WOLKITE UNIVERSITY



COLLEGE OF NATURAL AND COMPUTATIONAL SCIENCE

DEPARTMENT OF SPORT SCIENCE

THESIS

Title:-effect of strength training on selected skill related fitness components of sport science female student in wolkite university.

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ABSTRACT

The main objective of this study was to determine the effect of strength training on power, speed and agility of sport science department female students it also aimed to find out to what extent this effect strength training will have on power, speed & agility. The data for the study were collected through pre-test and post-test of the players. To improve the effect of strength training on power speed & agility of sport science department female students, some recommendation are forwarded. One, & very important to pay critical inflation of strength training at rest once, twice or friable in a week depending on performance variables be controlled for curative achievement of athletes & players in variance & sports of different level of completions.

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CHAPTER ONE

1 INTRODUCTION

1.1 background of the study

Fitness defines the ability of perform physical activity and encompasses a wide range of abilities each sport and activity requires a specific set of skill, and being fit for a sport requires a specific skill set. Being fit for one sport does not necessarily make you fit for another. Although it is not all clear cut, fitness is generally divided into specific fitness categories or components (listed below), and each can be tested and trained individually. Developing motor skill competence is the way to maintain adequate physical fitness and confirm that there is a strong relationship between motor skills and physical fitness .tank (red)1995

regular exercise applied to students enhances physical fitness components, but to maintain or improve benefits it is neededto practice physical exercise every day with moderate to vigorous intensity. By applying EUROFIT and ALPHA-FITNESS batteries to the students population there is confirmed that regular physical activity improves physical fitness, and speaking of genders, have a better level and also practice more physical exercise For obese students, an effective way to enhance cardiovascular fitness and to manage the weight, there should be practice aqua aerobic exercise at 60-75% of maximum heart rate for at least 3 times per week The connection indicates a better level of the motor capacities, aerobic exercise and strength. also there is an inverse relationship between cardiorespiratory fitness and body fat for females and that could influence the level of the blood pressure, so it is recommended to maintain a healthy life style. For youth population the resilience is directly linked with cardiorespiratory fitness, mental health-related quality of life and cognitive performance in domains that require selective attention. Fitness, physical activity behavior and motor skill development are important components of the physical education curriculum and are potentially indicators of child health. Physical fitness in children and adolescents has also been linked to positive health outcomes in adults. Moreover, motor skills can be used for talent identification to predict sporting success in children. Previous research has demonstrated the positive effects of three-weeks after school program addressing motor skills and fitness can have in young children. Therefore, encouraging

motor skill and fitness development in young children is likely to have substantial benefits on health outcomes and potentially subsequent sporting success in children (Grice, 2003; Kvaavik*et al*., 2009; Matvienko and Iradge, 2009 and Lloyd *et al*., 2010).

1.2 STATEMENT OF THE PROBLEM

Students have some physical weaknesses that hinder them to achieve the desired goals. Some of the obstacles were students do not exercise with effective training to bring change in agility speed & power, due to problems in physical fitness level and training methodology, so the researcher examined questions was known that there are limited and very low strength training places and organizations to conduct strength training.

Hence the scholars made their mind to take up the study on the students of the higher education, the purpose of the study was to determine the effect of strength training on power, speed and agility of Wolkite university students. what extent strength training enhance speed, Power and agility of students? What is the most contributor exercise improves student's power, speed and agility? Do student improve their speed, power and agility by working strength training effectively? how student advance their power, speed and agility, in exercising strength training. The scholar initiated in the title of effect of strength training on selected skill related fitness components of female students in Wolkite university.

1.3 OBJECTIVE OF THE STUDY

1.3.1 General objective of the study

The general objective of this research was to determine the effect of strength training on power speed and agility of sport science department students.

1.3.2 Specific object of the project

The specific objectives of the study were:-

- To determine the effect of strength training on power.
- To find out to what extent this effects strength training will have on speed.
- To recommend the relation of effects of training methodology in the power speed and agility of sport science department students.

1.4 Research question

 To what extent strength training enhance speed power and agility of students ?

 What is the most contributor exercise improve students power, speed and agility?

 Do student improve their speed, power and agility by working strength training effective?

 How student advance their power, speed and agility in exercising strength training .the scholar initiate in the tattle of effective of strength training on select skill relate fitness components of sport science female students in Wolkite university.

1.5 Delimitation of the study

This study would be delimited as follows,

 The study was delimited to the thrid year degree female students of department sport science and their age range will be 19-23 year

 It was delimits to the selected variables such as power speed and agility component of physical fitness

 The independence variable would be delimited to the free weight and fixed weight training god gets.

1.6 LIMITATION OF THE STUDY

To study this research there would be problem beyond control of the scholar but the reason tried all best to pass & did it form those problems are:-

- temperature
- Shortage of money or financial problems
- weather
- Maturity of sample students
-

1.7 SIGNIFICANCE OF THE STUDY

The study would provide a number of benefits for the following reasons, It many serve, an, initial indicator to those who wont to carry out further studies on the related topic. It help to understand more about effects of strength training method on power, speed and agility. It serves bench mark for students to conduct research on related topic, and as a reference to understand the effects of strength, training of power, speed, and agility. It would be help to understand the advantages of conducting strength training for power, speed and agility.

1.8 DEFINITION OF TERMS

Agility - the ability to quickly change body position or direction of the body. Balance and coordination- the ability to stay upright or stay in control of body movement, an important component of many sports skills. Body composition – refers primarily to the distribution of muscle and fatigue body. Body size such as height, lengths and girths are also grouped under this component. Cardiovascular endurance- or aerobic fitness, stamina, is the ability to exercise continuously for extended periods without tiring. Motor skill gross motor skills are the basic skills developed upon with specific sports skills training.

Flexibility: -Is the degree to which an individual muscle will lengthen stretching improves flexibility.(NASPE).2009

 Isometric exercise: -It involve muscle contraction without the muscle or joint moving.(USDHHS).1996

 Isokinetic exercise: -Isotonic contraction is the force generated by a muscle while contracting when the muscle lengths and shortens during movement with the force remaining constant .

Muscular strength – the ability to carry out work against a resistance.

Muscular endurance – the ability to repeat a series of muscle contractions without fatiguing.

Performance: -Is the observable behavior of player in variance parameters of games or sport.

Power :- the ability to exert a maximal force in as short a time as possible, as in accelerating,strength to speed.(USDHHS).1996

jumping and throwing implements. Power may be defined as the greatest possible neuromuscular impulse generated over a given time period.

Speed/quickness- speed is defined as the capacity of the individual to perform successive movements of the same pattern at the faster rate. –Is quickness of movement of a limb, whether this is the legs of a runners or the arm of the shot purter.

Strength training : -It is the use of resistance of muscular contraction to build the strength on aerobic endurance and size of skeletal muscle.

Strength: -Is the ability of skeletal muscle to move a specified resistance one time.

CHAPTER- TWO

2. REVIEW AND RELATED LITERATURES

The scholars have made deliberate and continuous search for related literatures from various sources on selected variables and they have been systematically detailed in this chapter as ready references to support results of this study.

2.1 REVIEWS OF STUDIES

Lesinski (M2014) Effect of complex training on strength and speed performance in athletes. Post activation potentiating (PAP) can elicit acute performance enhancements in variables of strength, power, and speed. However,, it is unresolved whether the frequent integration of PAP eliciting conditioning activities in training (i. e., complex training) results in long-term adaptations. In this regard, it is of interest to know whether complex training results in larger performance enhancements as compared to more traditional and isolated training regimens (e. g., resistance training). Thus, this systematic literature review summarizes the current state of the art regarding the effects of complex training on measures of strength, power, and speed in recreational, subelite, and elite athletes. Further, it provides information on training volume and intensities that proved to be effective. Effects of strength training on physical function: influence of power, strength, and Body composition.

J Strength Cond Res.(2009) determine the effects of strength training (ST) on physicalfunction and the influence of strength, power, muscle volume (MV), and body composition on physical function. Healthy, inactive adults (n = 50) aged 65 years and older underwent strength,power, total body composition (% fat and fat free mass [FFMJ), and physical function testing before and after 22 weeks of ST. Physical function testing consisted of tasks designed to mimic common physical activities of daily living (ADL). To improve internal validity of the assessment of mid thigh intramuscular fat, subcutaneous fat, and knee extensors MV, a 10-week unilateral ST program using the untrained leg as an internal control preceded 12 weeks of whole-body ST. Strength, power, and FFM increased significantly with ST (all $p < 0.05$), whereas rapid walk,5 chair stands, and get up and go time decreased significantly with ST in the overall group (all $p<0.05$). Women improved significantly in both walking test times (both $p < 0.05$) but not in the

stair climb test, whereas men improved in the stair climb test ($p < 0.05$) but not in walking test+4times. Multiple regression analysis revealed the highest R (0.28) for the change in chair Stands time, followed by stair climb and usual walk at 0.27 and 0.21, respectively. ST improves performance in functional tasks important for ADLs. Changes in strength, power, and FFM are predictors of ST-induced improvements in these tasks.

Takonya A Mis; (2002) Effect of strength and power training on physical function in community dwelling older adults. The performance of daily tasks, such as stair climbing or lifting an object, requires both muscle strength and power. Age-associated reductions in strength hand power can affect an older adult's ability to complete daily tasks such as stair climbing and lifting a child. The purposes of this study were to determine whether power training was more efficacious than strength training for improving whole-body physical function in older adults and to examine the relationship between changes in anaerobic power and muscle strength and changes in physical function. Thirty-nine men and women (mean age ± SD = 72.5 ± 6.3 years)with below-average leg extensor power were randomly assigned to control (C, n = 15), strength training(ST, n = 13) or power-training (PT, n = 11) groups. The ST and PT groups met 3 days per week for 16 weeks; the C group maintained usual activity and attended three lectures during the course of the study. Primary outcome measures included the Continuous Scale Physical Functional Performance test, maximal strength, and anaerobic power. After baseline was controlled for, the Continuous **Scale** Physical Functional Performance test total score was significantly greater for the PT group than for the ST ($p = .033$) and C ($p = .016$) groups. Maximal strength was significantly greater for the ST group than for the C group ($p = .015$) after the intervention. There was no significant difference between groups for peak anaerobic power. Power training was more effective than strength training for improving physical function in community-dwelling older adults. The performance of daily tasks requires muscle strength and power, though both may be compromised because of age-associated changes in the neuromuscular system. Inadequate strength may make it difficult to lift a grandchild, and stair climbing may be difficult with reduced leg power. Loss of anaerobic power, needed for physically demanding tasks and serial task performance, can also impose limitations on older adults. These age-associated changes are largely due to a reduction in muscle mass, which is mediated by the loss of type II fibers numerous studies of older adults have demonstrated the ability of strength-training programs to attenuate these losses. Whereas strength training incorporates a heavy resistance moved at a

moderate to slow velocity, power training often utilizes a light resistance moved at a fast velocity. Participation in strength training intervention has been shown to significantly improve strength and some functional tasks in older adults, but older adults who train for muscle power are more power filth an those who do not. Because power has been highly related to functional task performance ,these individuals may have a greater ability to rise from a chair, climb stairs, and possibly avoid a fall .Power training may Improve physical function beyond that of traditional strength-training intervention because it involves a high velocity of movement. High-velocity movements can improve the motor-unit firing rate, synchronization of discharge, and levels of muscle activation more than strength training can. Both strength and power training improve anaerobic power and physical function; however, studies comparing the effects of power and strength training on physical function and anaerobic power are limited. The purposes of this study were to determine whether power training was more efficacious than strength training for improving whole-body physical function in older adults and to examine the relationship between changes in anaerobic power and muscle strength and changes in physical function. J Aging Res. (2012) Flexibility training and functional ability in older adult. As indicated in a recent systematic review relating to Canada's Physical Activity Guidelines for Older Adults, exercise interventions in older adults can maintain or improve functional abilities. Less is known about the role of flexibility in the maintenance or improvement of functional abilities, and there currently does not exist a synthesis of the literature supporting a consensus on flexibility training prescription Purpose. To systematically review the effects of flexibility specific training interventions on measures of functional outcomes in healthy older adults over the age of 65 years. Methods. Five electronic databases were searched for intervention studies involving concepts related to aging, flexibility, functional outcomes, and training interventions. After evaluating the articles for relevance, 22 studies were considered.

Results. The results suggested that while flexibility-specific interventions may have effects on range of motion (ROM) outcomes, there is conflicting information regarding both the relationship between flexibility interventions and functional outcomes or daily functioning.

Conclusions, Due to the wide range of intervention protocols, body parts studied, and functional measurements, conclusive recommendations regarding flexibility training for older adults or the validity of flexibility training interventions as supplements to other forms of exercise, or as

significant positive influences on functional ability, require further investigation.Brian-Matthew Hickey (2009) Connected study on the effect of flexibility enhancement program on athletic performance when, flexibility is one of the key items. It has been hypothesized that improving an athlete's flexibility may allow them to be more successful in their chosen athletic endeavor. More specifically, speed, the most vital determinant of athletic success, may be significantly improved by incorporating some form of flexibility enhancement into an athlete's training program. Recently, a scientific study was conducted to examine whether or not including a specific form of flexibility training in an athlete's daily training routine wouldimprove sprint performance. In this study, 30 men age 20-35, who exercised an average of 7.5 hours per week during the six months prior to the study served as subjects. Their preferred modes of training were free weight sand cardiovascular machines (Stair master, stationary bicycle etc.). Fifteen individuals included twice daily, five-minute flexibility sessions into their exercise routine, thereby acting as the treatment group. The second group served as the control and did not incorporate any additional flexibility training into their pre- existing training program. Flexibility was assessed by a sit, reach test, power through a vertical jump test, and speed by a 40-meter dash.

GordonBS (2009) Investigate the relationship of flexibility, power, and strength to club head speed (CHS) in male golfers. Fifteen golfers (mean age +/- SD: 34.3 +/- 13.6 years) with ahandicap of </=8 volunteered for the study. Following a standardized warm-up, subjects proceeded to hit 5 waffle golf balls with a 5 iron while their CHS was measured. Rotational trunk flexibility was measured on a trunk rotator machine. An index of total body rotational power was measured through a hip toss with a 3-kg medicine ball while an 8-repetition maximum (RM) on tape deck machine was used to measure chest strength. Pearson correlations were used to assess the magnitude of the relationships between CHS and the measures of flexibility, power, and strength. Partial correlations were then run to assess the effect of handicap on the observed relationships. The only variables that were significantly correlated to CHS were chest strength (1'= 0.69, $p < 0.05$) and total body rotational power ($r = 0.54$, $p < 0.05$). These relationships were unchanged when the effect of handicap was controlled for. The results of this study show that strength of the chest in the peck deck motion and total body rotational power significantly correlate with CHS in male golfers. This information can be used by practitioners to develop training programs and field tests for golfers.

O'Sullivan K (2012) the effects of eccentric training on lower limb flexibility. Reduced flexibility has been documented in athletes with lower limb injury; however, stretching has limited evidence of effectiveness in preventing injury or reducing the risk of recurrence. In contrast, it has been proposed that eccentric training can improve strength and reduce the risk of injury, and facilitate increased muscle flexibility via are come to genes is. This systematic review was undertaken to examine the evidence that eccentric training has demonstrated effectiveness as a means of improving lower limb flexibility. Two independent reviewers to identify randomized clinical trials comparing the effectiveness of eccentric training to either a different intervention, or a no-intervention control group systematically searched six electronic databases. Studies evaluating flexibility using both joint range of motion (ROM) and muscle fascicle length (FL) were included. Six studies met the inclusion/exclusion criteria, and were appraised using the PED or scale. Differences in the muscles studied, and the outcome measures used, did not allow for pooled analysis. There was consistent, strong evidence from all six trials in three different muscle groups that eccentric training can improve lower limb flexibility, as assessed using either joint ROM or muscle FL. The results support the hypothesis that eccentric training is an effective method of increasing lower limb flexibility. Further research is required to compare the increased flexibility obtained after eccentric training to that obtained with static stretching and other exercise interventions.

2.2 Components of Physical Fitness

Fitness is defined as a condition in which an individual has enough energy to avoid fatigues and enjoy life. Physical fitness is divided into health and skill related physical fitness. Skill - related physical fitness are fitness types which enhance one's performance in sport settings. Health - related physical fitness is the ability to become and stay physically healthy. It also focuses on factors that promote optimum health and prevent the onset of disease and problems associated with in activity (National Association for Sport and Physical Education (NASPE, 2009)).

2.3 Age-appropriate Activities

As educators and parents consider how to help children develop the skill-related fitness components it is important to consider the age-appropriateness of activities. Obviously, one would not expect a young child in the first or second grade to participate in the same type of muscular strength and endurance training as a senior in high school. It is necessary to develop exercise prescriptions for both the elementary, middle grades, and secondary levels. The goal of the prescriptions is to increase the activity level of all students to at least 60 minutes per day by suggesting activities which students can engage in outside of the classroom. Within this prescription, detailed instructions must be given for activities that are age appropriate for the development of each health-related fitness component; students can chart the time spent engaged in the various activities for their math classes and write about their exercise in their language arts classes. It is important to consider that fitness activities need to be made fun for children or they will not want to participate. For most individuals, giving a direct command to go out and run two laps will not be an interesting activity in which to participate. In the area of cardiovascular endurance some fun activities for elementary age and middle school students might include: , a 15-minute fun circuit, or a family fun walk. In scarves is declared the winner for that round. The 15-minute fun circuit includes stations for jump rope, jumping over a hoop, jumping jacks, and mountain climbers. Adding music to the fun circuit makes walk is an activity that can take place at home. With the family, students are 43 encouraged to take a brisk
20- minute walk throughout the neighborhood. A list of items to be found along the walk can be compiled to make the walk into a scavenger hunt type of activity. For middle grade or secondary age students, flag tag can be modified into rollerblade flag tag. The same directions would apply with the exception that the students are rollerblading instead of jogging. Jumping rope is another cardiovascular activity that older students can enjoy. Creating task cards and routines as well as setting the activity to music is an excellent way to engage students in a cardiovascular workout.

2.4 Sport-related injury

In order for prevention programmed to successfully reduce the incidence of sports-related injuries in children and adolescents, a good understanding of the factors placing young athletes at risk is necessary. Traditionally, these risk factors have been broken down into extrinsic factors (those that are external to the athlete, such as weather) and intrinsic ones (those that are inherent

to the athlete, such as gender). Extrinsic risk factors typically include sport played, position within that sport, sport-specific rules, level and duration of play, playing surface, type and quality of protective equipment, coaching quality and experience and environmental factors such as weather and season. Frequently cited intrinsic risk factors include gender, age, physiological maturation level, anatomical alignment, physical fitness level, flexibility, strength, muscle–tendon imbalances, joint stability, coordination, prospective skill level, nutrition status, history of previous injury and psychological and social factors.

2.5 Final Summary

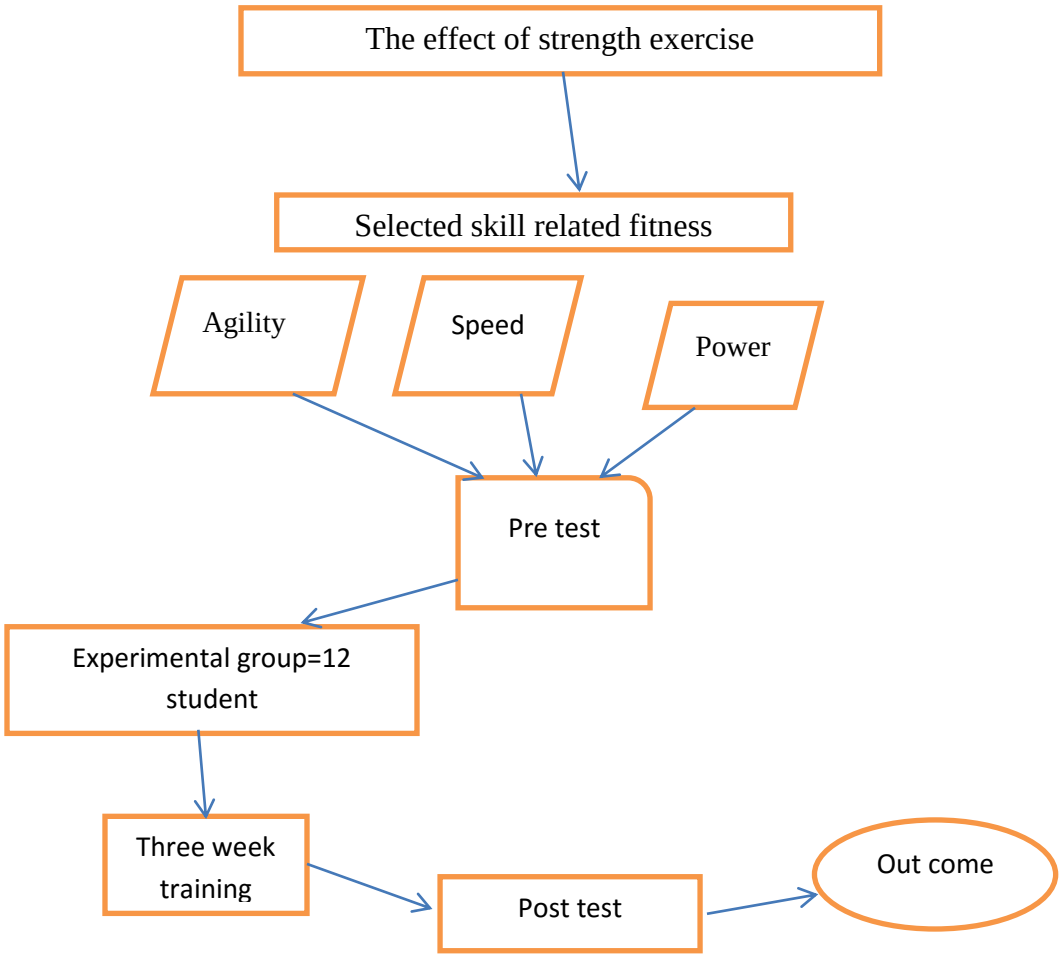
Concept of physical fitness is as old as humankind. Throughout the history of mankind physical fitness has been considered an essential element of everyday life. The ancient people were mainly dependent upon their individual strength, vigor and vitality for physical survival. This involved mastery of some basic skill like strength, speed, endurance, agility for running, jumping, climbing and other skills employed in hunting for their livings. Over the past four decades, there has been an increase in the prevalence of overweight and physical fitness deterioration in adult across all genders, ages and racial/ethnic groups (Ichinohe et al. 2004). training was originally developed in 1953 by Morgan and Anderson in England at the University of Leeds (Sorani, 1966). The original purpose of circuit training was to allow individuals to work out at their own level of intensity while still working out together as a group. An original circuit was made up of nine to twelve stations. An individual would work out at a station for a set period of time before moving on to the next station with little or no rest. Women have reported barriers to exercising that include lack of self-efficacy (situation-specific confidence in one's ability), social support, time and social interaction during exercise. Women respond differently than men to programs aimed at increasing exercise. For example, in the Activity Counseling Trial Research Group (ACTRG), which focused on increasing self-efficacy and social support, the intervention was effective in women but not in men. The gender-based difference in the effectiveness of ACTRG highlights the need to design programs specifically for women (Neis*et al*., 1998; ACTRG, 2001; Eyler and Vest, 2002)

CHAPTER 3

3. METHODOLOGY OF THE STUDY

3.1 RESEARCH DESIGN

The Research Study Was Focused On Experimental Study Within 3 Weeks Of Strength Training Exercises To Examine Skill Related Physical Fitness Variables.



3.2 SOURCE OF DATA

In this study the researcher was use both primary and secondary data sources. The primary data were obtained from pre-post-test measurements in the field throughout the training program (three week) and post-test after training. Secondary source of data such as documents, books, and Internet sources to get relevant and sufficient information regarding the study area.

3.3 STUDY POPULATION

The subject of this study was students of wolkite University from third year sport science female students. The total population was around 37 students.

3.4 SAMPLE AND SAMPLE SIZE

The students of first year degree in sport science were considered, as population. So, researcher used 12 students as sample from the total population of female students were selected as purposive sample for this study.

3.5 SAMPLING TECHNIQUE

Sampling technique is system of taking small ratio of information of this population from the sampled observation by using some statistical techniques. The researcher was selected 12 students by using simple purposive sampling technique from the population.

3.6 VARIABLE AND TEST

Variable	Exercise type	Test	Administration
Speed	Strength exercise	Maximum	30 meter acceleration test (second Maximum number of strength or exercise and how fast perform
Power	strength exercise	maximum	broad jump (meter)
Agility	strength exercise	Maximum repetition.	Illinois agility test (seconds)

3.6.1 Power test

Broad Jump

Standing Long Jump would conduct to measure subject's power and strength. In this test, the subject took crouch position by swinging his arm back ward with static position and jumped horizontally as far as possible with two feet. Three trials would be given and the longest distance would record as a score in meter (Wakai and Linthorne, 2005).

Broad Jumps build true leg strength, because you don't take a first step or get a running start. They require you to perform a deep Squat to propel yourself forward as far as you can, using your quadriceps and glute muscles.

- Use a surface that has some give to it.
- Get into a squat position with your feet shoulder-width apart facing an open space.
- Squat down deep and explode up, using your entire body to thrust yourself forward.
- Land softly on the ground and immediately transition into your next rep**.**

3.6.2. Agility test

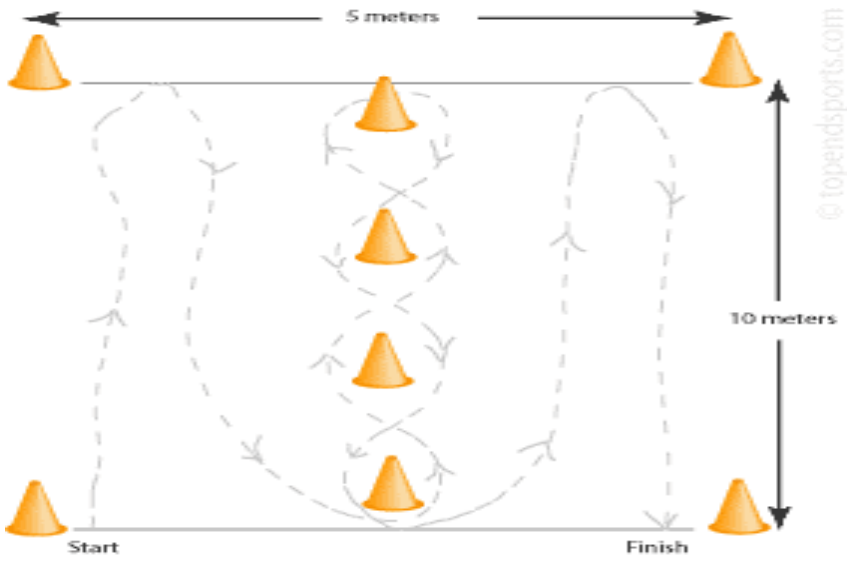
Illinois agility test

Agility times were recorded for the Illinois agility test. The test was used todetermine the ability to accelerate, decelerate, turn in different directions, and run at different angles. The Illinois agility test is set up with four cones forming the agility area (10 m long × 5 m wide). A cone was placed at each point A) to mark the start, B and C) to mark the turn spots, and D) to mark the finish. Another four cones were placed in the center

of the testing area, 3.3 m from each other. The test was conducted indoors on a wooden running surface. For all agility tests, the subject starts on the floor, face down, and begins with a random sonorous sound. The subjects must complete, as fast as possible, the agility circuit. Infrared beams were positioned at the finish point, 1-m over the floor, to take measurements with a photoelectric cell (Globus Tester, Codogne, Italy).

- purpose: to test running age

- equipment required: flat non-slip surface, marking cones, stopwatch, measuring tape, timing gates (optional)results:
- An excellent score is under 15.2 seconds for a male, less than 17 seconds for a female. See the full rating norm scores for the Illinois Test
- Advantages: This is a simple test to administer, requiring little equipment. Also, the players ability to turn in different directions and different angles is tested.



3.6.3. Test of Speed

30meter acceleration run test.

Speed was measured using the 30 meter accelerate run test. The objective of this test was to evaluate the development of the athletes' ability to effectively and efficiently accelerate from a standing start or from starting blocks to maximum speed. To take this test measure distance of 30 meter and placed a cone\marker at the start and finish lines. The players sprint the 30meter from a sprint start. The assistance records the time the athlete takes to complete the 30meter. Repeat these test three trials per players with a fully recovery between each run and the best of 3*30 meter accelerate its record to the nearest one hundredth of a second (Davis, 2000).

3.7 METHODS OF DATA COLLECTION

Like power, speed and agility, the data before and after the training was collected with the help of standard equipment tests and experts. The pre and post data was used for calculating the subjects selected for this was used to collect the data on selected variables the results. Select intensity type of strength exercise training is paramount to successfully enhance skill relate fitness component.

3.8 METHOD OF ANALYSIS

After all the required data collection activity was completed the researcher organizes, analyses data was used tables to put the data in to manageable size& percentages and meaningful ideas using manually as well as by to compare the selected physical fitness and jumping skill changes observe in the participants.

CHAPTER FOUR

4. DATA ANALYSIS AND INTERPRETATION

This chapter is with the analysis and interpretation of findings that the effect of strength exercise on agility, power and speed from wolkite university female students. The data was collected and analysed based on the pre-test and post-test of respondents

4.1. RESULT AND TEST OF THE STUDENTS STRENGHT.

TABLE 1 PERSONAL INFORMATION OR CHARACTERISTICS OF RESPONDENT

Age	Item	Number of respondent	
		Number	Percentage
	Below 18	-	-
	21-15	12	100%
	26-29		
	Above 30	-	-
Total		12	100%

-

As shown in the above table participants whose age 21-25 and 12(100%) whose age . Generally, all of the respondent's age is from 21-25 their sex is female.

TABLE 2STATISTICAL DESCRIPTION OF PRE-TEST AND POST-TEST

Mean values of Speed (sec), Agility (sec) and broad Jump (m) for twenty female students.

Item	pre-test of strength exercise	Post-test of strength exercise				
	Variables	Variables				
Statistics	Power	Agility	Speed	Power	Agility	Speed
Mean	1.73m	19.9	6.25	1.895	19.1	5.94

Standard Deviation	1.39	1.39	1.32	2.04	1.64	1.78

Table (2) showed that, the mean, median and standard deviation of speed, agility and power of participants that tested before training, during training and after training. Therefore, this result of test indicated that strength training improved the variables such as power, agility and speed ability of the participants according to the study.

POWER

TABLE 3 STATISTICAL DESCRIPTION OF broad jump POWER WITH PRE-TEST AND POST-TEST

Variable	Power	
Statistics	PRE-TEST strength exercise	POST-TEST Strength exercise
Mean	1.77	1.895
Standard deviation	1.39	2.04

As indicated in the above table(3)shows that the before training for strength exercise mean 1.77, and standard deviation 1.895 that pretest of central tendency and dispersion measure indicated the students before the power of strength exercise. When techniques such as in performing the strength exercise. The post-test power of strength exercise for Wolkite University sport science female students. As indicated in the above table (3) shows that for strength exercise mean 4.17, median 62.5 and standard deviation 2.04 that post-test of central tendency and dispersion measure indicated the students after the power of aerobic exercise

Speed

TABLE 4STATISTICAL DESCRIPTION OF SPEED WITH PRE-TEST AND POST-TEST

Variable	SPEED	
Statistics	PRE-TEST Strength exercise	POST-TEST Strength exercise
Mean	6.25	5.94
Standard deviation	1.32	1.78

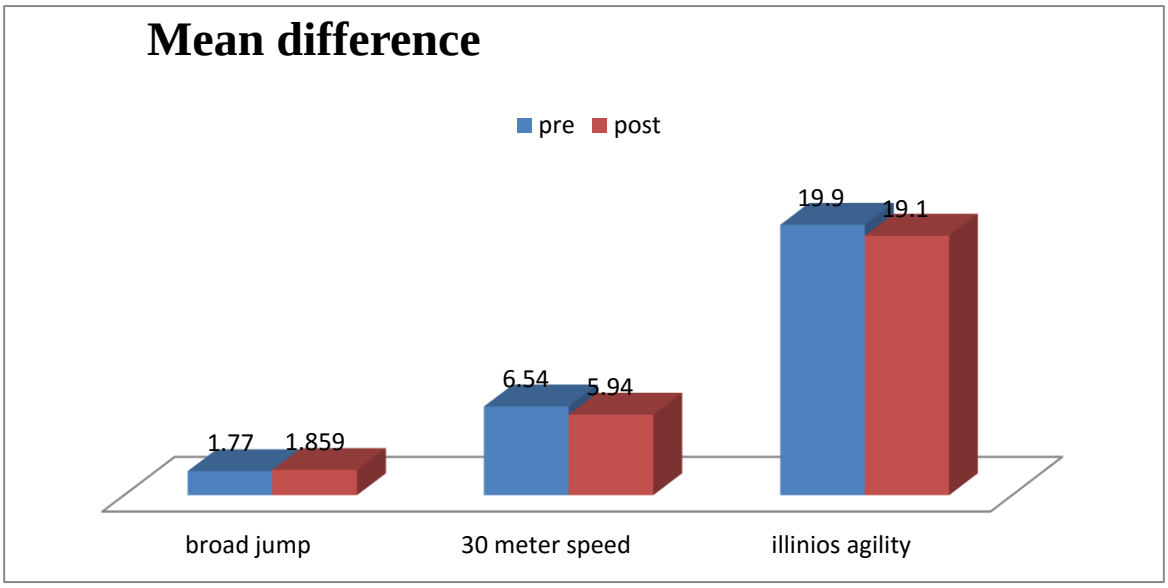
As indicated in the above table (4) shows that for Strength exercise mean 1.73 median 34 and standard deviation 1.32 that pre-test of central tendency and dispersion measure indicated the students before the quality of Strength exercise training have less speed Strength exercise because the result of the mean was increased after training. The post-test speed of Strength exercise for Aksum University sport science female students. As indicated in the above table (4) shows that for Strength exercise mean 3.17, median 47.5 and standard deviation 1.78 that post-test result of central tendency and dispersion measure indicated Strength of students improves. As test shows before training, the student's fitness of speed was less and after the exercise, it was increased accordingly. Therefore, the strength exercise would help to improve the fitness of speed of individuals.

Agility

TABLE 5STATISTICAL DESCRIPTION OF AGILITY WITH PRE-TEST AND POST-TEST

Variable	Agility	
Statistics	PRE-TEST Strength exercise	POST-TEST Strength exercise
Mean	19.9	19.1
Standard deviation	1.39	1.64

FIGURE.1 mean deference between pre and post test



Performance test	pre-Test	post-Test
broad jump	1.77 M	1.859 M
30 meter speed	6.54sec	5.94sec
Illinios agility	19.9sec	19.1sec

Fig.1 Comparison between pre-post Mean value for all variables

According to the above figure 1 the result shows that pre broad jump 1.77m and post broad jump recorded 1.859 M pre 30 meter speed 6.54 second post 30 metre speed 5.94 second and pre illinios agility 19.9 second post illinios agility 19.1second was recorded based on the result significant difference was occurred.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

This chapter deals with the summary, conclusions and recommendations based on the results and major findings of the study.

5.1. SUMMARY

The main objective of this research to determine the effect of strength training on speed, power and agility of female students from Aksum university department sport science 12 students were selected as subject/sample for the study. The paper of the present study is organized in five chapters. In chapter, one all the background of the study, statements of the problem, significance of the study and the objective of the study are discussed delimitation & limitation of the study, definition of words and acronomy of words also discussed, in the following chapter, chapter two a detail literature reviews that related to the present study have made. In this chapter both the social and economic role of sport discussed well. - In chapter three the overact methodologies that I used have presented. In this chapter the sources of population study design. Data collection tools, and statistical methods are mentioned. Data analysis and discussion on the results that we found made in chapter four and finally the conclusion and recommendation based on the result we found are made in chapter five. Future research direction also mentioned in this chapter.

5.2. CONCLUSIONS

Based on the results of the research (study), good strength training has a positive effect on the development of power, speed and agility of individual trainers. Above all the physical quality of the trainer is determinant factor of the effectiveness of strength training. Whoever, the attention given and the method followed to develop the power, and flexibility of the trainer was no more enough. Such condition results negative effects on the development of power, speed and agility.All the strength trainers have done according to the coaches training place or program. All individual exercise for the development of power, speed and agility and providing proportional training ensures the development better strength training, even though power,speed and agility are highly determined by proper practices, nutrients (like protein), which are the main component of macronutrient that help for the growth strength muscle tissue, also have

significant effect.

5.3. RECOMMENDATIONS

Based on the results and major findings as well as conclusions drawn from this study following recommendations are made:

1. As power, speed and agility are the major qualities for strength trainers, the coach should give the necessary attention for power, speed and agility training.
2. In order to improve the speed, power and agility ability the trainers, coaches should conduct different physical fitness tests on their trainers based on these results and coaches can identify the capability of their trainers.
3. In addition to proper strength training, well-balanced nutrients have a significant effect on the improvement of power, speed and agility. Therefore, to compensate the energy cost of the trainer, training organizations should facilitate and provide all the nutrients for their trainer.
4. The level and quality of coach is the main determinate issue for effective strength training on power, speed and agility of trainers. Though continues and effective training should upgrade the level of he coaches this will improve the power speed and agility of trainer.
5. The strength and resistance play performance role in sports training to improve performance of athletes, hence it is recommended to pay attention the result and conclusion of the this study.
6. It is recommended that the result of this study may be considered by the trainer and coaches to design the training program for the improvement of related components of general and specific fitness
7. The similar study project can be paned for male students or youth of higher education of pursuit of excellence in sports.
8. It is finally recommended to pay critical attention of strength training at rest once, twice or treble in a week depending on performance variables be controlled for curative achievement of athletes and players in variance and sports of different level of competitions.

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