Journal of Research Administration
Society of Research Administrators International

INVESTIGATING COMMON INJURIES OF LOWER BODY EXTREMITIES AND THEIR CAUSES AMONG SOCCER PLAYERS AT KAENDA FOOTBALL CLUB IN SIBBINDA CONSTITUENCY, ZAMBEZI REGION

Kela Gerald[1]
[1]Department of Intermediate and Vocational Educational, Private Bag, 1096, University of Nambia, Katima Mulilo Campus, Katima Mulilo Namibia

Abah James[2]
[2]Department of Applied Educational Sciences, Private Bag, 1096, University of Nambia, Katima Mulilo Campus, Katima Mulilo Namibia

Mashebe Percy[3]
[3]Department of Intermediate and Vocational Educational, Private Bag, 1096, University of Nambia, Katima Mulilo Campus, Katima Mulilo Namibia

***Correspondence Author:** Kela Gerald
ORCID: https://orcid.org/0000-0001-9881-0164
[*]Department of Intermediate and Vocational Educational, Private Bag, 1096, University of Nambia, Katima Mulilo Campus, Katima Mulilo Namibia. E-mail: gkela@unam.na

Abstract
The purpose of this study was to investigate common injuries of lower body extremities and their causes among soccer players at Kaenda Football Club (KFC) in Sibbinda constituency, Zambezi Region. Using personal information questionnaire, data were collected from 100 male soccer players and analysed using descriptive statistics on SPSS v21 statistical software programme. The participants were selected using the purposive sampling method based on their involvement and participation in competition and training sessions for the club. The results of the study revealed that knee injury (56%) ranked the highest common injuries of lower body extremities among the soccer players at KFC, followed by ankle injury (35%), upper leg injury (7%), while hip injury (6%) and groin injury (6%) were ranked as the least frequently experienced injuries of lower body extremities among the soccer players. A total of 8 different causes of the common injuries of lower body extremities were identified in the study area. The sequence of the causes of common injuries of lower body extremities among soccer players at the KFC showed that being tackled > tackling > running > jumping > turning > twisting > landing = shooting. Majority of the soccer players at KFC were found to be playing with chronic injuries while few of them were playing with acute injuries. Thus, effective preventative measures and awareness programs are urgently needed to reduce the incidence of injuries among the soccer palyers at KFC

Keyword: Common injuries, lower body, extremities, causes, soccer players

Introduction

Soccer (football) is the world's most popular sport played and viewed by millions of people around the world. Its world-class leagues and competitions include FIFA world cup, Premier League, Champions League, LaLiga Santander, UEFA Europa League, UEFA, Seria A, Bundesliga, Ligue 1, and The European Football Championship. In Africa, notable soccer leagues include Dstv Premier, Egyptian Premier, Algerian Ligue Professionnelle 1, CAF Champions League, Zambia Super League, Namibian Premier League, Ghanian Premier League, Nigeria Professional Football League among several others. In South America, leagues such as Uruguayan Premera Division, CONMEBOL, Copa Libertadores, Liga Pro, and Argentine Premera existed. In North America,

there are popular football leagues such as Arena Football League, United Football League, and American Profession Football League. In Australia, notable football leagues include Australian Football league, A-League Men, and Football Australia. In Asia, there are also popular football leagues such as Indian League, Super League, V. League 1, and Vysshaya Liga which provide the world with top-class entertainment (Harden, 2021).

Despite being a world-class and popular entertainment game in the sports arena, soccer comes with numerous injuries to the players which may lead to career end, lifetime disabilities, and even sudden death. Moreover, research has shown that soccer injuries result in decreased physical fitness, physical activity, physical movement, work time lost, and expensive medical costs (Wong & Hong, 2005). Previous studies have shown that soccer has higher injury rates with higher injury percentages, and more injuries have been found in soccer than in volleyball, netball, hockey, handball, basketball, rugby, tennis, boxing, judo, and swimming (Wong & Hong, 2005).

According to Hawkins & Fuller (1999), injuries caused by non-body contact (59%) were more prevalent when compared to injuries caused by body contact (41%), while jumping, shooting, running, and turning caused 39% of all injuries of lower body extremities classified under non-body contact. Research further indicated that soccer players under the age of 18 years reported 27% of injuries associated with running classified under non-body contact (Yde & Nielsen, 1999). To get deeper information, Wong & Hong (2005) observed four professional football clubs for two consecutive seasons and found that the percentage of non-body contact associated injuries (58%) was higher than body contact injuries (38%).

According to Namibia's School Sports Union (2020), injuries, protection, and prevention will always be part of sports, be it a contact or non-contact sport within a given sport space. Notably, most injuries sustained within a sport field are usually acute, and without proper medical treatment or rehabilitation, and these could advance to chronic injuries which might affect a person's life after sports (Harden, 2021). Chronic injuries have affected more than 18% of athletes globally who were once active in sports at one point, with injuries associated with back, hip, knee, leg, and even toes (WHO, 2019). Sports-related injuries, diagnosis, treatment, and rehabilitation cost the American government a whopping 3 Billion dollars annually, and now the government has embarked on injury preventative measures and awareness programs to reduce more injuries (Sport Science Facts, 2016).

The world health organization reports more than 5 million soccer injuries to lower body extremities annually worldwide (WHO, 2019). Contact and non-body contact injuries harm athletes' health, performance, fitness, and involvement in physical activity if not medically treated and rehabilitated. Thus, the main purpose of this study is to investigate common injuries of lower body extremities and their causes among soccer players at the Kaenda football club in Sibbinda constituency, Zambezi Region, and advise on helpful mitigation measures. This study was guided by the following reseqarch querstions:

1. What are the common injuries of lower body extremities that soccer players at Kaenda Football Club (KFC) frequently sustain during soccer matches and training sessions?
2. What are the causes of the common injuries of lower body extremities amoong soccer players at the KFC?
3. What are the prevention measures put in place to reduce the common injuries of lower body extremities among soccer players at the KFCl?

Recent information shows that over 265 million people play soccer either for professional or recreational purposes which involves rigorous training sessions (Walder, 2020). It is believed that the same equal number of people are involved and engage in non-registered soccer games (Holmich, 2007). Thus, information about soccer injuries is vital and required for the development of prevention, awareness, and rehabilitation programs (Wong & Hong, 2005).

Body Contact Injuries of lower extrimities in Soccer

According to Physiopedia (2020), body contact injuries emanate from outside blows or force (external causes) and have been reported widely in the world of sports. The major causes of contact injuries incude the following:

Tackling and being tackled

The ability to tackle in soccer is the act of a defender approaching an opponent who is in control of the ball, engaging him, and then rightfully using afoot to take away the ball from the opponent. On the other hand, being tackled can be defined as an aggressive and forceful way of trying to win the ball from the opponent, and it usually happened either from the front or from behind of a player if not executed safely (Masule, 2010). It is a destructive, forceful, and aggressive act that almost always involves physical contact, either between the players right up or with the ball in between them (Harves, 2021). Research shows that 50% of injuries in soccer occur during competitive matches and 20% of injuries are associated with tackling which occurs during practice sessions (Laprade, 2021).

Running

Running is one of the most important techniques in soccer as it is used simultaneously with dodging and dribbling. Sports medicine has recommended that running is good for the heart and body's overall fitness (Republican, 2018). However, repetitive pressure of running on legs and feet can enormously increase the risk of injuries over a long period. More than 43% of soccer injuries occurred in the region of lower body extremities and running has been associated with 50% of all such cases (Centre for Disease Control, 2015). Common running injuries include pulled hamstring (injury to the hamstring muscle), hip stress fractures, shin splints (pain in the bone between the knee and ankle), achilles tendinitis (painful tendon behind the ankle), plantar fasciitis (painful heel associated with inflammation of ligament), arch pain inflammation, and burning sensation under the foot (Machado Foot & Ankle Centre, 2021).

Shooting, twisting and turning

Shooting in soccer involves kicking or hitting the soccer ball with the intention of trying to score a goal (Soccer Coaching Pro, 2017). Shooting a ball with a leg requires timing, techniques, and precision. Studies have shown that more than 6% of soccer players sustain injuries related to a lack of appropriate shooting skills, and a lack of execution sequence (Soccer Coaching Pro, 2017). Twisting and turning is a common cause of injuries in soccer with 3 out of 10 representing 30% of players getting injured instantly after a wrong twist or turn (WHO, 2019).

Jumping and landing

High vertical jumping and landing in soccer have been documented and identified as the major cause of injuries to the lower limb due to the pressure that they place on the musculoskeletal system (Camara, Grande, Los Arcos, and Yachi, 2013). A mutual mechanism of leg injuries for young people in soccer can be inappropriate landing after jumping. The most common mistake contains failing at the knees immediately after landing, well-known as valgus. Some common dysfunctions that result in improper landing can be poor core control or weakness in the stabilizers (Modern Physical Therapy, 2020).

Injuries of lower extrimities in Soccer

Non-body contact injuries can be defined as injuries that occur away from the impact location or the injury that does not result from physical contact with an object or person, but from internal forces built up by the actions of the player, such as injuries that may be triggered by poor technique, over-stretching, lack of fitness and fatigue (Physiopedia, 2020). Several non-body contact injuries have been documented and these include ankle, knee, hip, and groin pains.

Ankle, Knee, Hip and Groin Pain

Dhinsa (2018) alludes that ankle injury are common in elite and novice level football, with the most common form being lateral ligament injuries. There are six common ankle injuries in football namely, lateral ligament injury, osteochondral lesions, ankle impingement, soft tissue impingement, plantar fasciitis, tendon achilles tendinopathy, and fractures. Soccer players usually suffer from an ankle sprain as a straight result of an aggressive tackle, though other causes of ankle injuries may include jumping, running, and failing. It is vital to look for medical treatment and rehabilitation for a sprained ankle to avoid repetitive ankle sprains that may result in long-term pain, also known as arthritis (Rothman Orthopaedic Institute, 2017). Soccer injury rates involving knees continue to rise with 4% of professional footballers quitting their careers due to these injuries (Laprade, 2021).

Acute and Chronic Injuries

Research has defined acute injuries as an injury that are severe and with unexpected onset, for example, sprained ankles, fractured hands and strained backs are classified as acute injuries (WHO, 2019). Acute injuries are sudden injuries that are usually associated with traumatic events such as crashing into another player during sports. These traumatic impacts can cause bones to crack, muscles to tear, and ligaments to snap; usually the soccer player will feel sudden sharp severe pain, fast swelling, loss of stability, and visible cold purple (Pulido, 2021). Acute injuries affect more than 30% of soccer players every season and if not given serious medical attention could affect a player's fitness and performance (Geier, 2021).

Research methods

This study used a cross-sectional approach which involves looking at data from a population at one specific point in time. The participants in this kind of study are always selected based on particular variables of interest. Moreover, this approach is best for this study as it will allow the researcher to collect data on a few different variables such as; sex and age (Cherry, 2019).

Population

A population is a group of individuals who have the same characteristics (Creswell, 2006). The population of this study consisted of 100 senior male soccer players at Kaenda Football club in Sibbinda Constituency of the Zambezi region, Namibia.

Sample

A sample is a subsection of the population that the investigator plans to study for generalizing about the target population (Cresswell, 2009). Maximum purposive sampling was used to select all the current members of the senior team to participte in the study. Thus, the study sample cosnsisted of 100 participants. The participants were selected based on their involvement and participation in competitions and training sessions for the club.

Data collection methods

The data collection method is the way of gathering an exact insights for research using regular validated procedures (Cresswell, 2009). The data were collected using a personal information questionnaire designed by the researcher. The questionnaire consisted of 15 items with yes and no questions, which were meant to gather information on the common injuries of lower body extremities among soccer players at the KFC, their causes, injuries conditions among players, as well as the players views on helpful mitigation measures.

Data analysis

Descriptive statistics were used to analyze the data with SPSS v21 numerical software program. Frequencies and percentages were used to interpret the results, which were presented in tables.

Results and Discussions

The purpose of this study was to investigate common injuries of lower body extremities and their causes among soccer players at Kaenda Football Club (KFC) in Sibbinda constituency, Zambezi Region. Table 1 shows the most common causes of injuries of lower body extremities among the soccer players. The results revealed 8 common causes of injuries of lower body extremities among the soccer players at KFC. Being tackled was rated as the highest cause of injuries of lower body extremities among the soccer players with 29% frequency while tackling was the second-highest cause of the injuries with 17.8% frequency among the players. These results relate to the study report by Drummond et al. (2021) in which it was reported that the most prevalent injuries among soccer palyers were in the region of lower extremities (86.9%) caused by being tackled during soccer training sessions, in matches, and local championship games.

Several soccer players are always out of action due to injuries and one of the main causes of injuries in the lower limb is tackling (Ruhr-University, 2020). More than 34% of professional soccer players sustain career-ending injuries after being tackled by an opponent during a defensive attack, and this shows how prone soccer players are when they step onto a soccer field to play football (Gebert et al 2019). Research has found that soccer injuries sustained from unsafe tackling by opponents have affected more than 18% of young adults who joined the professional football in the past 5 years, and these injuries relate to knee dislocation, broken bones, and fractures (Namibia Football Association, 2021).

The results of this study further showed that running was ranked as the third main cause of injuries of lower body extremities with 14.9% frequency among the soccer palyers at KFC, jumping ranked fourth with 9.9%, turning (7.9%) was fifth, twisting (6.9%) was ranked sixth while shooting and landing were ranked as the least cause of injuries of lower body extremities among the players with 5.9% frquency each. These results corroborate the report by Malone et al. (2017) who noted that high-speed running is associated with injuries of the lower body extremities such as torn muscles, ankle twists, and knee dislocation.

In a similar study, Wong and Hong (2005) found that during running, turning, and twisting; the highest causes of soccer injuries are usually inappropriate ground foot display, uneven playing surfaces, and unsuitable footwear. While research has found that running is one of the most significant skills in soccer as it is used concurrently with fudging and drooling in attacking and defensive approaches, incorrect running however, causes up to 58% of injuries related to muscle torn and bone rupture (Namibia Football Association, 2021).

Table 1 Common causes of injuries of lower body extrimities among the soccer players

Cause of Injuries	Yes(%)	No(%)
Tackling	17.8%	82.2%
Being tackled	29.7%	70.3%
Running	14.9%	85.1%
Shooting	5.9%	9.4%
Twisting	6.9%	93.1%
Turning	7.9%	92.1%
Jumping	9.9%	90.1%
Landing	5.9%	94.1%

Research has proved that soccer injuries have harmful effects on young adults' soccer players' fitness, sports engagement routines, and daily life physical undertakings. Table 2 below shows the common injuries of lower body extremities recorded among the soccer players in the study area. Knee injury ranked the highest common injury with a prevalence of 56% out of the five different categories identified. These results correspond to the report by Dai et al (2014) who asserted that knee injuries in soccer games are one of the most notable among young players with 0.20% to 3.67% per year globally.

Moreover, study further found that soccer-related injuries have risen with 4% of both amateurs and professional footballers quitting soccer and even their careers due to knee injuries (Njubei, 2022). Research has found a high outrageous tendency of knee-related injuries among young soccer players and these include cartilage, ligament, anterior cruciate ligament, meniscal, and post-traumatic osteoarthritis which have become a mutual tendency in soccer (Muleke, 2019). Ankle injury recorded the second-highest occurrence among the soccer players with 35% frequency. These results relate to the findings of WHO (2019) which indiacred that 28% of ankle injuries are found to be mutual in both amateur and elite levels of football, with the most common being lateral ligament injuries. According to Junge and Dvořák (2015), there were six mutual ankle related injuries that were reported after the 2014 soccer world cup and these include: osteochondral lesions (8.8%), lateral ligament injury (17%), ankle impingement and soft tissue impingement (20%), plantar fasciitis (12%), tendon achilles tendinopathy and fractures (42.2%). All these results show the severity of ankle injuries in soccer if precautionary measures are not put in place to decrease injury impacts. While the upper leg was ranked third with a score of 7%, these results were found to corroborate the stuidy report by Linschoten (2015) which indicated that upper leg injuries are common among soccer players even though they have low rates when compared to knee and ankle injuries. More than 24% of young soccer players suffer from upper leg injuries worldwide, and it has now become mandatory to wear soccer clits during matches (Linschoten, 2015).

Hip injury was ranked the fourth among the common injuries of lower body extremities with a score of 6% and groin injury ranked the fifth with a score of 5%. These results conform to the study report by Candela et al. (2019) which indicated that groin injuries are common in high-intensity team sports such as soccer and account for between 8 to 18% of all injuries in soccer, with a reported frequency of 0.8 to 1.3 groin injuries per 1,000 hours of athletic activity. Research further notes that groin injuries have been found to negatively affect a professional soccer player's career, affecting serious disturbance in the performance of both soccer endeavors and physical activities of daily life (Candela et al. 2019). Research suggests that the most mutual causes of hip and groin injuries among soccer players relate to being tackled by 30% in contact sports, whilst osteitis pubis, sports hernia, femoroacetabular impingement, bursitis, labral tears, hip dislocations accounbt for 22%, fractures 15%, and snapping hip syndrome, 12% (World Health Organisation, 2016).

Table 2 Common injuries of lower body extrimities

Injuries	Yes(%)	No(%)
Knee	56%	44%
Ankle	35%	65%
Upper leg	7%	93%
Groin	5%	95%
Hip injury	6%	94%

Table 3 below shows the number of players who played with acute and chronic injuries with no healing and rehabilitation in the study area. The results showed that 54% of the soccer players at KFC indicated to have been playing and training with chronic injuries sustained from previous matches and in training sessions, whereas only 19% indicated that they have been playing or training with acute injuries. These results concur with the Namibia Football Association (2021)'s report which indicated that more than 20% of Namibian footballers play soccer with chronic injuries. Harves (2021) also reported that there are about 15% of players with acute injuries playing in different Namibian Premier League games and training sessions.

The present study further found that only 27% of soccer players at the KFC indicated that they did not have any types of injuries of lower body extremities. Playing soccer without injuries increases playtime, performance, career endeavors, fitness and stamina, develops skills, as well as improves muscle strength and endurance (Caprivi Vision, 2018).

Table 3 Playing with/without injuries

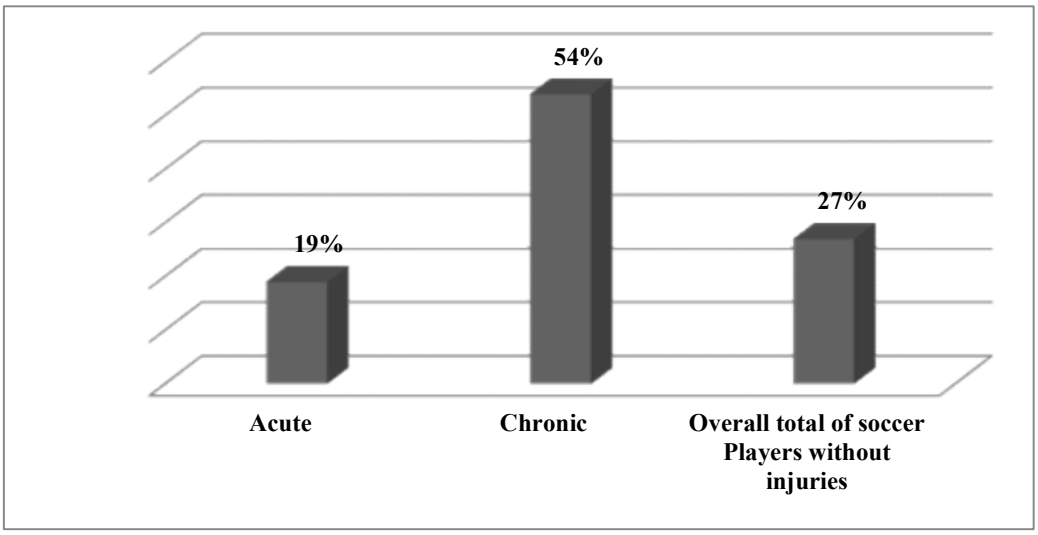
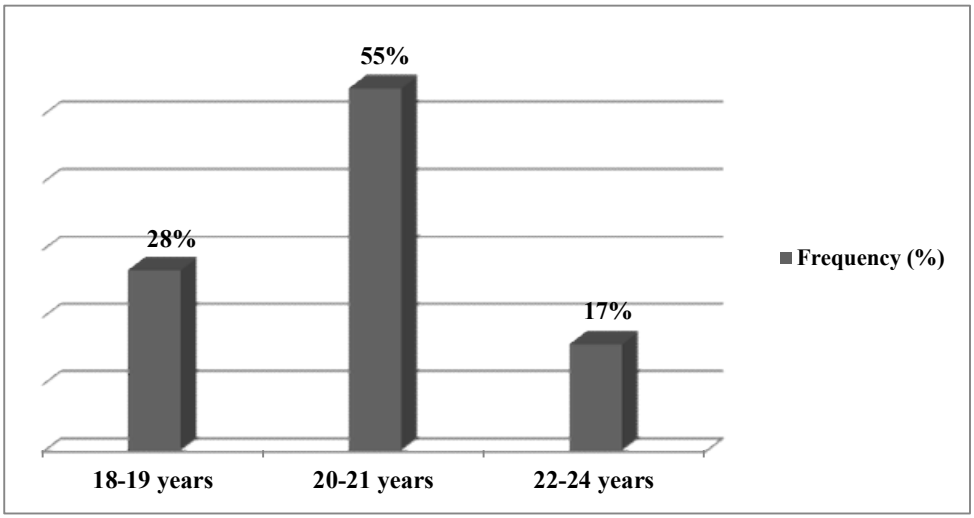


Table 4 below shows the age distrubution of participating soccer players, 18 – 19 year old players with a score 28% were ranked second highest in terms of participating numbers, whereas 20 – 21 year old players were ranked the highest number of participants with 55%. Whilst the 22 – 24 year old players were ranked the the lowest with 17% of participants. According to Little (2018) they find that the age group between 18 – 24 is the most curious and sports enthusiastic which also have a group of teenagers (18-19) that enter into emerging adulthood and move from the shelter and opportunity of school-based sporting involvement to better freedoms and mature commitments. The study carried out by Namibia School Sports Union (2020) found that the age group of 18 – 20 were more prone to acute injuries due to explosive speed skills, whilst the age group between 21 – 24 were more prone chronic injuries. Moreover the age group between (20-24) was found to be more prone to sports injuries of lower body extremities as they face more pressure to show complex sports skills and eagerness (Little, 2018).

Table 4 Age distrubution of participating soccer players



Conclusion and recommendation

Sports injuries are common in any given sports and injuries of lower body extremities have become common occurrence among soccer players. At the Kaenda Football Club (KFC) in Sibbinda Constituency, this study revealed that injuries of lower body extremities were caused mainly by tackling, being tackled, running, shooting, twisting, turning, jumping, and landing among the soccer players. Common injuries reported by the participants include those that occurred at the knee, ankle, upper leg, groin, and hip which the players frquently sustained during training sessions and matches. Generally, more 54% of the scoccer players at the KFC played with chronic injuries while 19% of the players played with acute injuries. These have implications for optimum performance and career endeavors of the soccer players at the KFC. The study therefore, recommends the following measures with the intent to reduce injuries of lower body extremities among the soccer players. The soccer coaches should incorporate:

i. warming up before commencement of physical activities to avoid injuries,

ii. cooling down with either dynamic or static stretches at the end of each training session to avoid muscle stiffness.

ii, Prevention Rest Ice Compression Elevation (PRICE) in any case of injuries.

iv. the principles of gradual overload to avoid over-training which causes more injuries among soccer players.

- total healing and rehabilitation for players with either chronic or acute injuries before they (players) return to competitive matches.

References

1. Camara, J.,Grande, G., Los Arcos, A., and Yachi, J. (2013). Jumping landing characteristics in elite soccer players with celebral palsy. Porte de Lasarte, Spain: Biology Sport.
2. Candela, V,. De Carli, A., Longo, U.G., Sturm, S., Bruni, G., Salvatore, G,. Denaro, V. (2019). Hip and Groin Pain in Soccer Players. Joints Open Access, 182-187.
3. Caprivi Vision. (2018). Benefits of sports. Katima Mulilo: Caprivi Vision.
4. Centre for Disease Control. (2015). Diagnosis of Diseases. Americano Journals., 64: 20 -30.
5. Cherry, K. (2019). Verywellmind. Retrieved December 25, 2021, from Student Resources: http://www.verywellmind.com
6. Cresswell, J. (2009). Designing and conducting quantitative research. SAGE.
7. Creswell, J. (2006). Designing and Conducting Mixed Research Methods. Lincoln, USA: SAGE.

8. Dai, B., Moa, D,. Garrett, W.E., Bing, Y. (2014). Anterior cruciate ligament injuries in soccer: Loading mechanisms, risk factors, and prevention programs. Journal of Sport and Health Science, 3: 299-306.
9. Drummond, F.A., Soares, D., Da Silva, H.G., Entrudo, D. (2021). Incidence of injuries in soccer players - mapping: a prospective cohort study. Sao Paulo: Revista Brasileira de Medicina do Esporte.
10. Exercise Science Bootcamp. (2019). Machanisms of Injury. Swakopmund: Exercise Therapy.
11. Farmingdale Physical Therapy West. (2020). Acute Injuries vs Chronic Injuries. Retrieved December 29, 2021, from Farmingdale: http://farmingdalephysicaltherapywest.com
12. Gebert, A., Gerber, M., Puhse, U,. Grassmann, P,. Stamm, H,. Lamprecht, M. (2019). A Comparison of Injuries in Different Non-Professional Soccer Settings: Incidence Rates, Causes and Characteristics. The Open Sports Science Journal, 2-5.
13. Geier, D. (2021). Tackling injuries in soccer. Charleston, South Carolina: DR.DAVIDGEIER.
14. Harden, J. (2021). World Footbal Report. Windhoek: Sports News.
15. Harves, J. (2021). Introduction to soccer tackling (The Front Block Tackle). New York: Coaching American Soccer.
16. Holmich, P. (2007). Long-standing groin pain in sports people falls into three primary patterns.RetrievedDecember25,2021,from http://www.fifa.com/worldfootball/bigcount/index.html
17. Junge A, Dvořák J. (2015). Football injuries during the 2014 FIFA World Cup. British Journal of Sports Medicine , 49:599-602.
18. Laprade, R. (2021). Knee Injuries in Soccer. Eagan, MN: Robert LaP]rade.
19. Linschoten, R. (2015). Soccer Injuries. Nuclear Medicine and Radiologic Imaging in Sports Injuries. Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-662-46491-5_47
20. Machado Foot & Ankle Centre. (2021). Running in Injuries. Baystone: LLC DBA Baystone Media.
21. Malone, S,. Owen, A.L., Mendes, B,. Brain, H. (2017). High-speed running and sprinting as an injury risk factor in soccer: Can well-developed physical qualities reduce the risk? Journal of Science and Medicine in Sport, 21: 257 - 262.
22. SSS
23. Muleke, S. (2019). Dimensions of Soccer injuries in young novice athletes. (G. Kela, Interviewer)
24. Namibia football association. (2021). Injuries in sports. Windhoek: NBC sports desk.
25. Namibia School Sports Union. (2020). Equal Sports for Namibia Youth. Windhoek: Government Gazzette.
26. Njubei, C. (2022). Sports in Zambezi Region. (L. Muzwalicaba, Interviewer)
27. Physiopedia. (2020). Physiopedia. Retrieved December 25, 2021, from http://wwwphysio-pedia.com
28. Pulido, R. (2021). What are Acute Injuries. 2624 Atlanta Blvd.: Emed Multispecialty Group.
29. Republican. (2018). Running implications on young people. Windhoek: Republican News.
30. Rothman Orthopaedic Institute. (2017). Common foot and ankle injuries from football. New York: Rothman Orthopaedic Institute.
31. Ruhr-University Bochum. (2020). Reasons for soccer injuries. Retrieved from Science daily: www.sciencedaily.com/releases/2020/09/200924135348.htm
32. Soccer Coaching Pro. (2017). 9 Things to Remember When Tackling. Retrieved December 25, 2021, from http://www.soccercoachingpro.com
33. Sport Science Facts. (2016). Protection of Sports Injuries. New York: Sports Science Press.
34. Walder, S. (2020). Prevention and Rehabilitation of soccer injuries. Windhoek: The Namibian.
35. WHO. (2019). Sports Injuries. Geneva: World Health Organisation.
36. Wong, P., Hong, Y. (2005). Soccer injuries in lower extremities. British Journal of Sports Medicine, 39:473-482.

37. World Health Organisation. (2016). Health for All. Geneva: WHO.