

**JIMMA UNIVERSITY**  
**COLLEGE OF NATURAL SCIENCE**  
**DEPARTMENT OF SPORT SCIENCE**



**MAJOR CAUSES OF INJURIES OF LONG DISTANCE RUNNERS IN SELECTED  
OROMIA REGION ATHLETICS CLUBS.**

**BY**

**HAILU MULETA DEME**

**A THESIS SUBMITTED TO JIMMA UNIVERSITY COLLEGE OF NATURAL  
SCIENCE DEPARTMENT OF SPORT SCIENCE FOR PARTIAL FULFILLMENT OF  
THE REQUIREMENTS FOR THE DEGREE OF MASTER IN ATHLETICS  
COACHING SPECIALIZATION**

**JUNE, 2019**  
**JIMMA, ETHHIPIA**

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APPROVAL SHEET

As members of the Examining Board of the Final M Sc. Open Defense, we certify that we have read and evaluated the thesis prepared by: Hailu Muleta entitled: Major causes of injuries of long distance runners in selected Oromia region athletics clubs. We recommend that it could be accepted as fulfilling the thesis requirement for the degree of Master of Science in coaching athletics specialization.

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## **ACRONYMS**

ACL: Anterior circulate ligament.

CECS: Coaches Education and Certification System.

IAAF: International Athletics Association Federation.

NCAA: National Collegiate Athletic Association.

PFPS: patella femoral pain syndrome.

UNC: University of North Carolina at Chapel Hill.

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## **ABSTRACT**

*The purpose of this study was to identify the effect of equipment, training method and environment as cause of injury in long distance runners of Oromia region state athletics clubs. The study area includes Sululta, Legatafo, Burayu, Beshan Oromia, Bosona Oromia, dandi Oromia and Adama athletics clubs which was found in Oromia special Zone around Finfine and Assela. The researcher was used cross sectional research design. The total population from those seven clubs (N=7) & one hundred ten (N=110), athletes sampled eight six (n =86) was determined by simple random sample technique and also coaches seven (N =7) were selected using available sampling technique. The Instruments prepared for data collection was questionnaires (n=86) for athletes and interview (n =7) for coaches. The collected data were analyzed by using descriptive statistics including Mean and standard deviation and multiple regressions was used to analysis the influence of equipment, training method and environment on athletes' performance. The descriptive result shows that equipment, training method and environment were the major causes of injury of Oromia region athletics clubs respectively and multiple regression result also indicates that positively significant predictors on athletics performance. The finding of the study concluded that equipment, training method and environment were found to be the major cause of injury. Therefore, the researcher recommended that the national athletics federation, Oromia athletics federation, zone sport bureau and clubs manager better make the necessary facility and equipment arrangements in order to minimize athlete injuries, upgrade coaches training methodology and education in collaboration with International Association of Athletics Federation.*

**Key word:** - *Injury, training load, environment, equipment, running injury.*

## CHAPTER ONE

### 1. INTRODUCTION

#### 1.1. Background of the study

The 1968 Mexico City Olympics was the first of several Olympic Games in which the middle- and long-distance events in men's athletics were dominated by countries from East Africa, in particular Kenya and Ethiopia. Kenya and Ethiopia participated in the Olympics for the first time in 1956. Ethiopia won its first Olympic medal in athletics in 1960, when Abebe Bikila won the marathon at the Rome Olympic Games. Kenya won its first Olympic medal in athletics in 1964, when Wilson Kiprugut won a bronze medal in the 800-m event at the Tokyo Olympic Games. Ethiopia's won the marathon in the Mexico City Olympics and also earned a silver medal in the 10,000-m run. Kenyan and Ethiopian women have followed a similar path to success in athletics. In addition, the Kenyans and Ethiopians have dominated the International Association of Athletics Federations (IAAF) World Cross-Country Championships, as well as major international road races and marathons, since the 1990,(Wilber & Pitsiladis, 2012)

The majority of runners who have injuries often complain of overuse injuries in the lower limb, possibly caused by training errors like running too often or too soon (Johnston et al., 2003). Therefore, the etiology of these injuries is multifactorial and diverse. Highlighted four factors that were significantly related to running injuries in the lower limb. These factors included lack of running experience, previous injury, running to compete, and excessive weekly running distance,(Nih, 2010).

A number of retrospective studies reviewed injured runners and concluded that most of the injuries were a result of training errors such as too much mileage, excessive speed work and inadequate rest,( Johnston et al., 2003).

Some extrinsic factors like terrain, hard running surfaces or incorrect shoes have also been identified as contributing factors to injury. A combination of intrinsic factors such as poor flexibility, anthropometry, previous injury and running experience could relate to running injuries Thus it is important to have knowledge about possible risk factors associated to running injuries to prevent further injury and severe long-term complications .The medical management of any sports injury can be expensive and time consuming, thus preventative strategies are

needed to reduce medical expenses. Before any of these programmes can be designed and implemented, it is imperative to have baseline data including prevalence, incidence rates and the possible risk factors that predispose the athlete to injury,(Taunton 2003).

According to, Logan, (2006), a suitable training programme should be tailored to the biomechanical requirements of the individual. Appropriate footwear should accommodate and compensate structural abnormalities and a stretching and strengthening programme should be incorporated to maintain flexibility and restore muscle strength and endurance. Runners who follow an incorrect training programme that includes improper surfaces, too much mileage, frequency and duration, are more prone to sustaining injury in the lower limb than those who follow an appropriate training programme. To promote independence in injury management, it is essential to address these factors, as well as others such as poor flexibility, previous injuries, muscle weakness and incorrect running style. Thus, a holistic approach is needed to rehabilitate injuries successfully.

According to, Nih, (2010), Athletics is one of Ethiopia's most popular sporting activities and becomes national identity. While athletics is promoted by health professionals and has a wide variety of medically and socially related benefits, it needs to be recognized that, as with any sport, injuries can occur. Injury is an unhappy risk that, according to most coaches, athletes, and medical practitioners, is a necessary part of athletics. Most athletes that participate in high level sports experience some type of injuries during their athletic careers. The multi-event nature of track and field poses a particular challenge to a coach trying to prevent and treat athletic injuries because each event presents its own unique problem, Therefore the study mainly focuses on major causes of injuries of long distance runners in selected Oromia region athletics clubs.

## **1.2 Statement of problem**

Research that has examined the influences of psychological factors on injury risk has stated that athletes who experience high levels of stress are exposed to a greater risk of sustaining a sport injury. Athletes can be expected to experience a variety of emotional responses and stress upon being injured. For many athletes, exercise and physical activity serves as a primary coping mechanism and outlet for dealing with psychological issues. In these athletes, an injury may result in even greater emotional upheaval. Emotional responses to injury include sadness,

feelings of isolation, irritation, lack of motivation, frustration, anger, alterations in appetite, sleep disturbance, and feeling disengaged (Nih, 2010).

According to Greve JMA, Andere et.al (2015), the etiology of overuse injuries in runners is multifactorial. This review showed that distance, soil type and footwear, as well as a history of previous injuries, biomechanical changes such as increased dorsiflexion and eversion ankle, and greater knee flexion are risk factors that influence the occurrence of these injuries.

A history of previous injuries related to running is found to be an associated risk factor as runners tend to continue training whilst experiencing pain and this delays healing of the injured structures. This involves competitiveness as the runner will run excessive mileage and possibly sustain an injury but will ignore the signs and symptoms and continue to run through pain. Furthermore, once the athlete returns to running after the presumed recovery of injuries, the athlete tends to be more competitive and subjects the already compromised structure to an increase in training, thereby increasing the risk of re-injury,(Nih, 2010).

According to (Nih, 2010), "Sports injuries" are injuries that happen when playing, exercising or running. Some are from accidents. Others can result from poor training practices or improper warm up. Some athletes get injured when they are not in proper condition. Not warming up or stretching enough before playing, running or exercising can also lead to injuries.

According to Salman (2014), the absence of one to seven days was considered as a short-term injury, one week to one-month absence was medium-term damage and for more than one-month absence was long-term damage.

According to Williams (2011), 46 male and 48 female elite runners in conjunction with the United States Olympic Committee and the Athletics Congress. The study that injuries often occurred shortly after the runners began intense interval training or track work in either lightweight racing shoes or running spikes.

The main factors reported by the participants as being associated with the occurrence of injuries were overtraining, inadequate sport technique, inadequate nutrition and aspects related to the athletes' behavior. The main strategies for injury prevention reported by the participants were muscle strengthening exercises, nutritional counseling and the provision of an orientation session or information.(Isaacs et al., 2012)



Runners should pay extra care to fully recover from their previous injury, avoid participating a training distance greater than 60 km/week, and wearing a running shoes more than eleven-month-old. In addition, competition distance, competition frequency, training surface, type of footwear, and the running season, were all significantly associated with running-related injuries, and runners therefore should take note of these risk factors to prevent injuries. The results of this study underscore urgent interventions by coaches, runners, medical professionals and the technical sport experts to ensure that 10,000-meter Ethiopian long distance runners become injury (Begizew, Grace, & Heerden, 2019)

According to kassa (2017), cause and management of sport injury and its impact on athletes performance: the case of Ethiopian youth sports academy Training errors, and injury management were the major causes and their impacts have seen on athlete's performance

So, Here to the above researches the causes of injury indicate that severity of time ,Training errors, poor training practices and injury prevention strengthening exercises, nutritional counseling were listed for different sports and different age group of athletes. Whereas the main propose of this research to examine the major causes of injuries in long distance runners in selected athletics clubs of Oromia region. Therefore the study was attempts to answer the following research question.

1. Did equipment's were the cause of injury for long distance runners in Oromia region athletics clubs?
2. Does training method was the cause of injury for long distance runners in Oromia region athletics clubs?
3. Did environment were the cause of injury for long distance runners in Oromia region athletics clubs?
4. How equipment, training methods and environment influence the long distance runner's performance in Oromia region athletics clubs?

### **1.3. Objectives of the study**

#### **1.3.1 General objective**

The main objective of this study was to explore the major causes of the injuries in long distance runners in selected athletics clubs of Oromia region.

#### **1.3.2 Specific objectives**

The specific objectives of this study were to:-

1. Find out equipment's as a causes of long distance runner's injuries in Oromia athletics clubs.
2. Determine the training method causes injuries in long distance runners of Oromia region athletics clubs.
3. Identify environment as causes of injuries on the long runners Oromia region athletics clubs.
4. Assess the influence of equipment, training methods and environment on long distance runner's performance in Oromia region athletics clubs.

### **1.4 Significance of the study**

This study will be able to provide information to coaches, sports tutors, and sports manager to identifying cause of injury, recurrent injuries, modifying training programs for runners and clue for medical management. The study to develop a screening process that could identify runners who was at a higher risk of injuries. Furthermore, the coaches is used the information provide to develop appropriate training programs for runners. How possibly such injuries to prevent from occurring. In addition that the study plays very significance role for athletics clubs on how to identify injuries that athlete showing during engaging themselves on training. Finally this study will initiate other researcher to conduct farther studies on similar issues.

### **1.5 Scope of the study**

The study was delimited only the major causes of long distance runners variables equipment, training method, environment and the influence in athletes' performance. Moreover, it was delimited to athletes and coaches who was taken part in selected seven Oromia region athletics clubs. A convenience sample from Sululta, Legatafo, Beshan Oromia, Burayu Dandi Oromia, Adama and Bosona Oromia athletics clubs were found in Oromia special Zone around Finfine

and Assela. Specially, in 3000m, 5000m and 10000m event long distance runners. Therefore, the study result was delimited to the particular areas and time from September 30, 2018 up to June 30, 2019.

### **1.7. Limitation of the study**

It should be noted that no research is without its limitations and the present study is no exception. Therefore, one of the potential limitations of the study is lack of adequate local researches related to major causes of injury in selected Oromia region athletics clubs. The researcher tried to design a thesis as properly as possible, there were some external factors that limited the strength of the study:

- ✚ Lack of accurately recorded document and unclear information concerning with athletes injury.
- ✚ The other serious problem was lack of relevant reference materials, sufficient books and literature in the area of study.
- ✚ Perhaps that athletics clubs is in seasonal or the differently placement of their center and an overlapped training program of the clubs.

### **1.8. Operational definition of key terms**

Running: - is a natural and popular sporting activity performed by many individuals worldwide. (van Gent et al., 2007)

Running injury: is the pain which can be seen on athlete during training and competition,(McGrath& Finch, 1996)

Warming-up: is a term which covers activities such as light exercise, stretching and even psychological preparation before undertaking major sporting activity,( (McGrath& Finch, 1996).

Equipment: - the material that aids coaches and athletes for better, accomplishment of their training and competition activities,(John.et.al:2008).

Performance: -the act of performing of doing something successfully, using knowledge as distinguished from merely possessing (Jason, 2011).).

## CHAPTER TWO

### 2. REVIEW OF RELATED LITERATURE

#### 2.1. Sports injuries

“Sports injuries” is a name applied to all types of damage occurring in the course of sporting activities. Injuries is variously defined. The most common definitions are based on time lost from training or competitions, or on medical treatment, defined as injuries requiring treatment by a physician. However, this may or not result in time lost from training or competitions. (Brooks, 2006).

According to (Cromwell et al., cited in Newell, 2011) sports injury is sustained during training or competition and restricts an individual’s involvement or time lost from play. Whereas, states that an injury is one that prevents a player from taking part in training or match and the injury has been there for a period greater than 24 hours.

According (Orchard J. Seward, 2015). Injury is an unfortunate risk that, according to most coaches, athletes, and medical practitioners, is an unavoidable part of athletics. Most athletes that participate in high level sports experience some type of injuries during their athletic careers.

The multi-event nature of track and field possesses a particular challenge to a coach trying to prevent and treat athletic injuries because each event presents its own unique problems. "Sports injuries" are injuries that happen when playing, exercising or running. Some are from accidents. Others can result from poor training practices or improper warm up. Some athletes get injured when they are not in proper condition. Not warming up or stretching enough before playing, running or exercising can also lead to injuries.

##### 2.1.1 Acute and overuse injuries in sport

(Junge and Dvorak, 2000), have defined an acute injury as an injury caused by a macro trauma or as an injury which caused a trauma, the reason being, e.g., tackling, kicking or running classified a traumatic injury as an injury which was caused by a single traumatic incident. An acute injury has also been defined as any injury or condition which did not exist prior to the date of injury occurrence. In many studies, an acute sports injury is defined as injury with a clear onset as a result of trauma, and which has occurred in training or competition and has caused at least one day away from training and competitions.

An acute injury has also been described as any physical injury that keeps an athlete away from at least one training session and competition needs a physician's care,

An overuse injury is defined as an injury which is caused by the consequences of repetitive micro traumas defined an overuse injury as a pain syndrome of the musculoskeletal system appearing during physical exercise without any known trauma, disease, deformity or Animalia that have given previous symptoms. An overuse injury has also been described as an injury with an insidious onset with a gradually increasing intensity of discomfort without an obvious trauma. The injury causes worsening pain during or after exercise and continuation of loading causes even worse pain and may stop exercise completely. A chronic injury has also been classified as any injury with insidious progression that existed prior to the date of the injury's occurrence or an exacerbation of a previously existing condition (Nih, 2010).

## **2.1.2 Types of acute and overuse injuries**

### **2.1.2.1 Acute injuries**

Sports injuries can be classified according to injury type and tissue. Acute injuries usually occur to the muscle, ligament, or skin. Bone or joint injuries are rarer, but can also be more severe Cramps, strains with different grades, and contusion are common acute injuries in the muscle Cramp is a sudden muscle contraction which is painful and may occur in any muscle, but mostly the calf. The etiology of muscle cramp is poorly understood Muscle strain is most prevalent in sudden acceleration or deceleration. Highest grade muscle tears can be very damaging. (Pleacher& Glazer, 2005)

The most common strain among athletes is hamstring strain .Contusions can result from a direct blow, especially in team sports such as soccer, football, ice hockey and basketball. The most common site of muscle contusions is the thigh Ligament injuries are strains of various grades from stretched fibers to a complete ligament tear with excessive joint laxity Ankle and knee ligament injuries in particular are common. Anterior cruciate ligament injuries are among the most severe knee injuries, limiting training and competition time. Moreover, severe injuries in the knee increase the risk for degenerative joint disease. skin injuries include abrasions and lacerations Acute tendon injury can be a sudden tear of the tendon, the rupture usually occurring

in an older athlete with history of injury of the tendon The most common acute tendons injuries are either partial or complete rupture of the Achilles and supraspinatus tendons, (Dugan, 2005)

#### **2.1.2.2. Overuse injuries**

Overuse injuries can occur to the same tissues as acute injuries, but the pathology of these injuries is different. The most common overuse injury occurs to the tendon and is called tendinopathy. It is prevalent in the Achilles, patellar and rotator cuff tendons. There is no clear understanding of the pathology of tendinopathy.(Khan et al, 1999)

Another common overuse injury among athletes is situated in the bursa. Bursa such as the sub acromial bursa and greater trochanteric bursa can become irritated and inflamed.(Adkins & Figler 2000, Pleacher& Glazer, 2005).

Another overuse injury prevalent among athletes is a stress fracture, which is a result of a micro fracture in bone caused by repetitive physical loading .The most common stress fractures occur to the tibia, metatarsals, fibula, tarsal navicular and femur Among ballet dancers, figure skaters and gymnasts repetitive bone stress in the spine may lead to a spondylolysis. Although upper limb stress fractures are less common than those of the lower limbs, stress fractures occur in sports where athletes are dominantly using an upper limb such as in swimming and tennis Overuse injuries in the muscle are focal tissue thickening, chronic compartment syndromes and muscle soreness,(Iwamoto & Takeda 2003, Laker et al, 2007).

Overuse damage to muscle fibers are a result of repetitive micro trauma. Focal areas, such as tissue thickening, can be palpated and can cause local pain. Overuse damage can also negatively affect rapid contraction and relaxation of the muscle. Chronic compartment syndrome is the most prevalent in the lower leg. Joint overuse injuries are inflammatory changes associated with repetitive loading, and are known as synovitis or capsulitis. Examples of such injuries are sinus tarsi syndrome of the subtalar joint and synovitis of the hip joint .Skin overuse injuries are blisters and calluses. A blister can occur at any site of friction with an external source, such as shoes or sports equipment. Dermatologic complaints are common among athletes, for example long-distance runners. Nerve entrapment syndromes occur as a result of swelling in the surrounding soft tissues. Nerve entrapment represents an uncommon but important cause of

lower limb pain, especially among runners Overuse injuries in ligaments are rare,(Brukner & Khan, 2006)

### **2.3. Injury incidence**

A study by (Phillips, 2000) suggests that incidence of injury pertains to the number of new injuries that occur in a population at risk over a period of time or the number of new injuries during a period divided by the total number of sports people at that period. It is also pointed out by that the incidence of injury can also be referred to as the injury rate. It determines the number of new injuries in a specific period divided by the total number of players exposed to injury.

According to (Newell ,2011) there is an expectancy that a greater number of injuries occur in training as teams are likely to have six times more training sessions than games with more participants likely to be involved in training sessions than in games. The research from the study shows that out of the 471 injuries recorded 276 happened during a game with the remaining 195 in training.

### **2.4. Principles of injury**

Prevention in recent years, there has been an abundance of literature on the principles of injury prevention. The (IAAF, 2012) suggests principles to adhere to prevent injury, which are as follows Physical conditioning - strength, balance, flexibility, endurance. Appropriate training methods - Exercises that are include strength, relaxation, and flexibility specifically geared to the demands made on the body of that sport, i.e. relaxation, strength, flexibility, progression. Rest and recovery- adequate sleep in order to avoid overexertion and fatigue. Appropriate equipment- properly fitted shoes, equipment must meet biomechanical requirements of the sport.

Warm up/cool down- a warm up should allow muscles and tendons to become more elastic, which enables muscles to be stretched further without the fear of injury. While a cool down helps to stabilize blood pressure and lower heart rate to help the body returns to its resting state. Flexibility- poor flexibility can result in awkward or uncoordinated movements which may lead to injury. Following the advice of a medical practitioner will aid recovery and a return to performing in the recommended time frame, will help to minimize the chance of the original injury re-occurring. It is also advised to include adequate rest periods in between trainings and games to aid recovery. (IAAF, 2012).

According to (Newell, 2011& Quinn, 2012) It is also stressed by that allowing adequate time to recover from injury can help reduce the incidence of non-contact injuries. In addition to that returning early from an injury increases the chances of a re-occurrence or developing a chronic problem that will lead to a longer recovery.

## **2.5. Most common running injuries**

Sport-related injuries are classified as acute (also traumatic) or chronic (also overuse). Acute injuries occur due to sudden trauma (e.g. leg bone fracture caused by opponents' foul in soccer or sudden hamstring tear during sprinting). Chronic injuries develop gradually as a result of accumulating micro trauma, which is caused by repeated sub maximal strain.(Roos & Marshall, 2014).

Depending on the appearance of pain, chronic injuries are further classified into four stages (McCarty, Walsh, Hald, Peter, & Mellion, 2010).

Stage 1: Pain, present only after activity.

Stage 2: Pain, present during activity, not impairing performance.

Stage 3: Pain, present during activity, impairing performance.

Stage 4: Ceaseless pain, not receding even with rest.

A recent meta-analysis showed an incidence of 2.5 injuries per 1000 hours of exposure in long-distance track and field athletes. However, novice runners are at much higher risk, with an incidence of 33 injuries per 1000 hours of exposure.(Videbaek, Bueno, Nielsen, & Rasmussen, 2015).

## **2.6. Running environment**

According to Van Mechelen (1992),running surfaces can vary from sand to concrete. As the impact forces from the gait cycle can be two to three times body weight, it is generally believed that running on hard surfaces increases mechanical shock thereby overloading joints and tendons. Soft surfaces quickly tire the muscles and are thought to increase injury particularly overuse injuries. The ideal running surface is flat, smooth, soft and resilient to running. Running



surfaces such as soft sand, cement, or other hard rigid surfaces should be avoided. Also of importance to running surface is the possibility of potholes, tree roots and stones, which may cause severe injury if they cause the runner to slip, trip or fall. Of course well designed running shoes are important for all running surfaces. At all running surface that are not comfortable to athletes are made injury and to prevent that designed running shoes with training surface.

A number of studies on the specific occurrence of injuries related to the environment reviewed in have found that running on hard surfaces may contribute to stress fractures review of the literature led him to conclude that running on hard surfaces was not significantly related to running injuries. It has also been speculated that running on sand may be related to injuries.

### **2.6.1 Temperature**

Extremes in temperature are a frequent adjunct to outdoor running. Consequently, the weather becomes a pertinent factor in the risk of injury. Temperature affects both bodily function as well as environmental factors, such as running surface. Running in a hot environment increases the risk of heat exhaustion, heatstroke, and dehydration Likewise, a runner can experience frostbite or hypothermia if running in extremely cold temperatures without taking precautionary steps also requiring consideration is the running surface in different climates suggested that climatic circumstances such as snow, may lead to more injuries since they can make running surfaces slippery,(Powell et al. 2000)

According to American College of Sports Medicine, 1987; Ting, 1991; Cross, 1993; van Mechelen, 1992; Vincent, 1996) explored runners enrolled in two community road races over a 12 month follow up period. 10% of those injured twelve months prior to the survey identified that their injury was the result of running on a slippery surface. This slippery surface, although not so indicated, may have been a result of cold climatic conditions (i.e. rain). No further specific evidence of preventive measures related to climate and running injuries was identified in the literature. Suggestions for injury prevention have been based on general recommendations relating to thermoregulation, such as wearing appropriate clothing, using sunscreens, maintaining hydration and undergoing acclimatization.

The Australian Little Athletics Association has no specific regulations concerning competition at high temperatures, where heat exhaustion is most likely to occur. Activities at Little Athletic

Centers, however, are scheduled for early morning and/or late afternoon during Summer/Autumn when temperature problems are not such an issue. At Championships when competition runs all day, as much shade as possible is provided and longer distance events are normally scheduled during the cooler parts of the day.

Ultraviolet protection is heavily promoted by the Australian Little Athletics Association. Children are recommended to wear a suitable hat at all times, which may be removed during competition. Parents and the children themselves are also recommended to apply and water-resistant broad spectrum sunscreen to all exposed skin every 2 hours. It is also recommended that children wear sleeved clothing to protect them from the sun when they are not competing, (Vincent, 1996).

## **2.7. Running footwear**

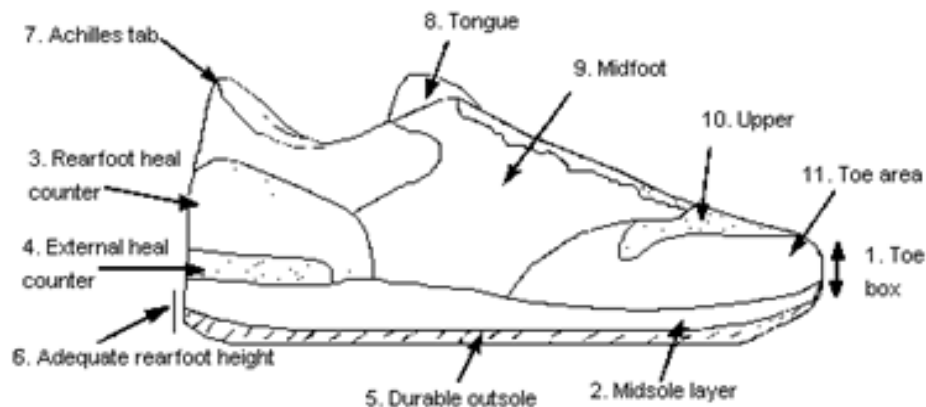
There are hundreds of pairs of running shoes, produced by various manufacturers in a range of colors and prices, in stores today. One thing remains clear however. When a runner selects a shoe it must provide cushioning, support and stability, and must maintain reasonable flexibility, softness, and lightness. (Mcgrath & Finch, 1996)

According to Marti et al. (1998), studied 4,358 male joggers involved in a popular 16 km race by means of designed to investigate the incidence, site, and nature of jogging injuries. On average, runners were found to choose their shoes according to recommended criteria such as “proper orthopedic construction” and “proper fit and comfort”. Other factors such as “look” or “price” were not significant factors in their choice. Runners, in general, hold this opinion because of strong advertising campaigns by manufacturers and retailers. For example, the Athletes Foot chain of stores, uses slogans such as “choosing the wrong running shoe can affect more than your feet”. Other influences may be attributed to a variety of literature (journals, books, magazines, newspapers).

Cross, (2010), from a general review of the literature on the prevention of injuries in sport, concluded that correct, suitable and safe footwear plays an important role in injury prevention. The key features of a running shoe also argued that an athlete’s footwear must be able to absorb shock, while maintaining enough stability to prevent excessive pronation (rolling in of the foot). The material of the midsole cannot be too heavy or too inflexible, but must still provide much of

the shock absorption. As a result of taking these factors into consideration, shoes are now designed with gel or air inserts in the midsole in order to provide lighter, yet efficient, shock absorption qualities. Traction in wet and slippery conditions requires a good tread pattern on the outer sole of the shoe. The inner sole should be comfortable, cupping the normal heel contour (the rigid material within the counter) during landing and supporting the arch of the foot. The toe box of the shoe should leave sufficient room for foot movement, particularly when running down steep inclines. Blisters, corns, loss of toenails, and so on, can be the result of a too tight fit. It is also important that the material used in manufacturing sports shoes allows the feet to breathe, thus reducing moisture and helping prevent blisters.

Figure -1 Anatomy of a running shoe



(Mcgrath & Finch, 1996)

Pronation (rolling in of the foot) is a natural function of weight bearing exercise. Excessive pronation, however, is a problem often associated with lower limb overuse injuries, including plantar fasciitis, Achilles tendinitis, shin splints and runner's knee. Greater stability of the foot can help prevent hyper pronation (excessive rolling of the foot). This is achieved in shoe design by including a heel counter (a rigid material within the exterior wrap around the heel) that is firmly connected to the midsole. This wedges the midsole and is made with materials of greater consistency (firmness) than those on the lateral side (away from the midline),(Cross, 1993).

Williams (2011), investigated male and female elite runners in conjunction with the United States Olympic Committee and the Athletics Congress. He found that injuries often occurred shortly after the runners began intense interval training or track work in either lightweight racing shoes or running spikes. The combination of the body not having yet adapted to the higher than usual forces associated with the intense training, coupled with a lack of cushioning on the part of the footwear may have been directly related to the incidence of injury.

Robins, Gouw and Cook et al. (1990). It looks evident that a training shoe providing softening, support and stability can play an important role in shock absorption, and as consequence injury prevention. However, there is also evidence which suggests that modern running shoes provide poor protection from running injuries and may cause chronic overloading. The question still remains, therefore, as to whether running shoes reduce the risk of injury.

Runners from two community road race events were conducted by (Walter et al. 1989). The runners were monitored during a twelve month follow up period, for the occurrence of musculoskeletal injuries. Runners owning two or more pairs of running shoes had a 50% increased risk of injury, compared to those with fewer pairs of shoes? The physical characteristics of the shoes (Varus wedge, waffle sole, wear patterns, or personal shoe repairs) could not be related either positively or negatively to risk. The observed effect, therefore, may be associated more with the greater levels of training of those owning more running shoes.

Robbins and Gouw, (1991), investigated twenty male subjects from a university population, to examine how plantar tactile events (i.e. when the sole of the foot touches the ground) affect perceived sole discomfort. They found that people who performed activities involving high impact footwear, currently promoted as offering protection in this environment, are at high risk for injury. In the natural situation (i.e. barefoot and natural surfaces) the impact is sensed and, through impact moderating behavior, is maintained at a safe level. An inadequate understanding of the physiology of human impact control has resulted in footwear which makes chronic overloading inevitable, by providing plantar comfort to the wearer, even when enormous vertical impacts are experienced. These observations are based on the results of laboratory tests, which may not necessarily be representative of a runner's environment, (Mcgrath & Finch, 1996)

## **2.8. Running injury**

Running is a natural and popular sporting activity performed by many individuals worldwide. Compared to other sports, it is easy to participate in, requires minimal facilities and equipment, with many individuals now participating in long-distance running, van Gent et al., 2007.

Despite its popularity and health benefits, runners are also at risk of being injured, with an estimated 37% to 56% runners being likely to sustain running-related injuries annually. Sports studies have reported on the incidence of running injuries occurring in long-distance runners during training and competition, with the causative risk factors having also been recorded. (Gallo et al., 2012).

These international studies among others include for example, (van Gent et al, 2007) who in their systematic review concluded that the incidence of lower extremity running injuries in long distance running varies from 19.4% to 79.3%. Too mentioned that of those sports participants who reported injuries across all training clinics, 29.5% were related to running. Depending on the specificity of the group of runners concerned (competitive athletes; average recreational joggers; males and females) and on different circumstances, these rates vary describe the mechanisms contributing to musculoskeletal running injuries as poor training habits, inadequate rehabilitation of previous injuries, high weekly mileage and incorrect shoes, which are referred to as the extrinsic risk factors. The intrinsic risk factors are those related to each runner, such as age, gender, previous injury, and training experiences, (Taunton et al, 2003).

Injury severity can also be defined based on time loss (Fourchet et al, 2011). According to (Salman 2014), the absence of one to seven days was considered as a short-term injury, one week to one-month absence was medium-term damage and for more than one-month absence was long-term damage. (Hägglund, 2007) considered injury severity as a slight/minimal injury if an athlete was absent for one to three days, minor/mild injury if an athlete was absent for four to seven days, as a moderate injury if an athlete was absent for eight to twenty-eight days, and absence of greater than twenty-eight days regarded as a major/severe injury.

As injuries in sports pose a major challenge to athletes, coaches, and sports clubs, the International Olympic Committee established a research Centre to explore and prevent injuries in various sports disciplines. Regardless of the fast growth of research, systematic reviews

evidencing the risk and protective factors in middle- and the long-distance running-related injuries, were lacking.(Hulmet et al., 2017)

Wilber & Pitsiladis, 2012; LeBrun et al., 2014) cited by Gebremeden, (2016), In Africa, sports injuries are poorly documented. Since the 1968 Mexico City Olympic Games, Ethiopia has been acknowledged and recognized for middle and long-distance running events in athletics, since then, the Government allocated a substantial budget for the Ethiopian Youth Training Program. The Ethiopian Youth Training Program was led by the Ministry of Youth and Sport, and was designed to fill the gaps of athletes that represent the country in different international tournaments and championships. Running-related injuries in 10,000-meter runners However, there is evidence-based data and information on the Ethiopian long-distance runners, Excellence is not often met without adversity. For many Athletes, adversity can mostly in the form of injury. Sports injuries occur with alarming frequency, and large number of sports performers are treated each year by medical personnel. Although contact sports produce more injuries per participant than non-contact sports, sudden and traumatic incapacitation may occur in either type of activity.

Athletics is one of Ethiopian's most popular sporting and becomes national identity. While athletics is promoted by health professionals and has a wide variety of medically and socially related benefits, it needs to be recognized that, as with any sport, injuries can occur. Injury is an unfortunate risk that, according to most coaches, athletes, and medical practitioners, is an unavoidable part of athletics. Most athletes that participate in high level sports experience some type of injuries during their athletic careers.

As Andre Panagos, (2009) ,stated that multi-event nature of track and field possess a particular challenge to a coach trying to prevent and treat athletic injuries because each event presents its own unique problem and acute injuries are usually the result of a single, traumatic event. Common examples include wrist fractures, ankle sprains, shoulder dislocations, and hamstring muscle strain. While overuse injuries are more common in sports than acute injuries, they are subtle and usually occur over time, making them challenging to diagnose and treat. They are the result of repetitive micro-trauma to the tendons, bones, and joints. Common examples include tennis elbow, swimmer's shoulder, Youth Pitching elbow, runner's knee, jumper's knee, Achilles tendinitis, and shin splints. It is no longer a secret that athletes who are not treated properly and who participate in sports again before their injury is fully healed, put themselves at tremendous

risk for recurrent injury and often career-ending injuries. (Taunton et al, 2003) ,Various methods of preventing sports injuries, such as use of insoles, external joint supports and multi-intervention training programs, have been proposed (Kujala, 2007& Parkkari, et-al, 2004).

The level of treatment following an injury is usually related to the severity of the injury. However; the availability of treatment on site might be the crucial factor to determine the type and level of treatment received. A review of the literature focusing on lower extremity injuries in runners also indicated that a reduction in running distance to below 32km/week would decrease the risk of a recurring injury (Macrea, 1992).

The easy-to-implement strategies and guidelines have been suggested by many recent research and real-life coaching and athletic experiences. The Ethiopian youth, athletes use a variety of methods and medicines to treat injuries, cure illnesses, and obtain a competitive edge. All injury treatments have potential adverse effects that may have deleterious impact on the maximum exercise performance of elite athletes. Parallel to this standardized assessment of severity, practices and treatments of sports injuries provides important information and directions for injury prevention and treatments both from the coaches and physicians point of view Similarly the current conceptualization of science of training, basic principles, theories as well as specific safe methods of strength and conditioning for athletes training are common problems in most coaches and athletes that predispose athletes for an overtraining and injury. This can also have a significant negative impact on performance, health and daily life. Fortunately overtraining can be prevented by implementing a sensible training monitoring program and careful training planning, (Brukner& Kahn, 2012).

The Training Centers train athletes for only four years and then transfer to different clubs. Different type of injuries happed in the training centers that need an attention by the Coaches, athletes and the concerned bodies of the training center. Injuries are also common for beginner athletes due to a number of factors. Due to the fact that athletes' performance is highly affected by repeated occurrence of injury, athletes' development at this special age specifically affected worse with this injury related fact. Since the researcher is a part of the training center and has observed the existence of the problem, he is motivated to investigate the Causes and Management of Sport Injuries and its impact on Athlete's performance at these Sport Training Centers, (Junior, l. c. h., carvalho, a. c. a., & lopes, a. d. (2012)

Good et al, (2005), Results highlight several long distance runners who experienced an identity crisis following running career termination. A major issue that influenced adaptation to this career transition was the degree to which runners defined their self-worth in terms of their participation and achievements as long distance runners. The concept of career transition, the adjustment to a running career termination and the subsequent threat to the running identity caused by injury, appeared to lead to a crisis for the long distance runner who was faced with premature identity foreclosure“ An inability to run caused by injury proved to be traumatic for the participant, as they lost a primary source of their athletic identity.(Sparkes, 2000).

The findings highlight that the issue of loss caused by injury is a symbolic loss of some aspect of the self. It would appear that an involuntary retirement from long distance running (caused by injury) has complicating consequences for the adjustment process after this career termination. Most notably, this proved particularly challenging for participants who had no control over their distance running career termination, which subsequently affected their emotional and coping reactions. (Lavalley and Willeman, 2000)

Shipway, (2010) investigated that severe injuries may result in a variety of psychological difficulties including fear, anxiety, and loss of self-esteem, depression and substance abuse. Two key informants openly admitted that since stopping running they struggled with an addiction towards alcohol. Participants, who had been immersed in the act of running to the exclusion of other areas of their lives, appeared to struggle to support their sense of self-worth without the input from long distance running.

## **2.9. Long-distance running**

Long-distance running represents the repetitive, low-impact exercise loading modality. In long-distance running, the structures of the lower extremities are exposed to a large number of repetitive forces, Hreljac 2004, Laker et al. 2007).According to Rauh et al. 2000, Rauh et al. 2006 and van Mechelen 1992a, Taunton et al. 2003), over twelve months have been reported in track and field, long-distance running is usually meant when athletes compete distances 3000 meters and over. Long-distance running in particular measures a person’s aerobic fitness. A runner’s number of competitions varies according to his/her race distances. If an athlete competes only in the marathon (42.195 km) he/she usually has fewer competitions a year than an athlete competing in a 3000-meter event.



Among runners, overall injury incidence rates increase athletes' exposure and overall injury rates. Injuries in long-distance runners are mainly overuse injuries because of the amount of repetition of the same movement. The etiology of overuse injuries is multifactorial. Overuse injuries may be caused by anatomical or biomechanical factors. Running distance, training program and exercise type, rapid increase in training intensity or weekly running distance has been shown to be associated with running injuries. Among runners, most of overuse injuries are located in or below the knee, mainly in the knee, lower leg and ankle. (Taunton et al. 2002)

### **2.10. Empirical review**

A prospective study was used over a period of ten months in eleven running clubs and twelve Youth Athletics Training Programs in Amhara Regional State and Addis Ababa. Participants completed a self-reported questionnaire. Logistic regression analysis and odds ratio and its 95% confidence interval was estimated for the predictor variables. The incidence of running-related injury was 62.4%, corresponding to 0.35 injuries per 100 running hours or 3.54 injuries per 1000 running hours. Participants previously injured had an 8.20 higher (2.14-31.40). Runners who train respectively 40km-50km per week and runners that wore running shoes eight to eleven months was significantly associated with a protective benefit against running-related injuries. Runners, coaches, and medical professionals must acknowledge the specific risk factors associated with running related injuries. The results underscore urgent interventions to ensure that 10 000-meter Ethiopian long distance runners become injury free. (Begizew, D.M., Grace, J.M., & van Heerden, H.J. 2018.)

Daoud, A Geissler, (2012), Asphalt and concrete were similar for all plantar variables and pressure zones. Running on grass produced peak pressures 9.3% to 16.6% lower ( $P < 0.001$ ) than the other surfaces in the rear foot and 4.7% to 12.3% ( $P < 0.05$ ) lower in the forefoot. The contact time on rubber was greater than on concrete for the rear foot and mid foot. The behavior of rubber was similar to that obtained for the rigid surfaces - concrete and asphalt - possibly because of its time of usage (five years). Running on natural grass attenuates in-shoe plantar pressures in recreational runners. If a runner controls the amount and intensity of practice, running on grass may reduce the total stress on the musculoskeletal system compared with the total musculoskeletal stress when running on more rigid surfaces, such as asphalt and concrete.

## 2.11. Conceptual form work

This section was containing the theoretical framework for the study. As it is indicated the general objective of this study was examining equipment, training load and environment with its components as a predictor of Athlete's performance. To achieve this goal, the following conceptual framework was developed from a review of literature on equipment, training method and environment

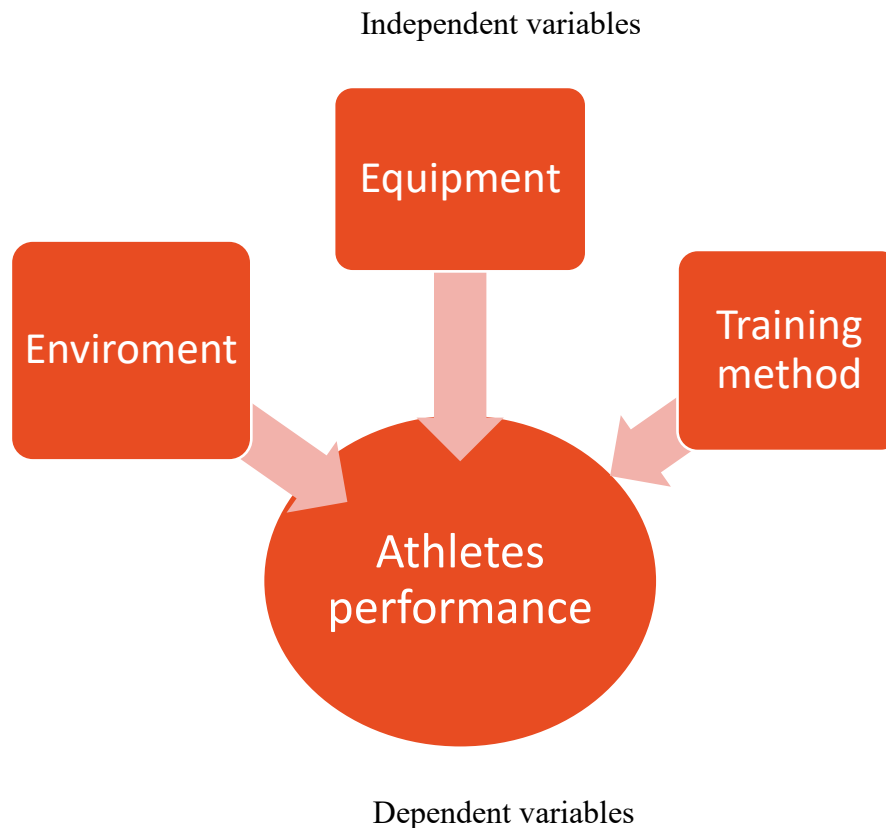


Figure 2: A diagram of the conceptual framework

Independent variables were focused on Equipment, training load and environment may be the cause of injury. Therefore dependent variables are the sum of the above variables that would be used to analyze the Impact of injury on long distance runners'.

## CHAPTER THREE

### 3. RESEARCH METHODOLOGY

#### 3.1. Study area

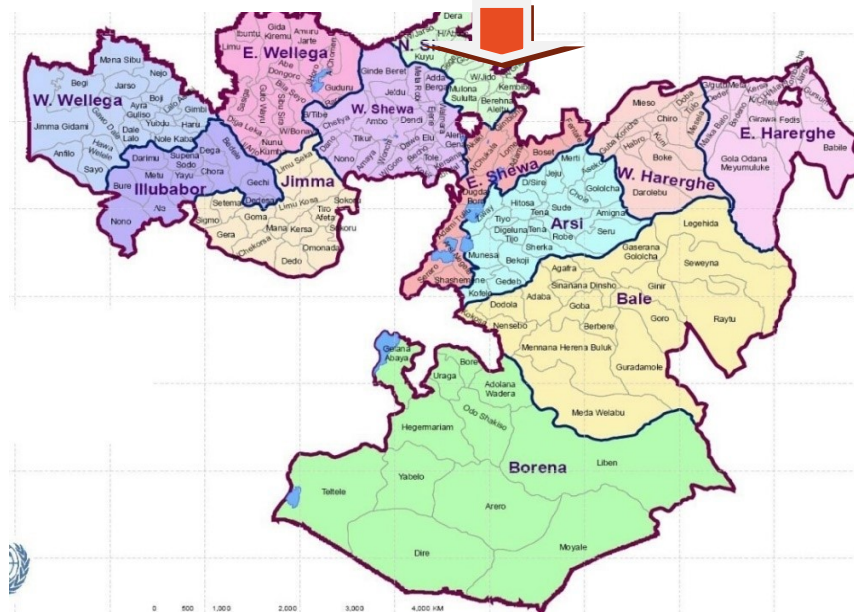


Figure 1 Map of Map of Target Area

Source:- <http://www.Researchgate.net/figure-map-of-Oromia-city-w.google.com>.

Location: Oromia special Zone around Finfine and Assela is located in the middle of Ethiopia and east oromia. The research would be conducted on seven (N=7) selected Oromia athletics clubs: -Sululta, Legatafo, Burayu, Beshan Oromia, Dandi Oromia, Adama club and Bosona Oromia specifically Oromia special Zone around Finfine and Assela. These seven (N=7) selected clubs were nearer to the capital city of Ethiopia and Oromia which were located approximately 2,355 meters above sea level, the city is located at the foot of the 3,000 meters high and with an Average temperature of 22 and 20c respectively, (Wilber & Pitsiladis, 2012)

#### 3.2. Research design

To achieve the objectives of the study, the researcher was Cross sectional research design employed to investigate and assess for the purpose of gathering data once from the respondents. The method that was obtained the relevant data from athletes in the form of a questionnaire and from the coaches in the form of interview.

### **3.3. Source of data**

Both primary and secondary data sources were used in this study. Primary data sources were collected through questionnaire, and interview to obtain reliable information for the study. The secondary source of data were collected from different materials or sources like books, journals, internet, different researches, and other materials related to the study.

### **3.4. Population of the study**

The study population was Oromia region athletics clubs. The total numbers of clubs in Oromia region eighteen (N=18) and the total number of coaches in Oromia athletics clubs were fifty four (N=54). Within this eighteen clubs seven hundred thirty five (N=735) athletes and fifty four (N=54) coaches' was involved. Total population was Seven hundred eight nine (N=789).

### **3.5. Target population**

In this research from eighteen (N=18) Oromia athletics clubs seven (N=7) target clubs were selected; Sululta, Legatafo, Burayu, Beshan Oromia, Dandi Oromia, Adama and Bosona Oromia specifically Oromia special Zone around Finfine and Assela. These clubs were selected purposively because of financial and time constraints. From these seven clubs eight six (n= 86) athletes and seven(n=7) coaches were obtainable in 3000m, 5000m and 10000m long distance runners.

### **3.6. Sample size and sampling techniques**

From total of seven clubs one hundred ten (N=110), athletes sampled (n =86) was determined by simple random sample technique and seven (N =7) coaches which were selected using available sampling technique. Which was determined in long distance runners from seven selected Oromia athletes clubs.

By using Sloven formula  $n=N/1+Ne^2$

Source: Taro Yamane (1976:886)

**Table -1 Study population, sample and sampling techniques**

No	Clubs	Total Athletes	Sample	Coach	Sample
1	Sululta club	17	14	1	1
2	Legatafo club	15	11	1	1
3	Beshan Oromia	14	11	1	1
4	Burayu club	18	15	1	1
5	Bosona Oromia	15	11	1	1
6	Dandi Oromia	15	11	1	1
7	Adama club	16	13	1	1
8	Population	110	86	7	7
9	Sampling techniques	sample random sample technique		Available	

Source: Oromia athletics federation, 2018

### **3.7. Instrument of data collection**

The instruments used for data collection was questionnaires and interview. Eight six (n=86) questionnaires for athletes and two (N=2) closed and open-ended interviews for seven (n=7) coaches prepared. Thus, questionnaire and interview was identifying as pertinent tools of this study.

### **3.8 Validity and reliability**

A pilot study was conducted on one club which including fifty (15) athletes from athletics clubs ascertain the reliability and validity of the research instruments. Accordingly, Holota athletics clubs was taken. The objectives of the pilot study was to: (1) assess the practicality and appropriateness of the questionnaire and provide an indication whether the item needs further refinement; (2) obtain advisors suggestions and views on the items; (3) determine the level of difficulty of the items; (eliminate poor wording, check clarity the questionnaires items and instruction) and (4) assess the reliability of the questionnaire.

In this study both contents were critically examined by researcher, participants of the pilot study and advisors. An instrument is valid if it measures what is supposed to measure. Accordingly the content validity was assured. To check the reliability of the questionnaires in the study, Cronbach alpha was computed using SPSS. Cronbach's alpha coefficient is the commonly considered as an "index of reliability associated with the variation accounted for the true score of the

underlying construct". According to Hair, Babin, Anderson and Tatham (2010), an acceptable reliability coefficient is greater than or equal to 0.70.

Equipment, training method and environment questionnaire was pilot tested on 15 athletes. The resulting Cronbach's alpha coefficients value in this study 0.822. For equipment were 0.798, for training method was 0.775 and for Environment 0.792.

### **3.9. Identification of variables**

#### **3.9.1. Independent variables**

In this study the researcher was focused on Equipment, training method and environment as an independent variables

#### **3.9.2 Dependent variables**

In this study as dependent variables was taken how independent variable equipment, training method and environment were influence on long distance runner's performance.

### **3.10. Data collection procedure**

The study was intended to collect data in selected Oromia region athletics clubs through questionnaire and interview. The questionnaires were translated to Afan Oromo language. The authorized official cooperation letters was received from Jimma University College of natural science Department of sport science for ethical clearance. Then, it was sought permission and follow ethical consideration relates to studies, aware, endorsement from clubs of particular study. The researcher got permission from five selective Oromia athletics clubs to collect data from coach and athletes. All the participants of the study would inform about the purpose of the study before the questionnaire distributed. Moreover, during the administration of the questionnaire further clarifications were given whatever question raised by respondents. It was distributed to eight six (n=86) athletes as well as seven (n=7) coaches was interviewed with the presence of the researcher. The questionnaires was distributed and collected from the respondents within the given time.

### **3.11 Scoring procedure**

To score level of, equipment, training method and environments response options were assigned a weighted score with strongly disagree having a value of one and strongly agree having a value of five. The quantitative survey instrument yielded a total of 28 scores that were averaged to form an overall measure of equipment, training method and environments. Athletes who had a high score were very agreed (maximum score of 5 x 28 questions = 140) while athletes with a low score were much disagreed (minimum score of 1 x 28 questions = 28) with their response.

In the analysis to make the interpretations meaningful, all scale scores were converted to a percentile mean scores are changed into percentage scores using the formula, (Rao & Abraham; 1991 cited in Mulatu Takele ,2013):  $\text{percentage score} = (\text{Mean value}-1) \times 25$ ; where the score 1 corresponds to 0%, 2 represents 25%, 3 corresponds to 50%, 4 represents 75% and 5 represents 100%. The percentage indicates the degree at which the particular items exist in the causes of injury under the consideration. Higher score indicates higher influences or impacts in athletes' performance.

### **3.12. Methods of data analysis**

The data was collected, edited, screened for error and omission, accuracy, uniformity and completeness and then was coded and tabulated before statistical analysis was carried out. Then, it was analyzed using SPSS version 20 and was used various statistical analysis techniques. The overall levels of equipment, training method and environment were analyzed using descriptive statistics such as mean and standard deviations. Descriptive statistics are used to describe the basic features of the data in a study. Though descriptive statistics used for demographic variable, the descriptive statistical analysis was conducted to search the mean value for each independent variable to show the level of equipment, training method and environment were the major causes of injuries of long distance runners' in Oromia region athletics clubs. Finally, multiple regression analysis was conducted to assess how equipment, training method and environment impact (influence) on athletes performance.

### **3.13. Ethical issue**

Ethical issue was considered and taken into account that the objectives of the study were explained for 3000m, 5000m and 10000m long distance trainees in the five selected Oromia clubs which was responsible bodies. Information or data was collected only form the voluntaries, discrimination in religion & gender was not ethical & also it was not allowed in this research.



## CHAPTER FOUR

### 4. RESULT AND DISCUSSION

This chapter presents analysis and interpretation of data. The target population consisted of one hundred ten (N=110) respondents. Out of this, samples from eight six (n=86) athletes' respondents and seven (n=7) coaches were taken.

#### 4.1. Demographic characteristics of athletes

Based on the response obtained from long distance runner's athletes and coaches of Oromia region athletics clubs the characteristics of the study were examined in terms of their, age, sex marital status, weight, training age and, educational background.

Table 4.1. Demographic characteristics of athletes' respondents

S.N	Questions	Category	F	%
1	Gender	M	48	55.8
		F	38	44.2
2	Age	18-30 years	86	100
3	Marital status	Married	6	7
		Unmarried	80	93
4	Weight	Below 45 kg	9	11
		46-60 kg	18	21
		51-55 kg	15	17
		56-60 kg	38	44
		61-65 kg	6	7
5	Year of training	0-5 years	34	40
		6-10years	49	57
		16 years & above	3	4
6	Educational status	Elementary school	9	10.5
		Secondary school	25	29.1
		Preparatory	43	50.0
		Diploma	3	3.5
		First degree	6	7.0

Key M=of, F=female, F=frequency, %= percent

Table 4.1 states that Out of 86 participants (48 /55.8 %) were male and (38 /44.2%) were female this implies that, the age distribution and participation of females in long distance runners needs high consideration in athletics clubs of Oromia region. Majority of the participants (86/100%) in the age group of 18-30 years. It indicates that most of the athletes were young, which is in the

productive and high opportunity for physically enduring. Then, it needs great attention to retain those youngsters to be saved from injuries. In addition, the most academic qualification of the respondents were preparatory (43 /50%) and only (6/7%) of the respondents hold first degrees. Moreover, training years was investigated in this study; thus the majority of athletes training Year were 6-10 (49/57%) had between 6-10 years of run experience. Therefore, most of the athletes were Stage 4 specialization and stage 5 Performance. This implies all of the athlete's physical, technical, tactical and mental capacities should be fully established with the focus shifting to the optimization of performance level. Generally most of athletes in Oromia athletics clubs can now be trained to peak for specific competitions and major events; whether those competitions be the Olympics, a regional competition or a local meeting or event; with each aspect of training individualized.

#### 4.2. Demographic characteristics of coaches

Table 4.2 Demographic characteristics of coaches' respondents

SN	Question	Characteristics	F	%
1	Age	31-40	1	14.3
		41-60	6	85.7
2	Sex	Male	7	100
3	Marital status	Married	7	100
4	Subject qualification	Sport management	4	57.1
		Others	3	42.9
5	Academic qualification	Diploma	3	42.9
		First degree	4	57.1
6	Coaching age	6-10 years	6	85.7
		Above 10 years	1	14.3
7	Coaching level	2 <sup>nd</sup> level IAAF	6	85.7
		4 <sup>th</sup> level IAAF	1	14.3
		Main coach	7	100

Table 4.2 states that 7 (100%) of the respondents are males and this indicates that there is unbalanced gender distribution of coaches in the clubs. In addition, the table shows that 85.7% of the coaches have the age of 41-60. The subject qualification of the coach was 4(57.1%) of them have sport management, and 3(42.9%) of them are others qualification. This indicated that they hadn't related subject with athletics coaching in the clubs. The highest academic qualification the coach 4(57.1%) of the respondents have 1<sup>st</sup> degree and the others qualification 3(42.9%) of them

have diploma. When we saw coaching level of the respondent 6(85.7%) had second level IAAF and 1(14.3%) of them had IAAF 4<sup>th</sup> levels. This finding states that most of long distance runner's coaches of athletics clubs of Oromia region athletics clubs had IAAF second level. This implies that, most of coaches were not competent enough to clubs coaching according to the standard of IAAF coaches' education and certification system (CECS), to be a senior coach in long distance running event in athletics everyone should have IAAF level four coaching level.

#### 4.3. Descriptive statistics for respondents on the level equipment

Table 4.3 Mean and standard deviation of respondents on the level of equipment

S.N	Questionnaire	M	SD
1	Do you think that the wearing shoes are useful for training	4.38	.97
2	The types of shoes you wear are comfortable for training.	1.75	.93
3	Shoes quality is exposed for injuries.	3.30	1.5
4	The shoes delivered expose for training.	3.47	1.2
5	The types of shoes and training wear comfortable	2.98	1.38
6	Injure faced from shoes and wear take long time to rehabilitated or save.	3.45	1.44
7	During training time similar injuries happen on athletes	3.86	1.09
8	Poor quality athletes tools provide from bureau can cause it to injury.	3.97	1.09
9	The part of body injured re-occur later in the training or competition due to wearing materials.	4.32	.83
10	Shoes like spikes standard running materials exposed to injuries.	4.26	.85
11	There are athletes drop out from race due to poor quality wearing materials.	4.40	.74
	Average	3.65	1.09

**Key** N = Number, % = Percent M=mean, SD=standard Deviation was used.

**Cut point** Percentage score = (Mean value-1) x 25; where the score 1 corresponds to 0%, 2 represents 25%, 3 corresponds to 50%, 4 represents 75% and 5 represents 100%. If 50% is neutral above 50% agree, below 50% disagree.

The results in table 4.3 shows that a variable mean value of 4.40 and standard deviation 0.741 indicates that athletes were very agree with 85% the statement "There are athletes drop out from race due to poor quality wearing materials"

The highest area of disagreement had the mean value and standard deviation was 1.75 and 0.93 respectively. The respondents expressed their disagreement with 18.5% the statement “The types of shoes and training wears are comfortable”.

Supporting the above idea some of the interviews said that:-

*(Code: A2, April 15, 2019) stated there is athlete who sustained injury right now. There have been injuries in the previous time as well. Who sustained injury during the race made 3000m semifinal having the athletes been struck by shoe spike on his knee. For a while the athletes feigned painless however at the end he was compelled to drop out. Code: c2 they are hurt why they are because the athletes utilize standardized shoes and wearing running materials. The problems occur related with the above materials being rubbed under armpit, and related problems. The shortage of health professionals who are capable to provided medical service to the injuries causes the athletes not rehabilitated within period of time.(Code: c2, April 22, 2019)*

The finding of this study reveals that the standard of shoes and training wears that was used in selected Oromia athletics clubs wasn't suitable for training and computation and also made athletes to injuries. Furthermore, a blister can occur at any site of friction with an external source, such as shoes or sports equipment. (Brukner & Khan, 2006). Accordingly similar study reveals that Well-designed running shoes are important for all running surfaces. At all running surface that are not comfortable to athletes are made injury and to prevent that designed running shoes with training surface. (Van Mechelen, 1992).

#### 4.4. Descriptive statistics for respondents on the level of training method

Table 4.4 Mean and standard deviation of respondent on the level of training method

S.N	Questionnaires	M	SD
1	Weekly training program can cause injuries.	4.37	.826
2	The intensity of weekly training overload cause of injury	4.49	.83
3	Athletes get injured when they are not in proper condition. Not warming up or stretching enough before running or exercising can also lead to injuries	4.44	.729
4	Coaches aware that each athlete when they are training or competition situation contains an element of danger.	1.77	1.03
5	Training that is given by your coach is the reason for injury	3.79	1.19
6	More injuries case during completion than training	4.12	1.17
7	Due to lack of profession can cause injuries on trainers	4.01	1.01
8	Due to running with the previous injury that were not healed completely or rehabilitated that may cause the repair tissue may damage again.	4.47	.714
9	Enough support are provide at training & competition area and place.	1.60	1.07
	Average	3.66	.952

Table 4.4 states that a statement “The intensity of weekly training overload cause of injury, Due to running with the previous injury that were not healed completely or rehabilitated that cause athletes get injured when they are not in proper condition and Not warming up or stretching enough before playing, running or exercising can also lead to injuries,” with a mean value of 4.49, 4.47, 4.44 and standard deviation 0.83, 0.714, 0.729 respectively indicates that athletes were strongly agree with 87.2%, 86.7% ,86% respectively.

The highest area of disagreement had the mean value and standard deviation was 1.60 and 1.07. The respondents expressed their disagreement with 15% the statement “Enough support is providing at training & competition area and place.

In agreement quantitative analysis, qualitative responses suggested that:-

*Code: B1, code: C1 and code: B2 stated also the same that several athletes are hurt due to the fact that the training undergone alone means that athletes without the consent of the coach and manage. Plus the training undergone with the professional’s guidance per week was matching the athletes overloading exercise and causing the athletes is hurt. (Code: B2, April 19, 2019).*

*(Code: B1, April 18, 2019) yes, our athletes often sustained injuries during training time. These injuries occur because they fail to warm up before moving on strong exercises and they feel pain on their foot whenever they are running a long range race upon the road made from asphalt.*

The finding of this study showed that the intensity of training per week ,lack of warming up and stretching before and after exercises, doing exercises individual (alone) and the absence of health officers from clubs were causes of injuries in selected Oromia athletics clubs.

Furthermore, Yeung (2001), suggest that runners who had trained for more than 3 days per week were more likely to be injured from this concluded that excessive speed work and not getting enough rest cause injuries.

Moreover, similar findings supported that Warming-up” is a term which covers activities such as light exercise, stretching, and even psychological preparation, before undertaking major sporting activity Warm-ups, including stretching, have been recommended as a means of reducing musculoskeletal injury because they improve the range of motion of the joints and improve muscle elasticity, thereby removing some of the physical stresses associated with running. Warm-ups are also believed to be beneficial in mental, as well as skill, preparation, Best & Garrett, (1993),

Correspondingly, Stretching or cooling-down after exercise may be more physiologically effective. This is because there is an increased amount of heat generated in the soft tissues after exercise and this is necessary for the increased elasticity that would enhance stretching,(Mc Quade, 1986).

In addition, the study by Buist et al (2007), a number of retrospective studies reviewed injured runners and concluded that most of the injuries were a result of training errors such as too much mileage, excessive speed work and inadequate rest

#### 4.5. Descriptive statistics for respondents the on the level of environment

Table 4.5 Mean and standard deviation of the respondents on the level environment

S.N	Questionnaires	M	SD
1	Geographical set up of the area cause of injure	4.37	.826
2	Due to grasping of land and lack of training place can extend training distance cause to injure	4.39	.830
3	The training and competition area takes in deference surface at different weather exposed you injury.	4.44	.729
4	Training field is comfortable for long distance runner.	1.77	1.03
5	Running on street / asphalt/ can exposed athletes for injure.	3.79	1.19
6	Healthy offers have adequate knowledge to treat injured tanners at all level.	4.12	1.17
7	Uncomfortable training and competition field cause injuries on trainers.	4.01	1.01
8	Training in the forest and mountains cause injuries.	4.47	.714
	Average	3.92	.94

Table 4.5 shows that a variable mean value of 4.47 and standard deviation 0.591 indicates that athletes were strongly agree with the statement “Training in the forest and mountains cause’s injuries and the training and competition area takes in deference surface at different weather condition exposed you injury with the mean value 4.44 and standard deviation 0.729.

The highest area of disagreement had the mean value and standard deviation was 1.77 and 1.03 respectively their disagreement with the statement “Training field is comfortable for long distance runners and “Running on street / asphalt/ can exposed athletes for injure” with the mean value 3.75and standard deviation1.19.

Considering quantitative findings qualitative response suggests that:-

*The athletes have sustained injuries due to the fact that they face strange weather condition than they already adapted during training moment and thus, whenever the racing condition were mismatched (incongruent ) we would fail to score the expected point during competition ... (Code: A1, April 15,2019) and Code: c2 revealed long distance runner athletes make training upon mount “Intoto” which dubbed (regarded ) as high altitude and this is favorable (suitable)*

*condition for them while the (athletes ) go to lowland like Adam ,the problem the air condition face them to lose the point as well as feel pain to drop out of the race.(Code: A1, April 15, 2019)*

*(Code: c3, April 20,2019)suggested that most of the times long distance runners trained around forest and mount they makes injury due to the fact that they are immersed in the grass-covered wells (holes) found in forest where training commonly takes place.*

This study suggests that training in the forest, mountains and asphalt, training and competition at different weather condition faces athletes to physically injure. Furthermore, Environment of training area i.e. not proper training area especially in the asphalt, and forest due to that many athletes were injured.

Van Mechelen, (1992) ensured that running on hard surfaces increases mechanical shock thereby overloading joints and tendons. Soft surfaces quickly tire the muscles and are thought to increase injury particularly overuse injuries. Running surfaces such as soft sand, cement, or other hard rigid surfaces should be avoided.

In the same manner according to American College of Sports Medicine, (Ting, 1991; Cross, 1993; van Mechelen, 1992; Vincent, 1996) explored runners enrolled in two community road races over a 12 month follow up period. Those injured twelve months prior to the survey identified that their injury was the result of running on a slippery surface. This slippery surface, although not so indicated, may have been a result of cold climatic conditions (i.e. rain).

Moreover Similar finding shows that is running on asphalt (hard) surfaces provokes a bigger absorption load on the lateral rear foot, increasing the risk of injury.(Tesutti et al. (2008).

#### **4.6. Descriptive statistics Summary of equipment, training method and environment**

Table 4.6 summary of equipment, training method and environment

SN	Variables	M	SD
1	Equipment	3.65	1.09
2	Training method	3.66	.952
3	Environment	3.92	.94

Table 4.6 the injuries level of equipment that sampled from respondents had slightly above the average (Mean=, 3.65, SD=1.09) level of Equipment. Similarly, the injuries level of Training



method in the sampled was found to be moderate (Mean=3.66, SD=0.952). More so, the level of Environment had above average (Mean=3.92, SD=0.94).

This implies that environment, training method and equipment was the cause of injuries in long distance runners' orderly with 73%, 66.5% and 65% respectively.

#### 4.7. Equipment, Training methods and environment influence on athletes performance in Oromia region athletics clubs.

The Beta value and p value shows that which variables has influences on athletes' performance and which has the least influences.

Table 4.7 Coefficients regression analysis

SN	Models	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	R square	Sig. F Change
		B	Std. Error	Beta				
1	Equipment	.013	.006	.210	1.992	.050	.162	0.002
2	Training method	.021	.009	.248	2.389	.019		
3	Environment	.025	.010	.247	2.404	.018		

#### 4.8. Regression model summary results of the variables

Table 4.8 model summary

Model	R	R Square	Std. Error	Sig. F Change
1	.403	.162	.35571	.002
Predictors:				
Independent variables: equipment, training method and environment. Dependent Variable: athletes' performance R2 = R square, P = Sig and Std. Error = Standard error B = Standardized Coefficients Beta use this for interpretation				

The regression result in table 4.7 illustrates that environment, training method and equipment were the most influential variable consequently for the interpreter of injuries on athletes' performance in Oromia region athletics clubs. In other words the independent variables (Training method environment and equipment) made significant relative contribution to the injuries on athletes' performance. The cause environment made the highest contribution ( $\beta = 0.247$ ;  $t = 2.404$ ;  $p = 0.18$ ) followed by Training Method ( $\beta = 0.248$ ;  $t = 3.896$ ;  $p = .019$ ) and equipment ( $\beta = .0210$ ;  $t = 1.992$ ;  $p = 0.050$ ) respectively.

The analytical results shows in table 4.8 that models the coefficient  $R^2 = 0.162$  and R adjusted is

0.162. The index was to ensure safety in the assessment of the suitability model (not to exaggerate the relevance of the model). The model was considered suitable by 16.2%, it means 16.2% of the athletes' performance explained by those independent variables. The remaining 83.8% could be due to errors and factors that are not included in this model.

Supporting the above idea some of the interviews side that:-

*(Code: A1 April, 17) the athletes performance before injury and after injury are not the same they are face them to lose the point as well as feel pain to drop out of the race. Code: A2, B1 and C3, they were confirm that the training load, uncomfortable equipment and the change of weather condition during training and competition were the main causes of injuries in long distance runners. (Code: B2, April 19, 2019)*

The finding of the study shows that environment, training Method and equipment had positive effect on injury in athletes 'performance in Oromia region athletics clubs. The variable training method was the strongest way to predict highly influence on athletes' performance, followed by environment and equipment based on their standardized coefficients of beta and P value.

Similarly, current study also showed that the causes of injury runners should pay extra care to fully recover from their previous injury, avoid participating a training distance greater than 60 km/week, and wearing a running shoes more than eleven-month-old. In addition, competition distance, competition frequency, training surface, type of footwear, and the running season, were all significantly associated with running-related injuries. ( Begizew, Grace, & Heerden, 2019)

Supporting this finding others similar finding agreed to that most athletic injuries where occurred due to lack of training error, proper training equipment, training area , proper treatment and injury management were the major causes and their impacts have seen on athlete's performance, ( kassa, 2017).

## CHAPTER FIVE

### 5. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### 5.1. Summary

This part of the study deals with the summary of the major findings, conclusion drawn on the bases of the findings and recommendations which were assumed to be useful to identify the major causes of injuries of long distance runners in selected Oromia region athletics clubs

In order to answer the questions, the descriptive statistics research method and multiple regression was employed. The relevant data to the study was gathered through questionnaires and interview. In general, ninety three (n=93) participants' eight six (n=86) athletes and seven (n=7) coaches were involved in the study.

The data obtained were analyzed using descriptive statements and statistical methods such as mean, standard deviation, and one multiple regression. Finally, based on the analyzed data, the following major findings were obtained from the study.

The study also identified that, there was not abundant equipment and training field. Most of the respondents reported that clubs had inadequate quality equipment shoes and wearing cloth for training, unsuitable training track and running equipment were not suitable for quality training and below the required standards. So, these were the causes of injuries in selected Oromia region athletics clubs.

The largest proportion of respondents indicated that clubs have inadequate number of coaches for long distance event. Because of this most clubs are covered by one male coach. The study showed that most of clubs athletes are using their training area on asphalt and forest because of absence of their own standard training track.

Finally according to the finding majority of respondents from questionnaires and interview the environment, training methods and equipment's were the causes of injury. Generally, based on the results of multiple regressions (table 4.7), majorities of coach's respondent replied that injuries influences individual's performance of the athletes in Oromia region athletics clubs were

environment made the highest contribution ( $\beta=.247$ ;  $t= 2.404$ ;  $p=.0.018$ ) follow by training method ( $\beta=. 0.248$ ;  $t= 2.389$ ;  $p=.019$ ) and equipment ( $\beta=. 0.210$ ;  $t= 1.992$ ;  $p=0.050$ ).

## 5.2. Conclusion

Based on the results from questionnaire and depth interview of the study the researcher obtained and analyzed, the following basic points were forwarded as a conclusion.

- ❖ According to training age most of the athletes were found both on specialization and Performance stage of athlete's development. During this age all of the athlete's physical, technical, tactical and mental capacities should be fully established there performance level.
- ❖ Proper training equipment like shoe problems mainly happened that were forced the athlete to train and compete with the same improper shoes and wearing cloth.
- ❖ Training not considering the training method including running too far, increasing the distance or time to quickly, load of training and high intensity and poor technique were the major cause in selected Oromia regional states Oromia athletics clubs.
- ❖ Many long distance running injuries were re-injured or aggravation of pre-existing injuries due to running with the previous injury that were not healed completely or rehabilitated.
- ❖ In addition to that other cause of injuries of long distance runners in Oromia region athletics clubs were athletes trained alone, i.e. without permission of coach or manager the athletes training their own. Therefore weekly training program over load to athletes and then exposed to injury.
- ❖ With regard to training environments especially in the asphalt and forest many athletes were injured due to the athletes immersed in unseen obstacles and the grass-covered wells (holes) found in forest.
- ❖ Lack of proper treatment in the training area and competition the athlete's takes long time to recovery. It means that the absence of health officers from training and competition area the athletes is difficult to rehabilitate from current injury.
- ❖ To sum up the budget that allocated for clubs to bought running material was not enough. This indicates that the shortage of finance to bought standard tools.so, used untendered material causes athletes to injury.

Major causes of injuries in long distance runner some selected Oromia region athletics clubs recognized by several causes which have been summarized in to equipment, training method related and environment related. These causes were highly interconnected with their performance and have to be care in systematic manner by giving prior emphasis to the causes which needs urgent solution.

### **5.3 Recommendation**

The study attempted to find the how equipment, training method and environment were the causes of injury and the influence on the athletes performance .Therefore, the findings of this study clearly showed equipment, training method and environment are significant variables influencing on athletes performance the result rendering statically support that causes of injury. The findings of this study also indicated that equipment, training method and environment has positive relationship with injury in Oromia region athletics clubs respectively.

Thus, Ethiopia athletics federation, Oromia athletics federation, sport academy, clubs in Oromia and experts or professional will arrange aware programs as well as to ensure about the causes of injury for athletes, coaches and managers.

To this end, the following recommendations will forwarded in light of the findings:

- Athletes take care of about the socks and nail what they are wearing
- Coaches in the clubs needed to identify most variables that contributing the causes of injuries, significant solution, strategic plan and program to persist them in the clubs. For instance, designing program and training to enhancing reasonable and safety training for all athletes.
- Coaches of projects needed to aware offer opportunities for promotion through creating better training, profession planning, good performance tracking, improving training and prevention of injury.
- Coaches before training give awareness about injury.
- Conducting professional workshops or seminars at clubs for coaches' experts who are responsible for supervising athletes in the clubs in order to solve the causes of injury.
- In the long term plan the sport commission should consider truck at standard.
- In the short term plan Oromia sport bureau according to their academic qualification and

level of coaching needs to fulfill coaches in the clubs.

- All stakeholders think over it about the employment of female coaches in each clubs.
- Shortage of facility and training environment were found among the main hindering causes of injury in the clubs. Therefore, the concerned bodies allocate enough budgets to buy at basic athletics equipment for long distance event trainer. Again, the clubs should work jointly with athletics federation, private sport, sport Medias, governmental and non-governmental organization...etc. so as either to get donations or generate incomes.
- Oromia sport commotion make standard training track /center/for long distance runners or adjust running surface in flat, smooth, soft and resilient to runners.
- Ethiopia athletics federation, Oromia athletics federation, sport academy, clubs in Oromia give attention or focus on the causes of injury in long distance runner athletes.

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**APPENDIX- 1**  
**JIMMA UNIVERSITY**  
**COLLEGE OF NATURAL SCIENCE**  
**DEPARTMENT OF SPORT SCIENCE**

**Questionnaire guidelines for athletes**

**Dear Respondents!**

The purpose of this questionnaire is to obtain information on the major causes of the injuries of long distance runners of some selected athletics clubs of Oromia zone. The information procured through the questionnaire will be used only for statistical analysis purpose. Any information that you give will be kept confidential.

Hence your cooperation in giving genuine information is highly valuable for the accomplishment of the study.

N.B

- There is no need of writing your name on the questionnaire.
- Please respond all questions

Part- I – Personal Data

1. Age 18-30                     31-42                     43-55
2. Sex    M                     F
- 3 Marital status    married     unmarried     divorce
4. What is your approximate weight in kg? 45 & Below 45  46 -50  51- 55  56-60   
61-65                     66-70                     71-75                     76 & above
5. How long have you been your training age? 0-5                     6-10                     10- 15                     16 and  
above
6. What is your educational status? Grade 1-4     Grade 5-8     Grade 11     Grade 12   
Diploma     1<sup>st</sup> degree     2<sup>ND</sup> degree & above
7. What was your performance before injury? Very high     high     Moderate     Low   
very low
8. what about your performance after injured? Very high     High     Moderate   
Low     vary low

## Questionnaire filling by athletes

### PART- 2

Directions: Please read each statement carefully and indicate to what extent you agree or disagree with each statement by thick (X) the number that best corresponds with each statement.

1                      2                      3                      4                      5  
 Strongly Disagree    Dis-agree            neutral                Agree                 Strongly Agree

No	Equipment related questionnaires	1	2	3	4	5
1	That the wearing shoes are useful for training					
2	The type of shoes you wear are comfortable for training.					
3	Shoes quality is exposed for injure.					
4	The shoes delivered expose for training.					
5	The types of shoes and training wear comfortable					
6	Injure faced from shoes and wear take long time to rehabilitated.					
7	During training time similar injuries happen on athletes					
8	Poor quality athletes tools provide from bureau can cause it to injury.					
9	The part of body injured re-occur later in the training or competition due to wearing materials.					
10	Shoes like spikes standard running materials exposed to injure.					
11	There are athletes drop out from race due to poor quality wearing materials.					
No	<b>Questionnaire related with training method</b>	1	2	3	4	5
1	Weekly training program can cause injuries.					
2	The intensity of weekly training overload cause of injury					
3	Athletes get injured when they are not in proper condition. Not warming up or stretching enough before playing, running or exercising can also lead to injuries					
4	Coaches aware that each athlete when they are training or competition situation contains an element of danger.					
5	Training that is given by your coach is the reason for injury					
6	More injure case during completion than training					
7	Due to lack of profession can cause injuries on trainers					
8	Due to running with the previous injury that were not healed completely or rehabilitated that may cause the repair tissue may damage again					
9	Enough support are provide at training & competition area.					
No	<b>Questionnaire related with Environment</b>	1	2	3	4	5
1	Geographical set up of the area cause of injure.					
2	Due to grasping of land and lack of training place can extend training distance cause to injure?					
3	The training and competition area takes in deference surface at different weather exposed you injury.					
4	Training field is comfortable for long distance runner.					

5	Running on street / asphalt/ can exposed athletes for injure.					
6	Healthy offers have adequate knowledge to treat injured tanners at all level.					
7	Uncomfortable training and competition field cause injuries on trainers.					
8	Training in the forest and mountains cause injuries.					



**APPENDIX- 2**  
**JIMMA UNIVERSITY**  
**COLLEGE OF NATURAL SCIENCE**  
**DEPARTMENT OF SPORT SCIENCE**

**Interview guidelines for coaches**

The purpose of the interview is to obtain information on the major causes of the injuries of long distance runners of some selected athletics clubs of Oromia zone. The information gained through the interview will be used only for statistical analysis purpose. Any information that you give will be kept confidential.

Hence your cooperation in giving genuine information is highly valuable for the accomplishment of the study.

**Part- I – Personal Data**

1. Age 18-30  31-42  43-55
2. Sex M  F
3. Marital status Married  Unmarried  Divorce
4. Subject of qualification Athletics coaching specialization  Sport management  other
5. Academic qualification Diploma  1<sup>st</sup> degree  2<sup>nd</sup> and above
6. How long have you been your coaching age below 1 year  1-5 year  6-10 year  11 year & above
7. Coaching level 1st level 2<sup>nd</sup> level  2<sup>nd</sup> level IAAF  3<sup>rd</sup> level IAAF  4<sup>th</sup> level IAAF
8. Your current work position in the club Main coach year  Assistant coach

**Interview checklist for coaches**

1. Is there injury have seen in your clubs in long distance runners? If your answer yes what is the main causes of injuries of the athletes in your clubs?

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2. After athletes injured what about their performance?

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**IBSA-1**  
**UNIVAARSITII JIMMAA**  
**KOOLEJJII SAAYINSII UMMAAMA**  
**MUMMEE ISPOORTII**

**Gaaffilee Atileetotaan guutamu**

Kaayyoon gaafii kana kilaboota naannoo Oromiyaa keessaa filatamanirratti atileetoota fiigicha dheeraa irraatti rakkoo hubaatii qaamaa gahu odeeffannoo funaanuufi. Gaafiileen dhiyaatan hundi qorannoo kana duwwaadha oolu. Odeeffannoon kennamu hundi iccitin isaa ni eegama. Kanaafuu ragaa sirii kennuun qorannoo kanaaf gahe guddaa qaba.

Hubaachiisa

- Gaaffannoo kanarratti maqaa barreesuu hin danda'amu.
- Gaaffillee hundaaf deebii kenna.

**Kutaa -1**

**Raga dhuunfaa**

1. Umriin kee woggaa    18-30                       31-42                       43-55
2. Saala    dhi                       dur
3. Haala gaa'ila            kan fuudhe     kan hin fuune     kan hin hiike
4. Ulfaatinni kee Kg meeqa    45 fi isa gadi     46 -50     51- 55     56-60   
61-65             66-70     71-75     76 fi isaa ol
6. Woggaa meeqa leenjiirra turte    0-5             6-10             10- 15             16 and above
7. Sadarkaa barnootaa            sad.1<sup>ffaa</sup>     Sad.2<sup>ffaa</sup>     kutaa 11     kutaa12     Diiploomaa   
Digirii 1 <sup>ffaa</sup>     digirii 2 <sup>ffaa</sup> fi isaa ol
8. Osoo hin miidhamiin dura qabxiin kee meeqa ture? Olaanaa    G/ galeessa    jijjirama hin qabu gadi aanaa
9. Erga miidhamtee booda hoo qabxiin kee? Olaanaa    G/ galeessa    jijjirama hin qabu gadi aanaa

**Kutaa -2**

**Kallaattii** – Tokkoon tokkoon gaaffilee armaan gadiitiif kanneen walitti dhufa jettu mallattoo (x)  
kaa'uun yaada kee agarsiisi

Gonkuma walii hin galu – 1 Walii hin galu -2 Hin murteesu – 3 Walii ni gala - 4

Baayee walii gala - 5

<b>I</b>	<b>Gaaffiiwwaan meeshaalee waliin walqabatu</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Kopheen leenjiif barbaachisaadha jettaa.					
2	Kopheen godhattu leenjiif mijaataadha.					
3	Qulqullini kophee hubatiidhaf nama geechiisa					
4	Kopheen si kennamu balaaf nama saaxila.					
5	Kophee fi huccuun ittiin leenjiitu fi dorgomtu mijaataadha.					
6	Hubaatiin kophee fi huccuun gahu fayyuuf yeroo dheeraa ni fudhataa.					
7	Yeroo leenjii hubaatii wal fakkataan atileetoota irra ni gaha.					
8	Karaa waajiraan meeshaalee dhufu qulqullina dhabuu irraan kan ka'en hubaatif nama saaxila.					
9	Huccuu fi kopheen hubaatiin gahe leenjii fi waldorgoommii irratti miidhaa qaba.					
10	Meeshaalee akka spaaykaafadhan miidhaan qaqqabe jira.					
11	Atiileetiin sabaaba qulqullina meeshaatiin waldorgommii adda kute jira.					
<b>II</b>	<b>Gaaffiiwwaan haala leenjii waliin walqabatan</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Sagantaa Leenjiin torbeetti kennamu hubaatiidhaaf ni geechiisa.					
2	waldorgommii walitti baay'achuun kan ka'e hubaatiif nama geechiisa.					
3	Shaakalaan dura fi booda sochii qaamaa hojjechuu dhabuun miidhaf nama saaxila.					
4	Leenjiistootni yeroo leenjii fi waldorgoommiin dursaanii akka hubaatiin gahuu danda'uu fi of eeggannoo akka goonu ni himu.					
5	Leenjiin leenjiisaa keetiin siif keenama jiru balaaf si saaxila.					
6	Yeroo leenjii irra yeroo waldorgommii hubaatii gaha.					
7	Hanqiina ogummaatiin balaan isiinirra gahe jira.					
8	Hubaatii duraa fi baqqaqsamuu qaama tureen dorgoomuun qabxii koo irratti dhibbaa ni qaba jedhame yaadama					
9	Iddoo leenjiitti wal'aansi quubsan ni jira.					
<b>III</b>	<b>Gaaffanoolee naannoo waliin walqabatu</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
1	Haali teessuma lafa naannoo dhiibba ni fida.					
2	Hanqina iddoo fi baayachuu maneen ijaaramaniin turtii leenjii dheeresuun hubaatiif nama saaxila					
3	Jijjiiramuu qileensaa iddoo leenjii fi waldorgommii adda adda ta'uun balaa namarraan gaha.					
4	Iddoon itti shakalatan fiigiicha dheeraadhaaf kan ta'uudha.					
5	Asfaaltii irra fiiguun rakkoof nama saaxilaa.					
6	Oggeesotni fayyaa naannoo hundatti argamani yaala ni kennu					
7	Iddoo shakalaa mijaachuu dhaabuun hubaatiin nama saaxila.					
8	Tabba fi bosona keessatti shakkaluun balaa qaba.					

**IBSA-2**  
**YUUNVAARSITII JIMMAATTI**  
**KOOLEJJII SAAYINSII UMMAAMA**  
**MUMMEE ISPOORTII**

**Uunka Af-deebii leenjistootaf**

Kaayyoon gaaffii kana kilaaboota naannoo Oromiyaa keesaa filatamanirratti atileetoota fiigiicha dheeraa irraatti kanaa hubaatii qaama gahu odeefannoo funaanuuf. Gaafiileen dhiiyatan hundi qorannoo kana duwwaadha oolu. Iccitiin Odeefannoon qorannichaa hundi eegamaadha. Kanaafuu ragaa sirii kennuun qorannoo kanaaf gahe guddaa qaba.

**Hubaachiisa**

- Gaafannoo kanarratti maqaa barreesuu hin danda'amu.
- Gaafiillee hundaaf deebii kenna.

**Kutaa -1 Ragaa dhuunfaaleenjistootaf**

1. Umriin kee woggaa meeqa      18-30                       31-42                       43-55
2. Saaladhi                       dur
3. Haala gaa'ila      kan fuudhe       kan hin fuune       kan hin hiike
4. Sadarkaa barnootaa      sad.1<sup>ffaa</sup>       Sad.1<sup>ffaa</sup>       kutaa 11       kutaa12       Diiploomaa   
Digirii 1 <sup>ffaa</sup>       digirii 2 <sup>ffaa</sup> fi isaa ol
5. Gosa barnoota      leenjisuuma atileetiksii       spoortii management       kan biroo
6. Sadarkaa leenjisuuma      leenjiisuummaa sad.-1<sup>ffaa</sup>       leenjiisuummaa sad.2 <sup>ffaa</sup>       leenjiisuummaa  
sad.2<sup>ffaa</sup> IAAF       leenjiisuummaa sad.3 <sup>ffaa</sup> IAAF       leenjiisuummaa sad.4<sup>ffaa</sup> IAAF
7. Gahee hojii      leenjiisaa1 <sup>ffaa</sup>       gargaara leenjiisaa       Supparvaayizeera
8. Woggaa meeqa leenjiiste?                      Woggaa 1 gadi       Woggaa 1-5       Woggaa 6-10   
Woggaa11 fi isaa ol

**Gaffannoo Af- deebii leenjiistootaaf**

1. Figiichaa dheeraa keessatti miidhaan atileetotarra keessanirra ni gaha? Eeyyeen yoo jetan Sababooni isa maali siti fakkata?

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2. Qabxii isaani irratti rakkoo fidaa?

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