at the club with an educational background preferably secondary and above. Documentation of injury was both current and previous injuries obtained within the 2012-2013 season only. Recruited players were visited at their respective clubs for consenting or assenting and data collection using the semi-structured assisted questionnaire. The players provided information on individual characteristics when enrolled for the study while injury data was recorded by the research assistant. Notably, the biometric characteristics were taken before training or match sessions and technical questions assisted by the trained research assistant. The pitch condition was measured using the standard referees match ball dropped from the flexed elbow height. Hard ground was measured with more than three bounces. For the weather conditions the dominant weather condition of the time was considered. The respondents reporting presences of sports injuries during data collection were further tasked to present medical evidence.

3.7 QUANTITATIVE DATA MANAGEMENT AND ANALYSIS

3.7.1 DATA MANAGEMENT

Primary and secondary field editing was done by research assistant and Principal Investigator (PI) respectively. Under safe conditions, data were then transported to the analysis centre. A database was then created using EPIDATA Version 3.1. Then double data entry by 2 data clerks was done using a computer and exported into STATA Version 11.2 after coding. Coded data was later edited, cleaned and backed up on a disk then frozen and safely stored in separate locations to avoid data loss. The duplicated data was used for analysis.

3.7.2 DATA ANALYSIS;

Descriptive study

The prevalence and injury patterns in the cross-sectional study were expressed as follows; Categorical variables were summarised using frequencies and proportions while continuous variables after subjecting them to a Shapiro-Wilk normality test for appropriate reporting of the data were summarised using; mean and standard deviation or median and inter-quartile range for skewed data.

Analytical study

To measure an association between the dependent variable (sports injury status) and the individual independent variables, Chi-square and Fishers' exact test were used appropriately. Then reported results in odds ratios at a 95% CI and P-values. However, any independent variables noted to have a p-value less than 0.2 was considered for multivariate analysis.

To assess the strength of association, using Stata Ver. 11.2 (Stata Corp. College Station Texas, USA) was still used with the dependent variable (sports injury status). The mathematical model used was the logistic regression model (backward elimination method) on all significant independent variables. The significant independent variables were further evaluated for possible interaction by forming interaction terms at an alpha of < 5% using the Chunk test that compared the $-2 \log$ likelihoods of the reduced and full models to a Chi-square distribution. None of the interacting terms were found to be significant hence not included in the model. The dropped independent variables with a P-value < 0.2 were tested for confounding individually basing on the odds ratios in both the full (unadjusted) and reduced (adjusted) models. An effect measure or percentage difference in Odds Ratio of 10% or greater was the basis for confounding to be present between the adjusted and unadjusted model. Hosmer-Lemeshow goodness of fit for the logistic regression was done and for good model fit, non-significant p-value was required.

3.8 QUALITY CONTROL MEASURES

Research assistants were trained on the basic community-based research for a period of 2 days. Due to the multilingual setting, the use of pre-defined categories in check boxes was utilised. An operational manual was provided to the research assistants to ensure minimal bias and high quality data. Regular meeting between data collectors and the PI were held to rectify problems encountered with an onsite verification of data collected by PI. Weight was measured using Seca Model type with standing height taken using uniform universally accepted units.

Double data entry by 2 research assistants in EPIDATA Ver.3.1 (www.epidata.dk) was done to further minimise errors by using a check command then cleaned by the PI. Pre-testing of the tool was done on 10 respondents in the FUFA Big league. With the help of language experts especially in the field of football, the instruments were translated in the local language then further back translated by another expert. Data were kept under lock and key. Documentation of injuries was done after cross-checking with club medical records available and also use of club competent medical personnel in addition to the FUFA medical team representative. This helped to determine whether the injury occurred and precise diagnosis.

3.9 ETHICAL CONSIDERATIONS

The Makerere Clinical Epidemiology Unit, the School Of Medicine Research and Ethics Committee and the Uganda National Council of Science and Technology approval for the study was sought. Further permission was sought from the FUFA chief executive officer, FUFA competitions committee, sports directors and club managers/coaches while informed consent and assent was sought from the players. Confidentiality was by concealment of respondents' names and clubs using only identifiers (serial numbers).

CHAPTER FOUR

RESULTS

4.0 INTRODUCTION

A total of 250 players were enrolled in the study from the 2012 – 2013 FUFA super league second half of the season representing 63.1% of the total 396 FUFA super league players.

4.1 DESCRIPTIVE DATA OF RESPONDENTS

4.1.1 Socio-demographic characteristics of players

The mean age of the players was 23.4 years \pm 4.1 years. The mean weight (kg) of the players was 71.5kgs \pm 6.2kgs. The mean height (cm) of the enrolled players was 174.57cm \pm 7.83cm.

Table 1 : Socio-demographic characteristics of the 250 FUFA super league players in the 2012-2013 season

Characteristic	Total N (N=250)	Proportion (%)
Age (yr)		
≤ 20yr	75	30.0
21 - 25yrs	92	36.8
26 - 30yrs	76	30.4
> 30 yrs	7	2.8
Religion		
Christian	173	69.2
Muslim	77	30.8
Marital Status		
Single	142	56.8
Married	108	43.2
Educational Level		
No formal education	35	14.0
Formal education received	215	86.0
Ethnicity		
Bantu	177	70.8
Luo	58	23.2
Foreigner	15	6.0
Region of residence*		
Other regions	12	4.8
Central region	237	94.2

* One respondent had missing data

The age category of 21 – 25 years comprised of the largest proportion of respondents (36.8%, n = 92) with most of the respondents being Christians (69.2%, n = 173). More than half of the respondents were single (56.8%, n = 142) and had received formal education (86.0%, n =

215). The majority of players were Bantu (70.8%, n = 177) and were from the central region (95.2%, n = 237) socio-demographic characteristics of players are summarised in Table 1.

4.1.2 Health characteristics of players

Most of the players as shown in Table 2 following a health check, fell in the normal Body Mass Index (between 18.5 kg/m² and 25kg/m²) that contributed 70.0% (n =175) of all players. History of previous injuries sustained within the season by the players were categorized into 3 groups with (40.4%, n =101) reporting no history of injuries within the season while 33.6% (n = 84) reported a single occurrence of an injury within the season. A history of recurrence of injury on the same site was also reported (25.2%, n = 63).

Table 2: Health characteristics and player position of the 250 Federation of Uganda Football Association super league players who participated in the 2012 – 2013 season.

Characteristic	Total n (N=250)	Proportion (%)
Body Mass Index		
≤ 18.4kg/m ²	3	1.2
18.5 – 25 kg/m ²	175	70.0
> 25 kg/m ²	72	28.8
Previous Injury		
No history of previous injury within the season.	101	40.4
History of a single injury within the season.	84	33.6
History of two or more injuries within the season.	65	26.0
Previous Injury on the Same Site		
No	187	74.8
Yes	63	25.2
Player Position		
Goalkeeper	29	11.6
Defender	67	26.8
Midfielder	97	38.8
Striker/Forward	57	22.8
Health personnel*		
Doctor	67	41.9
Allied health professional	58	36.3
Nurse	8	5.0
Traditional Healer/bone-setter	9	5.6
Self	13	8.1
Health facility visited[§]		
Government Hospital	12	7.5
Private Hospital	8	5.0
Private Clinic	43	26.9
Club clinic	82	51.3
Traditional Healers' shrine	9	3.8

* 5 and [§] 6 Players stayed consultation

4.2 PREVALENCE OF SPORTS INJURIES

Table 3: Sports injuries among 250 FUFA super league players in the 2012 – 2013 season

Variable	Injury Status Injured n (%)	95 % Confidence Interval
Overall Injury (n = 250)	160 (64.0)	58.0 – 69.9
Age (yr)		
≤ 20yr (n = 75)	50 (31.3)	55.9 – 77.5
21 – 25yrs (n = 92)	51 (31.9)	45.2 – 65.7
26 – 30yrs (n = 76)	54 (33.7)	60.7 – 81.4
> 30 yrs (n = 7)	5 (3.1)	35.1 – 107.8
Religion		
Christian (n = 173)	109 (68.1)	55.8 – 70.3
Muslim (n = 77)	51 (31.9)	55.5 – 76.9
Marital Status*		
Single (n = 142)	91 (56.9)	55.7 – 72.1
Married (n = 108)	66 (41.3)	50.6 – 72.5
Educational Level		
No formal education (n = 35)	25 (15.6)	56.2 – 86.7
Formal education received (n = 215)	135 (84.4)	56.3 – 69.3
Ethnicity		
Bantu (n = 177)	112 (70.0)	56.1 – 0.4
Luo (n = 58)	36 (22.5)	49.4 – 4.7
Foreigner (n = 15)	12 (7.5)	58.9 – 101.1
Region of residence*		
Other regions (n = 12)	11 (6.9)	75.3 – 108.1
Central regions (n = 237)	148(92.5)	56.2 – 68.7
Body Mass Index		
≤ 18.4 kg/m ² (n = 3)	3 (1.9)	
18.5 – 25 kg/m ² (n = 175)	113 (70.6)	57.4 – 71.7
> 25 kg/m ² (n = 72)	44 (27.5)	49.7 – 72.5
Previous Injury		
No history of previous injury within the season (n = 101).	41 (25.6)	30.9 – 50.3
History of a single injury within the season (n = 84).	62 (38.8)	64.3 – 83.3
History of two or more injuries within the season (n = 65).	57 (35.6)	79.6 – 95.8
Previous Injury on the Same Site		
No (n = 187)	103 (64.4)	47.9 – 62.3
Yes (n = 63)	57 (35.6)	83.1 – 97.8
Player Position		
Goalkeeper (n = 29)	18 (11.3)	44.1 – 80.1
Defender (n = 67)	37 (23.1)	43.2 – 67.3
Midfielder (n = 97)	64 (40.0)	65.5 – 75.5
Striker/Forward (n = 57)	41 (25.6)	60.1 – 83.8

* Individual did not report on residence and marital status

The results on the prevalence of sports injuries in relation to socio-demographic and sports specific factors of the respondents are summarized in Table 3. The overall prevalence of sports injuries among the players during the second half of the FUFA super league 2012 – 2013 season was 64.0% (n=160/250, 95% CI: 58 – 70).

The age category greater than 30 years had the highest occurrence of injuries (71.4%, 95% CI: 31.5 – 107.8). Players with a history of no previous injury within the season contributed 40.6% (n = 101, 95% CI: 30.9 – 50.3) to injuries while players with a history of more than two injuries within the season accounted for 26% (n= 65). However, previous recurrent injuries sustained by the players contributed 25.2% (95% CI: 19.78 – 30.62).

4.3 PATTERN OF SPORTS INJURIES

Table 4 shows results on the pattern of injuries in relation to type of injury and anatomical site. The commonest anatomical site affected was the knee (21.4%) which also accounted for the highest number of player injuries at all levels of severity. Soft Tissue Injuries (STI) accounted for the majority of injuries among the players (80.6%, n = 204 injuries) with haematoma /Bruises and sprains or ligament injuries in combination contributing 47.2% of the STI. The sprains accounted for the highest number of injuries sustained (22.1%) with 33.8% accounting for STI over 28 days spent out of play.

Table 4: Injury pattern by severity among the 2012 -2013 FUFA super league players

Variable	Frequency (%)	Player Period Out of Active Play				
		None	1-3days	4-7days	8-28days	> 28days
Number of players injured						
One injury	73(45.6)	12	11	15	11	24
Two injuries	73(45.6)	16	6	17	11	23
Three injuries	13(8.1)	4	0	2	1	6
≥ four injuries	1(0.7)	0	0	0	0	1
Anatomical site of injury						
Head and or face	10(4.7)	1	2	4	1	2
Neck or Cervical spine	1(<0.1)	0	0	0	1	0
Sternum or Rib or upper back	11(5.1)	4	1	1	0	5
Shoulder or clavicle	11(5.1)	6	0	1	0	4
Upper Arm	2(<0.1)	1	0	1	0	0
Elbow	9(4.2)	2	2	2	1	2
Forearm or Wrist	4(1.9)	0	0	2	0	2
Hand or Finger or Thumb	7(3.2)	1	0	2	0	4
Lower back or Sacrum or Pelvis	3(1.4)	0	0	0	1	2
Hip or Groin	15(7.0)	3	2	2	3	5
Thigh	19(8.8)	2	0	6	4	7
Knee	46(21.4)	8	5	10	8	15
Lower leg or Achilles Tendon	22(10.2)	4	2	5	4	7
Ankle	25(11.6)	7	3	2	3	10
Foot or Toe	30(14.0)	8	1	8	5	8
Total		47	18	46	31	73
Type of injury						
Skeletal tissues						
Dental Injury	3(1.2)	0	1	2	0	0
Fracture	4(1.5)	1	0	1	0	2
Dislocation or Subluxation	8(3.1)	0	0	2	1	5
Other Bone Injury	34(12.9)	10	2	6	6	10
Total	49(19.4)	11	3	11	7	17
Soft Tissue Injury						
Concussion with or/Contusion	5(2.0)	1	1	1	1	1
Haematoma or Bruise	66(25.1)	16	8	19	7	16
Abrasion	7(2.7)	2	1	3	0	1
Laceration	3(1.2)	0	0	1	1	1
Nerve injury	1(<0.1)	0	0	1	0	0
Muscle rupture or Strain or Tear	36(13.7)	9	3	8	4	12
Tendon injury/ Tendinosis/Bursitis	25(9.5)	7	3	2	3	10
Sprain or Ligament injury	58(22.1)	9	3	6	12	28
Lesion of Meniscus/Cartilage	3(1.2)	0	1	2	0	0
Total	204(80.6)	44	20	43	28	69

NB A player could sustain more than one injury

Table 5 : Sports injury distribution among the 160 injured FUFA super league players 2012 – 2013 in relation to the sports specific characteristics

Variable	Frequency	Percentage
Player position		
Goalkeeper	28	10.6
Defender	57	21.7
Midfielder	108	41.1
Striker/Forward	70	26.6
Player Role*		
Goalkeeping	17	7.9
Defense	48	22.3
Midfield	86	40.0
Striking/Forward	64	29.8
Pitch Condition		
Dry and Hard	153	56.9
Dry and Soft	51	19.4
Wet and Soft	35	13.1
Wet and Hard	11	4.4
Slippery	6	3.1
Muddy	5	0.6
Stony or Gravel	2	2.5
Weather Condition		
Sunny	157	59.4
Rainy	76	30.0
Windy	22	8.1
Cloudy	8	2.5
Period spent out of play/Severity		
None	55	21.7
1 to 3 days(Minor injury)	23	9.1
4 to 7 days(Mild injury)	54	21.4
8 to 28 days(Moderate injury)	35	13.8
> 28 days(Severe injury)	86	34.0

*** Some of the injuries were sustained outside the player roles e.g Warm-ups**

Table 5 shows the sports injuries distribution among the 160 players with the majority of injuries found among midfielders, 108 players (41.1%) while the goalkeepers accounted for the least injuries at 10.6% (n=28). Most of the injuries were sustained in the midfield accounting for 40.0% (86) while the goal keeping position was the least injured position at 7.9% (17). During sunny conditions 59.4% (157 injuries) players sustained injuries twice as much as injuries sustained during rainy conditions at 30% (76). The players with the majority of injuries 34% (86) spent more than 28 days out of play without full return to active participation. The dry and hard ground contributed 56.9% (153) of all injuries sustained by the players while stony and gravel pitch conditions accounted for 2 injuries.

4.4 FACTORS ASSOCIATED WITH SPORTS INJURIES

4.4.1 Circumstances surrounding sports injury occurrence

Table 6 : The sports-specific conditions associated with the sports injuries occurrence among the 160 injured FUFA super league players in the 2012 – 2013 season.

Variable	Frequency	Percentage
Injury occurrence involved		
None	34	21.2
Yes, with another player	37	23.1
Yes, with the Ball	74	46.3
Yes, with the pitch	15	9.4
Skill prior to injury*		
Kicking	13	8.1
Heading	7	4.4
Running	11	6.9
Jumping	14	8.8
Collision	34	21.3
Falling	9	5.6
Hit-ball	4	2.5
Twisting	11	6.9
Stopping	4	2.5
Shooting	16	10.0
Dribbling	28	17.5
Pressing	4	2.5
Competition type		
Training	85	45
Match	88	55
Pitch		
Home	85	54.8
Away or Visitor	65	41.9
Neutral ground or Unknown	5	3.3
Pitch Condition		
Dry and Hard	91	56.9
Dry and Soft	31	19.4
Wet and Soft	21	13.1
Wet and Hard	7	4.4
Slippery	5	3.1
Muddy	1	0.6
Stony or Gravel	4	2.5
Weather Condition		
Sunny	95	59.4
Rainy	48	30.0
Windy	13	8.1
Cloudy	4	2.5
Period Spent out of Play		
None	32	20.0
1 – 3 days(Minor injury)	17	10.6
4 – 7 days(Mild injury)	34	21.3
8– 28 days(Moderate injury)	23	14.4
> 28 days(Severe injury)	54	33.7

* Five players sustained injuries outside the basic sports skills

Table 6 displays the results on injury occurrence in relation to the sports specific characteristics of the 160 injured players. Most of the injured players 74 (46.3%) sustained injuries while in control of the ball. The skills performed prior to the injury found collisions accounting for the majority of players injured 34 (88.2%). However, 91 players (56.9%) sustained injuries on dry and hard ground with the sunny weather accounting for the highest injuries at 95 players. Among the players with injuries, 54 players spent more than 28 days without return to full active participation in the sport accounting for the highest number of injured players (33.7%).

4.4.2 Results of bi-variate analysis

Table 7: Unadjusted association between sports injuries and socio-demographic factors amongst the 250 players in the 2012 – 2013 FUFA super league season

Variable	Unadjusted Odds Ratio	95% Confidence Interval	P-value
Weight (Kg)	0.97	0.93 – 1.01	0.121
Age (yr)			
≤ 20 yrs	1		
21 – 25 yrs	0.62	0.33 – 1.17	0.141
26 – 30 yrs	1.23	0.62 – 2.45	0.561
> 30 yrs	1.25	0.23 – 6.90	0.798
Religion			
Christians	1		
Muslims	1.15	0.66 – 2.02	0.624
Marital Status			
Single	1		
Married	0.80	0.48 - 1.35	0.407
Educational Level			
No formal education	1		
Formal education received	0.68	0.31 – 1.48	0.326
Ethnicity			
Bantu	1		
Luo	0.95	0.52 – 1.75	0.869
Foreigner	2.32	0.63 – 8.53	0.205
Region of residence			
Other regions	1		
Central region	0.15	0.02 – 1.19	0.073
Body Mass Index			
≤ 18.4 kg/m ²	---		
18.5 – 25 kg/m ²	1		
> 25 kg/m ²	0.86	0.49 – 1.52	0.608
Previous Injury			
No history of previous injury within the season.	1		
History of a single injury within the season.	4.12	2.20 -7.73	< 0.001
History of two or more injuries within the season.	10.43	4.50 - 24.15	< 0.001
Previous Injury on the Same Site			
No	1		
Yes	7.75	3.2 - 18.85	< 0.001
Player Position			
Goalkeeper	1		
Defender	0.28	-1.17 – 0.61	0.534
Midfielder	0.17	- 0.69 – 1.03	0.699
Striker/Forward	0.45	-0.5 – 1.4	0.353

NB: Highlighted statistically significant variables taken for multivariate analysis

The results on socio-demographic characteristics are summarised in Table 7 and found no statistical significance with sports injuries. Previous injury and injury recurrence (previous injury on the same site) were found to be statistically significant.

4.4.3 Results of Multivariate Analysis

In assessing the strength of association, the independent significant variables included weight (kg), region of residence and age (yr) of players. Others included history of previous injury and recurrence of injury.

The statistically significant variables were previous injury within the season and injury recurrence (previous injury on the same site within the season) reporting OR 3.33 (95% CI: 1.72 – 6.47), OR 6.18 (95% CI: 2.36 – 16.17) and OR 3.57 (95% CI: 1.32 – 9.70). Interaction was assessed from the statistically significant variables namely; previous injury and injury recurrence within the season however, none of the interacting statistically significant terms were noted to be statistically significant at a level of significance of less than 0.05.

The variables that were dropped due to non-significance statistically namely weight (kg), age (yrs) and district of residence were further assessed for confounding at a 10% cut-off against the statistically significant variables that remained in the mathematical model. None of the following variables were retained in the model as confounders' weight (kg), age (yr) and district of residence. However, age and weight were included in the final model due to previous studies overwhelming confirming them as risk factors among sports injuries.

Table 8: Adjusted association between sports injury and independent factors of the 250 FUFA super league players, 2012 – 2013 season

Variable	Adjusted OR	95% CI	P-value
Weight (kg)	0.95	0.91 - 1.00	0.053
Age (yr)			
≤ 20 yrs	1		
21 - 25yrs	0.67	0.33 – 1.36	0.265
26 - 30 yrs	0.98	0.42 – 2.26	0.962
> 30 yrs	0.54	0.08 – 3.48	0.516
Previous Injury within the season			
None	1		
Single injury	3.33	1.72 – 6.47	< 0.001
Two or more injuries	6.18	2.36 – 16.17	< 0.001
History of previous injury at the same site			
No	1		
Yes	3.57	1.32 – 9.70	0.012

The results on the logistic regression to establish the strength of association between the different factors are displayed in Table 8. The final mathematical model included weight (kg), age (yr), previous injury and history of recurrence of injury within the same season. The statistically significant variables found were previous injury within the season and history of injury recurrence within the season.

In assessing the final mathematical model: logistic regression displayed above in Table 8 for goodness of fit, Hosmer-Lemeshow goodness of fit chi² (8) was used with 7.38. The number of groups set were 10, number of observations were 250 with the model able to predict 49.6% of sports injury occurrence.

CHAPTER FIVE

DISCUSSION

5.1 Prevalence of sports injuries

The overall prevalence of sports injuries among the 2012 – 2013 FUFA super league players was 64% with most of the injuries sustained (32.7%) keeping players out of play for more than 28 days. The grim reality that almost two thirds of players are injured is worrisome because this proportion is more than twice higher as compared to the highest overall prevalence (8 and 25%) in similar studies done in high resource settings. However, in a similar low resource setting: Benin city, Nigeria, the overall prevalence was higher at 81.6% (Azubuike and Okojie 2009) than in Uganda. This could suggest that the study respondents were drawn from more than one level of leagues ranging from the amateur to the professional levels that could have contributed to the high overall prevalence. Players tend to develop skills that circumvent injuries as their level of skill improves implying that elite footballers tend to suffer fewer injuries than amateur players despite evidence existing that professional player are at a higher injury risk (Hawkins, Hulse et al. 2001).

5.2 Pattern of sports injuries

The number of days spent out of play in relation to player position found midfielders 41.1% (108) sustained minor injuries than any other player role in this study. However, they continued to actively participate in the game. The defensive players' position was the highest group that continued participating in the game constituting overall 21.7% (57 players) despite being injured. Moderate injuries were commonly seen among midfielders accounting for 47.83% (11) followed by defenders 20.59% (7) of all moderate injuries. Severe injuries were commonly reported among midfielders accounting for 50% (27) trailed by strikers 24.07% (13) with goalkeepers accounting for the least injury occurrence at all levels of injury severity. However, in a similar study conducted among elite athletes, the moderate injuries reported 69% while the severe injuries accounted for 18% (Chomiak, Junge et al. 2000;

Walden, Hagglund et al. 2005; Cloke, Spencer et al. 2009; Petersen, Thorborg et al. 2010). This could have been caused probably by the inadequate or poor management of the injuries by the 'health personnel' especially the high number of injured players spending more than 28 days out of active football participation.

This further suggests that goalkeepers are less exposed to open play and high velocity situations compared to outfield players especially the midfielders and strikers who are required to link play. This finding is different from a study conducted by Stokes who reported goalkeepers as being at a higher risk than any other player (Stokes, McKeever et al. 1994). Practically, midfielders role to succeed derive their abilities through slickly, quick and decisive skills coupled with effort to succeed in retrieval or defending of the ball. This is different from other studies that have reported defenders and strikers sustaining more injuries than any other positional role (Ekstrand, Timpka et al. 2006; Villwock, Meyer et al. 2009; Williams, Hume et al. 2011 (Stokes, McKeever et al. 1994; Azubuike and Okojie 2009)). This suggests that the midfielders known for their glorified precision in dribbling, strikers in shooting accurately and defenders praised for their hard tackles perform these activities at high momentum despite their relatively heavy weight (kg) that is subject to high tempo experiences and collisions with the forwards are exposed to injuries more than any player position. Furthermore, midfield and striking roles require utmost concentration, close marking, agility and speed which increase the injury risk. The style of play employed by most of the coaches or managers during training differs greatly since the level of coaching experience and qualification greatly differs from one club to another. The modern style of play employed by the players and coaches requires team work especially when playing the 4:3:3 system that places midfielders, strikers and wing-backs at high tempo experiences that requires adjustment from an attacking to a more defensive role such that a larger burden is placed on the players especially the midfielders.

The commonest skill prior to injury was collision which was twice as higher as in another similar study (Azubuike and Okojie 2009) contributing 21.3%. Football is a contact sport that derived its' passion from the combination of advanced soccer skills that lead to intentional and non-intentional collision of which subjectively at the referees' own discretion determines the limits of excessive force. This can also be attributed to the skill levels among the players and the style of play employed by the club managers or coaches.

Our findings were in agreement with those from other resource-constrained setting; Nigeria where prevalence of sports injuries was 81.6% (204 injuries) (Azubuike and Okojie 2009). It was found that soft tissue injuries were the most prevalent type of sports injuries (80.6%) as noted in this study against 19.4% for the skeletal injuries. The commonest type of injury was haematoma and bruises followed by the sprains/ligament injuries with a proportion of 25.1% and 22.1% respectively. This finding was synonymous with another study that reported 31% of all injuries affecting soft tissues (Ekstrand, Hagglund et al. 2011). This could imply that a high injury proportion could be due to the pitch conditions that accounted for 56.9% (91) on dry and hard ground including the warmer climatic conditions during the second half of the season.

The most injured body part or anatomical site in this study was the lower limb especially the ankle joint accounting for 80% ($P < 0.001$) which was noted to be similar with other findings from other studies conducted in high resource setting reporting lower limb injuries being almost thrice lower as compared to the findings in this study (Orchard and Seward 2002; Ekstrand, Hagglund et al. 2011; Ekstrand, Healy et al. 2012). However, other studies found the thigh, especially the hamstring muscle, as the most commonly injured region in both sexes overall, while the hip/groin was more commonly injured in male players and the knee in female players (Orchard 2001; Marwan, Behbehani et al. 2012). This implies that since football is largely played using the lower limbs, then most injuries are more likely the lower limbs. The comparisons were done between genders unlike in this study where only male

respondents were involved. This implies that since football is largely played using the lower limbs, then the more likely injured body site would be the lower limb. Further in this study, muscle injuries or strains contributed 13.7% (36) less than in previous studies in high resource setting that constituted between 14 - 31% of all muscle injuries (Arnason, Sigurdsson et al. 2004; Walden, Hagglund et al. 2005; Walden, Hagglund et al. 2005; Eirale, Farooq et al. 2013). However, similar studies done in low resource setting (Hoskins and Pollard 2003; Azubuike and Okojie 2009) reported strains contributing to 13.2% of the injury type trailing the sprains which was similar with this study finding. Basing on the FIFA ranking done annually Uganda is almost 50 places, trailing most of the high resourced countries where these studies were done, such that the quality of the game in comparison to Ugandan players greatly differs. Such that the higher the quality of the game the higher the risk of injury since take-off and propulsion are majorly aided by the major muscles especially 4 major muscles namely Hamstrings muscles.

Sprains were found to contribute the highest injuries twice higher the number of strains reported in a low resource setting especially in this study constituting 22.1% (58 sprains). This finding was almost identical to other studies in high resource setting reporting sprains being the highest reported injuries though relatively lower than the injury occurrence in low resource setting (Giza, Fuller et al. 2003). This can be attributed to the level of skill within the super league players being slightly inferior in terms of mean height (174.57cm) greatly lower than in high resource setting. Secondly based on the UEFA classification of attracting talent into the region, the players from the FUFA super league requires a more rigorous passage through to an European license than a member countries of the UEFA (LEMBO 2011). There is also a difference in the quality of playgrounds where these players entertain their fans as compared to the typical standard pitch covered with green grass. The pitch is uneven, hard, dirty and at times slippery or without the required grass blade distribution, length/height and quality such that involuntary torsion, falling and lack of cushion may have

contributed to the injury risk occurrence during active play as also reported in other studies (Ekstrand, Hagglund et al. 2011; Kordi, Hemmati et al. 2011; Dragoo, Braun et al. 2012).

5.3 Factors Associated with Sports Injuries

Most of the players belonged to the group with a normal range of BMI however, the highest prevalence of injury was noted among players recording a BMI below the normal range in this study, 100% (3) followed by players with a normal BMI, 64.1% (113 players). Individuals recording a BMI above normal accounted for injury prevalence of 61.1% (72), which could imply that the heavier the players were; the less likely they sustained injury. However, a non-significant relationship in this study was found between BMI and injury occurrence. Furthermore, the injured players had a median BMI of 23.33 kg/m² lower than the overall and non-injured group of players. It is possible that these socio-demographic characteristics did not play a significant role in sports injury occurrence in this study. However, previous studies reported BMI to be an independent predictor of injuries especially presenting with a BMI of less than 25 kg/m² increased the risk of hamstring injury by nearly 2.5 times (Gabbe, Finch et al. 2005).

In this study, an association was not found between sports injuries and age (year). This finding was statistically non-significant and different with those reported in other studies that reported younger players being at higher risk. However, other studies found a significant increase in risk of injury above 23yrs of age (RR 3.8; 95% confidence interval (CI) 1.1 to 14.0; p = 0.044) The study further reported significant age at risk was between 23-25 years while age greater than 23 years reported an OR 1.3 – 3.9 and those > 25yrs being 2.8 – 4.4 times more likely to suffer injuries (Arnason, Sigurdsson et al. 2004; Woods, Hawkins et al. 2004; Gabbe, Finch et al. 2005). This study involved amateur players at community level and were based in a high resource setting different from the elite player in a low resource setting. Weight (kg) was noted not to be associated with injury occurrence OR 0.95. This finding was similar to a study that reported no association between injury occurrence and weight (kg).

However, the study only reported age and previous injury which were statistically non-significant (Arnason, Sigurdsson et al. 2004).

Ethnicity in this study was found not to be an independent predictor of injury occurrence. However, in the English premier league, race and ethnicity were reported to be strongly associated with hamstring injuries ($p < 0.05$) (Woods, Hawkins et al. 2004). However, in this study ethnicity was found not to independently predict injury occurrence ($p\text{-value} > 0.05$). This could be attributed to the single race we had in this study that were black Africans and the nature of the sport being played within the central region of Uganda leading to more Bantu being exposed to the sport. This is evident with the number of Bantu participating in the league contributing 70.8% (177) with a prevalence of injury at 63.3% (112).

This study further found competitive matches contributed to most of the injury occurrences accounting for 55% as compared to training that accounted for 45%. This finding was different from other studies that reported a 7-fold risk of injuries during matches as compared to training matches in high resource setting (Ekstrand, Hagglund et al, 2011). This could suggest the nature of training ground that double as match pitches despite their sorry state. Secondly, the number of players competing for the first team slot is quite large such that in the event to impress/catch the managers' eye need to perform since match bonus is guaranteed.

Our findings were in agreement with other studies which reported that dry and hard pitch conditions were reported to have contributed to 81.4% of injuries which was equally reported in other studies (Williams, Hume et al. 2011). While another study reported a trend towards greater injury incidence during warmer and/or drier conditions (Orchard 2002). This study reported that 56.9% of injuries were sustained on dry and hard pitch conditions. During the second half of the season most injuries were sustained during dry conditions with dry and hard pitch reporting a highly independent significant association of pitch condition with injury, $P < 0.001$. This implies possibly inadequate formal monitoring and implementation of

ground safety policies and guidelines is left to match officials and only done on match days. However, injuries sustained during training rarely have match officials but only club officials. This finding is similar to another study (Orchard 2002) that reported variations in the playing surface characteristics. Shoe-surface traction will usually have a positive correlation with ground hardness, dryness, grass cover and root density, length of cleats on player boots and relative speed of the game.

The weather conditions differ according to the weather patterns especially those within the tropics as reported in this study, 78.9% (157 injuries) were sustained during sunny conditions. However, in this study the injuries sustained during sunny conditions accounted for 59.4% less than other studies reported. Being the tropics, during the second half of the season dry spell were noticed and most of the games were played during sunny conditions.

The history of previous injury and history of recurrence of injury in this study were found to be independently associated with sports injuries with a $p < 0.001$ hence high at 33.6% and 74.8% respectively. Having a history of previous injury within the season increased the risk of injury by 3.33 times more than players who had no history of injury within the season. However, a player with a history of recurrence of injury was thrice more likely to develop an injury as compared to players with no history of injury recurrence. This finding was similar to other studies that found a significant association between knee and ankle sprains (OR= 4.6 and 5.3 respectively) with STI injuries reported to contribute 15% (Arnason, Sigurdsson et al. 2004; Eirale, Farooq et al. 2013). However, this study did generalise all previous or recurrence of previous injuries rather than individually identifying the specific injuries sustained by the players. It was noted that having a history of previous injury within the season was much higher than noted in other studies while a history of injury recurrence was similarly higher than other previous study finding. This could imply that injuries sustained by the players could have be poorly managed or poorly healed (fibrosis) as reported; 40% of the health workers being other medical workers and local or traditional health practitioners.

The soccer skill noted to be independently associated with sports injuries, was falling though in assessing strength of association was statistically non-significant (OR 0.17). However, in other studies, tackling especially collision [player-to-player contact (artificial turf 59.2%, dirt field 51.4%)] were noted to be associated with injury occurrence (artificial tuft incidence rate ratio 1.88) (Kordi, Hemmati et al. 2011). In Uganda no super league club plays on an artificial tuft.

5.4 Study limitations

The study method; cross-sectional study design could not establish causality but only an association.

Sprains and strains could not be graded as required in clinical practice since injuries were only observed and reported such that the researcher was not involved in the treatment or management of the injuries.

In this study it was difficult to ascertain whether physiological characteristics; fatigued, biometric changes, player exposure time and experience contributed to injury occurrence.

This being a community-based study, it solely relied on players' self-reports of their injury status, which could have caused recall bias thus leading to under-estimation or over-estimation of the prevalence of injury status. Also, there could be recall bias since retrospectively; players were asked a history of injury recurrence and history of an injury. However, this was minimised by only injuries sustained within the season 2012 – 2013 such that recall would not span over a period of six month. Secondly, cross checking with medical records for injured respondents who possessed the medical records were referenced with the help of some club medical officials.

Non-response was estimated at 11.3%. Non-response could have introduced measurement bias in evaluating prevalence of sports injuries, patterns and associated factors. This could have created either an under-estimation or over-estimation of the estimates. 10% inclusion in the sample size was done to have an increase of 28 respondents.

However, the findings of this study are valid based on the sample size, sampling techniques and data analysis method used.

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

6.1 Conclusions

- The prevalence of sports injuries among the 2012 – 2013 super league players is high at 64%.
- Soft tissue injuries recorded the highest injury occurrence contributing 76.4% (201) with haematoma or bruise and sprain accounting for 47.2% (124).
- FUFA super league players with a previous history of injury are 3 times more likely to be at an increased risk of sports injuries than players with no history of previous injury within the season. Players with recurrence of injury on the same site during the season are more than thrice at an increased risk of sports injuries than players with no history of previous injury recurrence.

6.2 Recommendations

- Increase on the training of specialized staff in the management of sports injuries by MoH and MoE&S.
- Encourage the stakeholders to employ qualified personnel to establish, manage and diagnose sports injuries currently in Uganda.
- Strengthening of the National Physical Education and Sports Policy (NPESP) on the management of sports-related injuries and employment of health personnel.
- Operationalising the MOH physical education and sports department to coordinate and supervise all the health-related aspects of the sport workers.
- Future research on an association between sports injuries, previous injury and previous recurrence of injury at the same site should be investigated to establish the trend and pattern of sports injury.

- Further prospective studies are needed to address the problem of football-related injuries.
- Establishment of a national sports injury database to systematically record player trends and in the process will fully define the nature and risk of injuries that shall allow establishment of an injury prevention strategy.

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APPENDIX A: CONSENT FORM

Research Topic: Prevalence, pattern and factors associated with sports injury among players in the FUFA Super League 2012 – 2013 season.

Introduction

My name is Edwin Mwaka John from the College of Health Sciences, Clinical Epidemiology Unit, Makerere University, Kampala. I am conducting this study as a partial fulfillment for an award of a degree in clinical epidemiology and biostatistics. This form is meant to explain to you the important details of the study before you decide to be a participant. You have been selected to participate in this study but you must understand its purpose, how it may benefit you and the risk involved. If you agree to participate in the study, you will be asked to sign this form.

Purpose

This study aims to describe the injury occurrences among males players registered in the FUFA super league for the season 2012 – 2013. The information you will provide will be useful in highlighting the sports injuries trend, risk factors, formulation of an injury report form and guide development of appropriate policies and management interventions by MoH and MOE&S to deal with the scourge.

Potential Benefits

By participating in the study, there isn't any direct benefit. However, the information that you provide will help researchers and policy-makers establish the injuries sustained by you the players and determine the best preventive strategies to minimize injury occurrence in the sporting fraternity.

Study Procedures

We will request you to answer some questions individually about your life and your health if you participate in the study. You may further be requested to provide medical records to support the injury occurrence. This study will take about two month but you will be required to participate for only an hour.

Risks

No risks will be posed to your life as a result of this study. There are no invasive procedures.

The interviewers may ask sensitive questions and will use up some of your time.

Right to refuse or withdraw

Your participation in this study is entirely voluntary and you can withdraw from the study at any moment whenever you so wish without affecting your time and health. There will be no penalty to you. You may choose to answer all or just some of the questions posed.

Confidentiality

If you accept to participate in the study, all personal information obtained from you will be kept under lock and key. This information does not risk your therapy/treatment in your esteemed club or by any way affect your family member(s) and you will be known by a number only.

Who to contact:

For any queries you may do so now or later. Feel free to contact Professor James Tumwine, Chairman School Of Medicine Review and Ethics Committee on 0772494120(kabaleimc@gmail.com) or Mwaka Edwin John (Principal Investigator) on 0772359865/0791111796 (mwakadoc@gmail.com).

CERTIFICATE OF CONSENT

I understand that by accepting to participate in this study and signing this informed consent I do not surrender my legal rights nor relieve the investigator of any liability, but merely indicate that I have been informed about the research study which I am voluntarily agreeing to participate and will be available for questions at the club ground when needed. A copy of this form will be provided to me.

Signature of participant _____ Date_____

(thumbprint) Sign of Research assistant _____ Date_____

APPENDIX B: (KIAMBATISHO) IDHINI FOMU

Utafiti Topic: Maambukizi, muundo na mambo yanayohusiana na michezo ya kuumia miongoni mwa wachezaji katika FUFA Super League 2012 - 2013 msimu.

Utangulizi

Jina langu ni Edwin Mwaka Yohana kutoka Chuo cha Sayansi ya Afya, Hospitali Magonjwa Unit, Chuo Kikuu cha Makerere, Kampala. Mimi kufanya utafiti huu kama ni kutimia nusu kwa ajili ya tuzo ya shahada katika Epidemiologia kliniki na biostatistics. Fomu hii ni maana ya kuelezea kwa wewe maelezo muhimu ya utafiti kabla ya kuamua kuwa mshiriki. Wewe kuwa kuchaguliwa kushiriki katika utafiti huu lakini lazima kuelewa madhumuni yake, jinsi wanaweza kunufaika na wewe hatari wanaohusika. Kama unakubali kushiriki katika utafiti, utaombwa uweke saina fomu hii.

Kusudi

Utafiti huu unalenga kuelezea matukio kuumia miongoni mwa wachezaji wanaume amesajiliwa katika FUFA super ligi kwa msimu 2012-2013. habari wewe kutoa itakuwa muhimu katika mwangaza michezo mwenendo majeruhi, hatari, uundaji wa aina kuumia ripoti na maendeleo mwongozo wa sera na mikakati ya usimamizi na Wizara ya Afya na MOE & S kukabiliana na janga hilo.

Uwezo Faida Kwa kushiriki katika utafiti, hakuna faida yoyote ya moja kwa moja. Hata hivyo, taarifa ambayo itasaidia kutoa watafiti na watunga sera kuanzisha majeraha na wewe wachezaji na kuamua bora mikakati ya kuzuia na kupunguza kuumia tukio katika udugu michezo.

Utafiti Taratibu

Sisi ombi wewe kujibu baadhi ya maswali mmoja mmoja kuhusu maisha yako na afya yako kama wewe kushiriki katika utafiti. Unaweza zaidi ukaulizwa kutoa rekodi ya matibabu ya kusaidia tukio kuumia. Utafiti huu itachukua kuhusu mwezi mbili lakini utahitajika kushiriki kwa saa moja tu.

Hakuna hatari hatari itakuwa vinavyotokana na maisha yako kama matokeo ya utafiti huu. Hakuna taratibu vamizi.interviewers wanaweza kuuliza maswali nyeti na mapenzi kutumia baadhi ya muda wako. Haki ya kukataa au kutoa ushiriki wako katika utafiti huu ni hiari kabisa na unaweza kuondoka kutoka utafiti wakati wowote wakati wowote hivyo unataka bila kuathiri muda wako na afya. Hakutakuwa adhabu na wewe. Unaweza kuchagua jibu wote au baadhi tu ya maswali yaliyoulizwa.

Usiri

Kama wewe kukubali kushiriki katika utafiti, taarifa za kibinafsi zilizopatikana kutoka utawekwa chini ya kufuli na ufunguo. Hii habari haina hatari tiba yako / matibabu katika klabu yako Tukufu au kwa njia yoyote kuathiri familia yako mwanachama (s) na wewe itakuwa inajulikana kwa idadi tu. Nani kuwasiliana: Kwa maswali yoyote unaweza kufanya hivyo sasa au baadaye. Jisikie huru kuwasiliana Profesa James Tumwine, Mwenyekiti Shule ya Utabibu mapitio na Kamati ya Maadili juu ya 0772494120 (kabaleimc@gmail.com) au Mwaka Edwin Yohana (Principal Mpelelezi) juu 0772359865/0791111796 (mwakadoc@gmail.com).

SHAHADA YA IDHINI

mimi kuelewa kwamba kwa kukubali kushiriki katika utafiti huu na kusaini hii ridhaa mimi si kujisalimisha wangu haki za kisheria wala kupunguza mpelelezi wa dhima yoyote, lakini tu zinaonyesha kwamba Nimefahamishwa kuhusu utafiti ambayo mimi hiari ya kukubali kushiriki na itakuwa inapatikana kwa maswali katika ardhi klabu wakati inahitajika. nakala ya fomu hii itakuwa zinazotolewa na mimi.

Sahihi ya mshiriki _____ **Date**_____ (thumbprint)

Ishara ya Utafiti msaidizi _____ **Date**_____

APPENDIX C: PROXY CONSENT FORM (I)

Research Topic: Prevalence, pattern and factors associated with sports injury among players in the FUFA Super League 2012 – 2013 season.

Introduction

My name is Edwin Mwaka John from the College of Health Sciences, Clinical Epidemiology Unit, Makerere University, Kampala. I am conducting this study as a partial fulfillment for an award of a degree in clinical epidemiology and biostatistics. This form is meant to explain to you the important details of the study before you decide to permit your son to participate. He has been selected to participate in this study but you must understand its purpose, how it may benefit you and the risk involved on his behalf. If you allow him to participate in the study, you will be asked to sign this form on his behalf.

Purpose

This study aims to describe the injury occurrences among males players registered in the FUFA super league for the season 2012 – 2013. The information he will provide will be useful in highlighting the sports injuries trend, risk factors, formulation of an injury report form and guide development of appropriate policies and management interventions by MoH and MOE&S to deal with the scourge.

Potential Benefits

By him participating in the study, there isn't any direct benefit. However, the information that he provides will help researchers and policy-makers establish the injuries sustained by him and determine the best preventive strategies to minimize injury occurrence in the sporting fraternity.

Study Procedures

He will be requested to answer some questions individually about his life and his health if you permit him participate in the study. He may further be requested to provide medical records to support the injury occurrence. This study will take about two month but he will be required to participate for only an hour.

Risks

No risks will be posed to his life as a result of this study. There are no invasive procedures to be done. The interviewers may ask sensitive questions and will use up some of his time.

Right to refuse or withdraw

His participation in this study is entirely voluntary and on his behalf he can withdraw from the study at any moment whenever he so wishes without affecting your and his time and health. There will be no penalty to you. He may choose to answer all or just some of the questions posed.

Confidentiality

If his allowed to participate in the study, all personal information obtained from him will be kept under lock and key. This information does not risk his therapy/treatment in his esteemed club or by any way affect his family member(s) and he will be known by a number only.

Who to contact:

For any queries you may do so now or later. Feel free to contact Professor James Tumwine, Chairman School Of Medicine Review and Ethics Committee on 0772494120(kabaleimc@gmail.com) or Mwaka Edwin John (Principal Investigator) on 0772359865/0791111796 (mwakadoc@gmail.com).

CERTIFICATE OF PROXY CONSENT

I understand that by permitting my son to participate in this study and signing this informed consent I do not surrender his legal rights nor relieve the investigator of any liability, but merely indicate that I have been informed about the research study which I am voluntarily permitting him to participate and he will be available for participation at the club ground when needed. A copy of this form will be provided to me.

Signature of Guardian/Coach _____ Date _____

(thumb print) Sign of Research assistant _____ Date _____

APPENDIX D: WAKALA IDHINI FOMU (I)

Utafiti Topic: Maambukizi, muundo na mambo yanayohusiana na michezo ya kuumia miongoni mwa wachezaji katika FUFA Super League 2012 - 2013 msimu.

Utangulizi

Jina langu ni Edwin Mwaka Yohana kutoka Chuo cha Sayansi ya Afya, Hospitali Magonjwa Unit, Chuo Kikuu cha Makerere, Kampala. Mimi kufanya utafiti huu kama ni kutimia nusu kwa ajili ya tuzo ya shahada katika Epidemiologia kliniki na biostatistics. Fomu hii ni maana ya kuelezea kwa wewe maelezo muhimu ya utafiti kabla ya kuamua kuruhusu mwana wako kushiriki. Yeye imekuwa kuchaguliwa kushiriki katika utafiti huu lakini lazima kuelewa madhumuni yake, jinsi wanaweza kunufaika na wewe hatari kushiriki kwa niaba yake. Kama wewe kumruhusu kushiriki katika utafiti, utaombwa uweke saine fomu hii kwa niaba yake.

Kusudi

Utafiti huu unalenga kuelezea matukio kuumia miongoni mwa wachezaji wanaume amesajiliwa katika FUFA super ligi kwa msimu 2012-2013. habari yeye itatoa itakuwa muhimu katika mwangaza michezo mwenendo majeruhi, hatari, uundaji wa aina kuumia ripoti na maendeleo mwongozo wa sera na mikakati ya usimamizi na Wizara ya Afya na MOE & S kukabiliana na janga hilo.

Uwezekano wa Faida

Kwa yeye kushiriki katika utafiti, hakuna faida yoyote ya moja kwa moja. Hata hivyo, habari kwamba yeye hutoa itasaidia watafiti na watunga sera kuanzisha majeraha na yeye na kuamua bora mikakati ya kuzuia na kupunguza kuumia tukio katika udugu michezo.

Jifunzeni Utaratibu

Yeye atakuwa wanaombwa kujibu baadhi ya maswali kuhusu maisha yake binafsi na afya yake kama wewe kuruhusu yake kushiriki katika utafiti. Anaweza zaidi ukaulizwa kutoa rekodi ya matibabu ya kusaidia tukio kuumia. Utafiti huu itachukua kuhusu mbili mwezi lakini yeye atatakiwa kushiriki kwa saa moja tu.

Hatari

Hakuna hatari itakuwa vinavyotokana na maisha yake kama matokeo ya utafiti huu. Hakuna taratibu vamizi kufanyika. interviewers wanaweza kuuliza maswali nyeti na mapenzi kutumia baadhi ya muda wake.

Haki ya kukataa au kutoa

Ushiriki wake katika utafiti huu ni hiari kabisa na kwa niaba yake anaweza kuliondoa kutoka utafiti wakati wowote kila yeye anataka hivyo bila ya kuathiri yako na muda wake na afya.

Hakutakuwa adhabu na wewe. Yeye anaweza kuchagua kujibu yote au baadhi tu ya maswali yaliyoulizwa.

Usiri

Kama wake kuruhusiwa kushiriki katika utafiti, taarifa za kibinafsi zilizopatikana kutoka kwake yatawekwa chini ya kufuli na ufunguo. Hii habari haina hatari tiba yake / matibabu katika klabu yake ya Bunge au kwa njia yoyote kuathiri familia yake mwanachama (s) na yeye itakuwa inajulikana kwa idadi tu.

Nani kuwasiliana:

Kwa maswali yoyote unaweza kufanya hivyo sasa au baadaye. Jisikie huru kuwasiliana Profesa James Tumwine, Mwenyekiti Shule ya Utabibu mapitio na Kamati ya Maadili juu ya 0772494120 (kabaleimc@gmail.com) au Mwaka Edwin Yohana (Principal Mpelelezi) juu 0772359865/0791111796 (mwakadoc@gmail.com).

SHAHADA YA IDHINI Wakala

Mimi kuelewa kwamba kwa kuruhusu mwanangu kushiriki katika utafiti huu na kusaini hii ridhaa mimi si kujisalimisha wake haki za kisheria wala kupunguza mpelelezi wa dhima yoyote, lakini tu zinaonyesha kwamba Nimefahamishwa kuhusu utafiti ambayo mimi hiari kumruhusu kushiriki na yeye itakuwa inapatikana kwa ajili ya ushiriki katika ardhi klabu wakati inahitajika. nakala ya fomu hii itakuwa zinazotolewa na mimi.

Sahihi ya Guardian / Kocha _____ Date_____

(thumbprint)

Ishara ya msaidizi Utafiti _____ Date_____

APPENDIX E: ASSENT FORM (II)

Research Topic: Prevalence, pattern and factors associated with sports injury among players in the FUFA Super League 2012 – 2013 season.

Introduction

My name is Edwin Mwaka John from the College of Health Sciences, Clinical Epidemiology Unit, Makerere University, Kampala. I am conducting this study as a partial fulfillment for an award of a degree in clinical epidemiology and biostatistics. This form is meant to explain to you the important details of the study before you decide to be a participant. You have been selected to participate in this study but you must understand its purpose, how it may benefit you and the risk involved. If you agree to participate in the study, you will be asked to sign this form.

Purpose

This study aims to describe the injury occurrences among males players registered in the FUFA super league for the season 2012 – 2013. The information you will provide will be useful in highlighting the sports injuries trend, risk factors, formulation of an injury report form and guide development of appropriate policies and management interventions by MoH and MOE&S to deal with the scourge.

Potential Benefits

By participating in the study, there isn't any direct benefit. However, the information that you provide will help researchers and policy-makers establish the injuries sustained by you the players and determine the best preventive strategies to minimize injury occurrence in the sporting fraternity.

Study Procedures

We will request you to answer some questions individually about your life and your health if you participate in the study. You may further be requested to provide medical records to support the injury occurrence. This study will take about two month but you will be required to participate for only an hour.

Risks

No risks will be posed to your life as a result of this study. There are no invasive procedures.

The interviewers may ask sensitive questions and will use up some of your time.

Right to refuse or withdraw

Your participation in this study is entirely voluntary and you can withdraw from the study at any moment whenever you so wish without affecting your time and health. There will be no penalty to you. You may choose to answer all or just some of the questions posed.

Confidentiality

If you accept to participate in the study, all personal information obtained from you will be kept under lock and key. This information does not risk your therapy/treatment in your esteemed club or by any way affect your family member(s) and you will be known by a number only.

Who to contact:

For any queries you may do so now or later. Feel free to contact Professor James Tumwine, Chairman School Of Medicine Review and Ethics Committee on 0772494120(kabaleimc@gmail.com) or Mwaka Edwin John (Principal Investigator) on 0772359865/0791111796 (mwakadoc@gmail.com).

CERTIFICATE OF ASSENT

I understand that by accepting to participate in this study and signing this informed consent I do not surrender my legal rights nor relieve the investigator of any liability, but merely indicate that I have been informed about the research study which I am voluntarily agreeing to participate and will be available for questions at the club ground when needed. A copy of this form will be provided to me.

Signature of participant _____ Date_____

(thumbprint) Sign of Research assistant _____ Date_____

APPENDIX F: KUTIWA SAINI NA FOMU (II)

Utafiti Topic: Maambukizi, muundo na mambo yanayohusiana na michezo ya kuumia miongoni mwa wachezaji katika FUFA Super League 2012 - 2013 msimu.

Utangulizi

Jina langu ni Edwin Mwaka Yohana kutoka Chuo cha Sayansi ya Afya, Hospitali Magonjwa Unit, Chuo Kikuu cha Makerere, Kampala. Mimi kufanya utafiti huu kama ni kutimia nusu kwa ajili ya tuzo ya shahada katika Epidemiologia kliniki na biostatistics. Fomu hii ni maana ya kuelezea kwa wewe maelezo muhimu ya utafiti kabla ya kuamua kuwa mshiriki. Wewe kuwa kuchaguliwa kushiriki katika utafiti huu lakini lazima kuelewa madhumuni yake, jinsi wanaweza kunufaika na wewe hatari wanaohusika. Kama unakubali kushiriki katika utafiti, utaombwa uweke saini fomu hii.

Kusudi

Utafiti huu unalenga kuelezea matukio kuumia miongoni mwa wachezaji wanaume amesajiliwa katika FUFA super ligi kwa msimu 2012-2013. habari wewe kutoa itakuwa muhimu katika mwangaza michezo mwenendo majeruhi, hatari, uundaji wa aina kuumia ripoti na maendeleo mwongozo wa sera na mikakati ya usimamizi na Wizara ya Afya na MOE & S kukabiliana na janga hilo.

Uwezekano wa Faida

Kwa kushiriki katika utafiti, hakuna faida yoyote ya moja kwa moja. Hata hivyo, taarifa ambayo itasaidia kutoa watafiti na watunga sera kuanzisha majeraha na wewe wachezaji na kuamua bora mikakati ya kuzuia na kupunguza kuumia tukio katika udugu michezo.

Utafiti Taratibu

Sisi ombi wewe kujibu baadhi ya maswali mmoja mmoja kuhusu maisha yako na afya yako kama wewe kushiriki katika utafiti. Unaweza zaidi ukaulizwa kutoa rekodi ya matibabu ya kusaidia tukio kuumia. Utafiti huu itachukua kuhusu mwezi mbili lakini utahitajika kushiriki kwa saa moja tu.

Hatari

Hakuna hatari itakuwa vinavyotokana na maisha yako kama matokeo ya utafiti huu. Hakuna taratibu vamizi.interviewers wanaweza kuuliza maswali nyeti na mapenzi kutumia baadhi ya muda wako.

Haki ya kukataa au kutoa

Ushiriki wako katika utafiti huu ni hiari kabisa na unaweza kuondoka kutoka utafiti wakati wowote wakati wowote hivyo unataka bila kuathiri muda wako na afya. Hakutakuwa adhabu na wewe. Unaweza kuchagua jibu wote au baadhi tu ya maswali yaliyoulizwa.

Usiri

Kama wewe kukubali kushiriki katika utafiti, taarifa za kibinafsi zilizopatikana kutoka utawekwa chini ya kufuli na ufunguo. Hii habari haina hatari tiba yako / matibabu katika klabu yako Tukufu au kwa njia yoyote kuathiri familia yako mwanachama (s) na wewe itakuwa inajulikana kwa idadi tu. Nani kuwasiliana: Kwa maswali yoyote unaweza kufanya hivyo sasa au baadaye. Jisikie huru kuwasiliana Profesa James Tumwine, Mwenyekiti Shule ya Utabibu mapitio na Kamati ya Maadili juu ya 0772494120 (kabaleimc@gmail.com) au Mwaka Edwin Yohana (Principal Mpelelezi) juu 0772359865/0791111796 (mwakadoc@gmail.com).

SHAHADA YA kutiwa saini na

Mimi kuelewa kwamba kwa kukubali kushiriki katika utafiti huu na kusaini hii ridhaa mimi si kujisalimisha wangu haki za kisheria wala kupunguza mpelelezi wa dhima yoyote, lakini tu zinaonyesha kwamba Nimefahamishwa kuhusu utafiti ambayo mimi hiari ya kukubali kushiriki na itakuwa inapatikana kwa maswali katika ardhi klabu wakati inahitajika. nakala ya fomu hii itakuwa zinazotolewa na mimi.

Sahihi ya mshiriki _____ Date_____ (thumbprint)

Ishara ya Utafiti msaidizi _____ Date_____

APPENDIX G: ORGANISATION CHART

Activities	Time Frame
Proposal writing and Submission to Clinical Epidemiology Unit.	3 rd August to 21 st September 2012
Presentation of proposal to Clinical Epidemiology Unit; Epidemiology Round.	24 th September to 28 th September 2012
Corrections of proposal.	29 th September to 28 th October 2012
Submission of proposal to School of Medicine –Research and Ethics Committee; Makerere University.	29 th October to 12 th November 2012
Presentation of proposal to School of Medicine – Research and Ethics Committee; Makerere University.	13 th November-27 th November 2012
Re-submission of proposal to Clinical Epidemiology Unit.	By 15 th December 2012
Data collection	30 th February to 28 th April 2013
Data analysis and Interpretation	4 th April to 30 th May 2013
Write-up	21 st April to 30 th May 2013
Presentation of dissertation to Clinical Epidemiology Unit.	29 th May 2013
Submission of dissertation.	By 30 th May 2013

APPENDIX H: QUESTIONNAIRE

Team/Cluster Code: Date:

Name of Research Assistant.....

Participant Identification Number.....

(WRITE IN BOLD/TICK WHERE APPLICABLE)

Socio-demographic Characteristics

1. Age (yrs)
2. Religion: catholic Protestant Muslim SDA Others (specify)....
3. Marital status: single Married Separated/Divorced co-habiting Others(specify)...
4. Highest level of education attained: Never attended school primary
 secondary tertiary others (specify).....
5. Ethnicity: Bantu Luo Foreigner unknown
6. Residence; sub-county.....county.....district.....
7. Weight (kg) 8. Height (cm)
9. History of previous injury within the season: No previous injuries Single report of a previous injury, History of two or more previous injuries.
10. Have you had a previous injury of the same type at the same site (i.e. injury recurrence?)
 No Yes
11. If yes specify date you returned to full participation from previous injury?
12. Which position do you play: Goalkeeper Defender Midfielder Striker
13. Which position where you playing when this injury occurred: Goalkeeper Defence
 Midfield Striking/forward Other (specify)
14. What was the type of playing action that led to your injury:
 Kicking Heading Running Jumping Collision Falling Hit-ball Twisting
 Stopping Shooting Dribbling others; specify.....
15. Game site: Home Visitor/Away Unknown/Neutral

SECTION II: INJURY REPORT FORM

16. Date of this Injury **17:**Date of return to full participation

18. Injured Body Part/Site:

- | | | |
|---|--|--|
| <input type="checkbox"/> Head/Face | <input type="checkbox"/> Shoulder/Clavicle | <input type="checkbox"/> Hip/Groin |
| <input type="checkbox"/> Neck/cervical Spine | <input type="checkbox"/> Upper Arm | <input type="checkbox"/> Thigh |
| <input type="checkbox"/> Sternum/rib/Upper back | <input type="checkbox"/> Elbow | <input type="checkbox"/> Knee |
| <input type="checkbox"/> Abdomen | <input type="checkbox"/> Forearm/Wrist | <input type="checkbox"/> Lower leg/Achilles Tendon |
| <input type="checkbox"/> Low back/Sacrum/Pelvis | <input type="checkbox"/> Hand/Finger/Thumb | <input type="checkbox"/> Ankle <input type="checkbox"/> Foot/Toe |

19. Injured Body Part Left Right Not Applicable

20. Type of Injury you have Other Injury (Please specify):

- | | | |
|---|---|---|
| <input type="checkbox"/> Concussion with or
/Contusion without loss of consciousness | <input type="checkbox"/> Lesion of Meniscus/
Cartilage | <input type="checkbox"/> Haematoma
/Bruise |
| <input type="checkbox"/> Fracture | <input type="checkbox"/> Muscle Rupture/ | <input type="checkbox"/> Abrasion |
| <input type="checkbox"/> Other Bone Injury | <input type="checkbox"/> Strain/Tears/Cramps | <input type="checkbox"/> Laceration |
| <input type="checkbox"/> Dislocation/Subluxation | <input type="checkbox"/> Tendon injury/ | <input type="checkbox"/> Nerve Injury |
| <input type="checkbox"/> Sprain/ Ligament Injury | <input type="checkbox"/> Tendinosis/ Bursitis | <input type="checkbox"/> Dental Injury |

21. Diagnosis (text/Orchard code):

22. Was this injury caused by overuse or trauma? Overuse Trauma

23. When did this injury occur? Training Match

24. What was the playground condition dry/Hard Dry/soft Wet/soft Wet/Hard slippery Muddy
 Stony/Gravel Dusty others (specify)

25. What was the weather condition: Sunny Rainy Windy others(specify).....

26. How long have you spent away from play? 1-3days 4-7days 8-28days >28days

27. Was this injury caused by Contact/collision? No Yes with the ball
 Yes, with another player Yes, with other object (specify).....

28. Did the referee indicate that the action leading to the injury action was a violation of the laws?

- No Yes, free kick/Penalty Yes, yellow card Yes red card

29. If yes, was the referees' sanction against? You (Injured Player) Opponent

30. Did you receive treatment? No Yes Unknown

31. If Yes Gov't Hospital Private Hospital Private Clinic Club clinic others(specify)

32. Who offered the clinical service: Doctor Allied Health professional (specify)
 Nurse Others (specify)

APPENDIX I: PERMISSION LETTER

Federation of Uganda Football Associations

FUFA House, Plot 879, Wakaliga Road - Mengo
P.O. Box 22518, Kampala, Uganda Fax: +256 414 272702, Website:www.fufa.co.ug, Email: fufaf@yahoo.com



FUFA/FSL/13/03/13

13th March 2013

**Club Secretaries
FUFA Super League**

RE: INTRODUCTORY LETTER

Mr. Edwin Mwaka John is conducting a clinical research program with FUFA approval among all FUFA Super League Clubs in Uganda. The research is to be conducted during the second half of the 2012-2013 season.

The research title is "Prevalence, patterns and factors associate with sports injuries among players in the 2012-2013 FUFA Super League".

The purpose of the research is to highlight the sports injury trend, risk factors and formulation of an injury report form. Information obtained will guide development of appropriate policies and management interventions by both Ministry of Health and Ministry of Education and Sports through the FUFA Medical Committee.

Any assistance accorded to him will be highly appreciated.

Yours faithfully,

Federation of Uganda Football Associations

Edgar Watson Suubi
CHIEF EXECUTIVE OFFICER



Cc: FUFA Super League Board
Cc: FUFA Competition Committee
Cc: FUFA Medical Committee

President
Lawrence Mulindwa
Tel: +256-772-453779
Email: fufa_chairman@email.com

Chief Executive Officer
Edgar Watson Suubi
Tel: +256-772-408661
Email: fufaceo@gmail.com

APPENDIX J: RANDOM NUMBER GENERATOR

- Enter a value in each of the first three text boxes.
- Indicate whether duplicate entries are allowed in the table.
- Click the **Calculate** button to create a table of random numbers.

Note: The seed value is optional. Leave it blank to generate a new set of numbers. Use it to repeat a previously-generated set of numbers.

How many random numbers?

Minimum value

Maximum value

Allow duplicate entries

Seed (optional)

310 Random Numbers

008 096 225 233 001 012 084 263 119 342 067 314 362 113 175 095 335 299 303 290 328 214
161 216 051 255 144 267 294 316 252 047 268 106 380 348 261 022 343 273 379 062 327 324
227 123 330 105 200 309 168 300 193 224 026 331 311 265 009 381 159 326 117 162 133 221
245 358 126 137 208 283 244 072 192 334 092 238 195 115 355 029 033 020 058 339 286 341
176 275 269 392 024 046 377 172 288 231 110 368 386 147 364 003 109 187 347 054 352 248
060 230 220 039 293 030 318 349 151 351 041 390 134 111 284 056 242 182 153 241 370 088
251 157 229 013 369 197 212 064 217 258 320 240 085 154 158 145 183 359 016 071 301 005
394 121 149 171 107 297 018 356 235 098 116 272 094 128 234 207 077 179 372 373 185 250
345 164 313 155 338 079 276 081 166 120 259 132 304 181 262 307 278 366 100 213 271 282
354 138 099 322 337 189 237 383 050 365 210 174 178 165 203 089 141 196 321 130 124 246
169 191 127 317 143 376 360 223 136 292 219 148 254 332 202 199 102 103 310 375 075 289
043 280 068 204 296 206 186 140 279 256 034 306 387 037 002 323 253 042 180 385 173 006
291 384 361 139 015 097 142 112 201 188 052 218 045 395 038 319 266 156 249 371 004 025
357 152 211 090 053 378 167 228 040 305 019 010 298 329 131 021 114 091 264 035 222 350
388 177

Specs: This table of 310 random numbers was produced according to the following specifications: Numbers were randomly selected from within the range of 1 to 396. Duplicate numbers were not allowed. This table was generated on 4/02/2013.

<http://stattrek.com/statistics/random-number-generator.aspx>