JIMMA UNIVERSITY

SPORT SCIENCE ACADEMY

DEPARTMENT OF SPORT SCIENCE

EFFECT OF TWELVE WEEKS CORE STRENGTH TRAINING ON AGILITY, POWER AND SPEED OF WACHALE WORADE MUKATURI TOWN U-17 MALE FOOTBALL PROJECT TRAINEES, NORTH SHOA ZONE.

BY

SHEMELES MAKONNEN

JUNE, 2024

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A THESIS SUBMITTED TO JIMMA UNIVERSITY SPORT ACADEMY DEPARTMENT OF SPORT SCIENCE FOR PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE MASTERS DEGREE IN FFOOTBALL COACHING

ADVISOR: MR. WONDEMAGEGNE DEMISSIE (PhD)

CO ADVISOR: MEKOYE MENGESHA (MSc)

JUNE, 2016/24

JIMMA, ETHIOPIA

APPROVAL SHEET

JIMMA UNIVERSITY

SPORT ACADEMY

DEPARTMENT OF SPORT SCIENCE

The research thesis entitled as "**effect of 12 weeks core strength training on agility, power and speed of wachale woreda Mukaturi town u-17 male football project trainees, north shoa zone.**" was approved by the department of sport science for partial fulfillment of the Degree of masters in **Football coaching.**

Shemeles Makonnen	_____	_____
Name of Student	Signature	Date
Approved by:		
Wondimagegn Demissie (Phd)	_____	_____
Name of Advisor	Signature	Date
Mekoye Mengesha (M.Sc.)	_____	_____
Name of Co-advisor	Signature	Date
Assistant Professor **Samson W,**	_____	_____
Name of Internal Examiner	Signature	Date
Girma Tilahun PhD	_____	_____
Name of External Examiner	Signature	Date
_____	_____	_____
Name of chairperson	Signature	Date

DECLARATION

I Mr. **Shameless Mekonne**n hereby declare and affirm that the thesis entitled "**effect of 12 weeks core strength training on agility, power and speed of wachale woreda Mukaturi town u-17 male football project trainees, north shoa zone."** is my own work conducted under supervision of **Wondimagegn Demise (PhD).** I have followed all ethical principle of scholarship in the preparation, data collection, data analysis, and completion of this thesis .I have adequately cited and referenced all the original sources.

Shameless Mekonnen _____ _____

Name of Student Signature Date

Department: _____

Sport science Academy: _____

As a supervisor, **Wondimagegn Demissie (Phd),** he conducted the entitled **effect of 12 weeks core strength training on agility, power and speed of wachale woreda Mukaturi town u-17 male football project trainees, north shoa zone"** is faithful record of original research carried out by Abdeta Birhanu under my guidance and supervision. Therefore, I recommend that it be accepted as fulfilling the thesis requirements.

Wondimagegn Demissie (Phd) _____ _____

Name of Advisor Signature Date

BIOGRAPHICAL SKETCH

Author Shemeles Makonnen was born on September 12, 1972 G.C. He attended Basaso Primary School for his primary and lower education. He joined Open Teacher Education College in 1996 2020 and graduated from TTI on September 10, 1997. He attended primary school (1-8) in Abbichu and Nya'a districts of North Shoa region. He graduated with a Diploma in Physical Development and Fitness in 2001. In 2010 t he obtained his Bachelor of Science degree in physical Education with many subject Sport science on August 27/12/2010 G.C. The author has been teaching in Abbichu Primary Schools for fourteen consecutive years and then changed his job in 2011 and worked in the Education Office for six (6) months before being assigned to the Youth and Sports Office on 30/07/2011 He joined Jimma University in 2015 E.C and continued his Master's Degree in Football Coaching. of Science in Sport science football coaching continued.

ACKNOWLEDGEMENTS

I would like to express my deepest gratitude to my major advisor Dr. Wandemagne Demissie Assistant Professor in the department of sport science, and to my co-advisor Mr.Mekoya Mengesha in the department of sport science for their constructive comments, supervision, encouragement and professional guidance throughout this study. I would like to thank all Jimma University Sport Science Department staff members for their great supports and positivity in helping students. My heartfelt thanks go to my staffs and Wachale Woreda and Abbichu town sport office workers who were a source of immense moral and also technical assistance during the testing sessions in order to make this thesis successful.

ACRONYEMS AND ABBREVIATIONS

ANOVA: Analysis of Variance

CG: Control Group

DTT: During Training Test

EG: Experimental Group

FIFA: Fédération Internationale de Football Association

PF: Physical Fitness

PoT: Post-test

SD: Standard Deviation

U-17: Under Seventy

VJ: Vertical Jump

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Abstract

This study designed to investigate the selected effects of 12 weeks core strength training on agility, Power, and speed of male trainees of the u-17 men football project Wachale Woreda Mukaturi Town North Shoa Zone. Only one (3.33%) of the trainees said the training was low and cannot provide good strength, 4 (13.33%) of the respondents said the training was satisfactory, 33.33% of the trainees said the training was good and 50% of the respondents said the training was very good which can provide the good strength and physical fitness. From this result one can observe more than 66.66% had no physical problem so they can perform the physical exercise designed for this study very well even if some of the trainees had (34.33%) had some physical problem. In study 15 u-17 athletes for experimental groups and also 15 for control groups were purposively selected. Paired t-test was used to analyze the data and SPSS version 26 was used for analysis purpose. Agility, power and Speed were had statistically significant difference before and after the experiment since the p-values for the three testes were less than the level of significance, so the concerned bodies should give attention for the significant parameters in order to improve the ability of the trainees at the study area.

Key Words*: Agility, Speed, Power, T-test Experimental Group and Control Group.*

CHAPTER ONE

1. INTRODUCTION

1.1 Back ground of the study

Quick strength, leaps, runs, tackles, and loco-motor motions are all part of the game of football. Not only is it a high-level skill sport, but it also requires both anaerobic and aerobic strength, as well as skill-related physical fitness such as power, speed, agility, and strength (Little and Williams, 2003; Afyon et al. (2017)).

A successful game of soccer is started by the ability to accelerate, and sprinting is a necessary component of enactment in many sports (Little and Williams, 2003; Murphy et al. (2003). Football is also thought of at the highest level as having bursts of intense activity interspersed with rest periods (Bradley et al.). (2009); Turner and others. (2011); Oberacker and associates. 2012).

According to Sheppard and Young (2006) and Young & Farrow (2006), agility is another motor performance factor that is defined as the ability to change position in response to stimuli that are stimulating to the body. As stated by Leona Bidaurrazaga and colleagues. 2015: As a consequence of speed, agility is a crucial football attribute.

Combination of strength, balance, and coordination. Since agility accounts for approximately 11% of player activity, the ability to deliver fast-paced, variable activities can impact soccer execution (Little and Williams, 2003). (Mirkov et al. 2008; Mohr and associates. 2008; Turner and others. 2011) and a player can play 50 turns on average during a match (Wisloeff et al. 1998; Turner and others. 2011). Thus, it is necessary to assess a football player's agility (Turner et al. 2011). Mirkov and associates (2008) as well as Turner et al. (2011) investigated the validity of field tests tailored to football and attested that agility testing may be the most suitable indicator of overall soccer playacting.

In order to achieve a level of explosive power in soccer that enables players to reach their peak jump height, qualified football players' leg muscles must possess this essential component. Anyway, it doesn't take long for a lot of exciting developments. As such, targeted resistance

training is necessary to maximize muscle strength from the main lower limb muscle bunches for explosive power (Taheri et al. (2014)).

Being able to run quickly (Little and Williams, 2003; Jullien et al. Ronnestad and associates (2008). , 2008), in addition to the height and distance jumped (Ronnestad et al. , 2008), which are thought to be a measure of power production, have shown a positive correlation with football performance. It is vital to gauge a player's capacity to produce force, accelerate, enhance their stretch-shortening cycle (SSC), and/or employ reactive strength. In general, one's capacity to apply the greatest amount of force and strength determines their power (Stone et al. (2003)).

Strength training is aimed at improving the players' specific activities, as football is considered a high-intensity, discontinuous sport that demands advanced levels of physical fitness specifically related to the ability to perform powerful activities. As stated by Arrones Suarez et al. (2019), in order to extend fat-free mass, bone mineral substance, and bone mineral density at both whole-body and regional levels throughout the competitive season in young male professional football players, a strength training program added to football-related training sessions may be a good option. Football players who are of the highest caliber should be able to participate in practice or a game 24 hours after a high-caliber training session, as intense resistance training has little effect on skill performance in the sport (Draganidis et al. 2013). A young athlete's potential to increase their athletic and sporting performance can be enhanced by an integrator training program based on resistance training and motor skill development, while also lowering the risk of an injury related to sports. Resistance training may be especially important for young athletes nowadays, as they are more likely to focus on one sport from an early age rather than developing their general physical well-being and sport-specific skills (Faigenbaum et al. 2016).

Resistance training and plyometric preparation may be necessary for a coach to succeed with their athletes. Thus, agility, speed, and explosive power are the necessary components of physical fitness and desirable athletic performance that are essential in most sports, particularly football (Zearei et al. 2013). Even so, core strength training in particular (Afyon et al. lower limbs (Chelly et al., 2017; Afyon, 2019; Dinç and Ergin, 2019; Vigneshwaran, 2017). (2009); Jullien and others. 2008; Styles and others. 2016,

the upper torso (Tricoli et al. as well as 12-week total body core strength training (Christou et al., 2005; Channell & Barfield, 2008) , 2006) have demonstrated a favorable impact on certain physical abilities of football players: however, other research has not suggested a comparable effect, leaving it unclear. As a result, it becomes vital to assess the relationship between total body strength and motor performance. Coaches, athletes, specialists, and academics may find this information useful in understanding how different aspects of muscle fitness affect motor tasks. With that in mind, the purpose of this investigation was to identify the football players' potential for speed using the sprinting speed test. A standardized stopwatch is used to record the time of the run in seconds, and players sprint as fast as possible within a designated 30-meter zone. The participants took the exam twice more, and the best score was noted to look into how a 12-week core strength training program affected their physical performance.

One of the most popular and difficult sports in the world, soccer requires players to possess a wide range of technical, tactical, and physical abilities. Players are rarely able to play the game with good technique if they are not physically fit (Chapman . et al, 2007). Players in this sport must possess a high degree of technical and tactical proficiency in addition to a significant level of physical fitness in order to achieve the best results possible (Sevensson and Drust, 2005). In the context of soccer, fitness refers to a variety of personal qualities that are a combination of numerous skills and abilities. By definition, this type of competence encompasses psychomotor, physiological, and physical aspects (Reilly & Williams, 2003). Players with greater physical prowess experience less fatigue during games played at the same intensity, which leads to a decrease in technical performance (Jukic et al., 2011). The requirement for players in modern football to possess high physical abilities has become one of the key components of training programs, whether they are daily, weekly, seasonal, or yearly.

Looking at players today and in the past, we find that their physical abilities have grown in a remarkable way Hanafi (1994). Players' abilities have increased significantly in the world in recent years. High levels of power, speed, and agility are necessary for players in competitive soccer to execute explosive moves like heading, shooting, sprinting, and dribbling (Stolen, et al. 2005). The physical demands of the different football codes played around the world are similar,

which highlights the significance of fitness testing (Pyne . etal, 2014). Football players' primary prerequisite for effective motion performance is their technical readiness. More specifically, technical preparation makes it possible for a soccer player to utilize all of their motor potential. We must emphasize that a soccer player's technical development cannot continue without concurrent work on the maintenance and development of those motor skills, which are essential to the game. The international DFB coaching course manual (2008:23) states that modern training is a highly complex process that goes beyond simpleexercise. Training needs to bedistinguished from straightforward physical labor by having a more focused training goal. The development and enhancement of players' training practices is essential to the growth and expansion of the youth football training project program. Additionally, a player's tactical, physical, psychological, and technical advancements are fundamental.

1.2. Statement of the Problem

In recent times, there has been a notable surge in the abilities of players worldwide. Comparing players from the past to the present reveals a remarkable physical growth in their skill set Hanafi (1994). To execute explosive moves like heading, shooting, sprinting, and dribbling, soccer players in competition need to possess exceptional power, speed, and agility (Stolen, et al. (2005). There is a lot of physical demand in the different football codes played around the world, which makes fitness testing crucial (Pyne . etal, 2014). The primary requirement for effective motion performance in football players is technical preparation. More specifically, technical preparation allows a soccer player to play at their highest level of motor potential. We must emphasize that without concurrent work on the development and maintenance of those motor skills that are essential for the game, a soccer player cannot make further progress in terms of technical improvement. The international DFB coaching course manual (2008:23) states that training is now a highly sophisticated process rather than just exercise. A more focused training aim is what sets training apart from straightforward physical labor. The growth and development of players' training practices is essential to the program's development and expansion for young football players. Additionally, fundamentals include a player's technical, tactical, physical, and psychological development.

Football players' development of strength, power, and speed (Getasew, 2018) is consistent with the finding of Mesfin (2014) that plyometric training improved specific physical fitness variables such as speed, agility, and explosive power as well as soccer skill .s. Based on the researcher's observations and perceptions, Wachale Woreda mukaturi Town football project trainees are unable to execute football skills effectively and efficiently. These players' poor football skill performance ability and lack of physical fitness stem from the aforementioned facts.

Trainers appeared to have paid less attention to the fitness of their trainees when the researcher observed the training situations. Only the ball contact drill receives more attention from them during the training session. These factors contribute to players' physical fitness limitations, which have an impact on their ability to perform football skills. As previously mentioned, plyometric exercise increases joint awareness, boosts power and agility, and improves athletes' soccer skill performances.

The elements of a power and agility training program have been analyzed as being crucial to the improvement of football players' physical performance. A few studies have been conducted on football players' increased power and agility. The researchers' expertise was observed during the preliminary studies in a one-year coaching role with Wachale Woreda mukaturi town football project trainees, including those trainees.

It is evident that participation in a training program is essential, but knowing which training program to use also improves football players' agility and power performance. This aids the researcher in observing and evaluating the Wachale Woreda mukaturi town football project trainees during their competition in Oromia. The trainees struggled with leg power during jumps, agility in various game situations, and agility to develop this physical fitness performance. Plyometric exercises were thus offered by this study as a means of helping football players improve their power and agility. Nevertheless, there hasn't been any research done in Wachale Woreda Mukaturi Town in the field of my study. This demonstration demonstrates that Wachale Woreda Mukaturi Town's U-17 male football trainees had plyometric exercise issues. Despite this issue, no research has been done specifically on it as of yet. Because of this, the researcher was inspired to close these gaps in knowledge by methodically examining how plyometric exercise affected the power and agility of

U-17 male football project trainees. Plyometric training was not used by the coaches to improve the players' physical fitness levels during the competition phases, based on my observations and experience.

As the background section made clear, the youth football development program is the most crucial period for players to acquire new abilities and information that will help them perform at their best. The FIFA youth football manual states that developing young players is crucial for the future of national and international football teams. This is because different players on a team have different needs and characteristics depending on when

they are developed into elite players. Training at the grassroots level by age bracket according to the traits of players at various ages is the best method for producing elite players. The goal of successful football teams and initiatives is to produce elite players in the necessary quantity and caliber (US youth soccer player development model, 2012). The youth football project involves extremely complex sport training.

An extended and ongoing learning process, according to the FIFA Coaching Manual (2004:2). The process's goal is to maximize a player's athletic performance based on the well-balanced development of their entire personality. However, when properly explained, youth football projects actually produce quality players who are capable of playing at the international level and suitable for modern football. The program's training challenges must be assessed and maintained to a level that can produce great, competent players capable of playing modern football, but nations like Ethiopia are still struggling to develop their leagues and national team standards. A suitable and alluring setting for testing masculine identities is youth football projects, which serve as the scene of symbolic struggles between representatives of "rival" working class communities, both nationally and at the local level.

The youth football project's practice is crucial for fostering the parents' involvement in the game and their attitude toward it. The youth football project development program has to be given more priority in order to raise the bar for their league and national team. A well-run, contemporary football project program must investigate areas such as inadequately trained labor in the area, equipment corruption of the project's leadership, facilities, and equipment, parental responsibility for the coach's coaching style, and a

dearth of research projects. For athletes to succeed, skill-related physical fitness is crucial, and it also ensures that trainees have the endurance needed to improve the physical components of their technical skill-related physical fitness. The execution of technical and tactical tasks necessary for sports-specific movements is the emphasis of skill-related fitness domains (Christopher Richs 2015). According to the background information provided, physical activity has a significant impact on trainees' skill-related fitness components. For this reason, the purpose of this study was to evaluate the impact of a 12-week core strength training program combined with specific physical exercises on the agility, power, and speed of U-17 male football project trainees from Wachale Worade Mukaturi Town.

1. HO: The selected skill-related physical exercises do not affect the agility of U-17 male player's from Wachale Woreda Mukaturi Town. Project interns

HA; choosing physical exercises that effect the agility of u-17 male players in wachale Woreda Mukaturi Town project interns

2.HO: The selected physical exercises do not affect the speed of U-17 male soccer project students in Wachale Woreda Mukaturi Town

HA; The choice of physical exercises affects the speed of wachale Woreda Mukaturi Town u-17 men's soccer project interns.

3.HO**:** Selected skill-related physical exercise was affect the power of Wachale Woreda Mukaturi Town U-17 male football Project trainees.

HA**;** Choosing physical exercises that affect the strength of Wachale Woreda Mukuturi Town u-17 male football project interns.

1.3. Objective of the study

1.3.1. General Objective

The general objective of this study was to investigate the selected effects of 12 weeks core strength training on agility, Power, and speed of male trainees of the u-17 men football project Wachale Woreda Mukaturi Town North Shoa Zone

1.3.2. Specific objectives

1. Identify the effect of 12 weeks core strength training selected skill-related physical exercises on improving the agility of trainees of the Wachale Woreda Mukatur Town U-17 Men's Football Project trainees.

2. To measure the effect of 12 weeks core strength training on the speed of Wachale Woreda Mukaturi town u-17 male football project trainees.

3. To assess the effect of 12 weeks core strength training on the power of Wachale Woreda Mukaturi town U-17 male football project trainees

1.4. Significance of the Study

Achieving the objective of the study and through the provision of answer to the research hypothesis; this study was expected to have several significance, some of which include:

It provides direct information to the Wachale Woreda Mukaturi Town Municipal Sports Commission, coach, and all concerned bodies' 12 weeks core strength training on the impact of selecting physical exercises on skill-related physical factors.

• It guides stakeholders for better knowledge and understanding of the effects of 12 weeks core strength training physical exercises on several skill-related components of fitness.

• This serves as a source for other researchers to conduct further and more detailed research on similar topics.

1.5. Scope of the study

The scope of my research is on the capital city of Addis Ababa, 78 km away. The study was conducted at one of the U-17 Men's Soccer Project camps, located in Mukaturi town, Wachalee Woreda in North Shoa Zone. I will divide this into EG (N=15) and CG (N=15). The study was conducted on 2016/24 E.C. It is to be done.

This research is best focused primarily on the effects of primary strength training on soccer players, which are clear, specific, precise, and controllable, and selected skill-related factors. The study is limited to the following parameters: •Environment - This study is limited to 15 years of

age and children under 16 years of age, gender of players, and number of male players only This was carried out targeting the following people.

• This study is limited to the performance components of strength, speed, and movement, and only the vertical long jump test is selected for

• physical fitness.Only 20m to 35m runs are selected for speed measurement in this test.

• The Illinois Agility Test and T-test are used to measure agility.This test is selected for this test

1.6. Limitations of the Study

Since the researcher was an independent scholar and investigator, he was unable to locate any funding, support, or relevant documents. These considerations led to the following limitations in this study:

- Insufficient funds, references, time, and staff; the study was unable to control for underlying characteristics like illness, fatigue, or injury.
  • The individuals' unpredictable effort during the exams could have an impact on the study's findings
- The effort at the subjects in performing the tests was uncontrollable which might influence the results at the study.
- Uncontrollably high subject effort during test administration may have an impact on study outcomes.
- The findings might not apply to other soccer team projects in the area or nation; they might just relate to male U-17 soccer players.
- The study's analysis and presentation only included descriptive statistics and the findings of paired sample t-test.

1.7. Operational Definitions of Key Terms

 Agility can be defined as the ability to maintain and control a correct body position during rapid whole-body movement with change of velocity or direction (Sheppard and Young, 2006). **Core strength**; “The ability of a muscle to produce force through contractile force caused by intra-abdominal pressure”(Faries & Greenwood,2007).

Football;- a game in which two teams of 11 players, A.(Mangan, and Lamartine P. DaCosta. London: Cass, 2001. 139-158). (International Bibliography of Football History), using any part of their bodies except their hands and arms, try to maneuver the ball into the opposing team's goal. Only the goalkeeper is permitted to handle the ball and may do so only within the penalty area surrounding the goal. The team that scores more goals wins (FIFA). (Miller et al., n.d.)

 Polymeric training:-polymeric training refers to movement which utilize the regime of muscular work known as stretch shortening cycle (SSC) (De Nuccioet.al.1991) .

 Power the ability to exert a maximal force in as short a time as possible, as in accelerating, jumping and throwing implements.(Corbin et.al 1994) .

Program;- Schedule of participation in activities for training from 15 to 16 years old.

Project;- The project aims to create maximum talent development opportunities for young people through training and developing their talent in football, in the junior and senior cadet categories.

Train;- Training involves teaching or developing in oneself or others skills and knowledge related to specific useful skills. (Váczi et al., 2013b)

CHAPTER TWO

2. REVIEW OF RELATED LITERATURE

This review of relevant literature is structured to include previous research findings and the ways in which different scholars have examined the impact of core strength training on soccer players' speed and agility. It will look at the following topics: the history of football in Ethiopia, the history of football in Africa, the history of football worldwide, general characteristics of the U-17 age group, the anatomy and physiology of the core, the core muscles, and the relationship between core strength and velocity stability. core physiology, core strength vs. stability; the physiological demands of soccer; strength training; strength training for soccer players; core strength training; the principles of core strength training; soccer and the core; skill- related fitness components; and the chosen skill-related fitness tests (power tests of SLJT and VJT, speed tests of 20- and 35-meter dashes; agility tests of Illinois agility and T-Test).

2.1 The History of World Football

There is no clear history of football's origins, although numerous authors have attempted to connect the game's history to their own nations by citing specific examples. There have been various ways to play it for thousands of years. Among sporting activities, it is reputed to be the oldest. Its existence even predates the birth of Christ, according to evidence. Soccer's historical roots date back thousands of years. It is said by some that soccer's history dates back to the year 2500.

B. C) Kickball, or tsu-chu, is a Chinese game. Egypt circa2000 B.C. C), and, 600 Japanese B. C), The development and dissemination of the game have also been closely associated with the Ancient Greeks and Romans. Emperor Claudius's Roman legions (A. D 43) are credited with bringing the game to Britain, where it was incorporated into regional games and continued to grow and change throughout the industrial revolution and middle ages. The first Football Association (English Football Association) was founded in London in October 1863, and the game's regulations were established. It was then that the modern game of soccer took on its well-known shape and identity.

In 1871 and 1872, EFA held knock-out competitions. The purpose of the laws was to keep rugby and association football (soccer) apart. In place of the kick-in, other events were added: the thrown (1863), offside (1866), corner kick (1872), whistle (1878), penalty kick (1891), and a variety of substitutions. Additionally, referees (1874) were added. All football clubs in Europe and the majority of Latin American countries played the sport at the start of the modern Olympic program in 1896. Since the Federation International De Football Association (FIFA) was founded in Paris on, modern soccer has truly become an international sport.

Robert Gyron, a Frenchman, on May 21, 1904, on behalf of about 170 countries. In 1900, soccer was added to the Olympic Games in Paris. The world cup was held in Montevideo in 1930, with Uruguay emerging victorious against Argentina. The African Federation and the Union of European Football Association (UEFA) were established in the first part of the 1950s to offer international competitions at the regional level. The FIFA World Football Cup, which is organized every four years, continues to be the most well-organized competition that attracts the interest of people of all ages in the modern world.

2.2. The History of African Football

From Morocco all the way to South Africa, football is followed with fervor throughout Africa. When there's a big football match in Africa, you can tell because the place you're visiting will literally come to a complete stop. In Africa, it's common to witness young boys engaging in football games wherever they go. Occasionally, plastic bags and string are used to create the ball.

Sometimes it will have crumpled paper wrapped around it. There is going to be a game as long as it can be kicked. While the exact origins of football in Africa are unknown, it is known that Ethiopia, Egypt, and Sudan were the first countries to found the African Football Federation. African association football is governed and administered by the Confederation of African Football (CAF). CAF stands for the. national football associations of Africa, runs continental, national club competitions, and controls the prize money, regulations, and media rights to those competition. CAF is one of the biggest of six continental confederations of FIFA. Although it is just three years younger than the UEFA,CAF still has a long way to go in order to improve the quality of the national and local competitions. CAF has been given 5 slots out of the 32 available

since the 1998 FIFA world cup in France.The top 5 African teams are ;Nigeria (The Super Eagles).

Egypt (The Pharaohs), Senegal (The Lions of Taranga), Cameroon (The Indomitable Lions), and Morocco (The Lions of Atlas). Like Brazil and Argentina, Nigeria and Cameroon have a long-standing rivalry in football. Egypt (The Pharaohs), Senegal (The Lions of Taranga), Cameroon (The Indomitable Lions), and Morocco (The Lions of Atlas). Like Brazil and Argentina, Nigeria and Cameroon have a long-standing rivalry in football.

2.3 The history of Football in Ethiopia

There aren't any formally documented records that date Ethiopian football's inception, claims Ethiopia Football (1999:7). However, the journal also reveals that the game was being played by foreigners as early as 1880. Ethiopia's history with football differs from that of the rest of Africa, where it was imposed during colonial rule. It was Emperor Menelik II's (r.) triumph. football was first played in Ethiopia in 1896 at Adwa against the Italian invaders (1889–1913). Following the Italians' defeat, Ethiopia gained recognition as an independent nation and was sent envoys to request favors from the rest of Europe.

Europe should recognize Ethiopia's independence and dispatch envoys to ask the Emperor for favors. Football was brought to Ethiopia by these European diplomats and the people they were supporting. These foreigners played football against one another for the first time in Addis Ababa in 1924. Even so, there were hints that the Teferi Mekonnen School had football teams. He participants were foreigners as early as 1927, including Greeks and Armenians who had been given refugee status by Ethiopia. In 1935, the Ethiopian team, mainly made up of European refugees and asylum seekers, defeated the French team (consisting of Djiboutian French Navy members) 3-1 in one of the "international" football matches played in Addis Ababa. All three goals were scored by Armenian Yervant Abraham. Also that year, St. Yideneqachew Tessema was one of the people who established George.founding members and is recognized as the originator of football in Ethiopia. Ethiopians were prohibited from playing football with Europeans during the Italian occupation of Ethiopia (1936–1941) due to fascist racial policies. Established Ethiopian football clubs were renamed St. There was also a separate sport office for the indigenous people, called the "Sport Office for the Indigenous.". Sidist Killo became Piazza Roma, George became Littorio Wube, the Qebana team became Villa

Italia, and Gulalea became Consolata. Ironically, a football match between an all-Ethiopian team, expatriate teams, and an Italian football team, Fortitudo, was played in Addis Ababa in 1942, right after the Italians were defeated. The team from Ethiopia, St. George was up against the Italians. The latter also suffered a defeat on the football field. The Ethiopian Football Federation was founded in 1943, not too long after. The Federation had a meager $127,00 budget. Since then, the Federation played host to the "Ethiopian Cup," which featured matches between football teams from the Ethiopian Army, the British Military Mission (BMME),football teams from Italian exiles who remained in Ethiopia following the war, Polisportiva, St. George and Body Guard, the football team of the Imperial Body Guard. Army dominated the Ethiopian Cup remembrance of the 1940s and 1950s, while BMME and Polisportiva won the 1945 and 1947 Ethiopian Cup finals, respectively (www . ethiosports . com). These matches must have served as forums for Ethiopian nationalism and patriotism in opposition to racism and colonialism, given the racist attitudes of the British towards Ethiopians and the Italians' short-lived colonial ambitions.

Ethiopian football gained more momentum in 1957 with the creation of the African Nations Cup, which featured Ethiopia, Egypt, and the newly independent Sudan. Ethiopia defeated Egypt 4–2 in the 1962 African Nations Cup, which was hosted in Addis Ababa. Since then, football has developed into an African Nations Cup, despite Ethiopia never having won one. among the most well-liked activities in Ethiopia. Football clubs were formed at all educational institutions, including universities, colleges, and even high schools. The military was also represented by football clubs on Ethiopian military bases. In this sense, the Ministry of Education and Fine Arts and the Imperial Ethiopian Armed Forces were instrumental in the growth of football in Ethiopia, acting as leaders in the field. In keeping with this, it's important to remember that these were "modern" institutions that allowed Western concepts to permeate much of Africa. The African armed forces and even now.

Ethiopia is not an exception when it comes to the continued modernity and organization of educational establishments. Football games served as forums for the expression of dissatisfaction in a nation where freedom of speech and association is either completely nonexistent or severely restricted. This was especially valid during the Derg era. The public saw the Derg as a soldiers' party or government, among other things, despite the latter's assertion of popular support and

Marxist rhetoric. As a result, the public identified numerous football teams, including Omedla, Mechal, and Ermejachen, that were drawn from and represented the police and army. the Derg. As a result, nearly every football game played in the Addis Ababa stadium between a civilian team and the armed forces or police became a symbol of conflict between the civilian and military communities as well as between Derg supporters and opponents. At times, the defeat of one of the aforementioned football teams by non-professional teams like Buna or St. George would lead to violence between army personnel and bystanders. Taxi drivers would demonstrate their displeasure and protest by refusing to serve the soldiers and police officers and only serving civilians if one of the army-police teams won the game. During Ethiopia's imperial era, confrontations between civilians and military personnel at football stadiums were not unusual, both in Addis Ababa and throughout the country.

For instance, there were multiple disturbances and fistfights between the military police teams and civilians in 1965 (Mekuria, Mechal, Omedla). A year after the Derg seized power, in 1975, they were allowed back into the football game. The politicization of the civil-military conflicts during the 1970s and 1980s is what set them apart. The annual football games between provincial teams and teams from within the provinces served as arenas for allegiances that went beyond racial and religious divides, but they also started to reflect the goals of ethno-nationalists in the majority of cases. This was particularly true following the emergence of Eritrean secessionist movements in the. 1960s. An Eritrean football match between the Eritrea Shoe or Red Sea and a non-Eritrean club, usually Ethiopian Navy or a club from the Second Division Army stationed in Eritrea, turned into a highly politicized match. On these occasions, supporters of Ethiopian nationalism and Eritrean secessionism occupied the Asmara stadium, with the football field serving as a battleground for the warring nationalisms. Tigregna beats, which are always accompanied by a drum and claps, electrified the stadium whenever an Eritrean club scored a goal. Supporters of the army or navy, who were primarily composed of armed forces personnel, civilian government employees, and some Eritreans, would chant "Amaressa," which is the Ethiopian army's well-known battle cry.

Regardless, whether the Ethiopian national team wins or loses in a football match against another country, the public always supports the team. The Addis Ababa stadium, and sometimes the Diredawa stadium, becomes a place where Ethiopian nationalism is celebrated and observed.

Singing patriotic songs, waving the Ethiopian tri-colors, wearing bonnets with the tri-colors, and dressing in traditional Ethiopian attire are all symbols of expressing nationalism at these matches (source: www.ethiosports.com).

2.4. Exercise

Exercise is defined as physical activity that is organized, structured, and repeated with the goal of conditioning any part of the body. Exercise is crucial for maintaining physical fitness, improving health, and aiding in physical rehabilitation. Exercise helps to prevent obesity, depression, and coronary heart disease. It also helps to improve motor skills and other aspects of physical fitness. One component of exercise that is crucial for boosting or maintaining joint function strengthening is range of motion exercises. Exercise gives muscles the right kind of resistance to build strength and endurance.

A regular exercise program can enhance physical fitness, endurance, and general health (USDHHS, ACSM, 2000). Physical activity is any movement of the body caused by striated muscle contraction that significantly increases energy expenditure. Exercise, which is defined as organized sports, striated muscle that significantly increases energy expenditure, or planned, structured, and repetitive physical activity aimed at maintaining physical fitness are all included in this definition (USDHHS, ACSM, 2000). In order to train for soccer using scientific principles, theory and practice must be connected. The design of training programs for soccer players is quite complex due to the fact that fitness for games encompasses many different elements and concepts. Training principles must be understood by practitioners in order for them to step in when things go wrong, when schedules are thrown off, and when performances fall short of expectations. Therefore, there are no universally applicable fitness formulas; instead, trainers need to be aware of the adaptation processes associated with the different training modalities. Whenever feasible, guarantee validity, incorporate the fitness work into game drills to directly influence practice, and save players' time (ACSM, 2001).

2.5. Tomorrow’s player shaped from today’s youngsters

Per the FIFA coaching manual available at www. FIFA . com (2010, 1) states that sports in general, and football in particular, have a significant educational role to play

in children's learning and development. Football must not only give kids the chance to learn the unique skills required for the game, but also foster the development of their personalities, psychological well-being, and social skills. Football academies, specialized schools, and other training facilities must adapt their curricula to the idea of holistic education and assume a teaching role while honoring the different developmental phases and their associated learning goals. While kids' football covers fundamental instruction and introduces kids to the game, mostly through. games and coordination drills, there is still a great deal of work to be done in the areas of youth player development and education while they are still in their building stage, or pre-training/pre-development age. e. aged 11 or 12 to 16 years. This is the ideal time to hone your technical abilities, basic psychological skills, and the technical/tactical foundations of the game. This age is when all of the fundamentals of technique, individual tactical awareness, and the game's fundamental principles are taught. Mental attitudes like connect ratio, self-confidence per-service, willpower, etc. are also trained. As a result, the pre-training and pre-development work must be maximized, and the coaches and educators who work with the players must be enthusiastic about their role as educators. In addition to the education and training they received at centers of excellence, a number of players today are well-known due to the significant work that is done at the national association and club levels during this pre-development/pre-training phase.

2.6. Physical Fitness

Physical fitness is characterized by the ability to perform occupational and recreational activities without becoming unduly fatigued and to have the capacity to handle unforeseen emergencies And also it is associated with a person´s ability to work effectively, enjoy leisure time, be healthy, resist hypo kinetic diseases or conditions, and meet emergency situations"(Corbin et al., 2006). There are many factors which help to develop physical fitness, but regular physical activity is the key aspect to achieve optimal physical fitness. Generally, Fitness is defined as the ability of a person to live a happy, well-balanced life. It embraces the physical, intellectual, social and spiritual aspects of a person’s life. Fitness has health-related components and skill related components which include; cardiovascular endurance, muscular strength, muscular

endurance, flexibility and composition . Skill-related components include agility, balance, coordination, speed, power and reaction time (Wilmore, and Costill, 2002).

According to Ortega et al. (2008), physical fitness is an integrated measure of the majority, if not all, of the bodily processes (skeletal muscle, cardio-respiratory, hemato-circulatory, psycho-neurological, etc) involved in engaging in regular physical activity and/or exercise. All of these systems' functional condition is genuinely examined when physical fitness is measured. Because of this, physical fitness is currently regarded as one of the most significant indicators of health and a predictor of morbidity and death from cardiovascular disease (CVD) and other causes. Physical fitness is largely governed by environmental variables, but it is also somewhat determined by genetics. One of the primary variables is physical activity (Andersen, 2003).

2.7. Importance of physical fitness

An essential component of total preparation for field and court sports is sprint training. The majority of sprint training concentrates on fitness and drills to build top speed and acceleration in straight sprinting (Sheppard, et al., 2003). The acceleration, maximum speed, and speed endurance phases of sprinting have all been the subject of prior studies and publications (Enoka, et,al.,2002). Sport scientists are changing the way they think about speed development. They are starting to emphasize change of direction speed drills more than merely acceleration, top speed, and speed endurance training (Sayers et al., 2000). This highlights the importance of training with certain movement patterns, while sprint training alone doesn't seem to have much of an impact on Scarlett & McDowell, 2001b). A minor correlation between straight sprint performance and change of direction speed performance provides more evidence in favor of this (Garefis, 2003). While some straight running is required in many field and court sports, numerous short sprints with direction changes are more common. As demonstrated by time and motion analysis, validation of testing batteries for elite and non-elite performers, and coaching analysis for sports like rugby and soccer, the capacity to sprint repeatedly and change direction while sprinting is a determinant of sport performance in field and court sports (Reilly, Williams, Nevill, & Franks, 2000). Given that these direction shifts are frequently seen in field and court sports in reaction to stimuli (such as the ball, another player, or the play), it would appear significant.

2.8. Components of Physical Fitness

A person's level of physical fitness is determined by a variety of factors. The ability to do daily chores with vigor and alertness without experiencing undue exhaustion is the definition of physical fitness. The state of having sufficient energy to prevent exhaustion and enjoy life is known as fitness. Physical fitness has six skill-related components (agility, balance, coordination, speed, power, and reaction time) and five health-related components (muscular strength, cardiac vascular endurance, flexibility, muscular endurance, and body composition). While skill-related physical fitness refers to the elements of physical fitness necessary for peak athletic performance, health-related physical fitness refers to those elements of physical fitness connected to some aspect of good health.

2.9. Skill-related Physical Fitness Components

Skill-related physical fitness consists of those components of fitness that have a relationship with enhanced performance in athletic activities. Skill related fitness abilities increases one’s ability to perform in various activities and only has an indirect connection with health. The skill-related components of fitness are; agility, balance, coordination, power, speed, and reaction time .

2.9.1. Agility

The capacity for rapid movement and direction changes while retaining equilibrium and control is known as agility. A combination of quickness, acceleration, balance, strength, coordination, and quick reflexes are necessary for effective agility. The capacity to move swiftly and change direction frequently is known as agility, and it improves performance in a range of activities. This is the result of combining coordination and speed. It enables you to quickly and effectively modify your body's position and direction. The most used method for measuring agility is the ill ions agility run (Wesson, 2002).

2.9.2. Coordination

The capacity to use senses and body parts to carry out motor activities with accuracy and fluidity is known as coordination. In order to produce a smooth and efficient movement, coordination entails arranging the appropriate motor programs in the proper order and making effective use of

the neuron muscle system. Therefore, the capacity to combine sensor and motor systems to generate effective movement is known as coordination. The ability to employ the brain, neurological system, and locomotor system in concert to produce precise and fluid movements is known as motor coordination. Activities that involve coordination include Body-balancing exercises like walking on a beam or balancing on one leg; Rhythm exercises like dancing to music; Kinesthetic awareness and spatial coordination exercises like learning how to somersault or execute a new dance move; Foot-eye coordination exercises like football dribbling and kicking; Hand-eye coordination exercises like racquet sports and ball throwing and catching

2.9.3. Power

The capacity to convert energy quickly into force is known as power. Furthermore, explosive strength refers to the capacity to efficiently combine strength and speed in order to generate the greatest amount of muscle force at the fastest possible pace. It is the speed at which work is completed or energy is used. Power can be defined as work divided by time, or as the rate at which work is completed. If two people can complete the same amount of work more quickly than one another, we have more power. It blends velocity or speed (distance/time) with strength (force). Vertical jumping and heavy object tossing are two ways to gauge power. Bosco and Gustafson (2003) state that power is a function of time and force, and that power is defined as the rate at which

2.9.4. Speed

Speed is the ability to perform a movement quickly.It is the time the ttakes us to respond to a stimulus. Speed is the rate of movement and often refers to the ability to move rapidly and it is an important factor in all explosive sports and activities that reqir sudden changes in space. The simplest measures of speed is a 30m,mark a non-slip surface and sprint as hard as the competent can perform from a flying start over the course and record the time taken (Wesson,2002) speed is ‘’rate’’of performance ‘’ of an activity. This can refer to any movement or action.It is the velocity at which one executes a movement can be the difference between success and failure. Speed is a culmination of reactive ability, rapid force development, rapid force application, and effective movement technique.

2.9.5. Reaction Time

Reaction time is the ability to perform movements and actions of the body or body-part at a particular moment to produce to best effect. This is the time between a stimulus being perceive and the first movement made in response to it. It also depends on how long you take to process the information and this can be improved with practice. So reaction time measures how swiftly the competent interpret and the react to expected and unexpected events happening around his or her .The most accurate measures of reaction time involve a simple test is a stick drop test (Wesson, 2004).

2.9.6. Balance

The capacity to maintain an erect posture whether moving or remaining stationary is known as balance. It is the preservation of equilibrium when moving or staying still. the balanced growth of a person's physical, mental, and spiritual components; To put it another way, something is balanced when it appears natural and easy to do, or when its center of gravity is above its area of support. Balance is the capacity to sustain equilibrium. The capacity to keep one's equilibrium while in a stationary position is known as static balance. Dynamic balance refers to the capacity to keep one's balance whilst moving. When competing forces or actions are balanced to prevent one from being stronger or bigger than the other, we have an equilibrium.

2.10. Objective of Physical Fitness Development

Longevity free from illness, bodily suffering, and misery is the ultimate goal of fitness. While achieving this life goal is difficult, it is not impossible. Being physically active can lead to happiness in life. People attempt to become physically fit in a variety of ways. Some of these include improved diets, better lifestyle choices, improved gymnastics, yoga, aerobics, etc. The following are some primary indicators of fitness: - Complete relaxation and stress relief - Increased physical power, endurance, and flexibility - Improved organ function - Strong immune system - Beautiful, healthy skin (https://www.scribd.com)

2.11. Training

A regular or long-term progression of exercise sessions aimed at enhancing physiological function for better health or athletic performance is called training. Although exercise increases

blood volume and enhances the respiratory and cardiovascular systems' functionality, the most significant changes occur in the muscle fibers that are employed in the exercise. Perhaps the most significant health benefit of exercise is the change in metabolism from carbohydrate to fat produced by aerobic training, which increases muscles' capacity to create energy aerobically. Blood fat levels, cardiovascular risk, and fat storage are all decreased by fat burning. Additionally, it lowers the risk of several malignancies and increases insulin sensitivity. Training does, of course, improve performance, but only with respect to the specific exercise that is trained. The two

2.12. Dose-Response Relationships

The relationship between a change in one variable and a corresponding change in another is described by a dose-response relationship. Within this particular context, the term "training dose" pertains to the attributes of the training regimen, including the kind, level of difficulty, frequency, length, and/or amount of physical activity that the person or group engages in. The term "response" describes the alterations that take place when a particular amount of exercise or physical activity is done. The subject of "how much exercise/activity is enough" is central to the field of exercise physiology. And "How do particular levels of physical activity, exercise, or fitness relate to the benefits attained?" These are known as dose response relationship questions by exercise scientists.

2.13. Effects of 12 weeks core strength training physical activity and exercise on physical fitness

A comprehensive assessment of the majority, if not all, of the bodily processes (skeletal muscle, cardiopulmonary, vascular circulatory, psycho neurological, and endocrine–metabolic) involved in engaging in regular physical activity and/or exercise is known as physical fitness. Therefore, it is essentially checking the functional condition of all these systems when physical fitness is measured. Because of this, physical fitness is currently regarded as one of the most significant indicators of health and a predictor of morbidity and death from cardiovascular disease (CVD) and other causes.

While there is a hereditary component to fitness, environmental circumstances can also have a significant impact. Engaging in physical exercise is a primary factor. As a result of the

significant physiological and psychological changes brought about by muscular contractions that increase energy expenditure, childhood and adolescence are critical life stages. On the other hand, physical exercise is defined as intentional, structured, systematic, and deliberate physical activity. Physical activity is linked to physical fitness, and children and adolescents who participate in well-planned and supervised physical exercise programs have improved physical fitness regardless of their age, sex, or stage of development. Enhancing physical fitness appears to need high-intensity physical activity.

2.14. Speed, agility, and quickness

Quickness, agility, and speed are some of the most important and noticeable aspects of being successful in sports. The ultimate goal of a program to develop speed, agility, and quickness is an improvement in the capacity to react fast, apply large force rapidly in the right direction, and redirect that force if necessary. An intelligently crafted program that takes care of these athleticism-related aspects greatly enhances overall performance and lowers the chance of injury. Quickness, agility, and speed are all products of acquired motor skills. Acquiring mastery in these talents will vary depending on the individual, but mastering their efficient and effective execution can enhance one's total athletic ability.

CHAPTER THREE

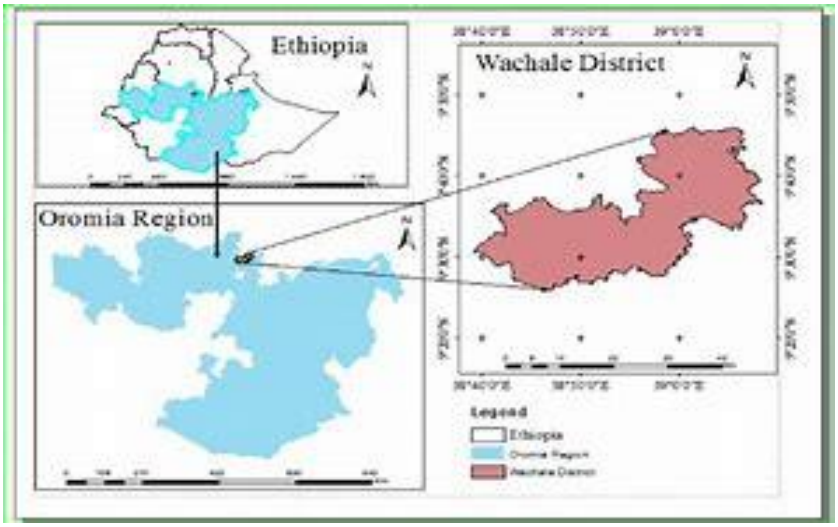
3. MATERIALS AND METHODS

This chapters includes description of experimental area, experimental materials, definition of variables, experimental design, source of data, study population, sampling size and sampling Technique, inclusion and exclusion criteria, data collection instrument, method and procedures of data collection, resistance protocol, methods of data analysis and ethical consideration.

3.1. Description of the study Area

Wuchale is a woreda in Oromia Region, Ethiopia. It was part of former woreda of Wuchalena Jido which was separated for Jido and Wuchale woredas. Part of the Kaba Shewa Zone, Wuchale is bordered on the south by Berehna Aleltu, on the west by Mulona Sululta, on the northwest by Yaya Gulele], on the northeast by the Amhara Region, on the east by Liban woreda, and on the southeast by Kembibit.

The research study was taken place at Wachale Worade Mukaturi town oromia regional state, Wachale Worade Mukaturi Town is the largest commercial town in oromia . The study area was located at eastern gate 78km apart from Addis Ababa and located between 9° 24' 59.99" N latitude and 38° 49' 59.99"E longitude and elevation of 1711 meters. The map of the study site is included on



1.1 Map of study area

3.2. Experimental Materials

During this research process instruments like whistles, stop watch, ladder, measuring tape, record sheet, paper, pen, Meter, Cone and footballs were used.

3.3. Study Design

The experimental research design was suitable for the desired field test. Pre-test and post-test were used for this study. All 30 trainees currently participate in the training program was invited for study. The participants divided equally in to two groups of 15 subjects experimental group and 15 subjects control group. Pre-and post-test were given to both experimental and control group. Only Experimental group was trained on selected physical exercises for 60 minutes of 3 non consecutive days per a week for 12 weeks.

3.4. Source of Data

Primary source of data were used in this research study. Primary source of data were designed by collecting a data through the supervision of experimental process (recorded pre-test and post test result).

3.5. Study Population

Study population of this research was Oromia regional state, Wachale Worade Mukaturi town 30 male soccer project trainees and their age is 15 and 16 years old.

3.6. Sampling Size and Sampling Technique

One training station contains a maximum of 30 trainees. The researcher was taken all participants as a sampling size. Before starting training program, questioner was given to the participant to know their physical activity status and their health status. The trainees were assigned in to two groups experimental and control group. To this study, the investigator was used the purposive sampling technique. Physical readiness questioner and health problem of the subjects were criteria to identify select and reject study subjects. Wachale Worade Mukaturi town male soccer project trainees were purposively selected.

3.7. Inclusion and Exclusion Criteria

Depending on questioner trainees who train regularly before a study and athletes those who have not health problem and free of physical injury were included. Trainees who have recent and before physical injury, health problem, musculoskeletal problem, restricted by physician, their parents were not volunteered, below 15 and above16 of age group were not include as study target for this study.

3.8. Method and Procedures of Data Collection

3.8.1. Method of data collection

The investigator employed a quantitative approach to gather information from the participants. Using skill-related assessments, such as agility, vertical jump, and sprint run tests lasting thirty and thirty meters, before and after a 12-week core strength training program. With the assistance of an assistant who received two days of training on how to record data from individuals during tests, the researcher was able to gather and record the data. Also, Wachale Worade Mukaturi Town training session served as the venue for each exam.

3.8.2. Procedure of data collection

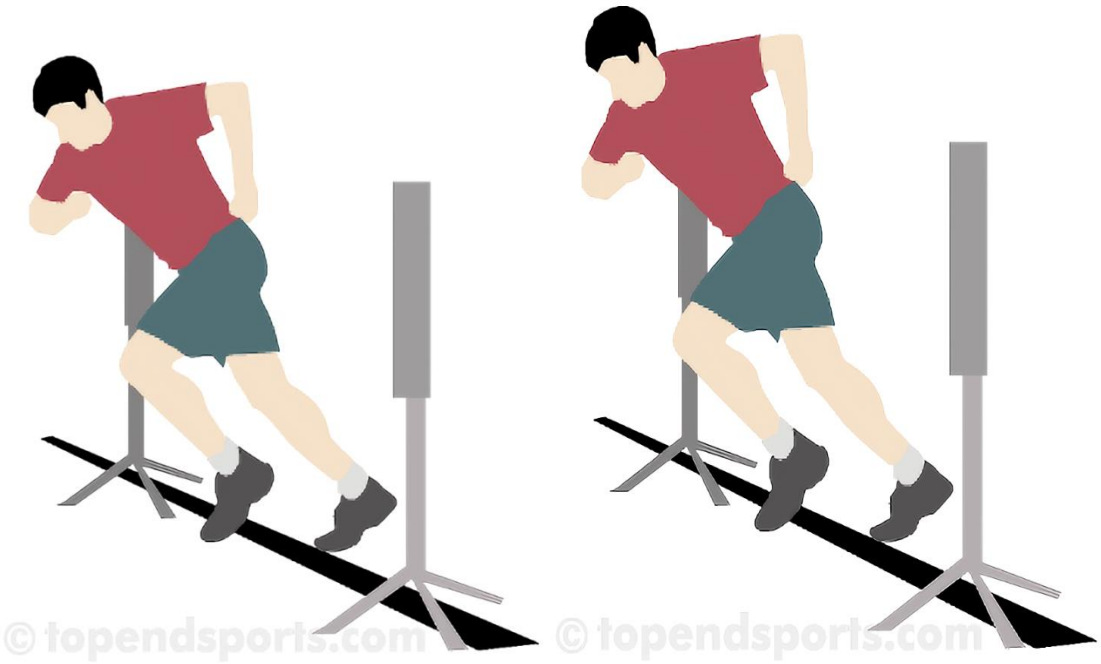
Before the trainers were going to execise 12 weeks core strength training program the pretest was given to both control and experimental group and recorded by the researcher.When the trainees was start training program the pre-test was made and record, than after the intervention of the pretest, posttest was done and also recorded at the end of three months or 12 weeks**.**

3.9. Physical Fitness Test Analysis

3.9.1. Thirty Five Meters Sprint Run Test

Before starting this test, the investigator collected all essential equipment for this test, such as measuring tape, whistle, stopwatch, and score recording sheets. This test commonly used to measure the speed performance of the individuals. Before starting the test the subjects performed warming-up exercise. The study subjects run between two lines 35m apart in time to recorded timer sound. Then after starter sounds a command like "Get Ready" by the assistant who stood nearest the starting line, and a visual signal to the second assistant who was stood at the finishing line he will command " Go". Then, the study subjects started sprinting, the second assistant and

the investigator will record the time it takes to finish the given distance. The score will be recorded from the two trials, the minimum time taken by the participant to cross the finishing line. The score recorded in seconds to the nearest tenth of seconds (Davis B. et al., 2000).



3.9.2. Agility T-test

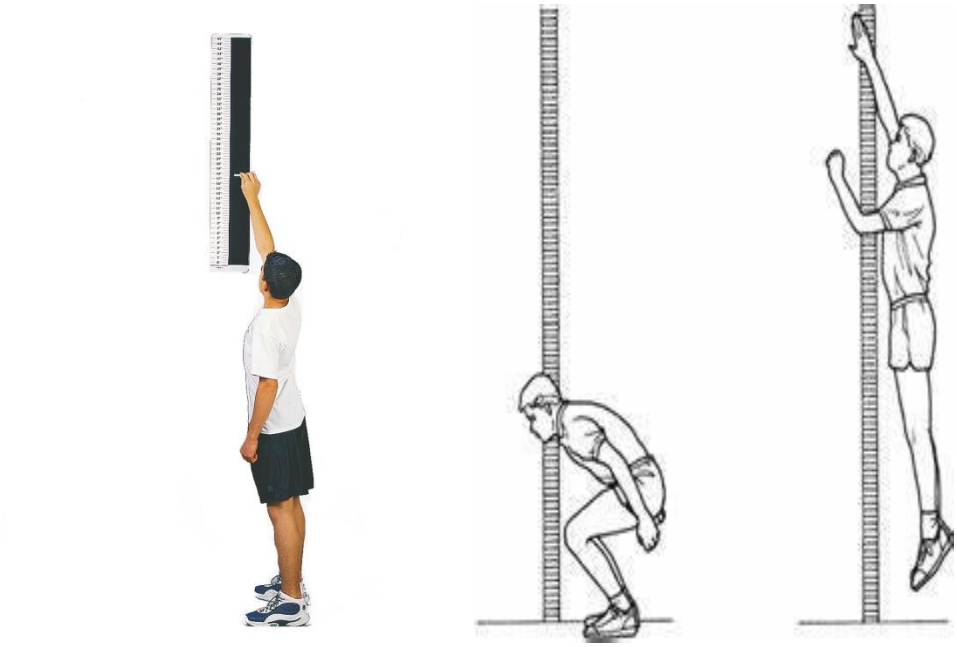
Before starting this test, the investigator collected all essential equipment for this test, such as measuring tape, marking cones, whistle, stopwatch, and score recording sheets to arrange the test and to record scores. This test is an effective way to assess the players ability to change of direction at speed. Before strength the test the subjects performed warming-up exercise. This test will be administered by set up four cones in a "T" shape. Cone A and B was set up 10 yardys (9.14)apart from each other. Cone B and C was set up yards(4,57m) apart from each other. Cones B and D was set up 5 yards(4.57m)from each other as well. The subject sterted at cone A. One the command of the assistant, the study subject will be sprinted to cone B and touch the base of the cone with their right hands, then, to the left, and shuffled sideways to the right to cone D and touch the base with their left hand, then shuffled sideways to the cone B touch with the left hand , and run backwards to cone A. The stopewatch was stopped as they passed cone A. The trials

were not counted. The best time of the successful trials nearest to the 0.1 seconds was recorded as data by the researcher and by the second assistant (Pauole et al,2000).

3.9.3. Vertical Jump Tests

This test was designed to gauge the trainees' leg muscular power. The competitor places their side against a wall and extends their hand toward the wall. The point of the finger tips is registered or recorded while the feet remain flat on the ground. We refer to this as the standing reach height. The athlete then takes a step back from the wall and launches himself as high as they can in the air, thrusting their body upward with the help of their arms and legs. The height of the jump is typically measured in terms of distance.

Vertical Jump Tests



3.10. The Training Protocol

The training session program was performed 3 non consecutive days of a week for 12 weeks. The training was consisted 10 minute warm up exercise before main training session for 40 minutes main training session within 1 minutes rest between each exercise. The training program was consisted of 2 to 3 sets of upper body, lower body and abdominal muscle exercises. At the end of training session 5 minute cooling down and stretching exercise were performed. Exercises like Stretching exercise ,Illinois cone drill run, 35m sprint run ,4x10 shuttle run, squat jump, back stretch, lateral jumps with agility ladder, Squat out/hop in ,Two jumps forward one jump back ,leg rise, shoulder stretch and vertical jump were performed during training program. To control training load intensity and volume was progressively and researcher was properly supervised throughout the training session.

3.11. Methods of Data Analysis

Quantitative data analysis was used in this investigation. Various strategies for data processing and display were employed, contingent on the type of data. The internal consistency response and completeness of the data were manually verified. Data were entered into a computer using SPSS version 25 after being verified to be accurate and consistent. The raw data on the project player's strength, speed, and agility was displayed using a histogram.

In order to determine if the population mean ranks of two related samples, matched samples, or repeated measurements on a single sample differ (i.e., it is a paired difference test), the Wilcoxon signed-rank test is a non-parametric statistical hypothesis test that was pretest and posttested. It can be used as a substitute for the paired Student's t-test (also called the "t-test for matched pairs" or the "t-test for dependent samples") in situations where it is not possible to assume that the distribution of the difference between the means of two samples is normally distributed, which indicates that the data did not meet the normality assumption because of the small sample size.

A nonparametric technique called the Wilcoxon signed-rank test can be used to ascertain whether two dependent samples were drawn from populations with a same distribution (Jaynes, 2003). Based on these presumptions, a related sample Wilcoxon Signed Rank non-parametric test was employed to ascertain, at the $P < 0.05$ level of significance, the significant difference between the pretest and posttest of agility, the significant difference between the pretest and posttest of power, and the significant difference between the pretest and posttest of speed due to selected physical exercise training.

3.12. Data Quality Control

All field test techniques, data gathering, and information management were done in compliance with established protocols and measures to guarantee data quality. Additionally, the investigator served as a data collection assistance. Additionally, instruction on the use of data collection tools and measures was provided to assistant data collectors in order to prevent errors. In addition to field exercises and demonstrations, the trainers receive supplementary lectures to raise awareness of each test. Standardized materials were the only ones utilized to maintain the data's quality. To prevent data feeding errors, all of the aforementioned tests will also be recorded and input into the program twice by separate users.

3.13. Ethical Consideration

To ensure a seamless and successful data collection process, the researcher took into account the participants' voluntary agreement. Respecting research participants also means outlining the goals of the study, the criteria used to choose them, the duration of their involvement, and their obligations. Additionally, the researcher established a positive relationship with the participants by emphasizing that their answers are essential to the study's success. Furthermore, the researcher emphasized that their answers would only be utilized for scholarly purposes and would stay private. Every decision made by the study will be made in accordance with the research ethical rules, code of conduct, and regulations of the university. There will be serious ethical considerations when conducting the study. According to ethical guidelines, researchers must not put participants in situations where their participation puts them at risk of bodily injury. The procedure will be accepted in accordance with university policies, and all relevant parties will be informed and given written consent.

CHAPTER FOUR

4. RESULTS AND DISCUSSIONS

In this chapter, effect of 12 weeks core strength training on speed, agility and power performance of Wachale Worade Mukaturi town U-17 male football project trainees was analyzed, interpreted and discussed with relevant literatures both using descriptive statistics and inferential statistics based the objective of the study. In these chapter results of data analysis, the interpretations of results and discussion on the results were included. Both descriptive statistics and inferential statistics results were included on the variables of the study. The first part of the chapter contains descriptive part such as results on demographic variables and trainees' health related information results would be presented and the second part includes the inferential part of the study using T-test. At the end of the chapter discussion on the main results of the analysis presented by related with other previously done study findings. In this study before experiment one trainees is done information on some demographic and their health related issues should collected and analyzed.

4.1 Descriptive Statistics on Demographic and Health Related Variables

In this study the trainees were asked eighteen (18) to identify whether there are problems in relation to their previous health condition since it difficult to conduct the experiment if the trainees have previous health problem. The questionnaire was design in Afan Oromo and no need of converting into English or any other language since all the respondents or trainees speak Afan Oromo.

In table 4.1 below for the question have you faced some injury during physical exercise only 4(13.33%) trainees responded yes and all the rest 26 (86.67%) said no this result showed that most of the trainees had no health problem previously and even if four of them had injury previously now cured and free of any physical and mental illness. The second question raised for the trainees was do you participate on physical exercise at least two times per week and 25 (83.33%) of the respondents said yes and only 5 (16.67%) of them said no. from this result one can observe that the trainees had good background experience in physical activities which important for the experiment that was conducted in this study (Table 4.1 below).

The other information obtained from trainees on their background information was whether they faced breathing problem after you perform a very simple physical exercise. For this question 10 (33.33%) of the respondents said they had problem related to breathing and 20 (67.67) of the respondents said that they had no problem with breathing. For the have you used medicine prescribe by physician recently, only 4(13.33%) trainees responded yes and all the rest 26 (86.67%) said no, this result showed that most of the trainees had no health problem previously in relation to breathing and even if four of them had problem in breathing previously now they are cured and free of any problem in relation to breathing (Table 4.1 below).

The other important question raised for the trainees was to identify or describe any health problem that they face before and four options were provided: problems related to heart and blood vessels, problems in neuron muscles, breathing problem and problem. For this question no respondent said I had heart and blood related problem, only one (3.33%) said I had neuron muscles related problem, 7 (23.33%) of the respondents said they had breathing problem, and the rest 22 (73.33%) of the trainees said they had no any health problem. From this result one can observe that most of the trainees (more than 73%) had no health problem so they can perform the physical exercise designed for this study even if some of the trainees had (26.66%) health problem(Table 4.1 below).

Identify any physical problem you had before this training was other the question raised for the trainees before they start the training and five options were provided such as my leg broken, Knee crack, head injured, my backbone cracked and no physical problem. For this question no respondent said my knee cracked and my backbone cracked. Only two respondents or trainees (6.66%) said I my head get injured, 8 (26.66%) of the respondents said their leg broken, and the rest 20 (66.66%) of the trainees said they had no any physical problem. From this result one can observe that most of the trainees (more than 66.66%) had no physical problem so they can perform the physical exercise designed for this study very well even if some of the trainees had (34.33%) had some physical problem (Table 4.1 below).

Table 1.Descriptive statistics on Previous Health Status of Trainees

No	Variable with its categories	Category	Frequency	Percept
1	Have you faced some injury during physical exercise	Yes	4	13.33
		No	26	86.67
2	At this time do you participate At least two times per week	Yes	25	83.33
		No	5	16.67
3	Have you faced some breathing problem after you perform a very simple physical exercise	Yes	10	33.33
		No	20	67.67
4	Have you used medicine prescribe by physician recently	Yes	4	13.33
		No	26	86.67
5	Identify or describe any health problem you face before	Heart and blood vessels	0	0
		Neuron muscles	1	3.33
		Breathing problem	7	23.33
		No problem	22	73.33
6	Identify any Physical Problem you had before this training	My leg broken	8	26.66
		Knee crack	0	0
		Head injured	2	6.66
		My backbone cracked	0	0
		No physical problem	20	66.66

7	Is there any family member who has corona	Yes	4	13.33
		No	26	86.67
8	Do you feel any tiredness ever	Yes	5	
		No	25	

In the table above for the is there any family member who has corona only 4(13.33%) trainees responded yes and all the rest 26 (86.67%) said no this result showed that most of the trainees families had no corona cases and even if four of them had corona disease all the four trainees from those families are free of corona disease. The last question raised for the trainees in th above was do you feel any tiredness ever and 5 (16.67%) of the respondents said no and only 25 (86.33%) of them said yes. From this result one can observe that the trainees had good background health condition which important for the experiment that was conducted in this study just in similar manner (Table 4.1above).

4.3. Comparison of Agility, Power, and Speed and between EG and CG of male football project trainees

The table below depicted the descriptive statistics on different variables such as speed, power, and agility before and after the experiments. In the table different statistics like minimum and maximum values obtained from experiment, the mean values of each variable and standard deviations were included. The descriptive statistics shown below is a crucial data summarization technique to display the nature of data, the consistency of the values and used to represent the set using single values.

N=number of playets in a group , Min= minimum, maximum , mean, standerd deviations, IAT=Illinois Agility test.

According to Table 3, the IAT mean of EG was.88041 for the pre-test and.80312 for the post-test, respectively. Furthermore, the IAT mean's CG, PT, and PoT results were, respectively, 1.10668 and 1.16084. that the EG's pre-test and post-test VJT means were, respectively,.09192 and.9226. Moreover, the VJT mean's CG, PT, and PoT results were.16867,.17243, and.16867, respectively. Thus, these data showed that both groups' pre- and post-test results showed a

substantial difference and a steady improvement. The results of Speed Test 1 (a 35-meter dash test) showed that the mean EG was 2.17363 after testing and.63190 before testing. Furthermore, the CG mean for the pre-test and post-test was 1.05423 and.63559, respectively. As a result, these statistics showed a notable difference and steady improvement. In their study on the relationship between soccer players' core strength traning stability, dynamic balance, and jumping performance, IBosco and Gustafson (2003) discovered a correlation between soccer players' core stability and jump height

Table 4. 2.Descriptive Statistics on Pre and Post Result on Variables in the Study

No	Items/variables	N	Min.	Max.	Mean		SD
		Statistic	Statistic	Statistic	Statistic	SE	Statistic
1	Experimental group test of pre-test Agility	15	16.98	20.52	18.5713	.22732	.88041
2	control group test of pre-test Agility	15	17.52	22.08	20.1180	.28574	1.10668
3	Control group test post Agility	15	17.56	22.09	20.0707	.29973	1.16084
4	Test experimental group Agility	15	15.56	17.96	16.4427	.20737	.80312
5	Power test control pre-test	15	2.05	2.57	2.4007	.04355	.16867
6	Power test experimental pre-test	15	2.32	2.68	2.4827	.02373	.09192
7	power test control post test	15	2.07	2.59	2.4220	.04452	.17243

8	power test post-test experimental group	15	2.33	2.68	2.4953	.02382	.09226
9	T-test post experimental	15	9.68	12.76	11.3893	.23904	.92579
10	T-test pre experimental	15	10.22	12.77	11.5613	.22090	.85554
11	T-test post CG	15	10.79	13.39	12.1580	.21538	.83416
12	T-test pre CG	15	10.77	13.38	12.1367	.21623	.83745
13	speed before pre-test Experimental	15	11.89	13.79	13.2047	.16316	.63190
14	Speed after post Experiment	15	10.78	20.64	13.5307	.56123	2.17363
15	Speed control before pre-test	15	12.38	15.45	14.1287	.27220	1.05423
16	Speed control after post	15	12.38	14.57	13.4353	.16411	.63559
17	Speed before control pre	15	12.38	1356.00	103.5300	89.46253	346.48691
18	Speed after control pre	15	12.36	14.56	13.4187	.16623	.64382
19	speed before experiment pre	15	12.09	14.18	13.4947	.14109	.54645
20	speed after experiment pre	15	11.83	26.85	14.4160	.90529	3.50616

As it is already described in the background of the study, this study was intended to investigate the effects of 12 weeks core strength training on agility, power, and speed of male trainees of the u-17 men football project at Wachale Woreda Mukaturi Town, North Shoa Zone. Identifying the

effect of 12 weeks core strength training selected skill-related physical exercises on improving the agility of trainees, measuring the effect of 12 weeks core strength training on the speed and assessing the effect of 12 weeks core strength training on the power were the main concern of the study at the study area.

In analysis paired t-test was used to analyze and identify the effect of the experiment on the speed, power and Agility of the trainees at the study area. The following table showed the analysis result data obtained from the experimental group and control groups on the three parameters. As the result depicted the there is no significant difference between speed before and after in the control groups since the p-value (0.3331) was greater than the level of significance which indicates that there no speed difference between the control groups but there was statistical significant difference between the experimental groups since p-value (0.019) was less the level of significance at 5% level of significance. The result indicated the training had brought a significant effect on the speed of the trainees, so the stake holders or concerned body should encourage the training (Table 4.4 below).

Table4. 3Mean speed comparison before and after the experiment

No	Test items	Paired Differences					t-test	Df	P-value
		Mean	SD	SE of Mean	95% CI of the Difference				
					Lower	Upper			
1	Speed Experimental post VS speed experiment pre	-.290	0.426	0.10993	-.526	-.054	-2.64	14	0.019
2	speed control post VS speed control pre	-90.1	346.7	89.509	-282.1	101.88	-1.01	14	0.331

The following table showed analysis result of paired t-test which displayed and identify the effect of the experiment on the power of the trainees. As the result depicted there was statistically significant difference between power of the trainees before and after taking the training in the control groups since the p-value (0.000) was less than the level of significance

which indicates that there is significant speed difference between the control groups and also there was statistically significant difference between the experimental groups since p-value (0.011) was less the level of significance at 5% level of significance. The result indicated the training had brought a significant effect both on the power of the trainees in control groups and experimental groups, so attention should be given for the trainees participating in the project stake holders or concerned body should encourage the training (Table 4.5 below).

Table4. 4Power test result from the trainees at the study area

Test items	Paired Differences					T	Df	P-value
	Mean	SD	SE Mean	95% CI				
				Lower	Upper			
Power test control post-test VS-control pre-test	.0213	.01246	.00322	.01443	.02823	6.631	14	0.000
Power test experimental pre-test vs. post-test experimental group	-0.013	0.017	0.004	-0.0219	-.0034	-2.94	14	0.011

The result in table 4.6 on agility of the study participants showed that there was statistically significant difference between the trainees' agility before and after the experiments at 5 percent. Difference between agility of the trainees before and after taking the training in the control groups since the p-value (0.494) was greater than the level of significance which indicates that there no agility difference between the control groups but there was statistical significant difference between the experimental groups before and after the experiments since p-value (0.000) was less the level of significance at 5% level of significance. The result indicated the

training had brought a significant effect on the agility of the trainees, so concerning body should give due attention for the trainees who are participating in the project so that they can succeed in the football game. In similar manner the t-test also shown in the last table and the result was statistically significant in the experimental groups but no in the control groups.

Table4. 5. Agility test result on the trainees at the study area

Paired Samples T-Test between experimental groups before and after the experiment	Paired Differences					T	Df	P-values
	Mean	Std. Deviation	SE Mean	95% CI				
				Lower	Upper			
experimental group test of pre-test Agility Vs test experimental group Agility	2.129	0.5973	0.154	1.7979	2.45943	13.8	14	0.000
control group test of protest Agility vs Control group test post Agility	0.047	.26100	.068	-0.097	0.192	0.7	14	0.494

Test items	Paired Differences					T	df	P-value
	Mean	SD	SE Mean	95% CI				
				Lower	Upper			
T-test post Experimental G - T-test pre Experimental Group.	.02133	.01125	.00291	.01510	.02757	7.341	14	0.000
T-test post Control G roup- T-test pre Control Group	-0.172	.451	0.12	-0.422	0.078	-1.48	14	0.162

CHAPTER 5

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1. Summary

The objective of this study was to assess the effect of selected physical exercises on skill related fitness components of Wachale Woreda Mukaturi town U-17 male football project trainees, Oromia Regional State, Ethiopia. To meet the objectives in detail, the following hypothesis were raised.

1. HO: Selected physical exercise has no effect on agility of Wachale Woreda Mukaturi town U-17 male football Project trainees.

HA: Selected physical exercise has effect on agility of Wachale Woreda Mukaturi Town U-17 male football Project trainees.

2. HO: Selected physical exercise has no effect on speed of Wachale Woreda Mukaturi Town U-17 male football Project trainees.

HA: Selected physical exercise has effect on speed of Wachale Woreda Mukaturi Town U-17 male football Project trainees.

3. HO: Selected physical exercise has no effect on power of Wachale Woreda Mukaturi Town U-17 male football Project trainees.

HA: Selected physical exercise has effect on power of Wachale Woreda Mukaturi Town U-17 male football Project trainees.

In order to answer the above hypothesis experimental design consists of EG (n =15) and CG (n = 15) Wachale Woreda Mukaturi town male soccer project trainees were purposefully selected. Pretest and posttest result of agility, power and speed were taken. After the pretest, 12 weeks core strength traninig selected physical exercise training was given to . Wachale Woreda Mukaturi town male soccer project trainees.

5.2 Conclusion

In light of the results of the study and the limits of the sample and the framework of statistical treatments used, the following points were concluded:

- Plyometric training has a profound effect on the explosive improvement of the lower body some degree of power.

- As the result depicted the there is no statistically significant difference between power before the experiment and after experiment since the p-value (0.198) was greater than the level of significance at 5% which indicates that the experiment has no brought change of difference on the power of the trainees
- The T-test between experimental group and control group has statistically significant mean difference since p-value (0.034) was less than the level of significance at 5% level of significance.
- Result obtained from the trainees on the have ever attacked by blood pressure and only 20% of the respondents said yes and 80% of them said no. from this result one can observe that the trainees had good health status regarding heart and blood pressure related complication which are important for the experiment that is conducted in this study.

- The other information obtained from trainees on the question how do you express your health status, only 6.66% of the respondents said they had very bad health status, none of them said they were on bad health status, 46.66% of the respondents said that they had medium health status, 23.33% of them said they are in good health status and also 23.33% of them said they are in a very good health status.
- For the question do you think that the physical exercise you are doing has effect on your education, only 3.33% of the respondents said yes and all the rest 97.67% said no, so from this result almost all the trainees can perform on their training without compromise their education.
- The result showed the speed mean difference between the control groups before and after the experiment. As shown in the table there was statistically significant mean difference between the two groups since p-value (0.00) was less than the level of significance at 5% level of significance.

5.2 Recommendation

Based on the findings of this study, the following points are recommended to investigate more on the effects of vertical jump test on power and t-test on agility in U-17 soccer players.

- To develop football players with exceptional strength and agility, plyometric training techniques must be incorporated into core training for coaches, the football federation, and other responsible organizations and individuals at the city, regional, and national levels..They should be given particular attention during training.
- Therefore, other studies may be needed to investigate the effect of training in Plyometric training should be provided by adding other components of fitness.
- Training participants must be made aware of the value of power, speed, and agility for soccer players.
- This research only investigates the effect of in Plyometric training on Speed, power and agility performance of soccer player's.
- Sports equipment and balls should be supported by the Wuchela District Youth and Sports Office for the support of coaches and trainers.
- A football coach who would be better off coaching is a player who takes coaching training.
- From result of descriptive statistics showed only13.33% trainees had injury before they started the training and all the rest 86.67% had no injury which means that most of the trainees had no health problem previously. So the researcher recommended and even if four of them had injury previously now they health and free of any physical and mental illness.

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APPENDIXES

Appendix -A

Health History and Physical Readiness Questionnaire

This questionnaire will designed to obtain information on the health status and physical readiness of the subjects participating for the research study. The information will keep strictly confidential.

For trainees: please read the following questions carefully and indicate your correct response to each question by encircling it on the choice letter given

1. Have you recently experienced any bone, muscle, bone,etc trauma? which is exacerbated by exercise? A. Yes B. No

2. Do you currently participate in an exercise program regularly (at least twice a week?)? A. Yes B. No If your answer is No, please explain below your reasons why you did not participate_____

3. Have you ever experienced breathlessness at rest with simple exercise?A. Yes B. No

4. Have you recently taken any prescription medication? A. Yes B. No If your answer is yes, name them below: _____

5. Identify any previous health problems A. Cardiovascular C. Neuromuscular B. Breathing D. None

6. Identify any previous physical problems A. Broken leg bone C. Dislocated knee B. Fractured skull D. Dislocated vertebrae E. None

7. Is there a family history of coronary heart disease? A. Yes B. No

8.Have you ever felt tired, when you feel nauseous or unconscious? A. Yes B. No

9. Have you suffered from heart problems before? A. Yes B. No If your answer is No, please explain below your reasons why you did not participate_____

10. Have you ever had any other chronic illness (with heart disease or hypertension)? A /Yes B/No

11. Are you currently taking any medications prescribed for your chronic condition? A/Yes B/No

12.How do you assess your health status? A. very poorly B. poorly C. averagely D. well E. very well

13.Does your physical activity affect your academic work? A. Yes B. No

14.Does the Youth and Sports Office provide you with good support? A. Yes B.no

15.Does your family support you in this exercise? A. Yes B. No

16,Please football training activities Are you interested?? A, Yes B, No

17. How would you evaluate the coaching methods being offered? A, Poor B, Satisfactory C, Good D, Excellent

18, Do you think, there is usually competition in town? A, Yes B, No

Appendix: B

Gaaffii Seenaa Fayyaa fi Qophii Qaamaa Gaaffiin kun odeeffannoo haala fayyaa fi qaamaa argachuuf kan qophaa'u ta'a qophii namoota qorannoo qorannichaaf hirmaatan. Odeeffannoon cimsee ni eega iccitii ta'uu qaba. Leenjifamtootaaf : mee gaaffilee armaan gadii sirriitti dubbisuun deebii sirrii keessan agarsiisaa tokkoon tokkoon gaaffii xalayaa filannoo kenname irratti marsuudhaan

1.Dhiheenya kana miidhaan qaamaa lafee, maashaalee, lafee,fi kkf si mudatee jiraa? kan sochii qaamaatiin hammaate? A. Eeyyee B. Lakki

Deebiin kee eeyyee yoo ta'e, gosa miidhaan kanaan dura sirra ga'e agarsiisi.

2. Yeroo ammaa sagantaa sochii qaamaa irratti yeroo hunda (yoo xiqqaate torbanitti al lama?) hirmaattaa? A. Eeyyee B. Lakki

Deebiin kee Lakki yoo ta'e sababni kee maaliif akka hin hirmaanne armaan gaditti ibsi_____

3. Sochii qaamaa salphaadhaan yeroo boqonnaa afuura kutuun si mudatee beektaa?A. Eeyyee B. Lakki

4. Dhiheenya kana qoricha ajaja ogeessa fayyaatiin kennamu fudhattaniittuu? A. Eeyyee B. Lakki Deebiin kee eeyyee yoo ta'e armaan gaditti maqaa isaanii kaa'i:_____

5. Rakkoo fayyaa kanaan dura si mudate kamiyyuu adda baafadhu

A. Onnee fi ujummoolee dhiigaa C. Niwuroo maashaalee

B. Hafuura baafachuu D. Hin jiru

6. Rakkoo qaamaa kanaan dura si mudate kamiyyuu adda baasi

A. Lafeen miila cabe C. Jilbi baqachuu

B. Mataan mataa cabe D. Lafeen dugdaa baqachuu E. Hin jiru

7. Maatii keessan keessaa seenaan dhukkuba onnee koronaa ni jiraa? A. Eeyyee B. Lakki

8.Dadhabbiin sitti dhaga'amee beekaa, yeroo garaa kaasaa ykn of wallaaluu sitti dhaga'ama? A. Eeyyee B. Lakki

9. Kanaan dura rakkoo onneetiin rakkattee jirtaa? A. Eeyyee B. Lakki

Deebiin kee Lakki yoo ta'e sababni kee maaliif akka hin hirmaanne armaan gaditti ibsi_____

10. Dhukkuba yeroo dheeraa kan biraa (dhukkuba onnee ykn dhiibbaa dhiigaa waliin) qabaattee beektaa? A /Eeyyee B/Lakki

11. Yeroo ammaa qoricha dhukkuba yeroo dheeraa keessaniif ajajame kamiyyuu fudhachaa jirtuu? A/Eeyyee B/Lakki

12.Haala fayyaa keetii akkamitti madaalta?

A. baayyee gadhee B. gadhee C. giddu galeessa D. gaarii E. baayyee gaarii

13.Sochiin qaamaa atti gotu hojii barnoota kee irratti qaba? A.Eeyyee B.Hin qabu

14.Waajjiiri Dargaggoo fi ispoortii Deeggersa gaarii isiniif godhu? A.Eeyyee B.lakki

15.Sochii qaamaa kan irratti maatiin kee si deeggara? A.Eeyyee B.Lakki

16,Maaloo hojiiwwan leenjii kubbaa miilaa Isiin hawwataadha?? A, Eeyyee B, Lakki

17. Mala leenjisummaa kennama jiru kan akkamitti madaaltu? A, Gadi Aanaa B, Quubsaa C, Gaarii D, Baay'ee gaarii

18, Akkas jettanii yaaddu, magaalaa keessatti dorgommiin yeroo baay'ee ni jira? A, Eeyyee B, Lakki

Appendix -C

Consent to participate voluntarily in this research study

Researcher's Name: Shemeles Makonnen Tolasa

Major Advisor's Name: Wendemagegne Damissie(PhD)

Co-Advisor's Name: Mekoya Mengesha (Mr.)

Thesis Title:

Effect of 12 weeks core strength Training on Agility, Power and Speed of Wachale Woreda Mukaturi **town U-17 Male Football Project Trainees.**

Purpose of the Study

The purpose of this study is to examine the effect of12 weeks core strength Training selected exercise training on skill related physical fitness components of Wachale Woreda Mukaturi town U-17 male project trainees using 12 weeks core strength regular exercise training

Procedure and Duration.

I will be interviewing you using a questionnaire to provide me with pertinent data that is helpful for the study. In this study physical fitness tests will be conducted before during as well as the end of training program. Participation in the study will not exceed 60 minutes per session and 3 days per week for training. The experiment study period will be for 3 months.

Risk and Benefits

The risk of being participating in this study is very minimal, While testing procedure and during training session you may experience numbness, muscle soreness, muscle cramp, muscle strain and fatigue but no major injury. There will not be any direct payment for participating in this study and again you will not pay for your participation. But the findings from this research may reveal important information for the investigator.

Confidentiality

The information and data obtained from you will be kept confidential. However, you are free to disclose it to your own physician. The information will be used only for the sake of the research and it will not be personalized. The data will be reported and presented without reference to the individual identify.

Rights:

Your participation in this research study is voluntary. You may discontinue from the

Training program at any time from the study if you choose to do so and this will not label you for any loss of benefits which you otherwise are entitled.

Contacts address

If there is any questions or inquires any time about the study or the procedures, please contact:

Shemeles Makonnen _____ (+251918925109/0973265798)

E-mail: _____ shemelesm4@gmail.com

Advisor: Wondemagegne Demissie (PhD) +2519 11116661

E-mail: _____liverse@gmail.com

Co-Advisor: Mekoye Mengesha (Mr.) _____+251 924411620

E-mail mekoyamengesha@gmail.com

Appendix- D

Table 1: List of Study Subjects of Experimental Group

No	Name of study targets	Data of birth	Age	Class level
1	Subject -1	2000 E.C	16	10
2	Subject-2	2001 E.C	15	9
3	Subject-3	2000 E.C	16	10
4	Subject-4	2001 E.C	15	8
5	Subject-5	2000 E.C	16	10
6	Subject-6	2000 E.C	16	10
7	Subject-7	2000 E.C	16	9
8	Subject-8	2001 E.C	15	8
9	Subject-9	2001 E.C	15	8
10	Subject-10	2001 E.C	15	8
11	Subject-11	2001 E.C	15	8
12	Subject-12	2000 E.C	16	10
13	Subject-13	2000 E.C	16	10
14	Subject-14	2001 E.C	15	9
15	Subject-15	2001 E.C	15	8

Appendix- E

Table 2: List of Study Subjects of Control Group

No	Name of study targets	Data of birth	Age	Class level
16	Subject -1	2001 E.C	15	9
17	Subject-2	2001 E.C	15	8
18	Subject-3	2000 E.C	16	9
19	Subject-4	2001 E.C	15	9
20	Subject-5	2001 E.C	15	8
21	Subject-6	2001 E.C	15	8
22	Subject-7	2001 E.C	15	9
23	Subject-8	2001 E.C	15	9
24	Subject-9	2000 E.C	16	10
25	Subject-10	2000 E.C	16	9
26	Subject-11	2001 E.C	15	8
27	Subject-12	2000 E.C	16	9
28	Subject-13	2000 E.C	16	10
29	Subject-14	2000 E.C	16	10
30	Subject-15	2000 E.C	16	10

Appendex- F

Description of the Training Schedule for three months .

In physical training it needs well designed and prepared plan. The main goal of this training plan is to develop skill related physical fitness variables of Wachale Woreda Mukaturi Town U-17 male football project through 12 weeks core strength training physical fitness intervention. In physical training ,plan and goals or objectives were specified, participants fitness level was assessed and it was well adjusted to the

participant`s fitness level and to the weather condition. The schedule was prepared with time frame, intensity and frequency of exercises. The following table includes different types of physical exercises which were performed by the subjects within 12 weeks in order to improve their physical fitness. The exercises involve in this study are warming up exercise, main work and finally cooling down exercise which was help to develop athletes' fitness level. Also FITT (Frequency, Intensity, Time and Type of Exercise) and principle of training was applied in the schedule;

Frequency of training: the repetition of exercise in one set. The training schedule was completed 3 days per week that is Monday Wednesday and Friday

2. **Intensity of training**: is how hard the body exercising or how much energy is expended when exercising. In this study the researcher was used moderate to adapt the exercise to high intensity for increasing load in the consecutive three months. There are ways to measure intensity of training;

 Heart rate - Heart rate can be an indicator of the challenge to the cardiovascular system that the exercise represents.

 Vo2max- the amount of oxygen consumed by the body during exercise.

Exercise was categorized into three different intensity levels. These levels include **Low** (40-50% MHR), **Moderate** (50-65% MHR), and **Vigorous** (65-85% MHR) for aerobic exercise and are measured by the metabolic equivalent of task. The effects of exercise are different at each intensity level (i.e. training effect). Recommendations to lead a healthy lifestyle vary for individuals based on age, weight, and existing activity levels. "Published guidelines for healthy adults states that 20-60 minutes of medium intensity continuous or intermittent aerobic activity 3-5 times per a week is needed for developing and maintaining fitness45

For Strength Training: The exercises you do (at least 8-10 exercises), the amount of weight you lift and your repetitions and sets determine the intensity of your strength workouts. In general, you want to lift enough weight that you can only complete the desired number of repetitions (around 1-3 sets of 8-16 repetitions of each exercise) (ACSM, 1990). The maximum heart rate was based on a person`s age. An estimate of a person`s maximum heart rate can be calculated as 220 beats per minute minus your age. (http://www.essa.org.au/wp-content/uploads/2014/06/exercise- intensity-Guidelines).

3. **Duration of training**: the subjects perform the exercise for 60 minutes per day in this study. Duration is dependent on the intensity of the activity, thus, medium-intensity activity was conducted over a longer period of time (30 min or more) and conversely individuals training at higher levels of intensity should train at least 40min or longer. (ACSM, 2000).

4. **Type of activity**: any activity that uses large muscle groups, which can be maintained continuously, E.g., Illinois cone drill run, 35m sprint run ,4x10 shuttle run, squat jump, back stretch, lateral jumps with agility ladder, Squat out/hop in ,Two jumps forward one jump back ,leg rise, shoulder stretch , vertical jump and various endurance game activities.

Appendix-G

Training exercise schedule for first Month (March,-May 2024)

Weeks	Types of exercise	Duration 1;30min	Set and rep.	Rest	Intensity
Weeks 1	Standing jump	15	3x5	1min	Low
	20m spriting run	15 minute	3x5		Low
	Squat jump	6minute	2x4	1minute	Low
	Jump to box	7minute	2x4	1minute	Low
	Lateral jump to box	7minute	2x4	1minute	Low
	Push-up	5minute	2x4	1minute	Low
Weeks 2	Standing jump	15minute		1minute	Moderate
	Single leg jump		3x8	1min	Moderate
	35m run	15minute	3x8		Moderate
	Box jumps	6minute	4x12	1minute	Moderate
	Lateral hurdle hope	8minute	4x20	1minute	Moderate
	lateral cone hope	6minute	3x5	1minute	Moderate
	Push up	5minute	3x8	1minute	Moderate
Weeks 3	Depth jumps	15min	3x5	1min	Low
	35m spriting run	15minute	3x5	1 min	Low
	Lateral jump	12minute	4x10	1minute	Moderate
	Single leg jump	13minute	4x10	1minute	Moderate
	Split squat jumping	12minute	4x10	1minute	Moderate
	Push up	17minute	3x10	1minute	Moderate

Weeks	Types of exercise	Duration 1;30min	Set and rep	rest	Intensity
Weeks 4	Home step	15min	4x6	1min	Moderate
	35m spriting run	15minute	3x10	1min	Moderate
	Hope jumps	12minute	4x10	1minute	Moderate
	Single leg lateral jumps	13minute	4x10	1minute	Moderate
	Depth jumps	12minute	4x10	1minute	Moderate
	Push up	17minute	4x10	1minute	Moderate
Weeks 5	Home step	15min	3x10	1minute	Moderate
	35m spriting run	15minute	3x10	1min	Moderate
	Hope jumps	12minute	4x12	1minute	Moderate
	Single leg lateral jumps	13minute	4x10	1minute	Moderate
	Depth jumps	12minute	4x15	1minute	Moderate
	Push up	17minute	4x12	1minute	Moderate
Weeks 6	Home step	15min	4x12	1min	Moderate
	35m spriting run	15minute	4x10	1min	Moderate
	Depth jumps	12minute	4x10	1minute	Moderate
	Single leg lateral jumps	13minute	4x10	1minute	Moderate
	Home jumps	12minute	4x12	1minute	Moderate
	Push up	17minute	3x10	1minute	Moderate

Weeks	Types of exercise	Duration 1;50Min	Set and rep.	rest	Intensity
Weeks 7	Home step	15min	4x10	1min	Moderate
	35m spriting run	15minute	4x10		Moderate
	Zigzag hops	14minute	4x10	1minute	Moderate
	Bounding	13minute	4x12	1minute	Moderate
				1min	Moderate
	lateral box	12minute	4x8	1minute	Low
	Push up	15minute	3x8	1minute	Low
Weeks 8	Home step	15min	4x10	1minute	Moderate
	35m spriting run	15minute	4x10	1min	Moderate
	Zigzag	14minute	4x20	1minute	Moderate
	Lateral box	13minute	4x15	1minute	Low
	Bounding	15min	4x10	1minute	Moderate
	Push up	12minute	4x10	1minute	Moderate
Weeks 9	Home step	15min	3x10	1min	Low
	20m spriting run	15minute	4x12	1min	Moderate
	Zigzag	14minute	4x3	1minute	Moderate
	Bounding	13minute	4x10	1minute	Moderate
	Lateral box	15min	4x15	1minute	Low
	Push up	12minute	4x10	1minute	Moderate

Weeks	Types of exercise	Duration 1;30Min	Set and rep.	rest	intensity
Weeks 10	Home step	15min	3x10	1min	Low
	Standing jump	15minute	4x12		Moderate
	Shuttle runs	14minute	4x10	1minute	Moderate
	Single leg forward hop	13minute	3x8	1minute	Low
	Illinois cone drill Run	15min	3x10	1minute	Low
	Push up	12minute	4x10	1minute	Moderate
Weeks 11	Home step	15min	4x10	1minute	Moderate
	Illinois cone drill Run	15minute			Moderate
	Rope jumping	14minute	4x10	1minute	Moderate
	4x10 shuttle run, 35m sprint run	13minute	4x10	1minute	Moderate
	Small sided 3vs3	15min	4x10	1minute	Moderate
	cool down:- Stretching exercise	12minute	4x10	1minute	Moderate
Weeks 12	T-shape test	15min	3x10	1min	Low
	20m run	15minute	4x20	1min	40-54%
	Rope jumping, Squat jump	14minute	4x15	1minute	Low
	vertical jump	13minute	4x20	1minute	Moderate
	Small sided 3vs3	15min	4x10	1minute	Moderate
	Illinois cone drill Run	12minute	4x10	1minute	Moderate