

JIMMA UNIVERSITY
COLLEGE OF NATURAL SCIENCE
DEPARTMENT OF SPORT SCIENCE

**ASSESSMENT OF PERFORMANCE RELATED PHYSICAL FITNESS OF FOOTBALL
PLAYERS BASED ON THEIR PLAYING POSITION: IN THE CASE OF SOUTH WESTERN
ZONE OF ETHIOPIAN NATIONAL LEAGUE FOOTBALL CLUBS.**

BY: BIZUAYEHU DEMISSIE

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**THESIS SUBMITTED TO SCHOOL OF GRADUATE STUDIES OF JIMMA UNIVERSITY IN
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SCIENCE IN SPORT SCIENCE (FOOTBALL COACHING SPECIALIZATION)**

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ABSTRACT

The purpose of this investigation is to assess performance related physical fitness of national league football players regarding to their playing position. National league football clubs competition is one of the most widely organized popular football contests across the country next to Ethiopian premier league match, which is governed by Ethiopian football federation. 7(seven) national league club players and coaches from south western regional division of the league was the population of the study. To conduct this research 3(three) clubs was selected purposively from 7(seven) clubs based on their date of establishment and previous achievement. Based on their playing position, 9 goal keepers, 24 defensives, 24 mid fielders and 18 forwards total of 75 players and 3(three) coaches was directly involved in the study. The main instrument of data collection was 30 meter sprint test, vertical jump power test, Illinois agility test and structured interview. Collected fitness test scores through predetermined fitness tests and structured interview was analyzed using descriptive statistics such as mean, median, standard deviation and analysis of variance was carried out to identify the significance mean difference. The result of the study reviled that, there was statistically significance mean difference between playing position in sprint speed test, vertical jump test and Illinois agility test, $p < 0.05$. Goal keepers appeared low scorer in speed and agility test. Lack of motivation and absence of measuring instruments was the main problems that hinder fitness assessment in national league football clubs. Coaches should consider positional role of players and demands during training programs.

Key words: *football, playing position, physical fitness, national league, performance efficiency.*

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ABBREVIATIONS

ATP: Adenosine triphosphate

BMI: Body mass index

CAF: Confederation of African football

CODS: Change of direction speed

PCR: Phosphocreatine

SSC: Stretch shortening cycle

CHAPTER ONE

1 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Soccer is one of the most widely played and complex sports in the world, where players need technical, tactical, and physical skills to succeed. Without good physical fitness, players are rarely able to play the game with good technique, (Chapman *et al*, 2007). Soccer is characterized by a continuous course of activities with intermittent intensity in the game and a very low success ratio (the number of achieved goals) according to possession of the ball. For achieving top results in this sport, it is necessary that players have an exceptionally high level of technical and tactical skills as well as significant physical fitness, (Sevensson & Drust, 2005).

Fitness in soccer specific context refers to a range of individual characteristics that is a composite of many attributes and competences. Such competence by definition includes, physical, physiological, and psychomotor factors, (Reilly & Williams, 2003). Physically superior players feel less fatigued during the game played with the same intensity and, therefore, those players experience less decrement in technical performance, (Jukic, *et al*, 2011).

Fitness can be classified into two major components, such as; health related physical fitness and skill/performance related fitness. Health-related physical fitness consists of those components of physical fitness that have a relationship with good health. The components are commonly defined as body composition, cardiovascular fitness, flexibility, muscular endurance, and strength. Skill related fitness usually called performance related fitness. Those components of performance related fitness are; power, speed & quickness, agility, balance and motor skills, such as coordination and accuracy, (Leyland, 2007). Skill or performance related fitness in motor skill is essential in activities, such as, basketball, racquetball, golf, hiking, soccer and skiing (W.K. Hoegher & Hoegher, 2013).

Players in competitive soccer require high levels of power, speed, and agility to perform explosive movements such as heading, shooting, sprinting, and dribbling, (Stolen, *et al*., 2005). Shots on goal are a particularly important feature because the final result of a match depends directly of their effectiveness. Soccer positions can be broadly categorized into four: Forwards, Midfielders, Defenders, and

Goalie/Goalkeeper, (Botelho, 2012). The work rates and work intensities rate differs among the forwards, defenders and midfielders, (Coopoo & McNaughton, 2012).

The total distance covered in a soccer match ranges 9-13 km, with a decrease of 5-10% in the 2nd half. Players spend 60-70% of the total match duration low-intensity activities (walking, jogging, slow running). Mean recovery time between very high-intensity activity (Sprint and High-intensity running) is 72 seconds, but this result differs greatly for different position players, Wide and central midfielders cover a greater total distance.(Molino's, 2013).

Central defenders undertake less high intensity running than all other positions. Performance in soccer is multi-faceted and so in order to assess each aspect the testing protocol should include a variety of methods for evaluating a player's ability. Soccer is a sport predominated by the aerobic energy system highlighted by players covering 10-12 km during a 90 minute match. However short bursts of high intensity work including multiple sprints, rapid changes in direction and headers are interspersed throughout the game. Therefore, aerobic fitness as well as speed and power are key components for any comprehensive soccer testing protocol (Rienzi, et al, 2005).

A research in to the analysis of movement in football has shown that players typically complete 1179 changes in activity across a 90 minutes match. More recently this has increased with studies reporting 1431 active patterns per match (Rienzi, *et al*, 2005). This increase is due to the greater magnitude of speed and physical requirement in the modern game.

How can you tell if you're on course for success if you never measure your progress? (Davies, 2005).The high-intensity intermittent nature of soccer demands that players have a high level of sport-specific fitness. Testing and measurement are the means of collecting information upon which subsequent performance evaluations and decisions are made, (Mackenzie, 2005). What is unarguable is that at elite level, soccer is played at a faster tempo than in previous decades, and players are better prepared all-round for performing their roles (Reilly & Williams, 2003).

The purpose of this study is to assess performance related fitness such as speed, power and agility of south western zone (A) Ethiopian national league football players through valid predetermined field testes.

The test results obtained from field tests was compared with published international standard of test scores. Therefore based on the research findings, the researcher forwarded certain possible solution for existing problem in the course of the study.

1.2 Statement of the problem

The combination of the multi- dimensional physical activity and football specific skill requires the players to have the physical qualities of a high level of anaerobic endurance, agility, sprinting ability, jumping and kicking power (Reilly, 2003). The tactical requirement of the game demands different physical requirement for the different playing position, (Mohr. *et al*, 2003). High level soccer requires a great amount of speed, power and agility (Korkusuz & Ergen, 2007).

The various codes of football played around the world have much in common in terms of their physical demand and correspondingly the importance of fitness testing (Pyne.*et al*, 2014). Competition naturally provides the best test for an athlete, but it is difficult to isolate the various components with the sport and get objective measure of performance (Di salvo, *et al*, 2006). The path to any performance goal is never usually a straight line but a series of peaks and troughs (Davies, 2005).

Testing the physical and physiological abilities of soccer players is important for a variety of reasons including: identifying the strengths and limitations of players, monitoring athletes during critical windows of development

Fitness testing is used as a way of comparing an athlete's results to previous performances or to normative standards established in the sport. Fitness testing can thus be used to modify future training as appropriate. (Jones. *et al*, 2008). One of the challenges for the sport scientists working in football is to balance the need for routine fitness testing with daily fatigue and well-being monitoring to best manage the physical preparation of players (Pyne *et al* 2014). There has been very little data published by investigators on soccer/ football player performance beyond describing only general movement made by players during a match. And also sport specific movement have rarely been measured due to the technical limitation of measurement technique adopted by investigator (Flanagan, 2010).

Ethiopia is one of the few nations in Africa to establish modern sport system. This was known for the reputable achievement in Africa by its huge contribution for the inception and development of continental sport organization particularly CAF founded in 1957 by collective effort of Ethiopia, Egypt and Sudan (Amdie, 2006). The performance of east African football teams in the continental competition has been low in comparison to other regions in Africa (Rintaugu, 2012). This statement includes our country Ethiopia in critical background of our football player's limited performance to compute against other nations. But there is no clear evidence to what extent and a degree to which the performance of players has been limited from

certain standard. Various study has been conducted on the assessment of physical performance of football players, but very few studies were conducted on the basis of playing position especially in Africa. As stated by Clark, (2007), positional roles are less well distinguished on the basis of physical fitness in Africa.

According to Korkusuz & Ergen, (2007), high level of soccer requires a great amount of endurance speed, power and agility. To this end the researcher attempted fill the gap shown on other study through administering objective measure of selected performance related fitness such as speed, power and agility of national league players based on four (4) basic playing position of football such as goal keeper, defensive, midfielder, and striker or forwards through predetermined fitness tests.

Therefore this research intends to answer the following basic question in the course of the study.

1. How national league football coaches assess their players' actual performance?
2. Is their significance difference between players performance related fitness according to their playing position?
3. Does performance related physical fitness of national league players go in line with international test standards?
4. Which performance related fitness of players becomes common problematic area for national league football clubs?
5. What are the possible solutions suggested to enhance players' performance related physical fitness?

1.3 OBJECTIVE OF THE STUDY

1.3.1 GENERAL OBJECTIVE

To assess selected performance related physical fitness of national league football players based on four (4) basic playing positions of football.

1.3.2 SPECIFIC OBJECTIVE

- ❖ To compare selected performance related physical fitness score of players with international test standards.
- ❖ To identify prevailing performance related fitness problem of players based on their playing position.
- ❖ To identify significance difference between performance related fitness of players based on their playing position.

- ❖ To find out, how national league football clubs coaches assess their players throughout the season?
- ❖ To forward a possible solution for the identified problem related to selected performance related fitness of the players.

1.4 SIGNIFICANCE OF THE STUDY

The study mainly aimed to assess the selected performance related fitness of south western zone Ethiopian national league football players using (3) three different fitness tests. Based on the test score, the researcher decide on the status of players performance related fitness depending on predetermined test norms according to their playing position. In a sense the researcher provide scientific justification through defined evidence of the investigation. Furthermore it also provide the important aspect of fitness assessment in soccer coaching profession and this may fill the gap of knowledge and intelligence of coaches regarding to fitness assessment. Finally the researcher hoped that it may initiate further investigation to be conducted on the relative problem and may help as source of reference.

1.5 DELIMITATION OF THE STUDY

To make the study manageable the researcher delimited the investigation on Ethiopian National league football clubs those are grouped under south western regional division and also ideally delimited on the assessment of selected performance related fitness such as power, agility and speed of national league football players based on four basic playing position of football.

1.6 LIMITATION OF THE STUDY

The researcher, in due course of the study faced different challenges and obstacle, regarding to these the study was limited because of the following factors:

- ❖ Absence of well trained and experienced fitness testers around each zone.
- ❖ The distance between one club to the other clubs.
- ❖ Lack of test measurement.
- ❖ Limited number of literatures regarding to fitness assessment based on playing position.

1.7 OPERATIONAL DEFINITION OF TERMS

Physical fitness: Is a state of health or condition of the body's ability to withstand the stress of daily life, (Amidie, 2006).

Playing position: The general terms used for positions in soccer are: Goalkeeper, Defenders, Midfielders, and Forwards, (Harves, 2012)

Performance: The interactions of several factors such as technical tactical, physical and mental aspects, (Dellal, 2010).

Performance related fitness: Components of physical fitness that have a relationship with enhanced performance in sports and motor skills. Those are commonly defined as agility, balance, coordination, power, speed and reaction time (Leyland 2007),

CHAPTER TWO

2 LITRATURE REVIEW

2.1 CHARACTERISTICS OF FOOTBALL.

Football is a team sport consisting of 10 outfield players and one goal keeper. Team managers are permitted to make up to three player substitutions in a match for tactical reason or if a player is injured. Football match are 90 minutes in duration with two periods of 45 minutes, separated by a 15 minutes half time break. Typically 3 minutes of injury time are added to each half. In some competition the game is extended by 30 minutes (two period of 15 minutes) of extra time if neither side has won the match within the initial 90 minutes period, (Dallaway,2013).

Football is characterized by a continuous course of activities with intermittent intensity in the game and a very low success ratio (the number of achieved goals) according to possession of the ball (Reilly *et al*, 2003). For achieving top results in this sport, it is necessary that players have an exceptionally high level of technical and tactical skills as well as significant physical fitness, (Svensson & Drust, 2005). Soccer is one of the most widely played and complex sports in the world, where players need technical, tactical, and physical skills to succeed (Reilly *et al*, 2003).

The game can be characterized as a predominant aerobic exercise combined with frequent intermittent short intense actions with a high rate of the anaerobic energy turnover.(Boone, *et al*, 2012). Soccer is intermittent labour intensive sport that require player to perform repeated high- intensity bout over the course of the game, (Reilly& Williams, 2003).

2.2 PLAYING POSITION IN SOCCER

As in all team sports, soccer players must ultimately specialize at various positions and then understand how to interact with players in other positions in order to effectively compete in the game. This is certainly true for soccer where players need the structure and understanding of a formation (and system of play) to be able to properly perform. This understanding begins by first introducing players to the generally-recognized names for the positions used in soccer and then by progressing to more specific terms as time goes on (Harves, 2012).Soccer positions can be broadly categorized into four: Forwards, Midfielders, Defenders, and Goalie/Goalkeeper (Harves, 2012).

2.2.1 Forwards

The players positioned close to the goal of their opponent team are the forwards, or attackers. A team can have one to three forwards. They primarily focus on scoring goals, and they are the ones who take most of the shots. In fact, they attack the opposition to generate the chances of scoring. However, forwards are at times required to play in the middle of the field. Forwards playing in the middle of the field are called strikers, while forwards playing near the touchlines are called wings. They must be physically powerful and energetic. Also, their running speed and kicking skills should be excellent to achieve accurate shooting (Harves, 2012).

2.2.2 Midfielders

The players playing in the middle of the field are the midfielders. They are also known as “Halfbacks.” Their major task is to possess the ball and pass it to the forwards for scoring goals, thereby allowing the transition from the fullbacks to the forward. They focus on defending and attacking, a good reason for them being in constant motion (Botelho, 2012).

A soccer team can have three to six midfielders. The most important skill of midfielders is their tackling abilities. The coach should help the midfielders enhance this skill so that they can successfully grab the ball from the opposition team. Besides, their ball passing skills should also be polished for greater accuracy (Harves, 2012).

2.2.3 Defenders

The defenders, also known as “fullbacks,” are the players who prevent the opponent team from scoring goals. For this reason, they are positioned close to their own goalpost. They form the last line of defence before the ball goes to the goalkeeper. Moreover, they also have to take the ball from the goalkeeper and pass it over to the midfielders; thus, they should be superb at kicking really far. As a coach, you need to enhance this skill in the defenders. A team can have three to five defenders. However, some coaches prefer a single defender, known as “sweeper,” who is positioned very close to his own goal behind the fullbacks (Harves, 2012).

2.2.4 Goalkeeper

The goalkeeper is the one who saves his team’s goal from the opponent by catching, deflecting, or punching shots away from the goal. Apart from this, the goalkeeper organizes the team’s defence. In fact, goalkeeper is the only player who can use both hands and arms while playing. However, he can use his hands only in the penalty box. Every team has only one goalkeeper .The goalkeeper may go anywhere on the field; however,

if the goalkeeper is outside of his own Penalty Area, he is subject to all of the regular rules that are applicable to field players. The goalkeeper is also referred to as the “goalie” or the “keeper.” (Botelho, 2012)

2.2.5 Advanced Soccer positions

In addition to the four basic soccer positions there are a number of advanced positions in modern football those are listed below according to, (Harves, 2012).

Central Forward (CF) – This position is assigned to a player who is best at scoring. He plays toward the central part of the field.

Deep Lying Forward (SS) - For this position, a player needs to have great scoring abilities and not to forget great ball skills.

Wingers (LW & RW) – The left winger (LW) and the right wingers (RW) are the outside forwards and midfielders who are generally the fastest and the best dribblers. They play on the sides of the field. They mainly focus on providing their team with accurate crossing passes for goal scoring.

Attacking Midfielder (AM) – An attacking midfielder is the one who plays just behind the forwards and provides them support. Their prime task is to pass the ball to forwards to score goals.

Central Midfielder (CM) – This player, usually the team leader, organizes the play in the midfield area. He targets toward creating lots of scoring opportunities for the attackers in his team.

Defensive Midfielder (DM) – The position of this player is right in front of the team's defence. Most often, it is his responsibility to mark the top offensive player in the opposition team. As a midfielder, he focuses more on defence.

Wingback (WB-RWB-LWB) - The tasks of wingback is similar to fullback (FB-RB-LB). But here the player needs to focus more on the offensive attacks.

Central Defender/Center Back (CB) – This player is the strongest defender whose prime focus is to protect the area directly in front of his own goal.

Sweeper (SW) - This player primarily focuses on clearing the ball in case the opponents get through the defensive line.

Full Back (FB-RB-LB) - This player is responsible for averting the opponents from getting the ball into the penalty area.

Side Midfielder (LM-RM) - This player is positioned either left or right of the midfield, which is in keeping with his kicking foot. He is responsible for providing his forwards with quality crosses.

2.3 PHYSICAL FITNESS.

A set of attributes that people have, or achieve relating to their ability to perform physical activity. Individuals are physically fit when they can meet both the ordinary and the unusual demands of daily life safely and effectively without being overly fatigued and still have energy left for leisure and recreational activities (W.K. Hoegher & Hoegher, 2013).

Skill-related fitness is crucial for success in sports and athletics, and it also contributes to wellness. Improving skill-related fitness affords an individual more enjoyment and success in lifetime sports, and regular participation in skill-related fitness activities also helps develop health related fitness. Further, total fitness is achieved by taking part in specific programs to improve health related and skill-related components alike. Physical fitness can be classified into health-related and skill-related fitness (W. K.Hoegher&Hoegher,2013).

2.3.1 Classification of physical fitness

Physical fitness can be classified into health-related and skill-related fitness (W.K. Hoegher & Hoegher, 2013)

2.3.1.1Health related physical fitness.

Health-related physical fitness consists of those components of physical fitness that have a relationship with good health(Howe & Hanchard, 2003).The components are commonly defined as body composition, cardiovascular fitness, flexibility, muscular endurance, and strength. This components of fitness can all help with the game of soccer, further to this they can all be helped the right physical training and determination(Howe & Hanchard, 2003).

A. Cardio respiratory endurance.

Also called aerobic fitness, refers to the circulatory and respiratory system's ability to supply oxygen to the body and to remove carbon dioxide and waste products during sustained exercise. Some say this is the best indicator of a person's overall health.Having good cardio respiratory endurance will lower your chance of suffering from heart disease. It also reduces the incidence of diabetes, blood pressure problems, stroke, depression and anxiety, and assists in the improved health of muscles and bones resulting in a fitter person (Howe & Hanchard, 2003).

B. Muscular strength.

The ability to produce force against a resistance, (W.K. Hoegher & Hoegher, 2013). When muscle strength is tested, the dominant limb is usually slightly stronger than the non-dominant limb. This phenomenon is not more apparent in muscles of the lower limb than the upper limb and is less so in highly trained individuals. Often a ratio of strength exists between agonists and antagonist muscle groups, for example, the strength of the hamstrings is around 60% that of the quadriceps (Howe & Hanchard, 2003).

C. Muscular endurance

The ability to exert force and continue, with in an extended time without getting tired. Athletes such as marathon runners, tri athletes, soccer players, football players, basketball players and swimmers all possess high levels of muscle endurance. Long-distance runners need a significant amount of muscular endurance but relatively little muscle strength. Having high levels of muscular endurance makes it easier to perform everyday tasks, improves posture and can reduce the instance of back pain. Muscle endurance training programs involve many repetitions at a light load. (W.K. Hoegher & Hoegher, 2013)

D. Flexibility

The ability to bend and stretch to execute the full movement at a joint, (W.K. Hoegher & Hoegher, 2013). The flexibility of a joint is dependent upon the extensibility and elasticity of the structures surrounding it. These structures include muscles, the fibrous joint capsule and ligaments. Flexibility reduces the risk of injury sustained during overstretching, for example, attempting to reach the ball when intercepting a pass. Conversely, hyper mobility may be disadvantageous as joints become unstable and prone to injury (Howe & Hanchard, 2003).

E. Body composition

The relative percentage of bone, muscle, organ and fat in the body. The person with the greater muscle mass and lower body fat will have a higher resting metabolic rate. From a performance aspect, a high level of body fat is generally detrimental as it is considered 'dead' weight and will lower an athlete's power-to-weight ratio. Very low body fat percentages are generally found in body builders, tri athletes and cyclists. High body fat percentages are not usually found in athletes except for the likes of sumo wrestlers (Howe & Hanchard, 2003).

2.3.1.2 Skill-Related/Performance Related Physical Fitness

Skill-related physical fitness consists of those components of physical fitness that have a relationship with enhanced performance in sports and motor skills. The components are commonly defined as agility, balance, coordination, power, speed and reaction time. (Leyland 2007), classify physical fitness in to health related and performance related; components of performance related fitness are, Power, Speed & quickness, Agility, Balance & Motor skill [i.e., coordination & accuracy]. Skill-related fitness is crucial for

success in sports and athletics, and it also contributes to wellness, (W. K. Hoegher & Hoegher, 2013).

A. Power

The ability to produce maximum force in the short period of time. The two components of power are muscle speed and force (strength). An effective combination of these two components allows a person to produce explosive movements such as required in jumping; putting the shot; and spiking, throwing, and hitting a ball, (W. K. Hoegher & Hoegher, 2013). Soccer players are frequently required to produce high power output and sometimes to maintain or repeat it with only a brief period for recovery, (Singh, 2010)

The splitting of high-energy intramuscular phosphagens contributes along with anaerobic glycolysis to the maximal power a player can develop. These substrates (ATP, creatine phosphate and glycogen) may be used for combustion by muscle at the onset of exercise and result in a high anaerobic work production. As soccer players must be prepared to repeat fast bursts of activity supported by anaerobic glycolysis, the high anaerobic capacity should be important to play well, (Reilly & Williams 2003).

Many research studies on soccer kick emphasized the importance of maximum power of the lower limb muscles and the coordination between the agonist muscles (vastus, laterals and medialis, rectus femora, tibias anterior and m. iliopsoas) and the antagonists (gluteus Maximus, biceps femora and semitendinosus) during the kick. Muscular power, often referred to as explosive power, is a combination of speed and strength an important in vigorous performance because it determines how hard a person can hit, jump and push etc. There are various means and method to increase power by increasing strength without sacrificing speed, by increasing speed of movement without sacrificing strength and by increasing both can be stressed by applying strong force through rapid motion (Singh, 2010).

Soccer requires repeated powerful movements like kicking, sprinting, tackling, and jumping. Measures of power generation, including sprinting ability and jumping height and distance, have been shown to be positively correlated to performance in soccer. It is therefore of vital importance to measure a player's speed, power generation capacity and reactive strength ability, or stretch shortening cycle (SSC) augmentation. Power is largely dependent on the ability to exert the highest possible force (i.e., maximum strength) (Turner *et. al*, 2011).

B. Speed

Speed is the rapid movement or action. Speed is significant component of a soccer fitness program. The speed of play in today's game is said to be quicker than ever. While elite soccer players are by no means Olympic sprinters, all other things being equal, faster players have a marked competitive edge. Sprinting in soccer is typically assessed over 10-30 meters because those are the most common distances covered during a match. Shorter distances (e.g., 10 meters) give an indication of acceleration whereas evaluating longer distances (e.g., 30 meters) provides insight about maximum speed (Disalvo, 2006).

Activities that require good speed for success are soccer, basketball, stealing a base in baseball, and sprints in track (W. K, Hoegher & Hoegher, 2013).

Sprinting ability is an integral component of successful performance in a variety of sports and the ability to accelerate in soccer underlies successful game play. Straight-line sprinting can be broken down into 3 phases: acceleration, attainment of maximal speed, and maintenance of maximal speed or speed-endurance. These are distinct qualities of speed, and specific tests should be used to evaluate each component within an appropriate test battery. At the elite level, soccer is also characterized by brief periods of intense activity followed by periods of recovery (Turner *et. al*, 2011).

These brief periods can be the actions that dictate the winning and losing team. Therefore, players must be able to perform these intense tasks repeatedly, and it is thus possible to state, with confidence, that the greater the ability of a player to restore depleted adenosine tri phosphate (ATP) and phosphocreatine (PCr) stores, the closer to maximal performance the subsequent sprint will be. Around 96% of sprints are less than 30 m, with an average duration of less than 6 seconds and an occurrence of every 90 seconds. This is in general agreement with other authors in the field who report that almost half of the sprints are less than 10 m (Turner *et. al*, 2011).

Furthermore, maximal sprints are often commenced when the player is already in motion so maximal velocity is achievable in a reduced period of time and distance. This therefore suggests the necessity to measure speed after a flying/rolling start. The time taken to complete a 5- to 10-m sprint from a stationary start is well accepted as a valid and reliable test to measure acceleration and is specific to soccer as aforementioned. Different protocols have been used to analyse maximal speed but most involve linear running over a distance between 5 and 40 m or more than 40 yd. This however, is not entirely specific to field sports so most also measured maximal speed from a rolling start (Turner *et. al*, 2011).

Another alternative for the measurement of maximal speed can be measured as the time taken between the 10- and 30-m marks (i.e., incorporating a sport specific flying start). The term "maximal speed" should be used with caution because very fast and technically competent sprinters may still be accelerating at 30 m.

Although a flying start is used to induce maximal speed this may in fact not be the case. The test, however, despite the definition of terms, is still valid and specific to soccer (Turner et. al, 2011).

Chapman, Derse, & Hansen, (2007), states that, In Soccer, there are three types of speed: sprint speed, quickness and technical speed.

Sprint Speed

Sprint speed is the ability to run fast. Your players need sprint speed when making runs, dribbling on a break way, or getting back on defence. Usually, your forward are your fastest players. Their speed often creates scoring opportunities. Nonetheless, all your players should do speed training. A fast defence can play more aggressively without worrying that it will be beaten easily.

Quickness

Quickness is the ability to react and move explosively. We usually define quickness as fast first steps or the ability to change direction with speed. It is a great quality to possess as a Soccer player. Many great players are not exceptional sprinters, but are extremely quick. Quickness often gives shorter or less skilled players an advantage over faster or more skilled players.

Technical Speed

Technical speed is the ability to execute fundamental Soccer skills quickly. It is the most specific form of Soccer speed. The world's best players are exceptional because they have great technical speed. They are able to control the ball and execute with speed.

Lightning speed is a necessary quality for all soccer players, regardless of playing position. Even goalkeepers need to develop this component of fitness, especially when coming of their line to intercept well-placed though balls. In fact, speed is regarded by both players and coaches as one of the most important predictors of soccer performance, (Jones, Hughes & Kingston, 2008).

C. Agility

The ability to change body position and direction quickly and efficiently. Agility is important in sports such as basketball, soccer, and racquetball, in which the participant must change direction rapidly and at the same time maintain proper body control. (W. K.Hoegher &Hoegher 2013).The dynamic nature of soccer requires the possession of not only speed but also agility. Agility refers to the capability to change the direction of the body abruptly.

The ability to turn quickly, dodge and side-step calls for good motor coordination and is reflected in a standardized agility run test, (Reilly & Williams, 2003).Quick turns with the ball. Being able to effectively

track or evade tricky opponents. Faking left, and then explosively cutting to the right. These are some key actions that help describe agility- the ability to quickly change direction or body orientation under control. Agility is one of the most complex conditioning elements in soccer (Singh, 2010)

It is affected by both decision making (cognitive) and physical (motor) abilities. It can be planned- when players know exactly what they want to do, or it can be reactive- which is the case for most situations in soccer. Like speed, developing good agility is dependent upon having a sound base in other conditioning components; particularly core and lower-body strength, balance, flexibility, and power, (Jones. *et al*, 2008).

Agility development is essential for soccer players because this fitness component transcends to all aspects of the game: attacking, defending and equally as important, goalkeeping. In the modern-day game, teams are very adept at becoming compact when not in possession; so for attackers, being able to manoeuvre with and without the ball in these tight spaces is a must.

How agile a defender is will greatly determine how effective they are at tracking shifty opponents and closing down strikers in the penalty area. For goalkeepers, having good posture, reaction skills and footwork represent a large percentage of their required skill set, and are especially important for stopping those close-ranged strikes on target, (Jones.*et al*, 2008).

Mirkov et al (2005) examined the reliability of soccer-specific field tests and reported that the most appropriate indicator of overall soccer performance may be agility testing. Agility is defined as the ability to change direction rapidly, without losing balance, using a combination of strength, power, and neuromuscular coordination. Young *et al*. (2002) and Sheppard and Young (2006) also suggest that agility is further affected by the athlete's perceptual and decision-making skills. Agility constitutes around 11% of player movement (Mirkov *et al* 2008, Mohr *et al*, 2008, Little, *et al*, 2005, stolen, *et al*, 2005), and on average, a player will make 50 turns during a single match. Previous literature, however, suggests that a soccer player changes direction every 2–4 seconds (Verheijen *et al*, 2010) and makes 1,200– 1,400 changes of direction during a game. This discrepancy is likely based on the definition of terms, but nevertheless, rapid activity occurs in the crucial seconds of the game and can make the difference between scoring and conceding a goal (Jullien *et al* 2008, Little, *et al*, 2005, Dupont et al 2004). Thus, the ability to produce fast-paced variable actions can impact soccer performance, and therefore, a soccer player's agility must be assessed.

The strength and conditioning professionals should be cognizant that most agility drills are pre planned and therefore only assess an athlete's ability to change direction (and not respond to a sport-specific stimulus). However, in most sports, including soccer, a change in direction is produced in response to a stimulus, such as an opponent's actions, and is therefore influenced by perceptual and decision-making skills (Sheppard and Young (2006), Young & Farrow, 2006). For this reason, the ability to change direction and velocity in a

pre-planned movement, such as that demonstrated in certain agility tests (e.g., t test, pro-agility, 5-0-5) may be better described as change of direction speed (CODS) (Young & Farrow, 2006).

To address this, a number of tests have been developed, that require subjects to change direction in response to a stimulus, such as a light, thus incorporating reaction time within the agility task. Once again, however, this also may not replicate on-field play because reaction time will be preceded by an athlete's ability to anticipate what is about to occur and the direction in which an opponent isn about to move (Young & Farrow, 2006).

Recently, Young, James and Montgomery (2002) outlined a comprehensive definition of agility as it related to running sports such as football codes. The researchers addressed the multi-faceted influences involved in agility performance. In particular, the authors outlined that there are two main components of agility – change of direction speed and perceptual and decision-making factors (Coopoo &Mcnaughton, 2012).Within these two main components, sub-components exist, as outlined in fig...

Table 1. Classification of agility

Agility classification	definition	example of sporting skill
Simple	No spatial or temporal uncertainty	Gymnast's floor routine: pre planned activity initiated when the athlete desire, with movements that the athlete has pre planned. Stimulus is the athlete's own movement and the physical domain in which they are executing the skill
Temporal	Temporal uncertainty, but movement is pre planned (spatial confidence)	Athletics sprint start: pre planned activity, initiated in response to a stimulus (starter's pistol) wherein there is no certainty as to exactly when the pistol will fire.
Spatial	Spatial uncertainty, but timing of movement is pre planned (temporal confidence)	Volleyball or racquet sport service receive, the umpire determines a narrow window of time wherein the server must serve the ball to the opponent. However, there is no certainty on the part of the receiver as to where the serve will be directed.
Universal	Spatial and temporal uncertain	Ice hockey or football: during offensive and defensive plays, the athletes cannot anticipate with certainty when or where opposition players will move to.

Table reference: Young, James and Montgomery (2002). Agility literature

D. Balance

Balance is skill related component of physical fitness that is related to the maintenance of equilibrium while stationary or moving. Also balance is the capacity to maintain the body's center of gravity within the base of support. In simple terms, it is the ability to sustain control of the body while stationary (static balance) or

moving (dynamic balance). Maintaining this state of equilibrium is dependent on accurate information from the visual, vestibular and other sensory systems of the body (Singh, 2010).

Balance is involved to some degree with all motor performances and some performances heavily depend upon balance. Dynamic and stable both are of great importance in all body contact sports such as sports and games athletics, football, Soccer, baseball and hockey. Developing good balance should be a fundamental goal when designing a conditioning program for soccer, as this tenet of conditioning is critical in so many game situations. The ability of a striker to; i) receive a lofted ball with the instep or thighs while under pressure from a defender. ii). Stay on their feet after evading a sliding challenge while dribbling at full speed; both depend on the ability to maintain control of the body (Singh, 2010).

Developing the balance component is also important for improving other facets of the game. For example, having good stability allows a player to change direction more efficiently and perform one-touch passes with greater control; highlighting the importance of balance in the agility and technical aspects of the sport.(Singh, 2010).

E. Coordination

Integration of the nervous system and the muscular system to produce correct graceful and harmonious body movements. This component is important in a wide variety of motor activities such as golf, baseball, karate, soccer, and racquetball, in which hand-eye or foot-eye movements, or both, must be integrated. Controlling the ball while running at full speed and then immediately sidestepping a tackle to play a pass, shows the importance of coordination- the ability to do several complex movements in an organized manner,(W. K.Hoegher & Hoegher, 2013).

E. Reaction time

A skill-related component of physical fitness that relates to the time elapsed between stimulation and the beginning of the reaction to it. How quickly a player responds to certain cues or stimuli within the game will play a significant impact on their performance. When defenders are marking in the box, they must respond and close down attackers quickly as soon as they receive the ball. Reaction time can be improved by doing exercises in which players have to respond to various sensory stimuli (auditory, visual, etc.) as this leads to a well-trained neuromuscular system. It is important that these stimuli (and the resulting reactions) are soccer-specific and are likely to occur multiple times throughout a game. Reaction time is extremely important in all performances, requiring quick response. It has special significance in events in which an individual depends on each other and thereby respond to each other's movement (Singh, 2010).

2.4 Fitness and Football

The game of soccer places varying physiological demands on performers. Fitness in a soccer-specific context refers to a range of individual characteristics that is a composite of many attributes and competencies. Such competencies by definition include physical, physiological and psychomotor factors. Good physical fitness is an absolute requirement for good play. Soccer is a physically demanding game, lasting from 60–90 minutes, requiring bursts of strenuous activity such as sprinting, dribbling, shooting, tackling and jumping for high balls (Reilly & Williams 2003).

Players often run anywhere from 3–6 miles over the course of a game. Without good physical fitness, players are rarely able to play the game with good technique. To be successful in field sports, players generally require many attributes and competencies including high levels of endurance, muscle strength, flexibility, agility, speed and coordination, as well as technical and tactical know-how (Chapman, 2007).

The primary concern of coaches is to develop and optimise all these skills in training in order to enhance performance and to harness individual capabilities to form an effective unit (Carling, Reilly & Williams, 2009). The total distance run by a player during a game depend on many different factors, including the level of competition, the player position, the playing style, and fitness level of individual (FIFA, 2010).

2.5 Fitness assessment in soccer

Competition naturally provides the best test for an athlete, but it is difficult to isolate the various components within the sport and get objective measures of performance. Fitness testing can provide relevant information about specific parts of a sport, (Disalvo, et.al, 2007).

Testing and measurement are the means of collecting information upon which subsequent performance evaluations and decisions are made (Mackenzie, 2005). Fitness profiling is achieved by means of a battery of tests. The test items may either be part of a comprehensive physiological assessment or be dedicated solely to assessing performance in soccer (Reilly & Doran, 2003).

2.6 The importance of fitness assessment

Coaches and sport scientists generally use performance assessment to evaluate four facets of player performance; these are physical, mental, technical and tactical skills (Pyne, Spencer & Mujika, 2014). The fitness profiles generated from means of a battery of tests have some value in allowing comparisons between individuals and, with the use of normative ranges, individual weaknesses may be identified and remedial training prescribed. Repeated fitness assessment is of further value in that changes in fitness profiles within individuals and throughout the team as a whole can be measured (Reilly & Doran, 2003).

Performance assessment is mainly employed to identify individual strengths and weaknesses in various sporting skills. By establishing a starting point for performers according to pre-identified strengths and weaknesses, coaches can plan and prescribe optimal training interventions and strategies to prepare for competition. There is also a need to explain the mechanism of action of the various attributes within performance and determine which one(s) might make worthwhile differences in the way players perform (Carling. *et al*, 2009).

Performance test is an assessment of how well a task is executed and the success of a training program is largely dependent upon satisfying the performance aims associated with it,(Mackenzie, 2005). To attain world-class levels of performance, information from the continuous assessment of training and competition must be made available to aid in the evaluation of how players are performing and progressing, (Carling. *et al*, 2009).

The information provided from formal assessments can be used to provide individual profiles of respective strengths and weaknesses in many aspects of performance. The results from tests can be used to: Predict future performance, indicate weaknesses, Measure improvement, enable the coach to assess the success of his training program, place the athlete in appropriate training group, and motivate the athlete (Mackenzie, 2005).

Every professional athlete (not just soccer players) understands the value of evaluating their level of fitness at regular intervals. The path to any performance goal is never usually a straight line but a series of peaks and troughs. How can you tell if you're on course for success if you never measure your progress, (Davies, 2005).

Davies, (2005) enumerates three main reasons why fitness testing should be step number one in the design of any conditioning program...

1 They use as starting point.

You can't begin to plan a program if you don't have a starting point. With a series of test results to hand you can determine how close (or far away) you are from where you want to be. From a training perspective it might help you with something as simple as setting the correct starting load in the weight room.

If you want to play professionally or semi-professionally what level of endurance do you require for example? If the average pro soccer player can run 3500m in twelve minutes (a test to determine maximal aerobic power), how do you compare?

2 They Help You to Prioritize

Even the most committed soccer players have limited training time available. In the perfect scenario you would be able to devote an equal amount of time to developing every aspect of your fitness. In reality, you must prioritise your time. Where do your weaknesses lay?

Do you have excellent stamina but lack explosive power? Are you quick off the mark but find it hard to hold the ball up and resist challenges? Only with a series of fitness tests will you have an objective answer. And you may even be surprised!

3 They Provide Motivation

Looking back and seeing how far you've come and how much you've developed is one of the most satisfying experiences in sport. You can only take full advantage of this positive reinforcement if you objectively measure your progress.

2.7 When should fitness testing occur?

The most obvious time is at the very beginning of pre-season when you are returning from a lengthy break. This is when results should be at their lowest during the season. It's also sensible to complete a second assessment just prior to the start of the competitive season. This will give you a good indication as to how effective pre-season training has been and can act as a real confidence boost going into the first competitive game (Davies,2005).

You may also want to perform a re-test midway through the in-season. This will help you to gauge whether your week-to-week training is maintaining the gains made in the pre-season. Finally, any time you embark on a new type of conditioning, one you are new to, it's sensible to test prior to starting and then after six to eight weeks (Davies,2005).

2.8 Field tests for assessment of soccer performance.

The order of the assessment above is designed to allow maximum performance in each test with minimal negative impact on the next test (Davies,2005).

Table 2 Field tests for assessment of soccer performance.

No	Fitness test	Fitness components	Time(mints)
1	Standing vertical jump	Explosive power	10
2	30m sprint test	Speed/ acceleration	10
3	Repeated Sprint test	Speed endurance	10
4	One repetition maximum	Maximal strength	15
5	Press up test	Strength endurance	10
6	Sit up test	Strength endurance	10
7	Multistage shuttle run	Aerobic endurance	30
8	Sit and reach test	Lower body flexibility	5
9	Trunk rotation	Core flexibility	5

Table reference (Davies,2005).

2.9 Factors may influence test results

The following factors may have an impact on the results of a test (test reliability) (Mackenzie, 2005).

- The ambient temperature, noise level and humidity
- The amount of sleep the athlete had prior to testing
- The athlete's emotional state
- Medication the athlete may be taking
- The time of day
- The athlete's caffeine intake
- The time since the athlete's last meal
- The test environment - surface (track, grass, road, gym)

- The athlete's prior test knowledge/experience
- Accuracy of measurements (times, distances etc.)
- Is the athlete actually applying maximum effort in maximal tests?
- Inappropriate warm up
- People present
- The personality, knowledge and skill of the tester
- Athlete's clothing/shoes
- Surface on which the test is conducted
- Environmental conditions - wind, rain,

CHAPTER THREE

3 RESEARCH METODOLOGY

3.1 Study design

The researcher gathers data from different site and different point of view. Therefore cross-sectional study design was be best closely related to the current study. The research method which also best suited for the investigation was quantitative and qualitative research methods.

3.2 Subject of the study

Players those are currently involving in the main team of national league football clubs such as, Jimma Abba Buna football club, Kaffa coffee football club, and Jimma city football club and also the main coach of the clubs was the subjects of this study.

3.3 Study area

South western part of Ethiopia consists of different zones and localities such as: Jimma zone, bench Maji zone, Sheka zone, Elu Abba Bora zone, Kaffa zone, and parts of Gambella region. From those zones and regions, national leagues clubs namely, Jimma Abba Buna, Mizan Amman, Kaffa Coffee, Jimma City, Mettu city, Nekemt City, and Gambella City were assigned in south western (A) division of the league. Among those clubs the main sight of this investigation was Jimma Abba Buna, organized and owned by horizon coffee plantation which is found in jimma city, and established on -2006 E.C. and the leadig team of south western A national league clubs. Secondly the study was chosen the site on Jimma City football club, this club was more experienced by participating under national league competition for long time and organized by jimma city administration. Jimma was located at latitude of 7,6667(740'0.012''N) and longitude of 36,83(3649'59.880'' E). The altitude is 1763cm above sea level and the city of jimma was 256km far from Addis Ababa. The mean annual temperature of jimma was ranged from 7.7 to 28.25 Celsius. The third area of this study was Kaffa coffee football club, which was located in Kaffa zone Bonga city and organized by kafa development association. In 2006EC competition season the club was the list of the clubs under the division. Bonga is the administrative center of kafa zone situated at a distance of 449km, south west of Addis Ababa. Topographically it lies at an altitude of 1650 meters above sea level and has woynadega type of climate. Its average annual rain fall is 1750 millimetres

3.4 Study population

The study population of this particular research 7(seven)south western (A) division of Ethiopian national league football clubs such as, Jimma Abba Buna, MizanAman, Kaffa Coffee, Jimma City, Mettu City, Nekemt City, and Gambella City. Each club have an average number of 25 players and one main plus one assistance coach. From those all 25 players from and coaches from those clubs totally 175 players and 14 coaches was the population of the study.

3.4 Sample size determination and sampling method.

The selection of players was based on playing position and no assistance coaches was included in the study, therefore all players from three selected national league football clubs selected by considering their health condition and status of injury. To realize the objective of the study, purposive sampling method was employed based on criteria such as previous achievements of the clubs. Thus, from seven (7) clubs those participated in 2006EC competition season, these selected 3 clubs were completed the league respectively from the list rank. Therefore from those three clubs total of 75 players was selected according to their positional involvement to this end, 9, goal keepers, 24 defensives, 24 mid fielders, and 18 forwards were the sample group of the study including 3 main coaches from selected clubs were the sample of the study.

3.6 Instruments of data collection

The main instruments of data collection in due investigation of the study was valid predetermined fitness tests and structured interview, the test score sheet was prepared to record test score during administering the tests considering playing position. Demographic data such as age, height and playing experience was recorded on single sheet prepared for collect those data. Additionally the researcher looked other published literatures as well as web sites in the area of the investigation.

3.6.1 The valid predetermined fitness tests

3.6.1.1 30-Meter sprint test

Speed test can be performed over varying distance, depending on the factor being tested and the relevance to the sport. This test is used to measure acceleration and speed off the mark. A longer distance isn't relevant to soccer where players rarely run flat out for more than 20-30meters/yards. The test, however, despite the definition of terms, is still valid and specific to soccer (Turner ,2011)

Equipment required.

- Measuring tape or marked track.

- Stopwatch.
- Cone markers
- Flat and clear surface.

Testing procedure

- A thorough warm up should be given including some practice starts and acceleration.
- The test involves running a single maximum sprint over 30 meters, with the time recorded.
- Set up 2 cones 30 meters apart starting at one cone.
- Start from a stationary position, with one foot in front of the other.
- The front foot must be behind the starting line.
- The starting position should be held for 2 seconds prior to starting, and no rocking movements are allowed.
- The tester should provide hints for maximizing speed as much as possible (such as keeping low, and driving hard with the arm and legs) and encourage to continue running hard through the finish line.
- On a signal of “Marks – Set – Go” sprint to the other cone as quickly as possible.
- Any time less than 5.0 seconds is good. Professional soccer players average 4.0 seconds.

Scoring

- Have a training partner record the time.
- The test will be repeated two times rest fully with 3 minutes rest time.
- The best time is recorded to the nearest 2 decimal places.

Reliability

Weather conditions, accuracy to record time and running surface can affect the result (Wood, 2010). Therefore the tester will consider and modify the test environment: such as set up the track with a crosswind, detail training how to record test score via stopwatch accurately and not to administer the test on the ground after rain to keep the reliability of the test result.

3.6.1.2 Illinois Agility Test

This test measures your ability to change direction quickly. You will need 8 cones, a stopwatch and a training partner to record the time.

Rapid activity occurs in the crucial seconds of the game and can make the difference between scoring and conceding a goal. Thus, the ability to produce fast-paced variable actions can impact soccer performance, and therefore, a soccer player’s agility must be assessed (Davies, 2005).

Table 3 Normative data for Illinois test.

	Poor	Fair	Average	Good	Excellent
Male	>18.8s	17.7-18.8s	16.8-17.6s	15.9-16.7s	<15.9s
Female	>23.4s	22.5-23.4s	18.7-22.4s	17.5-18.6s	<17.5s

3.6.1.3 Vertical jump

This is a good test for soccer because it measures jumping power relevant for heading ability. It's also useful for goalkeepers

Testing procedure

- Chalk your hand and stand next to a wall side on.
- Keeping your feet flat on the ground, reach up as high as possible and make a mark.
- Relax for a moment.
- Bend your knees to right angles and jump as high as possible making a second mark on the wall.

Equipment

- You will require some powdered chalk for this test.
- Measuring tape.
- Score sheet

Scoring

- Measure the distance between stationary position and jumping marks.
- Rest fully and repeat 3 times.
- Take the best score over the three trials and compare players result with the table below:

Table 4 normative data of vertical jump test

	Poor	Fair	Average	Good	Excellent	Intern ationa l standa
	<46cm	50cm	55cm	60cm	>65cm	
	<36cm	40cm	45cm	50cm	>55cm	

normative data of standing vertical jump test for all level of players (Davies, 2005).

- Professional soccer players average 60cm (Davies, 2005)
- Mean value for collegiate level and national junior level players is 56cm (Reilly, 2005).

3.6.2 Interview

Supplementary information from national league football club coaches was collected through structured interview regarding to the presence of special fitness coaches and continuous fitness testing throughout the season in the clubs.

3.7 Data collection procedure

Data collection procedure was preceded through the following steps. After taking ethical approval from Jimma University the researcher was progressed to the target area of the study. So that here it also persuade stakeholders, coaches, and players of each clubs through detail and brief description of the objective of the study. These made strong agreement and to enhance their cooperativeness. Then after the researcher was directly skipped to select sample participant considering injury and other health problem, therefore, by selecting test groups, the test was administered in four (4) categories regarding to playing position of the participant on similar field and similar measurement of testes. Finally the row data was compiled and the analysis of the data was made.

3.8 Data analysis

Demographic data of players was analysed using descriptive statistics thus based on the result characteristics of respondents such as age, weight, height, and BMI of players were interpreted. In addition to these descriptive statistics; was also used to know the frequency of the test score occurred in a distribution of the test score, the percentage of participant who scores a certain point of participant. Measure of central tendency mean was computed to find out the arithmetic average score of the tests. Standard deviation will also help the researcher to show how the test scores are deviated from one another. ANOVA (analysis of variance) was computed to identify the significant difference between test score with in playing position of players as well as anthropometric and demographic data. Statistical package of social science (SPSS) version 20 was used to compute statistical analysis of the test score.

Categorization of the same transcribed verbatim was used to discover common themes through detailed understanding. Therefore data from the side of coaches analysed based on three developed major themes.

3.9 Pilot study

The validity and reliability of the test was checked through administering pre-tests on players of Teppi city (Shetayine) football club. Then after, based on the pilot testing the test procedures was modified according to material utilization, test environment and considerable conditions that affect test reliability.

3.10 Ethical considerations.

There are several ethical norms that researcher considered during research investigation. First, norm promote the aim of research, thus prohibitions against falsifying or miss-representing research data promote the truth and avoid error. Second, norm promotes the values that are essential to collaborating work, Such as trust, accountability, mutual respect, and fairness. Further more the norm of research promotes variety of other important moral and social values. Such as keeping confidentially personal data of the participant responsibly and utilize that data for only the purpose of the study.

CHAPTER FOUR

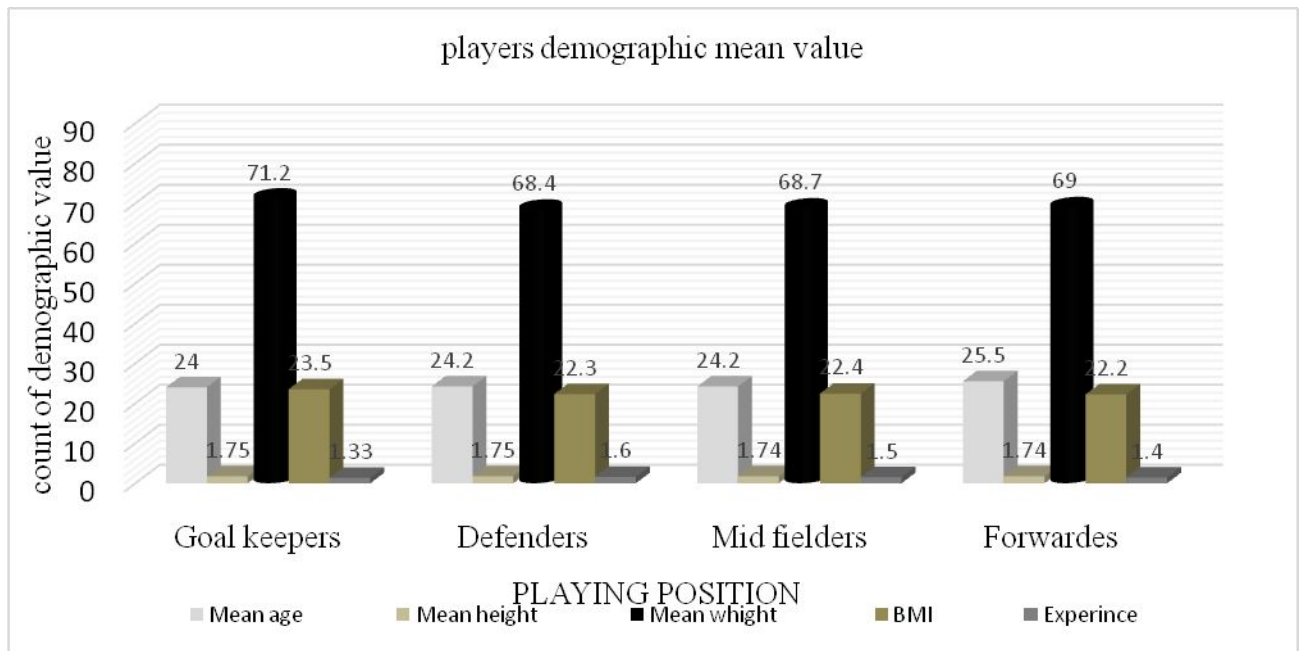
4. ANALYSIS AND INTERPRETATION OF DATA

The primary objective of this chapter is to find out the appropriate responses for the basic questions raised under the statement of the problem from the data gathered through selected fitness tests such as vertical jump test to measure explosive leg and hip power output, 30m sprint test, to determine sprinting ability and Illinois agility test, determine how a player appeared agile. Total 75 players from three national league clubs were tested regarding their position using the above tests, further more additional data was gathered through structured interview from the side of coaches. Therefore after collecting relevant data using fitness tests and structured interview from the sample group of the study the next step followed by data analysis and interpretation,

4.1 Demographic characteristics of players

The data gathered from players for this investigation, in addition to testing the performance of players through field tests demographic and anthropometric variables such as age, weight, height and BMI was included and the result of each variables was analysed.

Figure 1 Demographic and anthropometric Characteristics of players



According to the above graph, goal keepers' defensives and mid fielders were appeared approximately under similar age group while forwardes were older than other position. Regarding to their height, goal

keepers and defensives have similar mean height and taller than others on the other hand mid fielders and forward players were similar in their mean height value. Furthermore goal keepers were appeared heavier than the rest position with mean weight (M= 71.2kg) and forwards were found to be comparatively lighter than other positions with mean weight (M=69kg). So these indicate that there was considerable difference between playing position. Regarding to players anthropometric variable the minor mean variation was found between playing position, in this regard goal keepers found to be fatter of the position with (M = 23.5), while forwards appeared lower in their BMI having mean BMI (M = 22.2). Finally players playing experience was also found to be almost similar with respect of playing position therefore the highest mean value for year of playing experience appeared (M=1.6) for defensive and the minimum mean experience was (M=1.33) this implies all players have maximum 2 year playing experience in their club. In order to determine the significance difference between the above mean score, one way analysis of variance (ANOVA) was employed and the result had been analysed below.

Table 5 comparison of players' demographic and anthropometric characteristics

	N		M	SD	F(3,71)	Sig
Goal keepers	9	Age	24.0	2.6	3.7	NS
		Height	1.75	.035	.64	NS
		Weight	71.2	4.8	.52	NS
		BMI	23.5	1.76	.64	NS
Defenders	24	Age	24.2	1.74	3.7	.032
		Height	1.75	.08	.64	NS
		Weight	68.4	5.9	.52	NS
		BMI	22.3	1.84	.64	NS
Mid fielders	24	Age	24.2	1.47	3.7	.032
		Height	1.74	.06	.64	NS
		Weight	68.7	4.1	.52	NS
		BMI	22.4	1.32	.64	NS
Forwards	18	Age	25.7	1.5	3.7	.016
		Height	1.74	.07	.64	NS
		Weight	69	5.8	.52	NS
		BMI	22.2	2.2	.64	NS

$P < 0.05$

The above table 1 illustrated the mean difference of players based on their playing position regarding their demographic characteristics, therefore the researcher need to ensure the above mean difference was significant or not, cause of this one way analysis of variance (ANOVA) was used to identify significant mean difference of players demographic and anthropometric variables based on their playing position. Therefore one way analysis of variance (ANOVA) indicated that there was mean difference between players age regarding to their playing position, thus forwards ($M = 25.7, SD = 1.5$), mid fielders ($M = 24.2, SD = 1.47$), defences ($M = 24.2, SD = 1.74$), and goal keepers ($M = 24.0, SD = 2.6$), $F(3,71) = 3.7, P < .05$.

Multiple comparison test post hoc, indicated that there was significance difference between players, based on playing position regarding to their age amongst forwards ($M = 25.7, SD = 1.5$), older than defensives ($M = 24.2, SD = 1.74$) and mid fielders ($M = 24.2, SD = 1.47$), $F(3,71) = 3.7$ ($\text{sig} = 0.016$), $P < 0.05$). This means the mean difference indicated on the above table was true for only 3(three) playing position such as forwards, defences and mid fielders, otherwise, there was no significance difference between goal keepers, defences and mid fielders concerning their age.

The other section of analysis supported by ANOVA was anthropometric variables (height, weight and BMI) variation of players based on their playing position. Thus, as indicated on the table 2, there was a mean difference between players height according to their position amongst, goal keepers ($M = 1.75, SD = 0.035$), defenders ($M = 1.75, SD = 0.008$), mid fielders ($M = 1.74, SD = 0.06$) and forwards ($M = 1.74, SD = 0.07$), $F(3,71) = 0.64, P > 0.05$.

Multiple comparison test post hoc shown that there was no significant mean difference between players height based on their playing position. This means there was no positional variation on player's height, almost players have similar height.

In addition to these, other considerable anthropometric variable to be differentiate players based on their position was weight. One way analysis of variance revealed that there was mean difference between players weight among, goal keepers ($M = 71.2, SD = 4.8$), defences ($M = 68.4, SD = 5.9$), mid fielders ($M = 68.7, SD = 4.1$), and forwards ($M = 69, SD = 5.8$), $F(3,71) = 0.52, P > 0.05$.

Multiple comparison test post hoc, indicated that the above mean difference between players weight according to their position was not significantly different with $P > 0.05$. From this we understood that all players in any playing position have had similar body weight.

The last anthropometric variable which was included in this particular study was player's body mass index (BMI). BMI is a number calculated from player's weight and height. According the output taken from one way analysis of variance it had shown that, there was mean difference between players regarding playing

position, among goal keepers (M= 23.5, SD = 1.76), defences (M = 22.3, SD = 1.84), mid fielders (M = 22.4, SD = 1.32) and forwards (M = 22.2, SD = 2.2). $F(3,71) = 0.64, P > 0.05$.

Multiple comparison test, post hoc was employed to identify the significance mean difference of players BMI. Thus it had indicated that there was no any significance mean BMI difference between players regarding to their playing position.

Generally as we have seen from the above analysis, only player's age was found to be significantly difference from the demographic characteristics of players regarding their playing position, in contrast the other variables shown to be similar for all playing position. This indicates excluding age, there was no significance difference between players regarding to height, weight and BMI across playing position.

4.2 Descriptive statistics for player's fitness variables

Table 6 descriptive statistics of players speed score

Playing position	Fitness variables					
	Speed					
	N	M	SD	Median	Min	Max
Goal keepers	9	4.46	.10	4.5	4.3	4.6
Defence	24	4.35	.18	4.4	3.8	4.5
Mid fielders	24	4.38	.11	4.4	4.2	4.5
Forwards	18	4.27	.12	4.2	4.1	4.5
Total	75	4.36	0.15	4.4	3.8	4.6

On the above table the descriptive statistics obtained from 30m sprint test was analysed as indicated in the table the 9 goal keepers, 24 defenders, 24 mid fielders and 18 forwards was included in the study. In this regard as it was shown forwards were fastest player with mean score (M= 4.27) and goal keepers were slower with mean score (M= 4.46) than other position. The minimum score for goal keepers was found to be 4.3 and the maximum score appeared 4.6. In addition to these the minimum score for defence found to be 3.8 and the maximum score shown 4.5, furthermore, 4.2 second was the minimum score for mid fielders as well as 4.5 second was the maximum score. Finally the test score indicated the minimum and maximum score for forwards, to this end 4.1 and 4.5 were the scores respectively. From these one can understand that from all playing position defensive players have the minimum score. The research like to notice that the

position which has maximum score indicated the lowest value, because the fastest player minimize the seconds to reach the end line of the 30m test line.

Generally the total mean score of 30m sprint test for all (75) players who had included in this study was found to be (M=4.36 sec)and their maximum and minimum values appeared 3.8 and 4.6 respectively. This means players 30m sprint score was appeared good as shown in international test standard of the test.

Table 7 descriptive statistics of players’ agility score

Agility						
N	M	SD	Median	Min	Max	
9	17.7	.52	17.7	16.9	18.8	
24	17.1	.5	17.0	16.4	18.1	
24	16.9	.38	17.0	16.1	17.5	
18	16.8	.18	17.7	16.5	17.3	
75	17.0	.48	16.9	16.1	18.8	

The table shown agility score of players based on their playing position. Therefore in this assessment according to their position, 9 goal keepers, 24 defensive, Also 24 mid fielders and 18 forward players’ total of 75 players was included in testing Illinois agility test. Concerning the test result of different playing position, the mean score fore goal keepers found to be higher with mean (M= 17.7), but, this means not goal keepers were agile than other. it was interpreted inversely because the best agile players complete a given distance with short period of time. In this regard as it can be indicated on the above table, there was very small mean variation between players, forwards found to be better agile than mid fielders and defensive with very little increment of mean (M= 16.8sec), (M=16.9sec) and (M= 17.1sec) respectively. This means field players found to be better agile than goal keeper in Illinois agility test score.

Table 8 descriptive statistics of players’ power score

Power						
N	M	SD	Median	min	Max	
9	53	1.87	53.0	50	56	
24	52.6	1.63	53.0	50	55	

24	52.2	1.32	52.5	50	54
18	53.5	1.24	54.0	50	55
75	52.7	1.54	53	50	56

The last performance related physical fitness that assessed during this study was power as it has indicated on the above table, power score obtained through vertical jump test shown that, forward players appeared better than other position with mean (M= 53.5cm) and mid fielders in contrast found to be low scorer with mean (M=52.2). In addition to these the minimum score fore of all playing position appeared similar (50cm), and in maximum score, defensive and midfielders had have similar score (55cm)the rest goal keeper and defence have different maximum score, (56cm) and (55cm), respectively.

Table 9 Comparisons of fitness variables across playing position

		ANOVA				
		Sum of Squares	Df	Mean Square	F	Sig.
power score of players	Between Groups	19.652	3	6.551	2.981	.037
	Within Groups	156.028	71	2.198		
	Total	175.680	74			
agility score of players	Between Groups	5.820	3	1.940	11.706	.000
	Within Groups	11.767	71	.166		
	Total	17.587	74			
speed score of players	Between Groups	.254	3	.085	4.154	.009
	Within Groups	1.448	71	.020		
	Total	1.702	74			

*p <.05.

The above table illustrates the comparisons of mean differences in fitness variables across playing position. One way analysis of variance (ANOVA) indicated that there was a mean difference between playing in Illinois agility test score, to this Forwards was found to be better with mean score (M = 16.8, SD

=.18) than mid fielders score (M = 16.9, SD .38), as well as defence (M = 17.1, SD =0.5), than goal keepers (M = 17.7, SD = .52), F (3,71),= 11.70, P < .05.

Multiple comparison test indicates that there was statistically significance mean difference between south western divisions of national league football players across playing position in Illinois agility test thus this indicates forward, defences, mid fielders and goal keepers were separated regarding to their agility performance..

Regarding to vertical jump power test one way analysis of variance (ANOVA) showed that, there was mean difference between players of south western zone, national league football clubs in vertical jump test score, so that forwards mean score (M = 53.5 SD =1.24) than Goal keepers score (M = 53.0, SD 1.87), as well as defence (M = 52.6, SD =1.63), than mid fielders (M = 52.2, SD =1.39), F(3,71),= 2.98,P < .05.

Multiple comparison test indicated that, forward players were better than other playing position (Goal keepers, mid fielders, and Defensives). The difference was statistically significant at P < .05. Out of this there was not significance differences appeared between players position in vertical jump test score.

The third performance related physical fitness which was assessed by field test was speed, the score obtained through 30m sprint test was based on playing position. Therefore one way analysis of variance (ANOVA) indicated that there was mean difference between playing position in 30m sprint test, in this regard forwards were better than other position with mean score (M= 4.27, SD= 0.12), defensives were better than mid fielders and goal keepers with mean score(M= 4.35, SD= 0.18) and mid fielders have better mean score (M= 4.38, SD = 0.38)than goal keepers mean score(M= 4.46, SD= 0.10) F(3,71), = 4.15 P > 0.05

The result of multiple comparison test indicated that there was statistical significance difference between playing position in 30m sprint test.

Table 10 comparison of players' fitness mean score with international norms of each test mean score.

	Super	Excellent	Good	Average	Fair	Poor	Very poor
Vertical jump leg power test (cm)	64.8-69.9	61.0-63.5	57.2-59.7	53.3-55.9	48.5-52.9	44.6-48.3	39.4-44.5
Illinois agility test (second)	15.3-16.1	16.3-16.7	16.8-17.3	17.5-17.9	18.1-18.6	18.7-19.1	19.3-20.1
30meter sprint test (second).	_	< 4.0	4.2- 4.0	4.5- 4.3	4.6- 4.4	> 4.6	_

Table reference: Davis B, et al (2000), physical education senior syllabus, (2010).

The above table shown that, sport specific test standards are categorized by the international norms which was used to compare an athlete's performance based on those standard scores. Therefore, the present study attempted to compare test score obtained from field test assessment such as 30m sprint speed test, Illinois agility test and vertical jump leg power test with the international test standards on the above table.

As we have seen on the above table the result of players fitness score obtained from 3 fitness tests based on their playing position was compared with international norms of each test results. Therefore the mean score obtained from 30m sprint test of goal keepers was (M=4.46 sec), defenders (M= 4.35 sec), mid fielders (M=4.38 sec) and strikers (M= 4.27). Therefore the current test score of players as compared with the above standardized score distribution the score of goal keepers found to be below average, defenders and mid fielders appeared under average score of the standards and only forward players was found to be above average score of the standards. This implies that players were not sufficiently trained to compete reach their pick performance in maximal speed.

The players Illinois agility test score is the second performance related fitness variable which was compared with the test standard on the above table. In this regard Illinois agility test mean score obtained from current assessment of players shown that, goal keepers (M= 17.7 sec), defenders (M= 17.1 sec). Mid fielders (M= 16.9 sec) and strikers (M=16.8 sec). as it was clearly indicated that the mean score of players shown except goal keepers all position appeared at good standard of the normative data, but goal keepers found on the average standard of the test. From these one can understand that except goal keepers other positions shown little improvement than 30m sprint speed test.

The last performance related physical fitness compared with the international test standard was vertical jump test. Similarly to the above test score, vertical jump test score was also obtained from national league football players through field test. Therefore the obtained test mean score from those individual performers shown that, goal keepers (M = 53.0 cm), defender,(M= 52.6 cm), midfielders (M= 52.2 cm), forwards (M= 53.5 cm). As we have seen from these mean distribution forwards and goal keepers were better in vertical jump test and they fall in average distribution under the test standard, next to these mid fielders and defensive fall under fair but not good or bad category. These implies, especially defensives and mid fielders appears below average.

In addition to the above comparisons of test score of player with the standard, by considering the mean score obtained from different tests, prevailing performance limitation of players according to playing position was identified. In these regard, goal keepers mean score for Illinois agility test was lowest score (M=

17.7sec) and similarly the low scorer of 30m sprint test was goal keepers with mean score (M=4.46 sec) to these end agility and speed to be found prevailing limitation for goal keepers. This indicated that, goal keepers need extra demand to improve both variables in training season.

4.3 Qualitative analysis of data

In addition to the quantitative data which was gathered through field test assessment, the researcher also looked the opinions of coaches and their feeling through structured interview. Central themes of the transcribed verbatim was organized after deep understanding of similar concepts or opinions and those similar transcripts was categorized under the same group. Bogdan & Biklen (1992) suggested that, analysis involves working with data organizing it, breaking it in to manageable unit & searching for patters or themes to discover what is important to tell other. Therefore the data was analysed based on discovered themes such as; determining actual performance, major factors inhibit fitness assessment and what possible solution forwarded.

Determining actual players' performance

When the coaches were asked to answer the interview question regarding to how they determine the actual observable performance of player in the team, coaches who participated in this study explained that, the main tool in which football coaches used to determine the actual performance of players was, considering individual players contribution during competition and pre training effectiveness.

Major factors inhibit fitness assessment

The participants offered the major challenges that inhibit them, not to administer continuous assessment of fitness throughout the season with simple sport specific field test were, listed as follow;

Lack of coaches' motivation

Absence of measuring instruments

Low level of understanding about practical field test assessment

Possible solution to overcome the problem

Coaches who directly participated in this study suggested their opinion for possible solution could be considered for feature.

Creating awareness about the value of fitness testing and its advantage at any level of football game could be considerable.

Training plan also be consider fitness assessment schedule

CHAPTER FIVE

5. DISCUSSION

In order to assess selected performance related physical fitness of south western division of Ethiopian national league football players in terms of their playing position 3(three) different fitness tests was employed under four basic football position and the result was displayed in the analysis part. This section provide detailed discussion on the basis of obtained result. Before directly going to discuss the result obtained from the predetermined field tests players demographic and anthropometric variables was discussed first based on playing position in the following manner.

Regarding the age of players in the south western division of Ethiopian national league clubs, statistically significance age difference was appeared between playing position among forward, defence and mid field players. The study conducted by Clark (2007) found that no significance difference between playing position concerning age, this was in disagreement with present study. Average age of top players is 25-27 years with a standard division of about 2 years (Reilly & Doran,2005).

Despite of this fact the present finding showed below the suggested mean age. However, to suggest this constrains the age at which players can compete at the highest level would be erroneous. players who don't fall with in this age distribution are found to perform elite level of play players of teenage years do feature in all top club teams, the expression that young teams don't win trophies is not supported by recent history, although these players tend to be part of experienced squads, age need not be a barrier to performance excellence at the highest level of soccer, (Reilly & Doran, 2005)

Regarding to anthropometric variables the results of the present study identified no significant differences between playing position standards concerning the anthropometric measures, especially body weight, height and BMI. In disagreement with Gill et al. (2007), GKs were heavier and have higher body mass than other playing position groups. In addition to this the work of Clark (2007) in contrast with current study suggest that, while there are some differences between goalkeepers and all other positions, outfield players perform remarkably similarly in various physical fitness tests, and the differences are largely anthropometrical.

Accordingly, Reilly et al. (2000) have concluded that elite soccer teams are characterized by relative heterogeneity in body size. Therefore, there are likely to be anthropometric predispositions for positional roles, with taller players being the most suitable for central defensive positions and for the "target" player among the strikers or forwards. This factor may be linked with pre selection of early matures for key positional roles, where body size rather than playing skills provides an advantage. During running, jumping

and direction changes players must move their own body mass and a high body fat content would appear to be a disadvantage (Reilly, 1990).

In many competitive sports, players with a lower body fat percentage typically have better performances, which occur because low body fat is associated directly with a higher intensity of training (Davies, et al, 2001). In this study the player's BMI shows they were under normal weight standard required for sport activity. Larger individuals would be at an advantage in trying to cover the goal face, whereas lighter, leaner players may be more mobile in the outfield (Bangsbo, 1994).

Next to demographic and anthropometric discussion the result of 30m sprint test, vertical jump power test & Illinois agility tests based on playing position was briefly discussed as follow.

Hence the result obtained from Illinois agility test show that there was no significance difference between goal keepers, defences, mid fielders, and forward players. In agreement with present study the study of Clark (2005) also found no significance difference between playing positions. Further studies which in line with the present study was, the findings of, Malina et al. (2005) and Wong et al. (2009) confirmed that there is no positional difference in agility of playing position. Agility is the ability to change the direction of body motion rapidly, and results from a combination of a variety of physical components (Svensson & Drust, 2005). Soccer players continuously change movement direction and body position during a match.

Agility development is essential for soccer players because this fitness components transcends to all aspects of the game in attacking, defending and equally important in goal keeping. In modern day game teams are very adept at becoming compact when no in position; so far Attackers, being able to manoeuvre with and without the ball in these tight spaces is must, How agile a defence is will greatly determine how effective they are at tracking shifting opponents and closing down strikers in the penalty area. For goal keepers, having good posture, reaction skill and foot work represent large percentage of their required skill set and are especially important for stopping close- ranged strikers on target, (Jones, 2008).

Regarding to 30 metre sprint test the findings of the present study shown that there was no statistical significance difference between playing position such as goal keepers. Defensives, mid fielders and forwards. In agreement with the present finding (Reilly, 1990) stated that during a soccer match, players generally sprint for average durations of less than 6 s Since no statistical differences were found between acceleration and speed scores between any of the playing positions, it is possible that all playing positions require speed of movement.

Further investigation provided similar result that supported by present study was, the findings of Karavelioglu (2008) showed that there is no difference between the position in acceleration and 30 metre

sprint score of young football players. In addition to these Taskin H, (2006) found no significance difference between playing position in 30 meter sprint value.

Previous studies which in agreement with this findings were, Gil et al. (2007) who showed that forwards were faster than defences and mid fielders at the 30 m sprint test. Accordingly, Di Salvo et al. (2007) highlighted that forwards covered the greater distance at very high-intensity run compared with defence and mid fields. And also Tumilty, (2000) Svensson & Drust, (2005) reported that acceleration and running speed can differentiate between levels and positions of play.

Positional movements both in attack and defence, either with or without the ball are major determinants of the result of the passage of play (Bangsbo, 1994) and being able to perform these movements quickly seems necessary in all positions to play at the level of players studied here. Grasgruber and Cacek (2008) state the length of sprints is 15 m and usually no more than 30 m, every 90 s, it means 0.8 to 1 km for the whole match. Jovanović, *et al*(2011) declare that number of metres run at high intensity is criteria for division of players in elite or lower performance level.

Your player need sprint speed when making runs, dribbling on a break way, or getting back on defence. Usually, your forwards are your fastest players, their speed often create scoring opportunity. Nonetheless, all your player should do speed training. A fast defence can play more aggressively without worrying that it will be beaten easily (Chapman, et al, 2002). Sprinting speed is a necessary quality for all soccer players, regardless of playing position even goal keeper need to develop this components of fitness, especially when coming of their line to intercept well- placed through balls.

Soccer is multifaceted sport that requires well developed physical fitness to be successfully played, strength power and their derivatives (acceleration, sprinting and jumping) all make important contributions to the performance potential of soccer players. High speed actions are known to impact soccer players' performance and can be categorized in to action requiring maximal speed, acceleration or agility. Sprint speed is an essential components of being successful in the sport of soccer. Speed is an important factor affecting the performance in football and it is defined as persons moving himself from one location to other with maximum speed although speed ability is an innate characteristics, it is improved by long term deliberate training. There are a number of possible explanations for the current findings. It may be that some of the fitness components, like agility and speed, are important requirements for all positions of play, from goalkeepers to forwards. Either only players with fair attributes in these components become successful, or all positions have engaged in training to target these aspects (Kizilet, et al 2004)

Regarding vertical jump test score of players the present study found statistical significance difference between playing position among forwards, goal keepers, mid fielders and defensives. This means forwards

were better than other playing position in vertical jump power test. In line with the present study Jezdimirovic et al, (2013) found in their study vertical jump heights for goal keeper, defence and forward players were significantly higher compared with midfield players. Higher values for vertical jump height of defence and forward players compared with midfield players may be explained by the tendency for defence and forward players to be involved in more jumping and tackling compared with midfield players. In addition to these the findings of Clark(2007) indicated there was significance difference between playing position in vertical jump test value. Furthermore also Tumilty, (2000) found significance difference between players in vertical test score.

A higher level of all strength parameters would be preferable and allow for more powerful jumps, kicks, tackles, and sprints among other factors (Wisloff et al., 1998).The results of the present study support previous investigations indicating differences in vertical jump in soccer players according to the position on the team. Greater emphasis on these aspects could help the coach to effectively develop training programs and thus further improve the level of play in soccer.

Regarding to a method that, coaches used to determine players actual performance was,from the obtained result competition and training was the primary tools for determine actual observable performance of players. If athletes are to attain world-class levels of performance, information from the continuous assessment of training and competition must be made available to aid in the evaluation of how players are performing and progressing.Competition naturally provides the best test for an athlete, but it is difficult to isolate the various components within the sport and get objective measures of performance. Fitness testing can provide relevant information about specific parts of a sport. Before selecting a test, clear objectives should be defined. Fitness assessment was very important when it was administered in careful attention. With this regard Svensson & Drust, (2005) suggested that. Also, when controlled through strict adherence to procedure, field tests provide useful, valid and accurate means of assessing soccer fitness

Additionally, assessment of a team and developing a profile for the squad could help a coach identify a larger issue that needs to be addressed by the entire group. For example, if aerobic fitness is low for the majority of players then it is imperative that this receive priority during training. Regardless of working with an individual or a group, targeted training programs can be designed to improve the limitations identified with appropriate performance testing prior to the season (Reilly & Doran, 2005).Whilst performance assessment is mainly employed to identify individual strengths and weaknesses in various sporting skills.By establishing a starting point for performers according to pre-identified strengths and weaknesses, coaches can plan and prescribe optimal training interventions and strategies to prepare for competition (Carling, 2009).

To be successful in field sports, players generally require many attributes and competencies including high levels of endurance, muscle strength, flexibility, agility, speed and coordination, as well as technical and tactical know-how. The primary concern of coaches is to develop and optimise all these skills in training in order to enhance performance and to harness individual capabilities to form an effective unit. If athletes are to attain world-class levels of performance, information from the continuous assessment of training and competition must be made available to aid in the evaluation of how players are performing and progressing (Bradley et al, 2009)

In addition to these several possible solution had been suggested in different study to overcome and provide sustainable change for the problem. In the present stud regarding to fitness assessment it shown different idea was revealed similar to the present findings Variations in the level of physical training amongst squads are potential confounders to this data. This is arguably insignificant, as previously we have found no significant differences in physical fitness of players in squads ranked either high or low on the league log (Clark, 2007), suggesting that training status may be rather similar between different clubs.

In general coaches and individual working on sport setting at all consider the need of fitness assessment throughout the season especially football require special fitness characteristics to cope with emerging game challenges. In soccer practice it is normally considered that the quadriceps muscle group plays an important role in jumping and ball kicking while the hamstring controls the running activities and stabilizes the knee during turns or tackles (Fried & Lloyd, 1992). As soccer player jumps on average 15.5 times, with about nine headers a match (Bangsbo, 1994).

The existence of various in-game situations triggers the need for different physical and physiological profiles of players playing at different positions (Sporis et al., 2009). Also, if the modern game requires a reasonably high level of performance in all fitness components, as Reilly et al. (2000) discuss, then it is reasonable to expect similar test performances amongst outfield players. Considering the outfield players only, no positional discrimination could be made on any measures of flexibility, body fat, power, acceleration and speed, strength- endurance, agility, aerobic power and repeat sprint performance. In the current study even goal keeper can't differ in their performance in this case it may disagreed with the findings of the above investigator.

In recent years, latest studies have demonstrated that individual differences in playing style, physical performance and playing position should be taken into account when planning training and nutritional strategies. (Bangsbo et al, 2006) Findings in the latest years showed that all defenders positions have not the

same physical demands (Full-back perform more high-intensity activity, have less recovery time between exertions and the workload is greater than Center-back). (Bradley et al, 2009; Bloomfield et al, 2007; Di salvo et al, 2007).If players perform less specialized roles in a game, one would expect more homogenous groups on all parameters, including physical fitness between different positions (Clark, 2007).

CHAPTER SIX

6. SUMMARY, CONCLUSION AND RECOMMENDATION

6.1 SUMMARY

Soccer is multifaceted sport that requires well developed physical fitness to be successfully played, strength power and their derivatives (acceleration, sprinting and jumping) all make important contributions to the performance potential of soccer players. In soccer there are four basic playing position namely goal keeper, defences, mid fielders and strikers or forwards. The existence of various in-game situations triggers the need for different physical and physiological profiles of players playing at different positions.

Also, if the modern game requires a reasonably high level of performance in all fitness components. Soccer is a game full of direction and speed changes with and without the ball. Lightning speed is a necessary quality for all soccer players, regardless of playing position even goal keeper need to develop this components of fitness, especially when coming of their line to intercept well- placed through balls. Evaluation and reflection are used continually to provide feedback for feature acquisition and application of behaviour, performance, knowledge and skill. Information from the continuous assessment of training and competition must be made available to aid in the evaluation of how players are performing and progressing.

The objective of the present study was to assess performance related physical fitness of players according to their playing position. To assess performance characteristics field tests such as 30 meter sprint test, vertical jump test, and Illinois agility employed, these tests were approached to assess speed, explosive leg and hip power and the level of agility of players. Total of 75 players from three national league football clubs from positions which they were played, 9 goal keepers, 24 defensives, 24, mid fielders, 18 forwards and three coaches were selected to be the participant of the investigation. After collecting relevant data through predetermined field tests based on playing position, and structured interview the result was analysed.

As obtained from the research findings, coaches were dominantly consider, competition performance and training effectiveness to decide on the actual performance of individual performance. They also forward, lack of motivation and absence of testing measurement as a factor that made them no to perform field based fitness assessment. The mean score of the current test obtained through fitness assessment was compared with the international test standards to determine whether players test score go in line with the norm or not, to this regard when comparing 30m sprint score of players with test standard goal keepers found to below average standard, defensives and mid fielders found under average standard the rest forwards shown on above average standard. Instead of Illinois agility test goal keepers found to be average standard and the other three positions relay on good, category on the standard. From the final comparison

on power test the finding out lines, forwards and goal keepers relays on average standard and mid fielders and defensives found to fair not good or bad. The result obtained from fitness assessment of players based on playing position indicates, regarding to their agility score forward found to be most agile position, and there was statistical significance mean difference between forwards and other playing position(goal keepers, defensives and mid fielders) found. Regarding to speed and power in the present study there was no significance difference between players based on their playing position.

6.2 CONCLUSION

On the basis of the result obtained from the analysis the researcher made a conclusion to the following major findings.

- ⊕ There is no sport specific field assessment trend under south western division of Ethiopian national league football clubs.
- ⊕ There was no statistically significant difference between south western division of national league players regarding to their height, weight and BMI.
- ⊕ There was statistically significance difference found between playing position regarding their age.
- ⊕ Forward players have higher score in vertical jump power test than other positions and mid fielders score the lowest, these difference was found to be statistically significant. To this end forward players were better than mid fielders in lower body power output.
- ⊕ Forward players were better than other position compared with international test standard they were found to be at average and above average standard in agility, power and speed test.
- ⊕ Goal keepers, power and speed score found to be below the average standard of the test, this indicate goal keepers' speed and power performance was not in line with the test standard.
- ⊕ Agility and speed were prevailing performance limitations of goal keepers. This is due to goal keepers achieved less score in both test.

6.3 RECOMMENDATION

- ⊕ Coaches should be aware the fact that, the physical demands of the game are multi factorial. These results should be considered by managers, coaches, and trainers when planning training and conditioning sessions for teams.
- ⊕ Field based football specific assessment should be considered by coaches, because it provide objective strength and weakness of individual players as well as help the coaches to observe the predictive positional talent of players.
- ⊕ Determining the actual performance of players is important, it generate starting point to provide specific training, but knowing the starting point was not enough, so looking certain achievable fitness standard and comparing the result motivate player to do their best.
- ⊕ Coaches should work on goalkeepers in fitness program to improve their speed and agility performance which our national league players lack.
- ⊕ Coaches as well as individual who are working on sport setting should recognize and develop the habit of sport specific performance assessment through field based tests
- ⊕ Further research is needed to better describe the differences between national team players to obtain data specific to regional leagues, and better understand the relationship these differences may have on the pattern of play.

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Appendix A

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Test score sheet prepared for the assessment of selected performance related physical fitness such as: sprint speed, explosive power and agility of national league football players from south western division of the league.

No	Demographic data					Test score						
	Name of player(code)	age	Weight	Height	Playing position	Standing vertical jump			30m speed		505 agility	
						1 st	2 nd	3 rd	1 st	2 nd	1 st	2 nd
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												

Appendix B

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Structured Interview check list prepared for south western division (A) Ethiopian national league football coaches.

1. Have you ever administer fitness testing with simple field fitness testes?

2. How you evaluate the strength and weakness of your player?

3. What is your major criteria to select the best 11 players from your team squad?

4. What are the major challenges that inhibit you not to perform fitness

5. What possible solution can overcome the problem as a coaches?

Appendix c

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Descriptive

	N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum	
					Lower Bound	Upper Bound			
power score of players	goal keeper	9	53.000	1.8708	.6236	51.562	54.438	50.0	56.0
	defence	24	52.625	1.6369	.3341	51.934	53.316	50.0	55.0
	midfilder	24	52.208	1.3181	.2691	51.652	52.765	50.0	54.0
	striker	18	53.556	1.2472	.2940	52.935	54.176	50.0	55.0
	Total	75	52.760	1.5408	.1779	52.405	53.115	50.0	56.0
agility score of players	goal keeper	9	17.711	.5278	.1759	17.305	18.117	16.9	18.8
	defence	24	17.108	.4934	.1007	16.900	17.317	16.4	18.1
	midfilder	24	16.879	.3811	.0778	16.718	17.040	16.1	17.5
	striker	18	16.800	.1879	.0443	16.707	16.893	16.5	17.3
	Total	75	17.033	.4875	.0563	16.921	17.145	16.1	18.8
speed score of players	goal keeper	9	4.467	.1000	.0333	4.390	4.544	4.3	4.6
	defence	24	4.358	.1863	.0380	4.280	4.437	3.8	4.5
	midfilder	24	4.383	.1129	.0231	4.336	4.431	4.2	4.6
	striker	18	4.272	.1274	.0300	4.209	4.336	4.1	4.5
	Total	75	4.359	.1517	.0175	4.324	4.394	3.8	4.6