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COMPARATIVE STUDY OF SELECTED PHYSICAL FITNESS AND ANTHROPOMETRIC VARIABLE DIFFERENCE AMONG GARDOLLA AND KONSO NEW YORK MALE FOOTBALL CLUBS

By

Gebrhana Gebino

June, 2015

Jimma, Ethiopia

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THESE SUBMITTED TO SCHOOL OF GRADUATE STUDENTS JIMMA UNIVERSITY IN PARTIAL FULFILMENT OF THE PEQUIREMENT FOR THE DEGREE OF MASTER OF SCINCE IN SPORT SCINCE, (FOOTBALL COACHING SPECIALIZATINO

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LIST OF ACRIMONY AND ABRIVIBRATIONS

SNNPRS	Southern Nation And National People Regional State
SR	Shuttle run
BMI	Body Mass Index
SJ	Squat jump
CMJ	Countermovement jump
AAHPER	American Alliance for health, Physical education and recreation

ABSTRACT

The purpose of the study was to assess and compare the selected physical fitness and anthropometric variable among Gardolla and Konso New York male football clubs. Two sample national league football clubs in the southern zone were selected from Konso and dirasha wereda and to select 50 male football players from the total population of 60 players included as a subject from both clubs. Stratified random sampling technique was used to select the subjects according to the designed parameters. Quantitative data was used through the appropriate anthropometric test and physical fitness tests. Descriptive statistics was produced for each of the parameters. The results were presented as mean and standard deviation which shows the average results of each variable in both clubs. Independent T-tests was used to compare the results between the two clubs, To find out the significant difference in selected physical fitness variables, The results of this study showed that when comparing the average values obtained with the reference values provided by the normative data, Gardula are better than their Konso New York counterpart with normative data of harvard Step, 30 meter speed test, Illinois agility test, set and reach test and vertical jump test also, showed that statistically significant mean deference at the $P < 0.05$ on Harvard Step, 30 meter speed test, Illinois agility test, and vertical jump test. The bases of the findings of the study recommendations were drawn; it is useful to prepare training for both Konso New York and Gardula in the different age level of football players for improving their physical fitness and keeping them to maintain their performances. Therefor this is a need for the players to improve their physical fitness though specialized practice, through a well harnessed daily program. Also coaches need to study each player's fitness level and movement mechanics in order to correct, where necessary, for better physical fitness and playing ability. Future research should needs to examine methods for increasing physical fitness levels among this population group and identify cut-points related to health outcomes for all fitness components

.*Key Words*: ***Physical fitness, Football, strength, speed, endurance, flexibility, agility***

CHAPTER ONE: INTRODUCTION

1.1. Background of the Study

Football is one of the most widely played and complex sports in the world, where players need technical, tactical, and physical skills to succeed. However, studies to improve football performance have often focused on technique and tactics at the expense of physical resources such as endurance, strength, and speed, (Jan Helgerud, Lars Christian Engen, Ulrik Wisløff, and Jan Hoff 2001) Followers of football frequently criticize the game as lacking creativity and flair. Some critics may go so far as to blame use of scientific methods by football teams for lack of entertainment. Underlying these points is the fact that football at top level has an obligation to entertain the viewing public but financial rewards to the players often depend on their securing victory. Consequently, fear of failure to win may motivate players to on the side of caution and emphasize defense rather than attack. The negative emphasis on preventing the opposition from playing to its strength may leave the 'fans' disenchanted. Football itself is an art rather than a science is exemplified by the craft of great players like Zinadine Zidane or Brazil's Rivaldo, the erstwhile guile of Diego Maradona, the precision of David Beckham or the speed of Michael Owen. The game is aleatory and is partly determined by chance or strokes of individual genius. It can achieve this goal by enabling the team to play to its potential. This realization of possibilities can apply to the recreational player participating for pleasure, or the professional playing for material reward. It can apply to the parents gaining satisfaction from watching talented offspring at play or to the home supporter whose zeal may border on passion and prejudice. (Thomas Reilly and A. Mark Williams: Science and Soccer, 2003:5)

According to Bannister (2006), "physical fitness is a state of mental and physical harmony which enables someone to carry on his occupation to the best of his ability with greatest happiness." Physical fitness is a set of attributes that are either health- or skill related; the degree to which people have these attributes can be measured with specific tests. The complex nature of physical fitness can be best understood in terms of its components, such as, cardiovascular

of physical fitness (Sallies *et al,* 2002).

Physical fitness provides many benefits in football. These make the demands of the match seem easier to complete (jumping, holding off opponents and kicking the ball with power), improved self-image and as a result may improve confidence, rectify the problem of underweight soccer players, increase bone density, which in turn helps to prevent osteoporosis, the strength of the tendons and ligaments are increased, thus reducing the risk of strains and tears, improved posture and body alignment, and as a result improves movement, (Reilly, 2004). Participating in physical activity is beneficial to people of all ages. Physical activity contributes to fitness, a state in which people's health characteristics and behaviors enhance the quality of their lives (Trost *et al.*2002).

The assessment and determination of the anthropometric and physiological characteristics are essential to a successful achievement of a football team not only during a game, but also along the whole sportive season, and such information can and must be used by the coach to change the player's function or even the tactical formation of the whole team with the purpose to maximize the performance, once each positioning presents specific features (Shephard, 1999).

Every person has a different level of physical fitness which may change with time, place of work, the situation and there is also an interaction between the daily activities, and the fitness of an individual, the point if where to put the level of optimum fitness. From the physiological point of view physical fitness may say to be the ability of the body to adopt and recover from strenuous exercise (Manmeet *et al.,* 2010). Over the past four decades, there has been focus on an increase in the prevalence overweight and physical fitness deterioration in adult across all genders, ages and ethnic groups (Ichinohe *et al.* 2004).

Physical fitness is also essential in general life, especially for a football player. But, no data have been presented so far for national league level. Thus, the researcher hypothesized that Gardolla and Konso New York male football players may or may not have a significance difference in selected physical fitness variables. Therefore, the purpose of this study was to assess and compare some selected physical fitness variables among Gardolla and Konso New York male football clubs.

1.2. Statement of the Problem

According to Massuça and Fragoso (2011), anthropometrical characteristics of football players, as adequate body composition and body mass figures, among other factors, contribute to optimal exercise routines and performance, but body mass can influence an athlete's speed, endurance, and power, whereas body composition can affect strength and agility. In other words, successful participation in both football games, next to the high level of technical and tactical skills, also requires from each athlete suitable anthropometrical characteristics and body composition (Popovic, *et al.,* 2013). Many previous studies have evaluated ideal anthropometric profiles of successful football player (Milanovic *et al.,* 2012; Reilly *et al.,* 2000; and Veale, 2010).

Indeed, football is a team sport that is played in an outdoor field and requires a high standard of preparation through the development of physical performance skills, as of tactical and technical expertise, in order to complete for 90 minutes of competitive play. According to Triki and his collaborators, football training is mainly based on movement implementing the endurance qualities consisting of moderate activity alternating with periods of intermittent high intensity, leading to a significant production of metabolic heat, mostly due to the reason that the average work intensity during a football match is usually about 75–90% of maximum heart rate, respectively 70–85% of VO_2 max (Rexhepi and Brestovci, 2010). Furthermore, studies have not been conducted so far on Ethiopian athletes. Therefore, this study was assess and compare the selected physical fitness and anthropometric variable among Gardolla and Konso New York male football clubs.

Therefore, based upon the above reasons the researchers was try to answer the following basic questions:-

1. What was the current physical fitness and anthropometric status of Gardolla and Konso New York male football players?
2. was there may significant difference between Gardolla and Konso New York male football player's physical fitness and anthropometric variables?
3. What were the current status of both clubs, when compared to international norms of physical fitness and anthropometric variables?

1.3. Objectives of the Study

1.3.1. General objective

- This study w a s designed to investigate selected physical fitness variables of Gardolla and Konso New York male football players.

1.3.2. Specific objectives

The specific objectives of this study were to:

1. Assess the current status of Gardolla and Konso New York male football Players physical fitness and anthropometric variables.
2. Identify the significant difference between Gardolla and Konso New York male football player's physical fitness and anthropometric variables.
3. Compare Gardulla city and Konso New York male football player's physical fitness and anthropometric variables with international norms.

1.4. Significances of the Study

The present study of the comparison of selected physical fitness and anthropometric variables of football players would benefit in the following ways:

1) This study helpful to discover or to reach conclusions on the first line players.
2) The finding of this study will provide the players to know the actual physical fitness level.
3) This study will give an idea to coach to determine the potential of the player to play at a certain possible position.
4) This study will be baseline information for future intervention.
5) This stud will provide a reliable functional guide of manual for football players, coach and sport to assess the physical fitness of any footballers and draw a particular training program for a footballer.
6) The study will provide appropriate information to the player, coaches, physical education..etc. about the best physical fitness and anthropometric variables.
7) The result of this study will help to develop new concept of selection of young athletes as per their fitness.

1.5. Delimitations of the Study

- The study was delimited to the players of Gardolla and Konso New York football club.
- In this study only male football players were taken.
- In this study only 50 (25 from Gardolla and 25 from konso) player were selected.
- This study was also delimited to selected variables physical fitness component (agility, speed, explosive power, endurance and flexibility) and anthropometric variables (age, boy weight, bod height, BMI and training age)

1.6. Limitation of the study

The change of climatic condition as temperature, atmospheric pressure and relative humidity during the testing period not be controlled and their possible influence on the result this study was recognized as limitation. The change of the physiological, social as well as physiological condition of the football players during the period of data collection could not be controlled and their possible on the result of this study was recognized as limitation. Certain factors like daily routine, life style and food habit which would have an effect on level of fitness of the players, could not be controlled.

1.7. Definition of Terms

Football: - a game in which two teams of eleven players try to kick or head a ball into their opponent's goal, only the goalkeeper on either side being allowed to touch the ball with his hands and arms except in the case of throw-in (http://www.thefreedictionary.com/Football%2 (soccer)

Physical fitness: - a set of attributes or characteristics that people have or achieve that relates to the ability to perform physical activity (Haga, 2009)

Variables:-Some thin that varies or is prone to variation (http://dictionary.reference.com/browse/variable)

Speed: -The ability to perform a movement within a short period of time. (www.topendsports.com/fitness/speed.htm)

Endurance: is the ability of an organism to exert itself and remain active for an long period of time, as well as its ability to resist, withstand, recover from and have immunity to trauma, wand or fatigue (en.wikipedia.org/wiki/endurance 03/06/2015)

Agility: - The ability to rapidly change the position of the entire body in time and space with

speed and accuracy (Verschuren, et al 2009)

Flexibility: -The ability of a joint to move through its full range of motion (ROM), from a flexed to an extended position (Fitness, 2005)

Strength: It is the force that a muscle or group of muscles can exert against a resistance in one maximum effort. (www.topendsports.com/fitness/strength.htm)

CHAPTER TWO: REVIEW OF LITERATURE

2.1 physical fitness and playing ability

Amusa (1979) conducted research on the relationship between playing ability and selected physical fitness measures. Forty six subject were well conditioned soccer players with at least two years playing experience on the college level they were tested for running speed, power, agility, VO2 max, strength, anaerobic capacity and flexibility, in addition eleven anthropometric measurements consisting of skin fold and body diameters were taken. football playing ability served as the criterion measures and was measured by a rating of 3 experienced football coaches based on the selected football skill and strategy analysis of data was by zero order correlation and multiple regression analysis resulting in the following conclusion; age (experienced) is the best single predictors of the playing ability, weight and height are considered.

Lamba (2005) compared the selected physical fitness component such as agility, speed, strength, and physiological variables such as blood pressure, heart rate, breathe holding capacity and cardio vascular endurance of offensive and defensive football players at College level. The subject was 60 student of tour college of Gwalior who participated in the 1978-79 intercollegiate tournaments. Data was obtained by administering the test and was statistically analyzed using t- ratio. It was concluded that; (1) the offensive players are faster and have less resting pulse rate and thus have more cardiovascular endurance than a defensive player (2) the defensive and there is no difference between offensive and defensive football players in agility, blood pressure, and breath health holding capacity

There are no differences between children in urban and rural areas regarding to the weight gain and problem of obesity. Children are active physically and highest in physical fitness levels have similar prevalence the lower of obesity. Effect of weight gain and obesity also determined by the socio-demographic and geographical factors that make the differences, whether children in urban and rural areas could also affect to the overweight or obese status that consists of the several factors of energy expenditure between the children. Regular physical activity program associated the better of physical fitness and maintained the body mass index and reduced from weight gain and obesity

Chattopadhyal (2008) has made an attempt to compare the physical of the university level football players and hockey player. 20 players form hockey and 30 players form football were selected. The criterion measures selected for assessment the physical fitness has been resting pulse rate, Harvard and vo2 max and AAHPER fitness test battery and he found out there is significance different only in 30m dash favoring the soccer teams and pull ups favoring hockey team.

Gaurav, *et al.* 2011) investigated the significant differences of selected physical fitness variables between individual games and team games athletes. A group of 30 sportspersons A (Individual games athletes: N=15) and B (Team games athletes=15) of age group 18-25 years were selected from the department of physical education (T), Guru Nanak Dev University, Amritsar, Punjab, India. It was hypothesized that there may be significant differences with regard to selected physical fitness variables among individual and team games athletes. The between-group differences were assessed by using an independent samples t-test. The level of $p \leq 0.01$ was considered significant. An independent samples t-test revealed that individual games athletes had significantly higher muscular strength, agility, power, speed and cardiovascular endurance ($p<0.01$) than team games athletes

Kumar (2012) compared the physical fitness of government and non-government school boys of Chandigarh. On selected variables like Sit and reach, Shuttle Run, Standing Broad Jump, 50 yard Dash and 600 Yard Run/Walk) was conducted on 4000 male students ranging between 13 to 16 years, students in different schools from Government (N=2000) and Non-Government (N=2000) area of Chandigarh. To compare the mean differences between the Government and Non-Government school boys' T-test was computed with the help of SPSS Software. The level of significance was chosen .05. There were significant differences obtained between government and Non-Government school boys. The finding reveals that Non-Government school boys are superior in their physical fitness than their counterparts.

.Arandeep, et.al.2012) studied the Comparison of Health Related Physical Fitness components between urban and rural primary school children. The study investigated the comparison of health related physical fitness components between urban and rural primary school children. The sample was 20 Subjects, 9 years of age 10 of urban primary school children (girls) and 10 subjects of rural primary school children (girls). Five Health related physical fitness components (40 yard dash, standing broad jump, handgrip, sit and reach and 600 yard run/walk) were taken.

The result shows that the static strength of rural children's was significantly higher than the urban school children. But there is no significant difference of speed, explosive strength, flexibility and cardiovascular endurance components between urban and rural primary school children.

Brongder (1973) made a comparison of physical fitness and antibiotic measures of preadolescent maximum American and Anglo American males. Three hundred Mexico- American males between the age of 8 and were selected as subjects. AAHPER youth fitness test physical fitness 13 anthropometrics measurements were taken. They were standing height sitting height, weight shoulder width. The finding revealed a significant difference between the Mexican- American and Anglo-American males in certain physical fitness items were significantly higher for the Mexican-American males.

Dahl (April 1971) administered the AAPER youth fitness test on 400 Negroes and white boys from the same Texas school district. All test data were collected during spring semester of the 1969-70 St school years. It was found that the Negro boys obtained a higher mean score than the white boys on gross body coordination (Soft ball throw) the difference was significant at the 0.05 level of confidence. Negro boys scored significantly higher than white boys on muscular explosiveness (Standing broad Jump). A larger mean difference was obtained at the 01. level of confidence. Holfmann compared the effectiveness of four selected programmed of physical education in the development of physical fitness and general motor ability. The conclusion derived from the study shows that physical fitness and general motor ability of student can be improved by special training by a combination of isometric and isotonic exercised.

Robson et.al. 1978], Ray in his study compared the physical fitness of tribal and urban students in Tripura the administered the (AAHPER) test to 60 Tribes and 60 urban students studying at M.B.B College Agartala their ages ranging from 16-22 years. The mean differences between the physical fitness of urban and tribal significant at 0.05 level of confidence. It was found that urban students were better in pull-ups and softball throw for distance and their superiority was statistically significant at 0.05 level of confidence, but in the remaining five items, i.e., 50mts dash 600mts run/walk sit ups shuttle run and standing broad jump. The difference in performance of neither or confidences.

Cole (1972) conducted a study to investigate the effect of a season of inter- collegiate football participation on selected components of physical fitness. The elements of physical fitness measured were agility, cardio respiratory endurance, muscular strength of the legs and running speed. The subjects were sixteen members of the 1971 Emory University football Team. The pre-season practice and competitive season lasted approximately ten weeks. During that period the subjects were engaged in a maximum of four practice and or game situation per week. The seasons, schedule included thirteen games, plus two pre-season practice games. It was found that participation in inter-collegiate football program in likely to cause adaptations in the circulatory and respiratory system that will result in increased efficiency or improved cardio-respiratory endurance it produced significantly improvement in agility, muscular explosiveness (Standing broad Jump). A larger mean difference was obtained at the 01. Level of confidence. Holfmann compared the effectiveness of four selected programmed of physical education in the development of physical fitness and general motor ability. The conclusion derived from the study shows that physical fitness and general motor ability of student can be improved by special training by a combination of isometric and isotonic exercised.

Pullo, (1992).The game has changed dramatically since those early days on the gridiron. Many people are attracted to the game by the size and the pure athletic ability of the athletes. One of the most significant changes has been the addition of strength and conditioning program to help the athletes obtain superior strength and conditioning status unlike the athletes that are not being trained. College football is big business in these modern times. Many athletic departments spend a tremendous amount of money in order to support this sport. The hope and determination of the athletic department is to receive monetary returns in the success of their football program. Athletes and coaches are always looking for ways to gain an edge on their competition. In the last few decades, this edge has been sought through the strength and conditioning programs. The importance and effectiveness of a strength and conditioning program is a considerable advantage for the athlete, coach, and entire athletic department

Price (1968) conducted a study on the relationship of college football players, strength, speed and agility to the Coach's ranking of ability playing position were combined offensive backs offensive lineman, defensive lineman and into whole group units. The players were further divided as to group-I or group-II. Correlations were the completed between the objective tests scores and coach's subjective evaluation. It was concluded that arm strength and agility and total

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Physical fitness is a set of attributes a person has in regards to a person's ability to perform physical activity that require aerobic fitness, running speed, speed of limb movement, dynamic force, cardiovascular endurance, muscular strength or flexibility and is determined by a combination of regular activity and genetically inherited the ability of body. (Ignacio et al, 2007).

Karanjit Singh (1978) evaluated the physical fitness hockey players sixty-seven male hockey players were selected randomly from the total population of Punjab Stat e to serve as subjects in this study. The subjects were tested in 9 different components of physical fitness, extent flexibility, dynamic flexibility, explosive strength, static strength, dynamic strength, trunk strength, co-ordination, equilibrium and endurance. The data thus collected were statistically analyzed to find out the level hockey players is each element of physical fitness. This study showed dominance of explosive strength and respiratory endurance elements of physical fitness among hockey players.

Boone, et al., 2012 conducted a study on the Physical fitness of elite Belgian football players by player position. The purpose of this study was to gain an insight into the physical and physiological profile of elite Belgian football players with specific regard to the player's position on the field. The sample consisted of 289 adult players from 6 different first division teams. The players were divided into 5 subgroups (goalkeepers, center backs, full backs, midfielders, and strikers) according to their self-reported best position on the field. The subjects performed anaerobic (10-m sprint, 5 3 10-m shuttle run [SR], squat jump [SJ], and countermovement jump [CMJ]) and aerobic (incremental running protocol) laboratory tests. The strikers had Significantly shorter sprinting times (5-, 5- to 10-m time, and SR) compared with the midfielders, center backs, and goalkeepers, whereas the fullbacks were also significantly faster compared with the goalkeepers and the center backs. The goalkeepers and the center back displayed higher jumping heights (total mean SJ = 40.7 6 4.6 cm and CMJ = 43.1 6 4.9 cm) compared with the

other 3 positions, whereas the strikers also jumped higher than the full backs and the midfielders did. Regarding the aerobic performance, both full backs and the midfielders (61.2 6 2.7 and 60.4 6 2.8 ml min21 kg21,respectively) had a higher V_ O2max compared with the strikers, center backs, and goalkeepers (56.8 6 3.1, 55.6 6 3.5, and52.1 6 5.0 ml min21 kg21, respectively). From this study, it could be concluded that players in different positions have different physiological characteristics. The results of this study might provide useful insights for individualized conditional training programs for soccer players. Aside from the predominant technical and tactical skills, a physical profile that is well adjusted to the position on the field might enhance game performance.

Goran S, et al., 1953, Studied that physical and physiological characteristics of elite players. The purpose of this study was to evaluate whether players in different positional roles have a different physical and physiologic profile. For the purpose of this study, physiologic measurements were taken of 270 football players during the precompetitive period of 2005/06 and the precompetitive period of 2006/07. According to the positional roles, players were categorized as defenders (n = 80), midfielders (n = 80), attackers (n = 80), and goalkeepers (n = 30). Analysis of variance (ANOVA) was used to determinate differences between team positions. Goalkeepers are the tallest and the heaviest players in the team. They are also the slowest players in the team when sprinting ability over 10 and 20 meters is required. Attackers were the quickest players in the team when looking at sprint values over 5, 10, and 20 meters.

There were statistically significant differences between attacker and defenders when measuring vertical jump height by squat jump. Goalkeepers were able to perform better on explosive power tests (squat jump and counter movement jump) than players in the field. Midfielders had statistically significant superior values of relative oxygen consumption, maximal heart rate, maximal running speed, and blood lactate than defenders and attackers. The defenders had more body fat than attackers and midfielders (p, 0.05). Coaches are able to use this information to determine which type of profile is needed for a specific position. It is obvious that players in different positions have different physical and physiologic profiles. Experience Coaches can use this information in the process of designing a training program to maximize the fitness development of football players with one purpose only, to achieve success in football.

Arnason *et al.*2003 studied that Physical Fitness, Injuries, and Team Performance in football. A significant relationship was found between team average jump height (countermovement jump and standing jump) and team success (P 0.009 and P 0.012, respectively). The same trend was also found for leg extension power (P 0.097), body composition (% body fat, P 0.07), and the total number of injury days per team (P 0.09). Goalkeepers demonstrated different fitness characteristics from outfield players. They were taller and heavier, more flexible in hip extension and knee flexion, and had higher leg extension power and a lower peak O2 uptake. However, only minor differences were observed between defenders, midfield players, and attackers. Conclusion: Coaches and medical support teams should pay more attention to jump and power training, as well as preventive measures and adequate rehabilitation of previous injuries to increase team success.

General fitness means your body and mind should work properly and your immune system should be strong enough to fight with external and internal disease attacks. (Davic (2005)

Total football Fitness Covers every conditioning component important to soccer - in detail. More importantly, it's a step-by-step guide with one end-goal in mind to help you implement a highly effective, doable fitness plan. (Davic (2005):2)

2.2. How to Use Total football Fitness

2.3.1. Endurance conditioning

Few other games have as large a playing field. No other sport lasts as long without regular rest periods. In today's game players must run virtually non- stop, oftentimes sprinting, for an hour and a half. On average a player can cover as much as eight miles (13km) during a ninety-minute competitive game. Covering that amount of distance, at any intensity, for an hour and a half requires good stamina or endurance. Couple that with the fact that in football much of that movement consists of high-intensity sprints, explosive jumps, running backwards and tough challenges, and high levels of stamina become absolutely crucial! The term "endurance" is very general. When you think of related terms such as "strength endurance", "speed endurance", "cardiovascular endurance", "and aerobic endurance" and so on, it can become confusing.

Just as strength training for football consists of more than simply lifting weights, endurance training involves more than just running laps of the football field. By splitting endurance sessions into those that condition the aerobic energy system and those that condition the

anaerobic energy system you will become a much fitter (and better) player. (Davic , 2005:74:77)

2.3 Testing and Evaluation

When the first year athletes begin the program they are tested, on strength, power, and speed, so the strength and conditioning coaches can evaluate the athlete's fitness levels. The testing and evaluation process of athletes has two main objectives. The first objective is to identify the possibility of any pre-existing physical conditions that might hinder the athlete's performance. This might range from pre-existing injuries to lower than average scores on strength, power, and speed tests. Low strength, power, and speed test scores may show weaknesses in specific areas. The identification of inadequacies in some of these tests could give the strength and conditioning coach the ability to design a program to help the athlete in these specific areas (Arce, 1994).

The second objective is to measure the athlete's sport-specific skills. This measurement will produce information about the level of preparation the athlete has achieved. This information might also render information about the position or positions that might be most suited for the athlete. Once these two objectives are met then the strength and conditioning coach can begin the process of tailoring the program for the athletes (Arce, 1994).

The athletes are evaluated at the beginning to determine their fitness level. The strength and conditioning coach has the responsibility of assessing the level of fitness for every athlete. Once this has been attained then the strength and conditioning coach must be able to coach athletes at different fitness levels. A university's strength and conditioning program can be evaluated on its ability to accommodate all levels of athletes at the same time. There could be athletes that have participated in structured strength programs and also some athletes that have never resistance trained a day in their lives. The goal is to be able to have a program that can accommodate both types of athletes. "It is important to understand that in training football players, the 'pretraining' status of the players will affect the amount of development that can be expected with just short-term training. Thus mistakes in exercise prescription can lead to little or no changes. Individualized and periodized training is vital for development (Kraemer & Gotshalk, 2000, p. 803).

Most strength and conditioning programs test their athletes for the purpose of monitoring the

progress of their athletes. This testing enables the strength and conditioning coaches to evaluate their athletes and their program. The testing process needs to be an integral part of the strength and conditioning program. This process should be in direct concurrence with the design of the program. The evaluation of athletes should not be conducted in a manner in which, the process does not follow the design of the program. This should work together within the training program at the appropriate times to produce the most accurate results (Gambetta, 1998).

2.4 The Age Factor

Many investigators conclude that strength, speed, power, and size are all good indicators on the ability to start. It seems that a few studies are designed to show predictors on the ability to become a starter over a non-starter. The one variable that many of these studies do not take in consideration is the chronological age factor. Many of these studies are not designed to control for age. The literature that is being reviewed does not focus on this issue but age is a very important factor when discussing playing status. Age could possibly play an important role in playing status. Usually, the more physically mature athlete will score higher on power, strength, and speed tests, than the less physically mature athlete. These higher test scores may result in a starting position for the physically more mature athlete. The maturation of an athlete is a concept that might be overlooked in many studies. In a study by Barker and colleagues in 1993, they found that the, "starters were stronger than non-starters; consequently, 1-RM and 1-RM x body mass squat strength may be a determining factor as to which players start. It should be noted that starters were also older than non-starters (20.4 +- 1.0 vs. 19.3 =- 0.9 years). Therefore the strength differences between starters and non-starters may be related to strength training experience and maturation" (Barker et al., 1993, p. 231). Barker and colleagues realized that age is a very important factor in determining playing status. Many athletes are starters because they have been in the program longer than other athletes. The starters may have a greater understanding of the program and this understanding places them with the opportunity to start. Evaluating athletes by testing them on strength, power, speed, and endurance might render conclusions about an athlete's physical maturation. This study, as in other studies, reveals that age is also a factor to be recognized and controlled. Age might not be able to be controlled completely but there needs to be a serious attempt in controlling for age. Older athletes have usually been in a sound strength and conditioning program longer than younger athletes therefore, the older athletes have had more time to reap the benefits of the strength and conditioning program.

2.5 Bodyweight and Performance

There are many studies that are concerned with bodyweight and performance. Many studies direct their attention to the bodyweight issue. Bodyweight, in the sport of football is an interesting issue. The sizes of the players have always been discussed as an important issue. There is a lot of emphasis placed on bodyweight by the coaches and by the players themselves. Coaches want the biggest athletes possible. In 1975, Wickkiser and Kelly researched the topic of body composition. They asked coaches and players what they thought was their "ideal" bodyweight. "It was found that the players perceived their 'ideal weight' to be 9.1 pounds heavier than the ideal weight selected by the investigators. The coach also overestimated the weight by 6.2 pounds. This finding in conjunction with a negative correlation of .69 between percentage of fat and 40-yard dash speed for players evaluated in the present study, would appear to indicate the need for increased emphasis in making recent body compositional findings more accessible to football coaches and players. It appears that far too much emphasis is placed upon total body weight by the coach and the athlete" (Wickkiser & Kelly, 1975, p. 201).

In 1993, Mayhew, J.L., Bemben, M.G., Piper, F.C., Ware, J.S., Rohrs, D.M. & Bemben, D.A. conducted a study to determine the relationship between the seated shot put test and the bench press. The investigators found that the seated shot put test and the bench press "may be influenced by size and muscularity" (1993, p. 95). The same investigators concluded that the most determinant factor between the relationship of the seated shot put test and the bench press is bodyweight. They found that being a larger person may produce higher scores on the seated shot put test - bench press relationship (Mayhew et al., 1993). The investigators were not attempting to make a connection between body size and performance on the field. The investigators were making a connection between two different upper body strength-power tests. The investigators found that body size does play an important role in upper body strength but this finding does little to distinguish between upper body strength and performance on the field. Mayhew et al. even states that, "two important questions are left unanswered by the current research: What is the relationship between bench press power and football performance? And what is the relationship between sports performance and changes in upper body strength and power resulting from periods of heavy training" (Mayhew et al., 1993).

In 1994, Bale, P., Colley, E., Mayhew, J.L., Piper, F.C., & Ware,J.S. conducted a similar study where they wanted to compare strength measures between positions. The investigators reported that the back is relatively stronger than the offensive linemen when bodymass is taken into consideration (Bale et al., 1994). But the linemen have greater strength than the back when comparing absolute strength (Bale et al., 1994). The investigators found that, "the larger player is also stronger when strength is measured by the ability to perform maximum absolute bench press and deadlift exercises" (Bale et al., 1994, p. 388).

In this sense, the studies by Bale et al. and by Mayhew et al. conclude with the same findings. Both of these studies have found that typically larger athletes produce greater absolute strength and power than smaller athletes.

Bodyweight is undoubtedly a very important measure to be evaluated by the coaches. However, how much emphasis should be placed on this measure alone? In a study by McDavid in 1977, the researcher investigated football playing potential tests. Bodyweight as used in a classification index was used to determine the relationship to the test criterion. "The investigator was surprised to note that the classification index item had a negative but non-significant relationship to the test criterion. This may cause a re-evaluation of the importance of size alone in football. It seems obvious that size combined with other attributes contributes to a stellar performer" (McDavid, 1977, p. 101). In these studies that investigate bodyweight, the researchers have distinguished that bodyweight is a predictor for playing status. However, they all also agree that an excess in body fat could be detrimental to the athletes overall performance.

Seiler et al. conducted a study very similar to McDavid and to Wickkiser and Kelly by evaluating forty-one collegiate football players, through an investigation their anaerobic power. This study examined the idea that larger athletes are always the superior performers. The authors used a battery of anaerobic power tests to answer the question. They found that football players are much more powerful than untrained males. It is interesting to note that while the authors almost had the same conclusions as the previous studies, they also conceived that "for linemen to be able to execute the explosive movements necessary at the higher levels of collegiate football, greater efforts should be made to bring their body composition closer in line with other athletes on a football team. A leaner, more explosive lineman may out-perform a heavier but less powerful counterpart if both display the same technical proficiency on the field" (Seiler et al., 1990, p. 14). This study has the same conclusion as McDavid (1977) and Wickkiser & Kelly (1975).

In this sense, the issue of bodyweight has become a very important issue, with regard to its direct

correlation to performance. These studies are in agreement that being a larger athlete may increase performance capabilities in some positions, although, having an excess amount of body fat may be detrimental to the athletes performance (Bale et al., 1994; Mayhew et al., 1993; McDavid, 1977; Seiler et al., 1990;& Wickkiser & Kelly, 1975).

CHAPTER THREE: MATERIALS AND METHODS

3.1. Study Area

This study was being conducted in Dirashe is one of the woredas in the Southern Nations, Nationalities, and Peoples Region (SNNPR) of Ethiopia. Because, Dirashe is part of segen area Zone in the SNNPR, an administrative subdivision which is similar to an autonomous area. It is named for the Dirashe people, whose homelands lie in the eastern part of this woreda.

Dirashe is Located in the Great Rift Valley, Dirashe is bordered on the south by Konso woreda, on the west by the Weito River which separates it from the Debub Omo Zone, on the north by the Gamo Gofa Zone, on the northeast by Lake Chamo, and on the east by Amaro woreda. The administrative center of Dirashe is Gidole. (http://en.wikipedia.org/wiki/ Dirashe_people)

According to a 2004 report, Dirashe had 57 kilometers of all-weather roads and 44 kilometers of dry-weather roads, for an average road density of 66 kilometers per 1000 square kilometers. High points in Dirashe include Mount Gardolla (2545 meters).(http://en.wikipedia.org/wiki/Konso_people)

Also, study was conducted secondly in Konso (also known as Karati) is a town on the Sagan River in southwestern, Ethiopia. The administrative center of the Konso woreda of the Southern Nations, Nationalities, and Peoples Region, about 542 kilometers south of Addis Ababa Minch and 60 from Dirashe, this town has a latitude and longitude of 5°15′N 37°29′E and an elevation of 1650 meters. The city lies at the foot of mount 1053meters (3454ft) above sea level. It is also called Pakawle by some of the neighboring inhabitants. Based on figures from the Central Statistical Agency in 2005, Konso has an estimated total population of 4,593 of whom 2,258 are men and 2,335 are women (central statistical agency (2005) konso population)

3.2. Study Design

Cross-sectional and comparative study design was used, because, the participants of Gardolla city and Konso New York male football players were tested the field test at once.

3.3. Study Population

The total population of this study was all 60 male players from both Gardolla and Konso New York football clubs. In each clubs 30 registered players were included in the competition year of 2014/15 in order to represent Gardolla and Konso New York football clubs in Ethiopian national league respectively.

3.4. Sampling Size and Sample Technique

For this study only 50 male football players were selected (25) players from Konso New York club and (25) players from Gardula football club by using stratified sampling technique according to the designed parameters. Different tests were applied on the subjects tike anthropometric test includes age, sex, weight, height, body mass index (BMI) to know their characteristics and physical fitness tests includes explosive (vertical jump), speed (30 meter sprints), flexibility (sit and reach), endurance (Harvard step up test) and agility (Illinois agility test) tests to assess their physical fitness status.

3.5. Source of Data

The study was used only primary source of data. The primary source of data is the data directly gathered from the study participants, who are male football players of Gardolla and Konso New York respectively through anthropometric test to know the characteristics of the players includes biological age, training age, body weight, body height and body mass index and some selected physical fitness tests to get the objective of research which includes vertical jump, 30 meter speed, Harvard step up, sit and reach, and Illinois agility tests.

3.6. Instruments of Data Collection

Quantitative data was used through the appropriate anthropometric test includes age, sex, weight, height, body mass index (BMI) to know the characteristics of the study participants and physical fitness tests includes explosive (vertical jump), speed (30 meter sprints), flexibility (sit and reach), endurance (Harvard step up test) and agility (Illinois agility test) tests to compare selected physical fitness and anthropometric variables between Gardolla and Konso New York male football players.

3.6.2. Anthropometric measurements

Age: Biological (chronological) age in a year.

Training Age: the age of the players who started training in year.

Body weight: The calibrated digital balanced beam a physician's scale in kilograms (kg) to the nearest 0.1 kg will be used to measure the total body mass of an individual.

Body Height: The calibrated Stadiometer will be used to measure the total body height. The subjects will be measured without shoes.

Body mass index (BMI): This measurement will be taken purposely to calculate the percentage of total body height and weight ratio. It is an indirect measurement of body fat and can be calculated as our weight in kilos divided by the square of our height in meters, in other words kg/m2. According to the WHO classification, a BMI of 30 kg/m2 or more indicates obesity, while the cutoff point for overweight is 25 kg/m2. This is calculated as: weight in (kg) divided by height in (m2) =body mass index (BMI).

3.6.3. Physical fitness tests

Vertical Jump: Laser operated optoelectronic jump height measurement equipment (EMZ-10) was used to measure stationary vertical jump height (Musayev, 2006). The equipment recorded values with 1 cm precision. The vertical jump test involved a 2-footed vertical jump from a stationary position with the intention of attaining maximum height. Subjects were instructed to maintain their hands on the hips and keep the legs straight once they had left the ground. Before

each jump, subjects were verbally encouraged to jump as high Shuffling of feet or steps was not allowed. Consequently, each jump was closely observed to ensure that subjects did not alter their jumping technique to manipulate the time spent in the air.

Figure 1: Vertical jump tests

30 m sprint: This test involves sprinting for 30 meters as fast as possible from a stationary standing start position, with no swinging movements. Since, this is a very short distance to cover, subjects were expected to work at 100% maximum efficiency. Sprint time was measured with an optoelectronic photocell (split time 10 meters). In addition, to the 30 meter sprint time, this test also measured leg reaction time (first step), 10 meter acceleration and flying 20 meter sprint time. Previous studies have shown very good reliability of these sprint distances and this starting position for high speed performance assessment (Duthie *et al*., 2006; Moir *et al*., 2004)

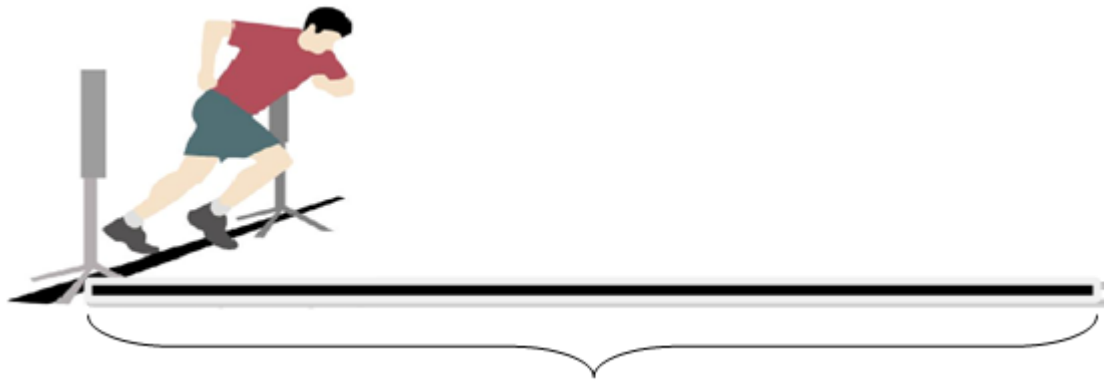


Figure 2: 30 m dash test

Sit and reach test: Subjects sat with the soles of their feet against the box, with their hips flexed to about 90^0 to assume an upright sitting position. Subjects are instructed to flex their hip joints and vertebral column (with possible contributions from shoulder joint flexion and scapular elevation) to reach forward as far as possible. A centimeter scale will be printed on the top surface of the box.

Figure 3: 30 m dash test

Harvard Step Test: The objective of this test is to monitor the development of the athlete's cardiovascular system. This test requires the athlete to step up and down off a gym bench to 5 minutes at a rate 30 steps/minute. The athlete steps up and down onto a standard gym bench once every two seconds for five minutes (150 steps). Then, the athlete's heart rate is measured one, two and three minutes after finishing the test. This test is suitable active and sedentary athletes but not for individuals where the test would be contraindicated (www.brianmac.co.uk).

Figure 4: Harvard step test

Illinois Agility test: The objective of the Illinois agility run test is to monitor the development of the athlete's agility. Agility is an important component of many team sports, though it is not always tested, and is often difficult to interpret results. The Illinois Agility Test (Getchell, 1979)

is a commonly used test of agility in sports, and as such there are many norms available. The average running score for males are between 18.1-16.2 seconds and females are between 21.7-18.0 seconds (www.topendsports.com).

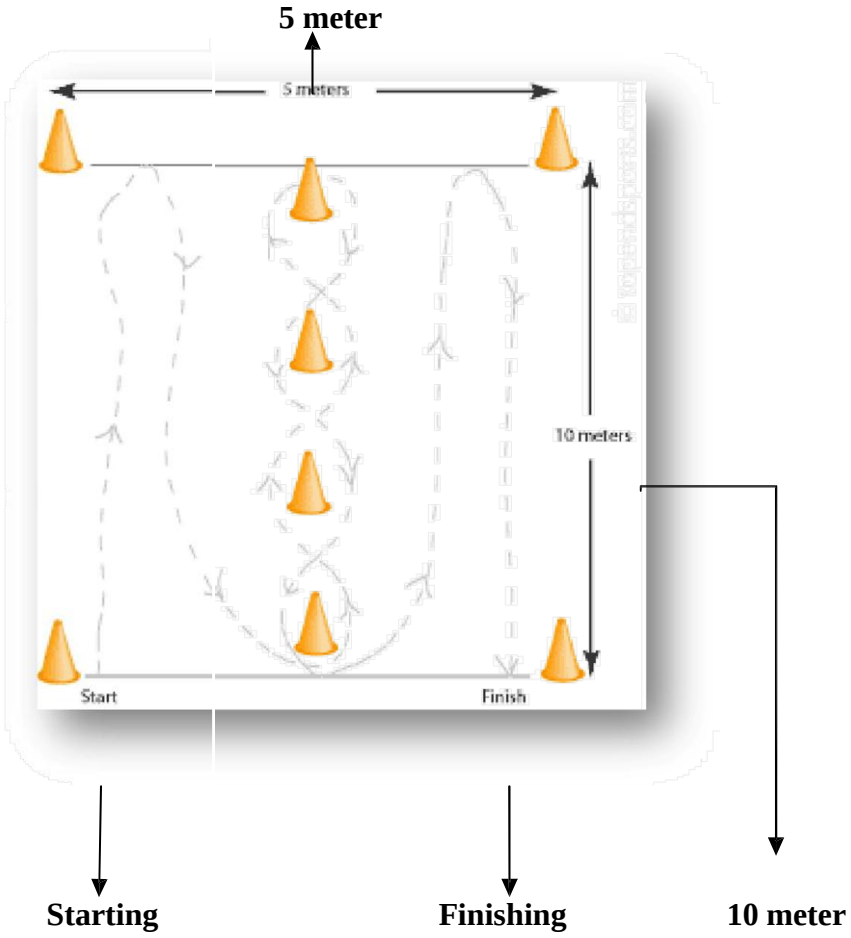


Figure 5 Illinois agility test

3.7. Method of Data Analysis

Descriptive statistics was used for each of the parameters. The results were presented as mean and standard deviation which shows the average results of each variable in both clubs. Independent T-tests was used to compare the results between the two clubs, to find out the significant difference in selected physical fitness variables. The significance level was set at $P<0.05$ for each of the statistical tests. The SPSS 20 software was used for the statistical analysis.

3.8. Ethical Issue and Code of Conduct

This research was conducted as per the rules, policies, and research ethics of Jimma University. Permission was obtained from the director of both clubs. The purpose of the study was explained to the study participants in order to get informed verbal consent. The privacy of the participants was guaranteed in risk of any harm. A written consent form was ready to each participant to obtain their agreement. Then, a written consent was received from each study subjects and anyone who will not be willing to take part in the study was full right to do so.

CHAPTER FOUR: RESULT AND DISCUSSION

An attempt was made to examine the comparative difference between Konso New York male football player and Gardula male football players. The data were assessed through quantitative data obtained from the players. Three types of analysis were proposed for this study. Before the main analysis results the biographical data of the players in order to provide a description of the sample from which data was collected; descriptive information on age, training age weight, and by the means, and standard deviations are described. Second, comparison of selected physical fitness variables of Konso New York male football player's and Gardula male football players were compared with normative data. Third, to determine any significant differences between Konso New York male football players and Gardula football players on selected physical fitness variables; Independent t-tests and test of null hypotheses were determined.

4.1. Characteristics of the study participants

Table4. 1 demographic characteristics of respondents

Team	Mean±SD					
	N	Age	Tran-age	Height	Weight	BMI
Konso new York	25	21.36 ± 1.57	3.84 ± 0.68	1.72 ± 0.54	66.64 ± 3.84	22.35 ± 1.18
Gardula	25	22.16 ± 1.67	4.24 ± 1.39	1.72 ±0 .05	68.32 ± 2.99	22.90± .96

The above table: 4.1. Describes players' characteristic of Konso New York and Gardula City Football clubs. The current performance of Konso New York football club in the national league of southern region is placed in 10^{th} position out of 11 team and Gardula football club placed in 4^{th} position out of 11 team. The numbers of players included in both teams were 25 in Konso New York and 25 in Gardula City football clubs. The mean age of Konso New York players were 21.36 ± 1.57 and Gardula City players' were 22.16 ± 1.67. This showed that both teams' were included the same age level of players. The mean training age of Konso New York players were 3.84 ± 0.68 and Gardula City players were 4.24 ± 1.39. This showed that both teams' were included players who have the same training experience. The mean BMI of Konso New York players were 22.35 ± 1.18 kg/m^2 and Gardula City players were 22.90 ± 0.96

kg/m^2. This showed that both teams' player had an ideal body composition. The results showed that there is no significant difference in players' characteristics.

Table4. 2 Normative/ Standard Data For Male For The Age Of 20-25

NO	Physical Fitness Components test	Excellent	Good	Average	Fair	Poor
1	Sit and reach (cm)	+17 to +27	+6 to +16	0 to +5	-8 to -1	-20 to -9
2	Illinois agility test (secs)	<15.9	15.9-16.7	16.8-17.6	17.7-18.8	>18.8
3	30m dash (secs)	<4	4 - 4.2	4.3-4.4	4.5-4.6	>4.6
4	Harvard step(secs)	>90	80-90	65-79	55-64	<55
5	Vertical jump (cm)	>65	60	55	50	<46

Source: Khetmalis (2012) Development and standardization of a test battery for selection of Football players International Interdisciplinary Research Journal, Volume 2 pp 154-156

4.1.2. COMPARISONS OF SELECTED PHYSICAL FITNESS VARIABLE OF KONSO NEW YORK AND GARDULA WITH NORMATIVE DATA

Table4. 3 Comparison Of Harvard Step Test Values With Konso New York And Gardul Normative Data

Activity	Description	Clubs			
		Konso New York		Gardula	
		Number	Percentage	Number	Percentage
Harvard Step Test	Excellent	-		-	
	Above average	1	4%	3	12%
	Average	3	12%	9	36%
	Below average	10	40%	7	28%
	Poor	11	44%	6	24%
Total		25	100%	25	100%

Table 4.3 Establishing a comparison between the results obtained from Harvard Step test of Konso New York and Gardul with normative data using the percentage, it was observed that 1(4%) of KonsoNew York players are in the scale of Above average, 3(12%) are in scale of average, 10(40%) are in below average scale, and 11(44%) are in scale of poor. while 3(12%) of their counterpart or Gardula players are in the scale of Above average,9(36%) are in

average scale, 7(28%) are in below average scale 6(24%) are in scale of poor. This revealed that when comparing the average values obtained with the reference values provided by the normative data, Gardula are better than their Konso New York counterpart with normative data of Harvard Step Test.

Figure 4. 1 Graphical Representation Of Harvard Step Test values

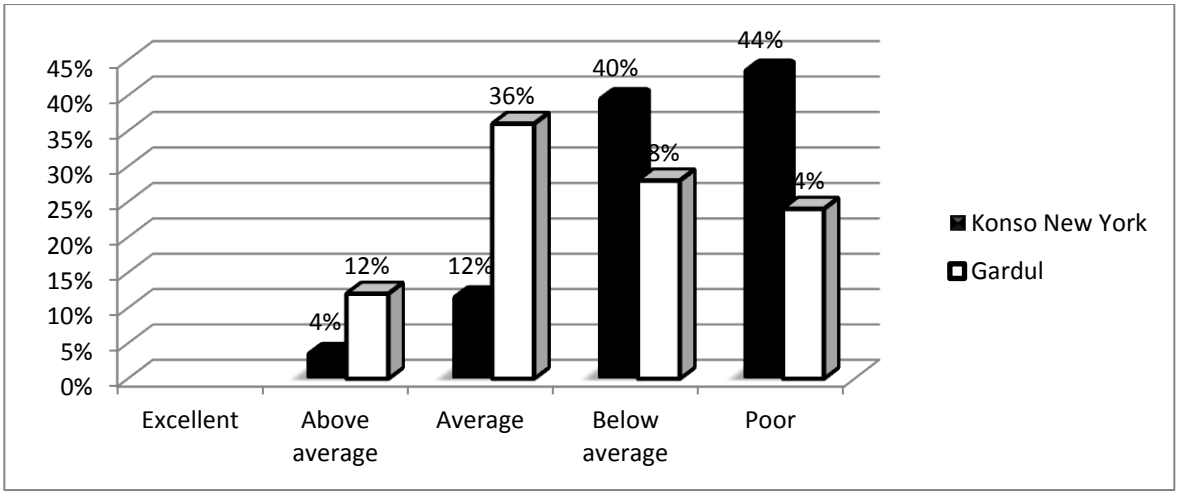


Table4. 4 Comparison Of 30 Meter Speed Test Values With Konso New York And Gardul Normative Data

Activity	Description	Clubs			
		Konso New York		Gardula	
		Number	Percentage	Number	Percentage
30 meter speed test	Excellent	-		8	32%
	Above average	9	36%	9	36%
	Average	6	24%	1	4%
	Below average	2	8%	5	20%
	Poor	8	32%	2	8%
Total		25	100%	25	100%

Table 4.4 Establishing a comparison between the results obtained from 30 meter speed test of Konso New York and Gardul with normative data using the percentage, it was observed that 9(36%) of KonsoNew York players are in the scale of Above average, 6(24%) are in scale of average, 2(8%) are in below average scale, and 8(32%) are in scale of poor. while 8(32%) of their counterpart or Gardula players are in the scale of Excellent,9(36%) are in above average

scale, 1(4%) are in average scale 5(20%) are in scale of below average and 2(8%) are in scale of poor. This revealed that when comparing the average values obtained with the reference values provided by the normative data, Konso New York are less than their Gardula counterpart with normative data of 30 meter speed test.

Figure 4.2 Graphical Representation Of 30 Meter Speed Test Values

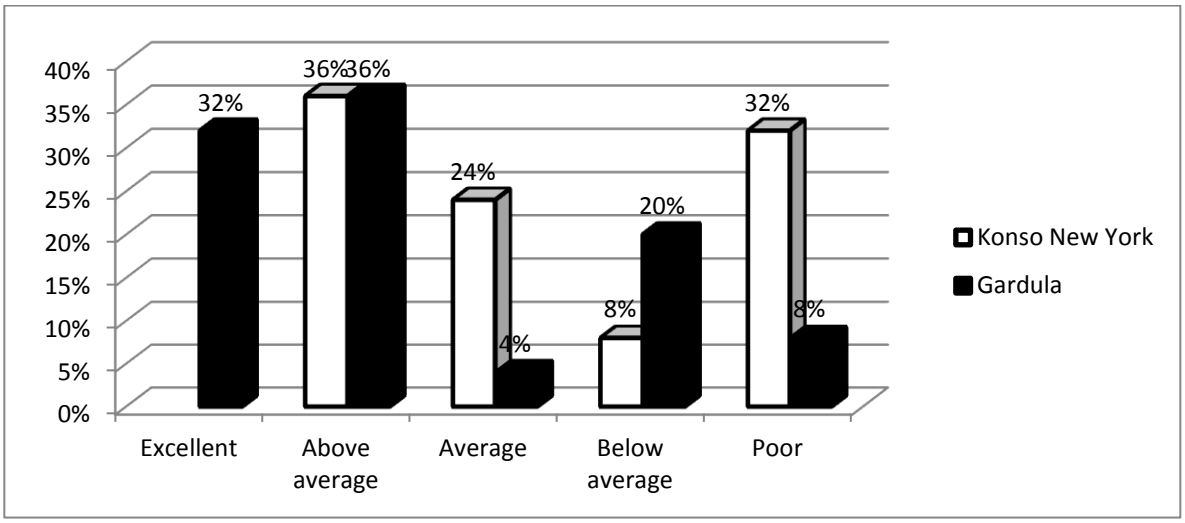


Table4. 5 Comparison Of Illinois Agility Test Values With Konso New York And Gardul Normative Data

Activity	Description	Clubs			
		Konso New York		Gardula	
		Number	Percentage	Number	Percentage
Illinois Agility Test	Excellent	9	36%	23	92%
	Above average	7	28%	2	8%
	Average	7	28%	-	-
	Below average	1	4%	-	-
	Poor	1	4%	-	-
Total		25	100%	25	100%

Table 5 Establishing a comparison between the results obtained from Illinois Agility test of Konso New York and Gardul with normative data using the percentage, it was observed that 9(36%) of KonsoNew York players are in the scale of Excellent, 7(28%) are in scale of Above average, 7(28%) are in average scale, and 1(4%) are in scale of below average and1(4%) are in scale of poor. while 23(92%) of their counterpart or Gardula players are in the scale of Excellent and 2(8%) are in above average scale. This revealed that when comparing the

average values obtained with the reference values provided by the normative data, Konso New York are less than their Gardula counterpart with normative data of Illinois Agility test.

Figure 4.3 Graphical Representation Of Illinois Agility Test Values

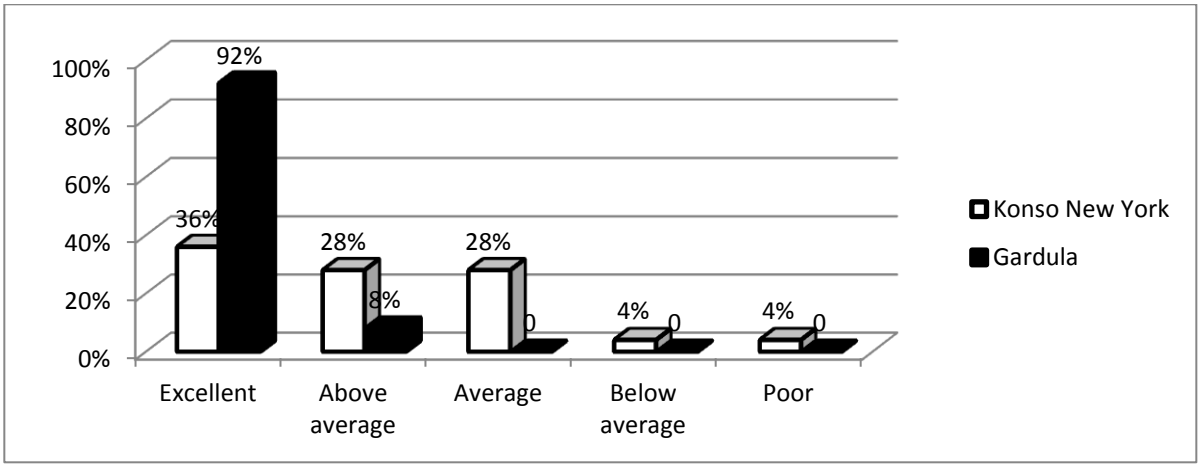


Table4. 6 Comparison Of Sit And Reach Test Values With Konso New York And Gardul Normative Data

Activity	Description	Clubs			
		Konso New York		Gardula	
		Number	Percentage	Number	Percentage
sit and reach test	Excellent	8	32%	10	40%
	Above average	14	56%	13	52%
	Average	3	12%	2	8%
	Below average	-	-	-	-
	Poor	-	-	-	-
Total		25	100%	25	100%

Table 6 Establishing a comparison between the results obtained from sit and reach test of Konso New York and Gardul with normative data using the percentage, it was observed that 8(32%) of KonsoNew York players are in the scale of Excellent, 14(56%) are in scale of Above average and 3(12%) are in average scale. while 10(40%) of their counterpart or Gardula players are in the scale of Excellent and 13(52%) are in above average scale and 2(8%) are in average scale. This revealed that when comparing the average values obtained with the reference values provided by the normative data, Gardula are better than their Konso New York counterpart with normative data of sit and reach test.

Figure4.4 Graphical Representation Of Sit And Reach Test Values

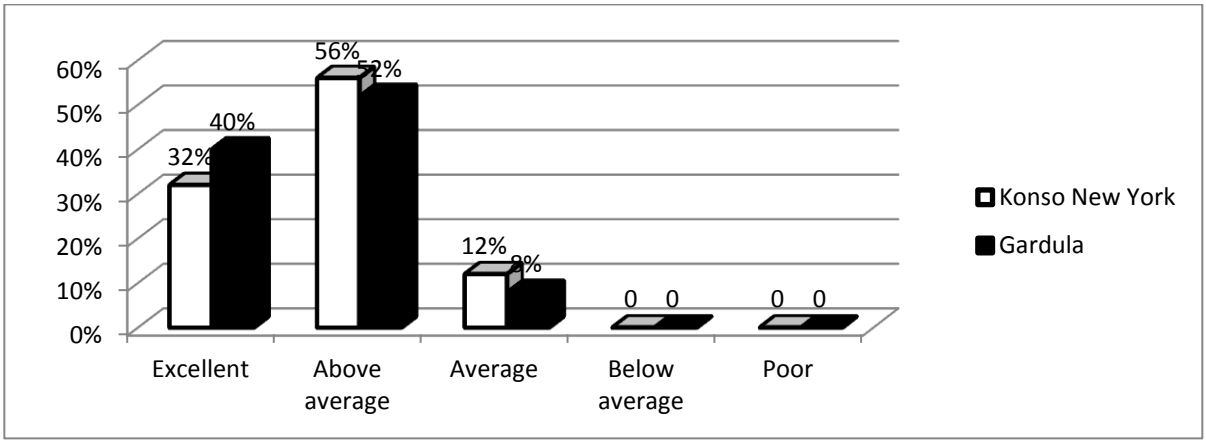
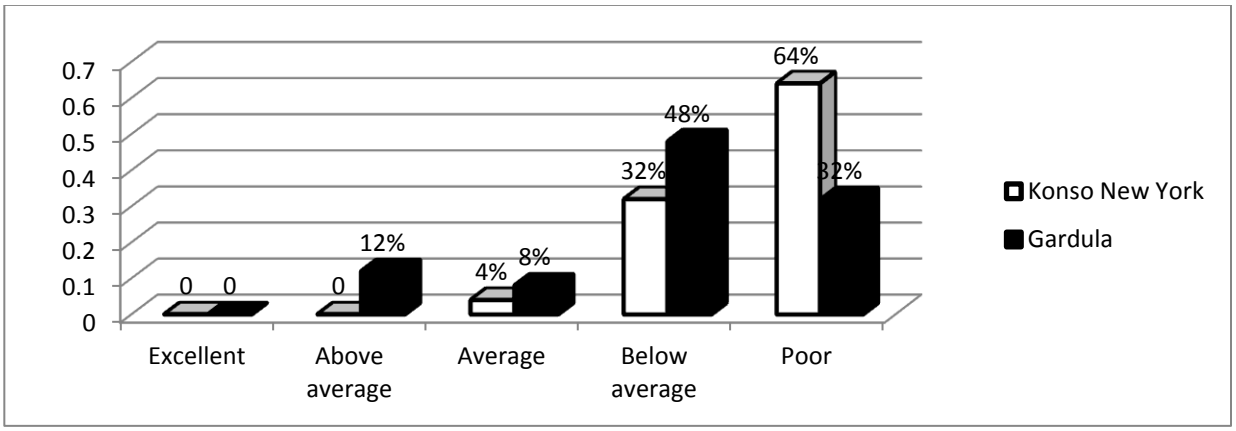


Table4. 7 Comparison Of Vertical Jump Test Values With Konso New York And Gardul Normative Data

Activity	Description	Clubs			
		Konso New York		Gardula	
		Number	Percentage	Number	Percentage
vertical jump test	Excellent	-	-	-	
	Above average	-	-	3	12%
	Average	1	4%	2	8%
	Below average	8	32%	12	48%
	Poor	16	64%	8	32%
Total		25	100%	25	100%

Table 7 Establishing a comparison between the results obtained from vertical jump test of Konso New York and Gardul with normative data using the percentage, it was observed that 1(4%) of KonsoNew York players are in the scale of average, 8(32%) are in scale of below average and 16(64%) are in scale of poor. while 3(12%) of their counterpart or Gardula players are in the scale of Above average,8(32%) are in average scale, 12(48%) are in below average scale and 8(32%) are in scale of poor. This revealed that when comparing the average values obtained with the reference values provided by the normative data, Gardula are better than their Konso New York counterpart with normative data of vertical jump test.

Figure4. 5 Graphical Representation Of Vertical Jump Test Values



4.2. Players Performance Tests

Table 8 Comparison between Konso New York and Gardula City Football clubs Performance tests

Team	Variables	Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	Mean	SD	Mean Diff.	Sig. (2-tailed)	Lower	Upper
Konso New York	**Harvard Step Test**	4.897	0.032	2.497	56.66	8.85	7.45*	0.016	13.44	1.45
Gardula				2.497	64.11	12.00				
Konso New York	**30m Speed Test**	0.531	0.470	2.574	4.45	0.40	0.27*	0.013	0.05	0.48
Gardula				2.574	4.17	0.33				
Konso New York	**Illinos Agility Test**	8.960	0.004	4.401	16.32	1.27	1.19*	0.000	0.65	1.74
Gardula				4.401	15.12	0.47				
Konso New York	**sit and reach test**	0.032	0.858	0.573	12.90	6.89	1.12	0.569	5.08	2.82
Gardula				0.573	14.03	7.02				
Konso New York	**vertical jump test**	1.150	0.289	2.715	44.44	5.41	4.80*	0.009	8.35	1.24

A careful observation of the above table 4.8 showed that the Mean ± S.D values of Harvard Step Tests of Konso New York football players were score 56.66 ± 8.85 seconds and Gardula

football players were score 64.11 ± 12.00 seconds. According to the development and standardization of a test battery for selection of football players (Khetmalis, 2012), Gardula football players score a better mean difference with 7.45 seconds than Konso New York football clubs. Previous research indicates that lower body strength also impacts on post-match fatigue. Therefore, it is likely that other physical qualities, such as muscular strength, may influence the fatigue response seen following intensified competition, (Rich D Johnston *et al*. 2015). The findings of this study are in agreement with other study. That a team with superior fitness would not have a definite advantage when playing an opponent with less physically fit players(Scandinavian *2004*) The current performance of Konso New York football club in the national league of southern region is placed in 10^{th} position out of 11 team and Gardula football club placed in 4^{th} position out of 11 team. Gardula are better than their Konso New York on muscular endurance.

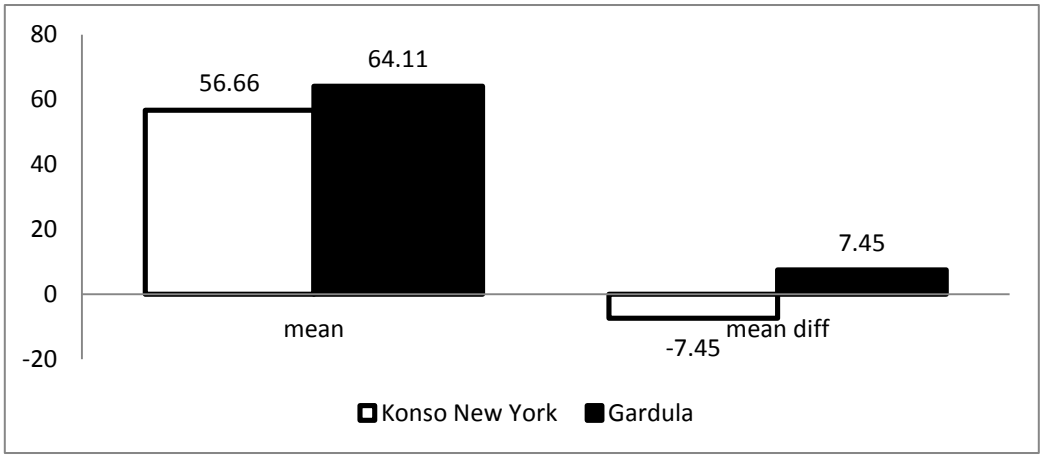


FIGURE4. 6 COMPARISON OF HARVARD STEP TESTS BETWEEN KONSO NEW YORK AND GARDULA CITY FOOTBALL CLUBS

According to the above table 4.8 the Mean ± S.D values of 30 meter speed Tests of Konso New York football players were score 4.45 ± 0.40 seconds and Gardula football players were score 4.17 ± 0.33 seconds. According to the development and standardization of a test battery for selection of football players (Khetmalis, 2012), Gardula football players score better mean difference with 0.27 seconds than Konso New York football clubs. This showed that statistically significant mean deference is at the $P < 0.05$. In general, the results show that Gardula was heavier and taller than Konso players and performed better in vertical jumps and sprint tests. The results support by, Malina *et al*. (2005) found that body mass index was the most significant predictor in 30-m sprint performance and body height was the significant

predictor of vertical jump performance. Moreover, players in the present study with higher BMI values performed better in vertical jumps and 30-m sprints.

.This showed that, the coach of Gardula football team properly give training for the players and follow their performance. The research that is available indicates that strength and conditioning programs have shown to improve strength, power, speed, and vertical jump measures. The increases in these variables have been proven to improve athletic performances (Stone *et al.*, 2000). According to Smythe, 1995, all this points to the need for comprehensive planning, programming and implementation of training process, to a final product, a football player who has a highly developed motor ability such as speed. Many strength and conditioning coaches believe that strength and power measures and sprinting performance are strongly linked (Blazevich, 1997a, 1997b; Johnson, 1996; Luchtenbern, 1990; Sheppard, 2003, 2004),

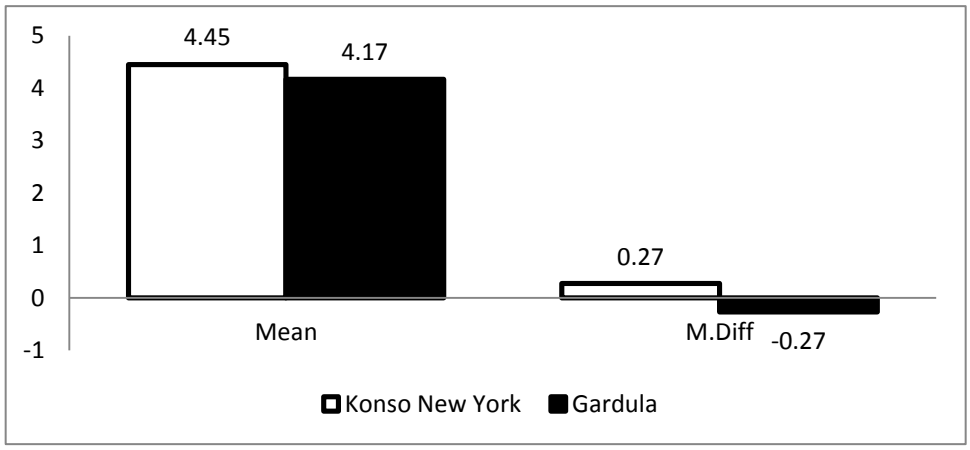


Figure4. 7 Comparison of 30m speed Tests between Konso New York and Gardula City Football clubs

The above table 4.8 also showed that the Mean ± S.D values in Illinois Agility Test Konso New York football players were score 16.32 ± 1.27 seconds and Gardula football players were score 15.12 ± 0.47 seconds. According to the development and standardization of a test battery for selection of football players (Khetmalis, 2012), Gardula football players score better mean difference with 1.19 seconds than Konso New York football clubs. This showed that statistically highly significant mean deference at the $P < 0.05$. Speed is also associated with the agility that incorporates the components of velocity and it is considered as changing movement direction but with maintaining the achieved speed (Smythe, 1995). Many strength and conditioning coaches believe that strength and power measures and sprinting performance are strongly linked (Blazevich, 1997a, 1997b; Johnson, 1996; Luchtenbern, 1990; Sheppard,

2003,2004), All this points to the need for comprehensive planning, programming and implementation of training process, to a final product, a football player who has a highly developed motor ability such as speed.

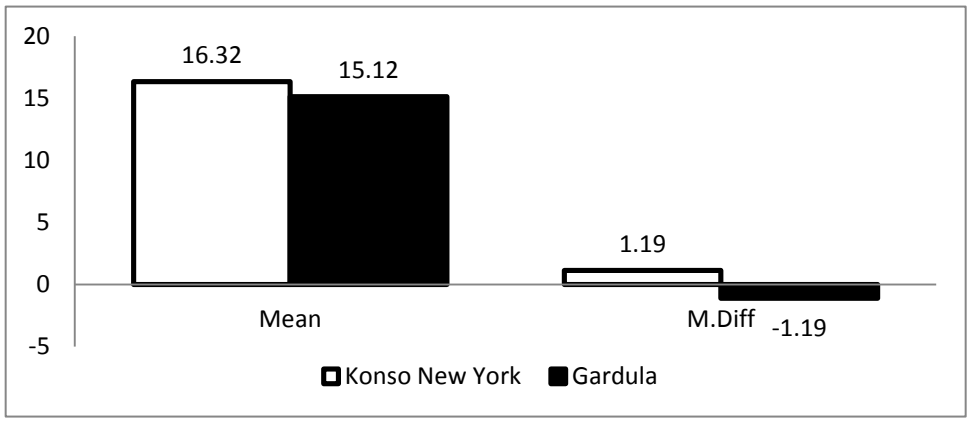


Figure4. 8 Comparison of Illinos Agility Tests between Konso New York and Gardula City Football clubs

A careful observation of the above table 4.8 showed that the Mean ± S.D values of Sit and Reach Test of Konso New York football players were score 12.90 ± 6.89 cm and Gardula football players were score 14.03 ± 7.02cm. According to the development and standardization of a test battery for selection of football players (Khetmalis, 2012), Gardula football players score better mean difference with 1.12cm than Konso New York football clubs, but there is no statistically significant mean deference at the P > 0.05.

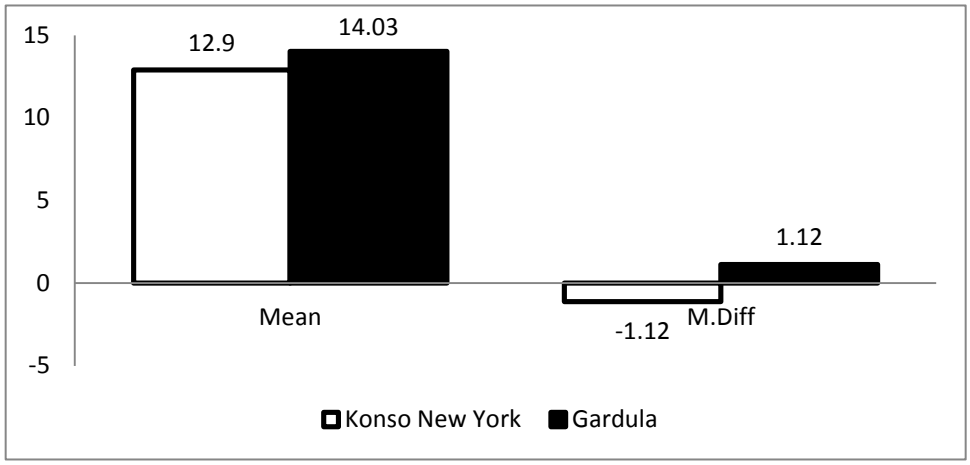


Figure 4.9Comparison of sit and reach Tests between Konso New York and Gardula City Football clubs

As stated in the above table 4.8 the Mean ± S.D values of Vertical jump Test of Konso New York football players were score 44.44 ± 5.41cm and Gardula football players were score 49.24 ± 6.98cm. The findings of this study are in agreement with other study, Malina *et al*. (2005) found that body mass index is the most significant predictor in 30-m sprint performance and body height was the significant predictor of vertical jump performance. Moreover, players in the present study with higher BMI values performed better in vertical jumps and 30-m sprints.

High score better strength (Anil Kumar 2014). It means that Gardula city players have better strength of physical fitness than the Konso New York players, also According to the development and standardization of a test battery for selection of football players (Khetmalis, 2012), Gardula football players score better mean + difference with 4.80cm than Konso New York football clubs. This showed that statistically significant mean deference at the $P < 0.05$. This showed that, the coach of Gardula football team properly give training for the players and follow their performance.

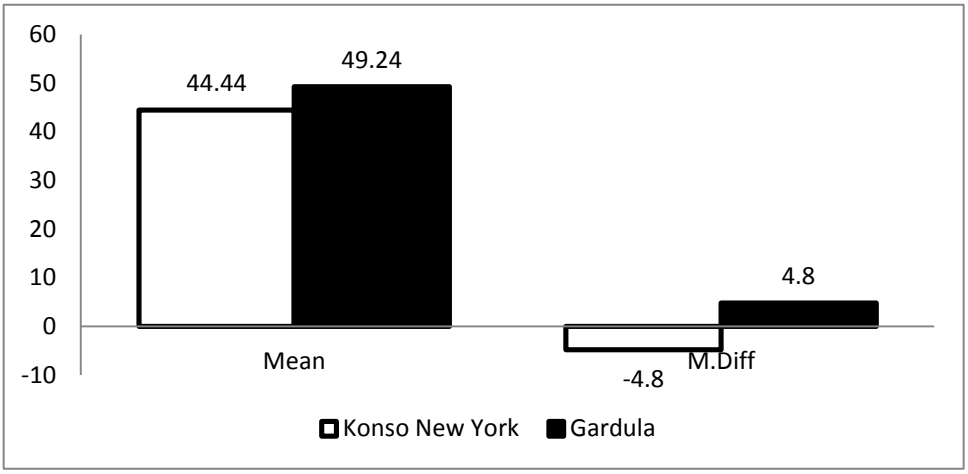


Figure4. 10 Comparison of vertical jump tests between Konso New York and Gardula City Football clubs

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

The primary purpose of this study was to identify the significance difference between Konso New York and Gardula cite male football players on selected physical fitness variables. To this end, this chapter deals with summary of the major finding of the study, the conclusion drawn from the finding and recommendation forwarded.

5.1 SUMMARY

As stated above, the main purpose of the study was to compare the selected physical fitness variables among Konso New York and Gardula city male football players in order achieve the objective of the study, the following basic research questions were raised and answered. 1. What is the current physical fitness and anthropometric status of Gardolla and Konso New York male football player's? 2. Is there may significant difference between Gardolla and Konso New York male football player's physical fitness and anthropometric variables? 3. What will be the current status of both clubs when compared to international norms of physical fitness and anthropometric variables? With respect to this the specific objective of the current studies were to investigate the physical fitness level of Konso New York and Gardula city players to measure the agility between Konso New York and Gardula city football players, to examine the speed between Konso New York and Gardula football players to measure the explosive power between Konso New York and Gardula city football players, to examine the flexibility among Konso New York and Gardula city football players. to find out the endurance between Konso New York and Gardula city football players, to help the coach in order to find the best players with in selected physical fitness variables and develop norm or standard for the future for the team

In this study, a comparative study method was employed with the assumption that will help to gather sufficient information at a given time. In addition, research based review of related literature was used to secure additional information on the subject under study.

The required data were collected from football players. The available sampling techniques were used (purposive) to select the samples Konso New York and Gardolla.

Combinations of different test batteries were employed as data gathering tool in the study. All collected data were organized, analyzed and interpreted by using different statistical methods (mean, standard deviations and independent t test to compare Konso New York and Gardolla city football players on selected physical fitness variables. Generally, as a result of analysis made, the following finding of the study were summarized

- Gardolla city are better than Konso New York counterpart with normative data of agility, endurance, explosive power, and speed and flexibility.
- There is statistically significance difference among Konso New York and Garrdula city on agility, endurance, explosive power, and speed test but there is no significance difference between Konso New York and Gardolla on flexibility.

5.2 CONCLUSION

The result of the study reveals that Gardolla city football players were betters than the Konso New York football players in agility. There is no significance difference between Konso New York and Gardolla city in flexibility. The result of the study reveals that Gardolla city players were better than Konso New York players in endurance. The result of the study reveals that Gardolla city were betters than the Konso New York players in explosive power. The result of the study reveals that Gardolla city players were betters than the Konso New york players in speed.

5.3 RECOMMENDATIONS

Based on finding the study and conclusion drawn, the following recommendations are forwarded.

- It is useful to prepare training for both Konso New York and Gardolla in the different age level of Football players for improving their physical fitness and keeping them to maintain their performances.
- It is advised to Coaches to include the scientific Physical Fitness programs in their Schedules during training for all players to enhance their fitness level at the national league level.
- Future research should needs to examine methods for increasing physical fitness levels among this population group and identify cut-points related to health outcomes for all fitness components.

- The research that is available indicates that strength and conditioning programs have shown to improve strength, power, speed, and vertical jump measures. The increases in these variables have been proven to improve athletic performances.

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Appendix 1

VERTICAL JUMP

Purpose

Measure leg strength and power, particularly of quadriceps and calves. Leg strength is a critical predictor of many essential functions.

Equipment Required

- Vertical flat wall or blackboard
- Measuring tape
- Chalk or bucket of water for marking wall
- Broom or cloth to clear markings

Technique

- Stand flat footed, feet parallel to wall.
- Reach as high as possible with hand closest to wall, leaving mark on wall.
- Assessor records height of standing reach.
- Crouch and jump as high as possible.
- Mark the wall with chalk or wet fingers at the peak of the leap with the fingertips of outstretched hand closest to the wall.

- Use arms to propel body upwards however steps are not allowed.
- Land the jump with soft knees to cushion impact.



Critical Elements

- Initial reach should be greatest possible, at maximum stretch, with foot against wall and arm and body fully extended.

- Applicant may crouch to jump, but May not take any steps.

Timing

- No time limit involved.
- Two jumps per applicant allowed.
- The better of two attempts is scored.

Point Scoring

- The distance between the recorded ‘standing’ mark and the recorded ‘jumping’ mark is used to determine vertical jump height achieved.
- Jump height achieved is recorded.
- Points are allocated according to the Vertical Jump Point Scale.

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Vertical jump test (cm) standard					
Vertical jump (cm)	Excellent	Good	Average	Fair	Poor
	>65	60	55	50	<46

Appendix 2:- 30 Meter sprint test

This test involves the athlete to run as fast as possible from a starting position to the maximum speed the athlete is capable of.

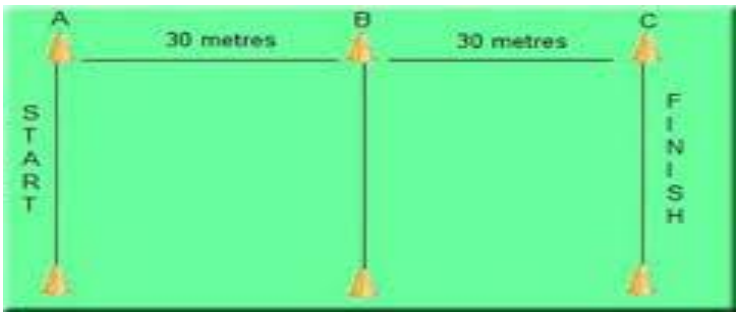
How the test in conducted:

1) The athlete does a warm up that involves running and then stenches to reduce the chance of damaging the muscles
2) The 30 meter distance is then measured out for the athlete to run
3) The athlete then starts running as fast as possible from start to finish of the 30 meter distance.
4) The stop watch is started when the athlete crosses the start line and the stop watch is stopped when the line finish line is crossed.
5) The test is repeated 3 times to gain a more accurate result
6) The fastest time recorded is used to assess the athlete performance normative data:

Sprint or speed tests can be performed over varyin+g distances, depending on the factors being tested and the relevance to the sport. Sprinting start

Purpose: The aim of this test is to determine acceleration and speed.

Equipment required: measuring tape or marked track, stopwatch or timing gates, cone markers, flat and clear surface of at least 50 meters.



Procedure: The test involves running a single maximum sprint over 30 meters, with the time recorded. A thorough warm up should be given, including some practice starts and accelerations. Start from a stationary position, with one foot in front of the other. The front foot must be on or behind the starting line.

This 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 (such as keeping low, driving hard with the arms and legs) and encouraged to continue running hard through the finish line.

Results: Two trials are allowed, and the best time is recorded to the nearest 2 decimal places. The timing starts from the first movement (if using a stopwatch) or when the timing system is triggered, and finishes when the chest crosses the finish line and/or the finishing timing gate is triggered.

target population: soccer other sports in which speed over a similar distance is important.

Standard

30 Meter sprint test					
30 Meter sprint test)	Excellent r	Good	Average	Fair r	Poor
	<4	4 - 4.2	4.3-4.4	4.5-4.6	>4.6

Appendix 3:- SIT AND REACH

Purpose

This is a cold test conducted to measure the day to day flexibility of muscles and tendons in the back of the legs and trunk. Applicants are not permitted to warm up or stretch before the test.

Equipment Required

- Sit and Reach Box

Technique

- Sit on floor and place both feet (without shoes) against the sit and reach box.
- Straighten legs and sit up tall.
- Stretch arms out with one hand on top of the other, right and left index fingers are to start and

remain level with each other throughout the stretch.

 Assessor places hands softly on the quadriceps muscles, just above the knee caps to ensure applicants knees do not bend.

Critical Elements

 with the elbows and knees locked, one hand on top of the other, slowly and smoothly flex the trunk and hips and stretch as far as possible, sliding both hands, evenly along the box.

- Jerking and double movements are not permitted.
- Applicants must hold their furthest possible reach for 3 seconds.
- Legs must remain straight.
- The best score of two attempts is recorded.
- Points are allocated from the scale below.

Timing

- No time limit involved.
- Two attempts allowed.
- The better of two attempts is recorded.

Point Scoring

- The distance reached is used to determine flexibility.
- Distance reached in centimeters is recorded.
- Points are allocated according to the Sit and Reach Point Scale.
- Example: a 15 cm reach scores 2 points.

Standard

Sit And Reach Test Standard					
Sit and reach test	Excellent r	Good	Averag e	Fair r	Poor

(secs)	+17 to +27	+6 to +16	0 to +5	-8 to -1	-20 to -9

Appendix 4:- Harvard Step Test

The Harvard Step test is a test of aerobic fitness, developed by Brouha et al. (1943) in the Harvard Fatigue Laboratories during WWII. The features of this test are that it is simple to conduct and requires minimal equipment. There are many other variations of step tests too.

Equipment required: step or platform 20 inches / 50.8 cm high, stopwatch, metronome or cadence tape.

Procedure: The athlete steps up and down on the platform at a rate of 30 steps per minute (every two seconds) for 5 minutes or until exhaustion. Exhaustion is defined as when the athlete cannot maintain the stepping rate for 15 seconds. The athlete immediately sits down on completion of the test, and the total number of heart beats is counted between 1 to 1.5 minutes after finishing (see measuring heart rate). This is the only measure required if using the short form of the test. If the

long form of the test is being conducted, there is an additional heart rate measures at between 2 to 2.5 minutes, and between 3 to 3.5 minutes. See some videos of Harvard Step tests being performed.

Scoring: the Fitness Index score is determined by the following equations. For example, if the total test time was 300 seconds (if completed the whole 5 minutes), and the number of heart beats between 1-1.5 minutes was 90, between 2-2.5 it was 80 and between 3-3.5 it was 70, then the long form Fitness Index score would be: (100 x 300) / (240 x 2) = 62.5. Note: you are using the total number of heart beats in the 30 second period, not the rate (beats per minute) during that time.

Fitness Index (short form) = (100 x test duration in seconds) divided by (5.5 x pulse count between 1 and 1.5 minutes).

Fitness Index (long form) = (100 x test duration in seconds) divided by (2 x sum of heart beats in the recovery periods).

Standard

Harvard Step Test standard					
Harvard Step Test (secs)	Excellent	Good	Average	Fair r	Poor
	<15.9	15.9-16.7	16.8-17.6	17.7-18.8	>18.8

Appendix 5:- ILLINOIS AGILITY TEST

Purpose

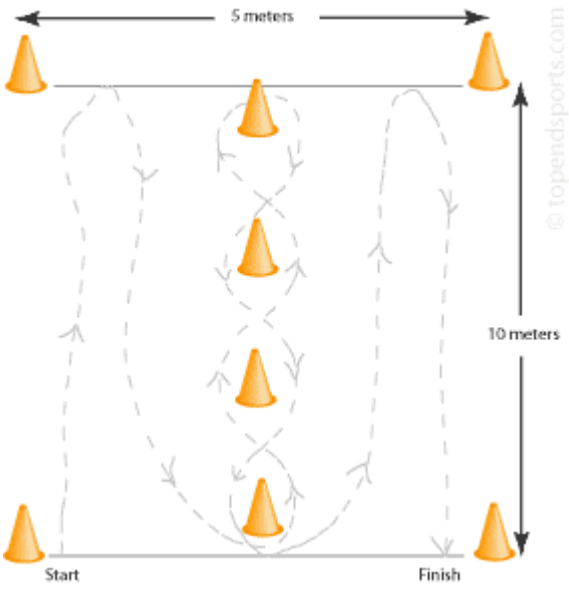
Measure ability to start, stop and move the body quickly in different directions.

Equipment

Required

- 8 x 300mm cones
- Stopwatch digital (sports supply)
- Measuring tape fiberglass 30 meters
- Flat non slip surface

The course measures 10m in length and 5m in width. 4 cones are used to mark the start, finish and the two turning points. Another four cones are placed down the centre at equal distance apart. Each cone in the center is spaced 3.3 meters apart.



Techni

- Lay on stomach facing the start line.
- Top of head is level with the start line and legs are extended out behind the body.
- Flex arms and place hands next to the shoulders.
- On the ‘start’ command, get to feet as quickly as possible and sprint to the far line, touching it with one foot then returning to the start line.
- Weave in and out of the row of cones and back again towards the start line.
- Lastly sprint once more to the far line, touching with the foot and sprint back to the finish line.

Critical Elements

- The run is not counted if the participant: strays outside the boundary of the rectangle, fails to touch or cross the line at either end, touches a marker, fails to follow the prescribed course.
- Participant must be warmed up followed by stretching exercises concentrating on lower limb

Timing

- Measure in hundredths of a second e.g.; 18.45 seconds
- Timing starts the second the assessor says go and stops as participant crosses finish line.
- Two attempts allowed.
- The fastest speed achieved is scored.

Point Scoring

- Only correct runs are timed.
- Two attempts are allowed best out of two times is scored.
- Points are allocated according to the Illinois Agility Test Point Scale.

Illinois Agility Test standard					
Illinois agility test (secs)	Excellent r	Good	Average	Fair r	Poor
	<15.9	15.9-16.7	16.8-17.6	17.7-18.8	>18.8

APPENDIX 6

WORK SHEET ON SELECTED PHYSICAL FITNESS TESTS FOR FOOTBALL PLAYERS

I. Individual back ground

1. Full Name…….

2. Club …….

3. Age ……..height (M) …….weight (Kg) ……BMI……..

4. Experience ……

II. Actual performance on test batteries

No	Tests	1st try	2nd try	3rd try Be	Best
1	Harvard step test (in minute)				
2	Sit and reach(in cm)				
3	30m Dash (in second)				
4	Vertical jump(in cm)				
5	Illinois agility test (in second)				