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# A COMPARATIVE STUDY ON PHYSICAL FITNESS STATUS OF URBAN AND RURAL MALE STUDENTS IN THE CASE OF YEDUHA GENERAL HIGHER EDUCATION PREPARATORY SCHOOL

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**BAHIR DAR UNIVERSITY**

**SPORT ACADEMY**



**A COMPARATIVE STUDY ON PHYSICAL FITNESS  
STATUS OF URBAN AND RURAL MALE STUDENTS  
IN THE CASE OF YEDUHA GENERAL HIGHER  
EDUCATION PREPARATORY SCHOOL**

**BY**

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**AUGUST, 2018**

**Bahir Dar University**

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**A THESIS SUBMITTED TO SPORT ACADEMY, BAHIR DAR UNIVERSITY IN PARTIAL FULFLLMENT OF REQUIRENTS OF THE DEGREE OF MASTERS OF EDUCATION IN PHYSICAL EDUCATION.**

**BAHIR DAR UNIVERSITY**

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**Bahir Dar University**

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## **Declaration**

The research work is entitled, a comparative study on physical fitness status of urban and rural male students in Yeduha general higher education preparatory school. I declare that this thesis is my genuine and original work, and so that, the thesis has not been presented for the award of any academic degree, diploma, or any other similar title in any other institution except, deposited at the university library to be made available to borrowers under the rule of library. I declare that all sources of materials used for the thesis have been duly acknowledged.

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<b>Table of Contents</b>	<b>Page</b>
Declaration .....	i
Acknowledgments.....	ii
Table of contents.....	viii
List of tables.....	vi
Abstract.....	vii
Abberivations.....	viii
 <b>CHAPTER ONE</b>	
<b>INTRODUCTION..... 1</b>	
1.1 Background of the study .....	1
1.2. Statement of the problem .....	3
1.3. Objectives of the study.....	5
1.3.1. General objectives .....	5
1.3.2. Specific objectives .....	5
1.4. Research question.....	5
1.5. Significance of the study .....	5
1.6. Delimitation of the study.....	6
1.7 Limitation of the study .....	6
1.8. Operational definition of terms .....	6
 <b>CHAPTER TWO</b>	
<b>REVIEW OF RELATED LITERATURE..... 8</b>	
2.1. Concepts of physical fitness.....	8
2.2. Components of physical fitness.....	9
2.2.1. Health related physical fitness components.....	9
2.2.2. Skill-related physical fitness components .....	10
2.3. Health and physical fitness.....	11
2. 4. Objectives of physical fitness development .....	12
2.5. Physical activity and sedentary behavior .....	13
2.6. The benefits of quality physical fitness.....	14
2.7. Physical activity outcomes and impacts.....	15

2.8. The effect of physical activity on adults and aged people .....	16
2.9. Physical fitness and life in urban and rural area.....	17
2.10. Factors that affect physical fitness program.....	18
2.11. Barrier's for physical activity development.....	22
2.12. Physical fitness differences urban to rural people.....	23
2.13. The development of fitness test.....	23
2.14. Guidelines for the administration and use of fitness tests .....	24

## **CHAPTER THREE**

<b>RESEARCH METHODOLOGY.....</b>	<b>25</b>
3.1 Study design .....	25
3.2 Subject of the study and population .....	25
3.3 Sampling techniques and sample size .....	26
3.4 Source of data.....	26
3.5 Instruments of data collection .....	26
3.5.1 Questionnaire.....	27
3.5.2 Interview .....	27
3.6. Procedures for administration of fitness tests .....	27
3.6.1 Cardiovascular endurance fitness test.....	27
3.6.2 Body composition tests.....	28
3.6.3 Flexibility test.....	28
3.6.4 Agility test .....	28
3.6.5 Speed test.....	29
3.7 Reliability of test .....	29
3.8 Selected variables and their criterion measures. ....	30
3.9 Methods of data analysis .....	30
3.10 Ethical issue.....	30



## **CHAPTER FOUR**

<b>RESULTS AND DISCUSSIONS</b> .....	32
4.1 Characteristics of the respondents.....	32
4.2. Result of fitness test .....	33
4.3. Results of student from questionnaire.....	36
4.4. Discussions.....	42

## **CHAPTER FIVE**

<b>SUMMARY, CONCLUSION AND RECOMMENDATIONS</b> .....	48
5.1. Summary .....	48
5.2 Conclusions .....	50
5.3 Recommendations .....	50
<b>REFERENCES</b> .....	52
<b>APPENDIX A:</b> questionnaire for students.....	58
<b>APPENDIX B:</b> interview question for teacher.....	62
<b>APPENDIX C:</b> Standard and norms for selected variable.....	63

<b>List of table's</b>	<b>Page</b>
<b>4.1 Characteristics of the respondents</b> .....	32
Table 4.1.1: Age, weight and height of the respondents .....	32
<b>4.2. Result of fitness test</b> .....	33
Table 4.2.1: The mean and standard deviation value of urban and rural male students. ....	34
Table 4.2.2: The t- value of selected variable between urban and rural male students: .....	35
<b>4.3. Results of student from questionnaire</b> .....	36
Table 4.3.1: Fitness program and health .....	36
Table 4.3.2: Participation in regular exercise.....	37
Table 4.3.3: Knowledge about the contribution physical fitness .....	39
Table 4.3.4: Factors affecting physical fitness performance.....	40
<b>Standard and norms for selected variable</b> .....	62
Table 1. The standard norms of 3 minutes step test. ....	63
Table 2. The normative data of BMI test. ....	63
Table 3. The normative data of sit and reach test .....	64
Table 4. The normative data of Illinois test. ....	64
Table 5. The normative data of 50 meter test.....	64

## **ABSTRACT**

*The purpose of this study is to compare the physical fitness status of urban and rural male students: in the case of Yeduha general higher education preparatory school. Mixed design was employed in the study. The study was used mixed approaches. The sample of the study was selected through systematic random sampling and comprehensive techniques. The sample sizes of the study were 50 urban male students and 50 rural male students and three physical education teachers. The data were collected through physical fitness test, questionnaire and interview. The collected data is being analyzed by statistical procedure arithmetic mean, standard deviation, standard error of mean and independent sample “t” test. The analyzed data result indicated that there were significant differences between urban and rural male students on physical fitness components. The comparative analysis of each selected physical fitness components between urban and rural male students cardiovascular endurance mean 78.32bpm and 73.18bpm, standard deviation 4.91bpm and 2.28bpm respectively, body composition mean 25.17kg/m<sup>2</sup> and 22.48kg/m<sup>2</sup> standard deviation 2.57kg/m<sup>2</sup> and 2.16kg/m<sup>2</sup> respectively, flexibility mean 4.52cm and 3.14 cm, standard deviation 3.09cm and 2.02cm respectively, speed mean 11.11sec., and 9.50sec., standard deviation 1.21sec., and 0.56sec., respectively and agility mean 16.20sec., and 16.95sec., standard deviation 1.41sec., and 1.67sec., respectively. In this study urban male students have a greater performance in flexibility and agility than rural male students due to the superiority of urban male students’ life style. The rural male students have better cardiovascular endurance, body composition and speed than urban male students due to their regular involvement in various activity after school to help their families like shepherding, fetching water, other farming activity, traveling from home to school and vice-versa.*

## **ABBERRIVATIONS**

BMI = Body mass index

B.P.M= Beat per minute

CDC= Center for disease control

CHD = Coronary heart disease

CM= Centimeter

CRF= Cardiorespiratory fitness

CVD= Cardiovascular disease

CVE= Cardiovascular endurance

DF=Degree of freedom

DHHS= Department of health and human service

NASPE = National Association for Sport and Physical education

NCD= Non communicable disease

NIDDM= Non-insulin dependent diabetes mellitus

PA= Physical activity

RMSR= Rural male student response

S.D = Standard deviation

SEC = Second

SEM = Standard error of mean

SPSS = Statistical Package for Social Science

UMSR= Urban male student response

USDHHS= United State Department of Health & Human Service

WHO= World health organization

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of the study

The school physical education programs focused on helping children attain competency in the fundamental motor skills (e.g. throwing, catching) and movement concepts (e.g. balance) that form the foundation for later development of specialized game, sport, fitness and dance activity. As children progress through school skill and fitness development is accompanied by any increased knowledge understanding of physical activities. High school students get opportunity to choose several different activities from their physical education program. Some instruction may take place in the community, increasing the range of activities that can be offered to students and encouraging students to use the community facilities during their leisure time (Deborch A.Wuest and Charles ,2006).

Available experience and scientific evidence show that the regular practice of appropriate physical activity and sport provides people, male and female, of all age and conditions, including persons with disability, with wide range of physical, social and mental health benefits (Ibid).

It interacts positively with strategies to improve diet, discourage the use of tobacco, alcohol and drugs, helps reduce violence, enhances functional capacity and promotes social interaction and integration. Physical activity is for an individual: a strong means for prevention of diseases and for nation's cost-effective methods to improve public health across the population, (WHO, 2003b).

Schools physical education focus on promotion of life span involvement in physical activity. Students learn the skill, knowledge and attitude that will enable them to participate in various physical activities throughout their life. Elementary school physical education program focused on helping children attain competency in the fundamental motor skill and movement. Physical fitness is estate health rather than behavior. It is asset of physical attributed that allows the body to respond or adapt to the demands and stress of physical effort. It is a multidimensional indicators of several functional capacities such as cardiovascular endurance, muscular strength or

mobility, which in varying degrees are a result of genetics' and stage in the life span, as well as physical activity levels (ministry of health of Newzeland, 2003).

According to Haskell and Kiernan, (1996), Fornicola, (ND, karinharju, (2005) and U.S.A DHHS, (2000) physical fitness is defined "the ability to carry out daily tasks with vigor and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies." Although the development of physical fitness is the result of many things, optimal physical fitness is not possible without regular physical exercise. Physical fitness is associated with a person's ability to work effectively, enjoy leisure time, be healthy, resist hypokinetic diseases, and meet emergency situation. Although the development of physical fitness is the result of many things, optimal physical fitness is not possible without regular physical exercise.

Physical fitness is the ability of the body to function at optimal efficiency. The fit individual is able to complete the normal routine for the day and still have ample reserve energy to meet the other demands of daily life. Recreational sports and other leisure activities and handle life emergency situations (Ibid).

All-round fitness is a key to quality of life. To be able to carry out daily tasks without undue fatigue or to enjoy leisure time pursuits requires a certain degree of fitness. A physically fit person looks better, feels better and think better and so lives better. Likewise, physical fitness is closely associated with good health. Blair et al., (1989) showed that people with "good" fitness level have less heart disease risk than those with "low" fitness. Compared with inactive, people moderately or vigorously active people are less likely to suffer premature all-cause mortality; cardiovascular diseases (CVD) such as coronary heart disease (CHD), stroke, and high blood pressure; colon cancer; non-insulin dependent diabetes mellitus (NIDDM) and osteoarthritis (USDHHS, 2006) suggests that muscle fitness is necessary to prevent back pain.

The urban people with the growth of cities has come a great transformation in the living habits of society. The city is the hub of much social life, and it influences its standards. Intellectual growth, and habits, moral codes and condition, behaviors patterns and cultural conditions resolve a ground it. New communities, new groups, new ethic relations and multitude of classes make of the city on intricate and complex units of modern society. The student performances vary on the

different physical fitness components. The urban and rural male students have different skill and health related physical fitness. The available data relating, urbanization to PA, sedentary behavior and CRF indicate somewhat variable results. Research addressing the lifestyle and physical fitness of urban and rural youth is limited (Coelho e Silva et al. 2003).

PA occurs in social contexts that have specific demands and constraints such as opportunities for walking, access to playground, proximity to shopping, centers, and so on. Changes in parental work habits, television viewing, availability of video game, and other culturally related factors in the environment have also been indicated as contributing to increased opportunities for sedentary behaviors (Moreno et al. 2001). The effect of urbanization may also interact with rearing style; for example, mothers with higher level of education are more likely to engage in health promotion behavior (Sherar et al, 2009). The two group, those are urban and rural male students shows varies behaviors after transformation of child to adults, and changes in living habits of the society influences their living standards.

The purpose of this study was to compare the physical fitness status of urban and rural male students on selected physical fitness, cardiovascular endurance, body composition, and flexibility from health related physical fitness, and, agility, and speed from skill related physical fitness, and to find out which of these two categories is more physically fit in response to tests administered so as one can improve the standard and level of physical fitness in urban and rural male students.

## **1.2. Statement of the problem**

Schools have the potential to improve the health of young people by providing institution in physical education that promotes enjoyable lifelong physical activities. Disease and health problem resulting from an inactive life style have their origins early in life. This is when active lifestyle should be established. Fitness begins at birth and should continue throughout a person's life. Physical activity and fitness behaviors should be normal and necessary part of everyone's life. Fitness improves general health and it is essential for full and vagarious living. The physical fit child feels more alert and eager to do things. A weak child is a weak brick in the wall of the nation. The wealth of nation depends entirely up on the health of every citizen of the country (Deborch A.Wuest and Charles ,2006).

Many factors can be related to level of physical activity among children. Loucaides et al, (2004) stated five factors that would contributed to level of physical activity among children in their “Difference in physical activity levels between urban and rural school children in Cyprus”. They stated that the factors that contribute are seasonal factors, space, and safety, exercise equipment availability, transportation and daily activity. Other factors that would related to children’s physical activity are, participation in organized sport, physical education class in the school, transport patterns, electronic and screen based entertainment, and socio-cultural changes (Dollman, 2005). These factors, some lead to the result of the urban children to have higher level of physical activity such as the equipment availability and transportation while some factors lead to the result that rural children have better level of physical activity (Loucaides et al, 2004). A child’s nowadays, also less active especially in urban areas. Dollman et al, (2005) stated that children nowadays are more ‘preferred’ to be inactive when choosing activities such as eating and sleeping as their top 10 activities.

Nowadays individuals has different level of physical fitness in our school that may be determined on their lifestyle, family background or parental involvement, time, place of work, and living area. Physical fitness is determined by direct interaction with daily activities.

At school level the student have great difference in interest, participation and performance of physical activities in physical education practical class. That is why this study mainly was focused on the comparison of physical fitness status of urban and rural male students on selected health related and skill related physical fitness.



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

#### **1.3.1. General objective**

- The general objective of the study is to compare the physical fitness status of urban and rural male students in Yeduha general higher education preparatory school.

#### **1.3.2. Specific objectives**

- To identify the physical fitness status in urban and rural male students.
- To examine the physical fitness level of urban and rural male students.
- To point out factors that affects the quality of physical fitness in urban and rural male students.
- To examine the significance different between in urban and rural male student on selected physical fitness components.

### **1.4. Research question**

The study mainly focused on the physical fitness status of urban and rural male students. Therefore, this study was tried to answer the following basic research question:

- ❖ What is the status of physical fitness in their daily activity of urban and rural male students?
- ❖ What are the factors that affect the quality of physical fitness in urban and rural school male students?
- ❖ How could improve the physical fitness level of urban and rural preparatory school male students?
- ❖ What are the significant different between in urban and rural student fitness components?

### **1.5. Significance of the study**

The significance of research will be increased knowledge, the habits of problem solving, and to reach on a solution of a certain issue. This study can helps as an input to introducing the ways of developing physical fitness level of rural and urban male students, and motivate the students on the participation of regular exercise. The finding of the study could provide information about the physical fitness level of urban and rural male students, for school, youth and sport office, and

provide information for those who want to involve on health related physical fitness and performance related physical fitness training program. The finding of the study also used for the teachers' to modify the teaching methodology in their practical class, and it will provide source for other researchers for further investigation on this area of study.

### **1.6. Delimitation of the study**

The study was conducted in Amhara region, East Gojjam zone, Yeduha, Yeduha general higher education preparatory school urban and rural male students. The school is situation 265 km from Addis Ababa in northern part of Ethiopia. The data were collected from 100 (50 rural and 50 urban) male students of Yeduha general higher education preparatory school. The study was restricted on comparison of physical fitness status of urban and rural male students. It was delimited on a physical fitness component; cardiovascular endurance, flexibility, body composition, speed and agility.

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

The researcher faced for the following difficulties on doing this thesis:

- The distance of the study area to get recent review literature, and materials, and difficulty to obtain assistance during physical fitness test.
- Lack of the student willingness to get on a time and actively participate on physical activity during physical fitness test.
- Some respondents hand writing illegible on open ended question on the questionnaire.

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

**Agility:** the ability to rapidly and accurately change position and direction of the movement of the entire body in space (Charles B. Corbin (2000:8).

**Body composition:** the relative proportion (percentage) of muscle, fat, bone, and other tissue that comprise the body (Charles B. Corbin (2000:7).

**Cardiovascular endurance:** the ability of the heart, blood vessels to supply fuel and oxygen to the muscle (Charles B. Corbin (2000:7).

**Flexibility:** the range of motion available in a joint. It is affected by muscle length, joint structure, and other factors (Charles B. Corbin 2000:7).

**Physical activity:** is generally considered to be a broad term used to describe all forms of large muscle movements (Charles B. Corbin 2000:11).

**Physical exercise:** exercise is defined as physical activity done for the purpose of getting physically fit (Charles B. Corbin 2000:11).

**Physical education:** is defined as an educational process that use physical activity as means to help individuals acquire skill, fitness, knowledge and attitudes that contribute to their optimal development and well-being (Wuest Bucher, 1999:9).

**Physical fitness:** is the body's ability to function efficiently and effectively (Charles B. Corbin 2000:6).

**Sedentary behavior:** defined as any waking activity characterized by low energy expenditure ( $\leq 1.5$  metabolic equivalents) and a sitting or reclining posture (Sedentary Behavior Research Network 2012).

**Speed:** the ability to perform a movement in a short period of time (Charles B. Corbin 2000:8).

## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **2.1. Concepts of physical fitness**

According to the ministry of health of Newzeland (2003); physical activity is any body movement produced by skeletal muscles that result in energy expenditure. It comprises by skeletal muscles that result in energy expenditure. It comprises duration, frequency, intensity, type and context. The energy expenditure can be measured in kilocalories. Physical activity in daily life can be categorized into occupational, sports, conditioning, household or other activities.

Physical exercise: is a subset of physical activity that is distinguished by being done to improve or maintain physical fitness or health. Exercise can be done at a variety of intensities but often means vigorous activity. It can include moderate intensity walk. Exercise is a subset of physical activity that is planned, structured, and repetitive and has as a final or an intermediate objective the improvement or maintenance of physical fitness. Physical fitness is estate health rather than behavior. It is asset of physical attributed that allows the body to respond or adapt to the demands and stress of physical effort. It is a multidimensional indicators of several functional capacities such as cardiovascular endurance, muscular strength or mobility, which in varying degrees are a result of genetics' and stage in the life span, as well as physical activity levels (ministry of health of Newzeland, 2003). According to Haskell and Kiernan, (1996), Fornicola, (ND, karinharju, (2005) and U.S.A DHHS, (2000) physical fitness is defined "the ability to carry out daily tasks with vigor and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies." Although the development of physical fitness is the result of many things, optimal physical fitness is not possible without regular physical exercise.

## **2.2. Components of physical fitness**

According to Wuest and Lombard (1994), NSCA, (2001) and Karolides (1993), physical Fitness is most easily understood by examining its components, or parts. There are two major components of physical fitness. These are health related fitness such as cardiovascular, endurance, muscular strength, flexibility and body composition and skill related fitness components such as agility, power, coordination, balance, reaction time and speed.

### **2.2.1. Health related physical fitness components**

1. **Cardiovascular endurance:** the ability of the heart, blood vessels, blood and respiratory system to supply fuel and oxygen to the muscles and the ability of the muscles to utilize fuel to allow sustained exercise. A fit person can persist in physical activity for relatively long periods without undue stress. The American Heart Association (2004b) reported that cardiovascular disease is the number one killer in America. Therefore, activities promoting cardiovascular fitness are extremely important in the prevention of this life threatening disease as well as other degenerative illness that can be related to poor cardiovascular endurance.
2. **Muscular endurance:** The ability of a muscle or group muscle to remain contracted or to contract repeated (exert) for a long period of time. A fit person can repeat movement for a long period without undue fatigue. For true assessment of muscular endurance it would be necessary to test each major muscle group of the body.
3. **Muscular strength:** The ability of the muscle to exert an external force or to lift heavy weight, or the amount of force a muscle can produce with a single maximum effort. A fit person can do work or play that involves exerting force such as lifting or controlling one's own body weight.

According to WHO, (2005), women have smaller amount of the anabolic hormone testosterone and therefore have less muscle mass and size than men, because of this, women typically have 60% to 80% of the absolute strength of men and have relative strength similar to man muscle strength peaks, around 25 years of age, plateaus through 35 to 40 years of age, and then shows an accelerating decline, with 25% loss of peak force by

the age of 65 years. The male and female strength ratio is unchanged, so that women are limited by a loss of strength at an earlier age than men. Muscle strength can be greatly improved as little as 8 weeks of resistance training, even in 90 years old. Maximum strength is usually reached in the 20s and typically decline with age. As people grow older, regardless of gender, muscular strength is better among people who train than people who do not. This suggests that progressive resistance training is one antidote to premature aging.

4. **Body composition:** the relative proportion (percentage) of muscle fat, bone, water, and other tissues comprise the body. A Fit person has a relatively low, but not too low, the percentage of body fat (body fatness), according to NHS Direct, (2011), A BMI of  $< 18.9$  as underweight and may indicate mal nutrition, an eating disorder or other health problems, while a BMI  $> 25$  is considered over weight and above 27 is considered obese or high risk. As exceptionally, people who do regular physical activity and possess a large muscle mass and size can be high in body weight without being too fat and weighting at the same time today, preferably early in the morning is best, because it is more likely to represent real changes in body composition. There is loss of height through aging: BMI will increase without any corresponding increase weight.
5. **Flexibility:** The range of motion in a joint or group of joints. It is affected by a muscle length, joints structure and other factors. Flexibility is highly specific and varies for each joint or joint group. Thus, the flexibility of a certain joints cannot be used to generalize the flexibility of other areas of the body: there is also a relationship between flexibility measures and deference's in age and sex.

### **2.2.2. Skill-related physical fitness components**

According to Charles B. Corbin, (2009), skill related components of physical fitness are more associated with performance than good health. They are called skilled-related because people who possess them find it easy to achieve high level of performance in motor skill, such as those required in sports and in specific types of jobs, skill-related fitness is sometimes called sport or motor fitness.

1. **Speed:** is the ability to perform a movement quickly. It is the time takes us to respond to a stimulus.
2. **Power:** the ability to transfer energy in to force at a fast rate (exert force rapidly, based on a combination strength and speed). Throwing, jumping, or sprint starting sport events that require considerable power.
3. **Agility:** is the ability to change position and direction rapidly, with precision and without loss of balance.
4. **Balance:** is the maintenance of equilibrium while stationary or while moving. The harmonious development of physical, mental, and spiritual aspects of a person.
5. **Coordination:** is the ability to use the sense and body parts in order to perform motor tasks smoothly and accurately.
6. **Reaction time:** the time elapsed between stimulation and the beginning of reaction to that stimulation driving or racing car and starting as print race require good reaction time.

### **2.3. Health and physical fitness**

Regular physical activity and good fitness not only help prevent diseases, but also promote quality of life and feeling well. Good health related physical fitness can help the person feel good, look and enjoy life.

Available experience and scientific evidence show that the regular practice of appropriate physical activity and sport provides people, male and female, of all age and conditions, including persons with disability, with wide range of physical, social and mental health benefits. It interacts positively with strategies to improve diet, discourage the use of tobacco, alcohol and dings, helps reduce violence, enhances functional capacity and promotes social interaction and integration. Physical activity is for an individual: a strong means for prevention of diseases and for nation's accost-effective methods to improve public health across the population, (WHO, 2003b). The world is witnessing a significant increase of the global burden of non-communicable diseases (NCD) such as cardiovascular diseases, cancer, diabetes and chronic respiratory diseases. The increasing global epidemic of these diseases relates closely to respective changes

in lifestyles mainly in tobacco use, physical inactivity and unhealthy diet. The 2002 world health report on "Risk to heart-promoting healthy living" highlights the significant contribution of these risk factors, including physical inactivity to the overall burden of NCD worldwide. Overall physical inactivity is estimated to cause 1.9 million Deaths globally. Physical inactivity causes globally, about 10-16% of cases each of breast cancer. The risks of getting a cardiovascular disease increases up to 1.5 times in people who do not follow minimum physical activity recommend actions. Physical activity is in key position for weight control. In the United States, obesity causes 300000 deaths annually, a number exceeded only by deaths related to tobacco. A higher rate of obesity is found in many countries of Latin America, the Middle East and Asia. Some island nations of the western pacific have especially high rates of obesity. In china, an estimated 200 million people could become obese in the next ten years. The health benefits of physical activity and a healthy diet take place through many other mechanisms besides influencing weight control.

The negative effects of degrading physical fitness on both individuals and society are serious and multi-dimensional. It can cause many risk factors to health including coronary health disease, certain form of cancer, diabetes, hypertension, stroke, gall bladder disease, osteoarthritis, respiratory problem, gout, and is associated with increases in all-cause mortality. Low level of physical activity and cardiorespiratory fitness are both associated with higher risk of all cause and disease specific mortality. Physical fitness is the ability to perform daily activities willingly and actively. Physical fitness includes not only components of sports but those of health as well. Regular physical activity prevents or limits weight gain, and gain in body mass index (BMI) (Kyle et al., 2001).

#### **2.4. Objectives of physical fitness development**

Physical development objectives help build big muscles and develop the human organic system, (organic refers to the digestive, circulatory, excretory, heart regulatory, respiratory and other systems of the human body). As Charles A. Bucher (1993.) stated as in his book "it results in the ability to sustain adaptive efforts, to recover; and to rest fatigue" this objective also as physical fitness, physical conditioning organic development or biological development is concerned with increasing the capacity of the body for movement.



Physical activity also has economic benefits especially in terms of reduced health care costs, increased productivity, healthier physical and social environments. Economic consequences of physical inactivity affect individuals, businesses and nations.

Data from developed countries indicate that the direct costs of inactivity are enormous. In the U.S.A, an investment of US\$ 1 (time and equipment) leads to US\$ 3.2 in medical cost savings. Physically active individuals save an estimated US\$ 500 per year in health care costs according to 1998 data. The costs associated with inactivity and obesity accounted for some 9.4% of the national health expenditure in 1995. Inactivity alone may contribute as much as US\$ 75 billion to us medical costs in the year 2000, WHO, (2003).

## **2.5. Physical activity and sedentary behavior**

It is obvious that regularly participated in physical activity contributes to good health across throughout the life. Where as an individual not participate on physical activity or inactivity is one of the exposor of different disease. This also supported in literature like (Lee et al. 2012). Sedentary behavior, including time spent sitting each day is emerging as an independent risk of factors for health (Owen et al, 2010). Moving more and sitting less is important for physical mental health and wellbeing, and delivers arrange of other economic, social and environmental benefits. Sedentary behavior, defined as any walking activity characterized by low energy expenditure (<1.5 metabolic equivalents) and a setting or reclining posture (Sedentary behavior research Network, 2012). It includes sitting at work or school, car travel, and screen-time (television viewing, video game, play, computer use for leisure). A growing body of evidence indicates that time spent sitting is consistently associated with premature mortality, type 2 diabetes, and risk factors for cardiovascular disease, irrespective of time spent being active. Prolonged sitting is a risk factor for poor health and early death, even among those who meet, or exceed, national physical activity guidelines (VicHealth 2012b).

Sedentary life is the most important problem for individual health growth (Ujevic et al, 2013). Children and young people who spent prolonged periods of time in sedentary behavior have poorer physical, mental, social, and academic profiles (Hinkely et al, 2014, Okely et al, 2013). These sedentary behaviors mostly develop though the age individuals because the childhood movement not continuous out of the live that become decline and become deactivate. In thus, evidence suggests sedentary time increases during the transition from primary to secondary

school and older adolescent are the second most sedentary group after older people (Matthews et al, 2008).

## **2.6. The benefits of quality physical fitness**

The benefits of physical activity have been viewed as important in our society for many years. However, it was not until the second half of this past century that evidence from a scientific standpoint began to support these beliefs (cooper, 1999). There is an accumulating body of evidence to support the fact that young children are becoming less physical active and more overweight and obese. For example, the centers for disease control (CDC: 2000) reported that physical inactivity has contributed to the 100% increase in the prevalence of childhood obesity in the united states since 1980. In addition to issues regarding obesity, many studies on physical activity have shown that the body responds to exercise in ways that have positive effects on the cardiovascular, respiratory, endocrine, and musculoskeletal systems. More specifically, physical benefits of exercise such as increased muscle strength, range of motion, flexibility, posture, and endurance, all promote self-sufficiency and decrease feelings of depression, dependence, and lack of control. Regular participation in physical activity also appears to reduce anxiety, improve mood and enhance an individual's ability to perform daily tasks.

Also emerging research in animals and humans alike suggests that physical exercise may boost brain function, improve mood, and otherwise increase the capacity for learning (Kong, 1999). According to WHO, (2003b) regular physical activity active play and sports can be a practical means to achieving numerous health gains, either directly or indirectly through its positive impact on other major risks, in particular high blood pressure, high cholesterol, obesity, tobacco use and stress. Physical activity reduces the risk of cardiovascular disease, some cancers and type 2diabetes. These benefits are mediated through a number of mechanisms: in general it improves glucose metabolism, reduce body fat and lowers blood pressure. Physical activity may reduce the risk of colon cancer by effects of prostaglandins, reduced intestinal transit time, and higher antioxidant levels. Physical activity is also associated with lower risk of breast cancer, which may be the result of effects on hormonal metabolism. Participation in PA can improve musculoskeletal health, control body weight and reduce symptoms of depression. Much of the health gain is obtained through of at least 30 minutes of cumulative moderate physical activity every day. This level of activity can be reached through abroad range of appropriate and

enjoyable activities and body movements in people's daily lives, such as walk, to work, climbing stairs, gardening, dancing, as well as a variety of leisure and recreational sports.

The Governor's council on physical fitness and nutrition believes that regular physical activity is one of the most important things Iowans can do for their health. It can help: (<http://www.Healthyiowa.gov/fitness.aspx>)

- ✓ Control weight
- ✓ Reduce the risk of cardiovascular disease
- ✓ Improve core strength
- ✓ contribute to productivity in the classroom and worksite
- ✓ Reduce the risk for type 2 diabetes.
- ✓ Reduce the risk for some cancers.
- ✓ Improve bones and muscle strength.
- ✓ Contribute for mental muscle health and mood.

## **2.7. Physical activity outcomes and impacts**

Physical activity is associated with many physical and mental health benefits as well as social, economic, and environmental benefits. Across all age groups, physical activity is related to lower obesity risk and better fitness, bone health and cognitive performance (Lee et al 2012, Okely et al 2013).

Physical health: physical inactivity is responsible for more than five million deaths globally per year (Lee et al. 2012). Sport and recreation participation is related to reduced overweight or obesity and improved physical fitness (Khan et al. 2012). Active travel contributes to low obesity risk and premature cardiovascular disease mortality among adults, and improved fitness in children and youth (Larouche 2014a, Larouche et al. 2014b, Xu et al 2013).

Mental health: participation in sport and recreation is associated with fewer depressive symptom, better mental and social health, team work skills, social interaction and friendships and feelings of belongingness among children and adolescents (Eime et al. 2013). Walking can deliver a community benefits by increasing social connections and public safety (Burke et al. 2014).

## **2.8. The effect of physical activity on adults and aged people**

According to WHO, (2003) for adults and aging individuals physical activity has shown to improve balance, strength, coordination, flexibility, endurance, mental health, motor control and cognitive function. Improved flexibility, balance, and muscle tone can help prevent falls- a major cause of disability among older people. Walking or organized exercise sessions, appropriately suited to an individual's fitness level can provide the opportunity for social interaction, for reducing feelings of alone lines and social exclusion. Physical activity improves self –confidence and self-sufficiency, the benefits of physical activity can be enjoyed even if regular practice starts late in life. While being active from an early age can help prevent many diseases, regular movement and activity throughout life can also help relieve the disability and pain associated with common diseases among older people are cardiovascular diseases, arthritis, osteoporosis and hypertension.

Department of Health and Human Service of USA, (2004) suggested that researchers have found that exercise and physical activity also can improve the health of people who are 90 or older, who are frail, or who have the diseases that seem to accompany aging. Staying physical active and exercising regularly can help prevent or delay some diseases and disabilities as people grow older. In some cases, it can improve health for older people who already have diseases and disabilities, if it's done on a long term, regular basis.

Regular participation in various exercises increase physical fitness. The high level of physical fitness is desirable for a full productive life. However, sedentary living habits and poor physical fitness have negative impact on both health and daily living. Every person has different level of physical fitness which may change with time, place of work, and situation. There is also an interaction between the daily activities, and the fitness of individual. From the physiological point of view, physical fitness may be ability of the body to adopt and recover from strenuous exercise (Kamla –Raj, 2010). Mostly an individual physical fitness results' based on the regular participation on regular exercise. Hence, physical activity and physical fitness are closely related in that physical fitness is mainly not entirely determined by physical activity, and also by genetic, it addressing on (Bouchard, C., L., Pe' Russe, 1994). According to WHO, (2006b) active living contributes to individual physical and mental health but also to social cohesion and community well- being opportunities for being physical active is not limited to sports and

organized recreation. They exist everywhere, where, where people live and work, in neighborhoods and in educational and health establishments.

According to WHO, (2018) regular physical activity of moderate intensity- such as walking, cycling, or doing sports-has significant benefits for health. At all ages, the benefits of being physically active outweigh potential harm, for example through accidents. Some physical activity is better than doing none. By becoming more active throughout the day in relatively simple ways, people can quite easily achieve the recommended activity levels. Regular and adequate levels of physical:

- Improve muscular and cardiovascular fitness;
- Improve bone and functional health;
- Reduce the risk of hypertension, coronary heart disease, stroke, diabetes, various types of cancer (including breast cancer and colon cancer) , and depression;
- Reduce the risk of falls as well as hip or vertebral fracture; and
- Are fundamental to energy balance and weight control.

Insufficient physical activity is one of the leading risk factors for global mortality and is on the rise in many countries, adding to the burden of NCDs and affecting general health worldwide. People who are insufficiently active have a 20% to 30% increased risk of death compared to people who are sufficiently active.

## **2.9. Physical fitness and life in urban and rural area**

A concept of physical fitness is as old as humankind. Throughout the history of mankind physical fitness has been considered an essential of daily life having two components like health related fitness and motor or skill related fitness (Corbin & Lindsey, 1994). The ancient people were mainly dependent upon their individual strength, vigor and vitality for physical survival. This involved some basic skill like strength, speed, endurance, agility for running, jumping, climbing and other skill employed in hunting for their livings. Study of skill related or motor gathered lots of interest from earlier.

The study of environment and the effects on motor ability and development of a healthy life style remain unclear (Ozdienc, Ozcan, Akin, & Gelecek, 2005; Pene Reyes, Tan, & Mallina, 2003;

Tognarelli et al., 2004; Tsimeas, Tsiokanos, Koutedakis, Tsigilis, & Kellis, 2005). Living in an urban environment has been associated with inactivity of school children. In fact, students in urban areas tend to spend most of their free time at home, adopting sedentary behaviors such as reading, playing computer games, or watching television (Ruel et al., 1998). Conversely, students living in rural areas tend to engage in activity play in open environments, outside the house. The assumption may be that rural students are more fit compared to their urban peers (Pena Reyes et al., 2003). However, the induction of agricultural mechanization, maintenance of traditional high calorie nutritional habits, and the limited introduction of organized sport facilities and programs with respect to urban areas may put rural children at a disadvantage (Sheehan, 2005). Beneficial changes in public health and nutrition have been associated with early physical growth and development of children living in urban areas with respect to their rural peers (Bielicki, 1986; Pena Reyes et al., 2003). The urbanization phenomena of western countries developed over the past century could represent a tremendous opportunity to study health-related differences, if any, between children living in rural and urban areas.

Rural area is generally linked to a more strenuous, physical dynamic way of life that is advantageous to physical fitness. On the other hand, changes in lifestyle due to living in urban settings may also affect physical fitness. Environmental and social changes related to living in urban areas such as crowding, changing neighborhood, safety worries and inadequate grounds for play may possibly contribute to lower level of physical fitness among children.

## **2.10. Factors that affect physical fitness program**

There are determinant factors on physical fitness those are lifestyle, family background or parental involvement, time, place of work, facilities and equipment, the existence of large class size, environment, and living area. Physical fitness is determined by direct interaction with daily activities. Many factors can be related to level of physical activity among children. Loucaides et al, (2004) stated five factors that would contributed to level of physical activity among children in their “Difference in physical activity levels between urban and rural school children in Cyprus”. They stated that the factors that contribute are seasonal factors, space, and safety, exercise equipment availability, transportation and daily activity. Other factors that would related to children’s physical activity are, participation in organized sport, physical education class in the school, transport patterns, electronic and screen based entertainment, and socio-cultural

changes (Dollman, 2005). These factors, some lead to the result of the urban children to have higher level of physical activity such as the equipment availability and transportation while some factors lead to the result that rural children have better level of physical activity (Loucaides et al, 2004). Dollman et al, (2005) stated that children nowadays are more 'preferred' to be inactive when choosing activities such as eating and sleeping as their top 10 activities. Further, television watching also get higher rates if years especially girls. In Iowa, a study examining differences in physical activity, physical fitness, and overweight among rural and urban children shows that children from rural areas and small cities were more active than urban children (Joens-Matre et al, 2008).

The complex interaction among exercise, genes, nutrition and environmental factors source: Adopted from Bray (2000).*J.Appl.physiol.*88:792. These factors may have more to do with youth fitness scores than doe's activity level. Lifestyle and environmental factors also make a difference. For example, nutrition is a life style factor that can influence test scores and environmental condition. (Heat, humidity and population) strongly modify test performance.

## 1. Environment

The physical and social environment of cities has a major impact on the extent of physical activity. Multiplier effects are important levers for change. For example, the promotion of physical activity through commuting encourages a greater utilization of public transport and its thus attractive to urban planners and transportation agencies. Key issues include also access to open spaces, playgrounds, gymnasium, stairwells and road networks as well as social factors such as, level of crime and the local sense of community. Crowding, crime, traffic, poor air quality, a lack of parks, sports and recreational facilities and sidewalks make physical activity and sports a difficult choice for many people. The challenges is therefore as much as the responsibility of governments as it is for people, particularly for fostering the creation of sustainable environment which encourage the regular practice of physical activity and sport in the community, WHO(2003b).

Attention should also be directed towards the development of class climate or atmosphere where children feel psychological safe. Respect for other appreciation of individual difference and

valuing of effort contribute to warm, nurturing class climate. In this climate children feel free to try new activities, explore and create and challenge them to achieve (Wuest Bucher, 1999).

### 1. The existence of large class size

Physical education class sizes are often larger and more heterogeneous than classes in other subject area. Many and diverse expectations associated with the multiple role of teacher and coach may lead to difficulty in meeting these competing demands (Wuest Bucher, 1999).

Large class size demands time for physical activity. Large physical education class contribute to decrease in student learning, decrease in acquisition of motor skill and decrease in achievements of task essential knowledge and skill in both urban and rural students. The National Association for Sport and Physical Education (NASPE) recommends that large of physical education class is consistent with those of other subject area for safe and effective instruction. As class size increase safe and effective instruction may become compromised. This can manifest itself many ways such as: (NASPE, 2004)

- Decrease instruction time due to management issue
- Insufficient amount of equipment and activity space
- Decrease practice opportunities resulting in slower rate of learning
- Decrease student time spent in activity during class
- Decrease the ability of teacher to provide individualized instruction
- Increase students injury
- Increase opportunity for “off task” behavior of students
- Reducing learning and teaching feedback

### 3. Shortage of facilities and equipment

The shortage of facilities can be considered as one of significance factors in shopping education class. According to Jesse and Williams (1964) in some high schools the shortage of facilities are a very real. They also emphatically explain that there are many communities and institutions with limited facilities. On the influence that shortage of activities can lay claim they future suggest when facilities are in critical shortage or merge as innumerable schools. Then class in physical education are hold in class, corridors and basements, such places unit the program and



when facilities are lacking children do not learn the skill and co-operation that is essential for their development. When physical education fall in shortage of facilities required teacher will also be in problem on this issue. Equipment should be appropriate for the ability of the child and children should be instructed in its proper use enforcement of class that emphasize safety help ensure the wellbeing of students.

#### 4. Parental Involvement

In addition to introducing children to physical activity through physical education program and integrated curriculum parents can be encouraged to become involved in this aspect of their children's development. Children today are leading a more sedentary lifestyle than ever before (U.S Department of Health and Human Services, 2001). The days of coming home from school and playing outside until dark have been replaced with activities such as watching television, surfing the internet, and playing video games. However, there are many things that parents can do to get children out of the house and involved in some types of physical activity (New York online access to health, 2004). Some of these activities may include taking family walks or bike rides, going to the park or other recreational facilities, encouraging participation in extracurricular activities. They can ask their children what they are doing in physical education or better yet, visit them in class. Encouraging them to practice skills learned or practicing with them can be an effective to keep them turned on to physical activity.

#### 5. The view on physical fitness assessment

Historically, physical fitness assessments for children and adolescents have been a mainstay of the physical education curriculum. If used correctly, fitness assessment can enhance instruction of fitness concepts, provide diagnosis of fitness needs for individual exercise prescription, facilitate fitness goal-setting and self- monitoring skills, and promote fitness knowledge and self-testing skills (Whitehead et al., 1990). However, there are many factors other than physical activity that can influence a child's performance on physical fitness tests (e.g., maturation, heredity, predisposition/ trainability and body composition). An overemphasis on fitness testing in the curriculum can send the wrong message to children about physical activity. For example, some children may get discouraged in physical education if they score poorly on fitness tests

despite being physically active. Alternately, children may incorrectly believe that they don't need to be active if their fitness levels are in the healthy fitness zone.

Recently, there has been a conceptual shift in the physical education field toward the promotion of physical activity. While fitness is still a desirable outcome, more emphasis is being placed on promoting the behavior of physical activity. For example, in the current National Association for Sport and Physical Education (NASPE) definition "physical educated person", three of the five components refer specifically to physical activity (NASPE, 2001). In addition to having good skills and reasonable level of fitness, a physically educated person participate in regular activity, knows the benefits of participation and value the contribution activity can make to a healthy lifestyle.

Incorporating physical activity assessments into the curriculum allows for better instruction on physical activity concepts and avoids some of the problems associated with fitness testing. An additional benefit is that by emphasizing a behavior, all children can be successful.

Many people assume that physical activity and physical fitness are directly related, but they actually represent very different things. Physical activity is a behavior, while physical fitness is a characteristic. While physical activity will contribute to physical fitness, the relationship is not as strong one would expect. There are a variety of other factors that influence levels of physical fitness and many are beyond a person's control.

## **2.11. Barrier's for physical activity development**

According to WHO (2003), some major constraints to physical activity development:

- ❖ Lack of awareness about benefits
- ❖ Insufficient data on trends, levels, and determinant of physical activity
- ❖ Lack of political commitment and support
- ❖ Insufficient cooperation between concerned sectors.
- ❖ In access, ability to the community of available sport facilities.
- ❖ Existence of strong barriers to people participation in physical activity.

## **2.12. Physical fitness differences urban to rural people**

Urban and rural people have different level of physical fitness which may changes with time allotted, place of work, work load, facilities and equipment, situation, and also interaction between the daily activities. From the physiological point of view physical fitness may say to be ability at the body to adopt and recover from serious exercise. Chaudhary (1998) studied the difference in physical fitness of urban and rural students studying in the class IX and X and found that rural students were better in physical fitness than urban students. Uppal and Sacreen (2000) conducted a study to find out the comparison on cardiovascular fitness between urban and rural students and revealed that students with rural background performed better than that of their counterparts in urban area. Charles (2006) conducted a study on the “Differences in health for rural and urban Canadians”.

The rural communities have good physical fitness than urban communities in specific physical fitness and vice versa urban communities also have a good physical component than rural on a certain physical fitness components, it supported that trend in physical fitness shows more variable contrasts. Youth from rural communities were more likely to be classified as a physical fit, especially in CRF, compared with urban youth in Oman (Albarwani et al., 2009).

## **2.13. The development of fitness test**

To best determine whether you are at the peak of your physical health, you can use different types of physical fitness tests. Different tests check for various aspects of physical well-being. There are tests that focus on gauging the strength, stamina, flexibility, and more. Tests can focus on one particular physical trait, a combination, of two or several, and even overall physical fitness, (WWW. Fitday. Com). According to lenny D.Wiersma et al. (2008), physical fitness testing is common place with schools and the physical education (PE) curriculum, with advocates claiming one of the key purposes of testing to be the promotion of healthy lifestyles and physical activity. Despite this, much controversy has surrounded the fitness testing of young people.

## **2.14. Guidelines for the administration and use of fitness tests**

Fitness testing can be an important part of any school physical education or fitness programs. The following guidelines, however, should be observed when fitness tests administered: (Charles B. Corbin (2009)).

1. Measure fitness components that the public and research experts agree are the most important. Focus on health and self-improvement rather than on comparison to others.
2. In the school environment, fitness tests should be a part of the total educational program. Attention should be given to the knowledge and understanding of fitness concepts, and students should be held accountable for class work. Written test items should measure the students' understanding of the concepts.
3. Fitness test results should be kept confidential; careful attention should be given to ensure that the test results do not embarrass or threaten a student's self-image.
4. Teach students how to take fitness tests; give ample time for practice of the test components.
5. Fitness awards should encourage life time activity rather than a one time performance.
6. Take care to provide necessary, adequate, sufficient, and valid information regarding test results to parent's students.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Study design**

The purpose of this study was to compare the physical fitness status of urban and rural male students in Yeduha general higher education preparatory school. The study was able to conduct to identify the physical fitness status of rural and urban male students' particularly cardiovascular endurance, body composition, flexibility, agility and speed. In order to obtain the required information a mixed research design was employed in the study. In this study mixed approaches were employed simultaneously to analyze the data, because it allows using more than one research techniques or source of data within the study which makes data triangulation possible. According to Creswell, J. W. (2009), triangulation assumes use of multiple methods to measure the same issue. The purpose of triangulation "using different method and/or techniques" (questionnaire, interviews, experiment, observation, fitness test) is to ascertain the validity of data finding. This research consists' two independent groups and use "t" test to know the exact level of significant difference between the two groups. The researcher was assessed each sampling students in procedure and in conducive environment during fitness test.

#### **3.2 Subject of the study and population**

The target populations of this study are Yeduha general higher education preparatory school both grade 11<sup>th</sup> and 12<sup>th</sup> urban and rural male students and three physical education teachers in order to get the relevant information about the student physical fitness level. The total number of urban male students 254 and 251 rural male students. The target populations determined by taking 20% from the total students. Based on this 100 male students are selected as sample of the study from the total population of the two groups.

### **3.3 Sampling techniques and sample size**

The study was employed systematic random sampling techniques, because of the following reasons:

- ✓ Every population has a non-zero probability (the same chance) of being selected for the sample.
- ✓ The members are not selected at the discretion (personal judgment) of the researcher.
- ✓ There is a complete list of the entire population.

The sample size was determined by taking 20% of each group from the total students (urban male students 254 and 251 rural male students). Therefore target populations of the study were 50 urban male students and 50 rural male students. Regarding to teacher comprehensive techniques was employed because; their number was small that was three and they possessing the required characteristics.

### **3.4 Source of data**

In order to collect relevant data, the research used both primary source and secondary source to secure sufficient information data. The primary data was coveted from subjects through questionnaire, interview and fitness test. Secondary source was coveted from that is relevant books, internet and journals.

### **3.5 Instruments of data collection**

To collect data in appropriate way the researcher used different instruments based on the type of research, participant situation and researcher experience, time, and training; methods of data gathering are questionnaires, interview, observation, group discussion, document and tests (Yalew, 1998).

This study employed both qualitative and quantitative research approach and multiple data collection methods were used in order to touch important aspects of the problems, such as questionnaire, fitness test, and interview serve as data collection instrument of the study.

### **3.5.1 Questionnaire**

The questionnaires were designed to collect necessary information from sample students. This methods of data collecting used to save time and money, it provide reliable data from the participant because it cannot reveal the respondent name, and provide the same questionnaire for each participant to get reliable information about the study. This used for to check the validity and reliability of the data. Total numbers of questions were prepared for students are 15. The question consist both open ended and close ended question. The questions cover so many important of issue of physical status of male students.

### **3.5.2 Interview**

The purpose to collect rich and deep information's for the study through a direct interaction with the teachers. This instrument used to get clear answer form the teacher, can easily explain unclear interview question, and it also used to obtain non-verbal answers from the subject. The participant expressed their feeling freely without fair. This study employed unstructured, open ended or in-depth interview with the guidance of some general questions. However, the researcher was also formulated questions during an interview. Furthermore, this instrument was employed to collect data from the three physical education teachers.

## **3.6. Procedures for administration of fitness tests**

The researcher followed standard procedures for testing the selected variable and recording the score in the record sheet. The necessary data was collected from urban and rural male students' fitness test results for the selected variable. Before the administration of the test the researcher was demonstrated how to perform the tests and then the students were given chance to practice to become familiar with the test. To ensure uniform testing condition the student were tested only during the appropriate session for the selected variables.

### **3.6.1 Cardiovascular endurance fitness test**

3 minutes step test

Purpose: to determine the state of students' cardiovascular fitness and the recovery heart rate after exercise.

Equipment: bench with 30cm high from the ground level, stop watch, assistant and record sheets.

Procedure: the student warm up for 10 minutes and after finishing be sure to cool down, step up and down on a bench for three minutes at a rate of 24 steps per minutes. Stop at exactly 3 minutes and immediately sit in a chair. Counting begins after 1 minutes rest.

Scoring: the researcher records the student heart rate for 60 seconds, and checks the rating scale.

### **3.6.2 Body composition tests**

#### **BMI test**

Purpose: to determine the ideal body weight in relation to the body fat and lean tissue.

Equipment: weight in kg, meter, digital balance, and record sheet

Procedure: divide body weight in kilogram by height in meter squared

Scoring: weight in kilogram per meter squared and then use the rating scale for Body Mass Index

### **3.6.3 Flexibility test**

#### **Sit and reach test**

Purpose: to measure lower back and hamstring flexibility.

Equipment: meter ruler, tape, bench, record sheet and assistant

Procedure: the warm up and stretch for 10 minutes, remove their shoes, ruler the top of the bench with tape so that the front edge of the box lines up with the 20cm mark on the ruler and the zero end of the ruler points towards the students, the students sits on the floor with their legs fully extended to the bottom against the bench the students places one hand on top of the other hand ,slowly bends forward and reach along the top of the ruler as fare as possible holding for the stretch for two seconds, the assistant records the distance reached by the student's fingertips in cm, the student perform three times.

Scoring: take the three distance average.

### **3.6.4 Agility test**

#### **Illinois agility run**



Purpose: to determine the student agility

Equipment's: cone, meter, stop watch, whistle, and record sheets

Procedure: warming up for ten minutes, and after finishing be sure to cool down. The length of the course is 10 meter and the width is 5 meter. Four cones are used to mark the start, finish and the two turning points. Another 4 cones are placed down the center an equal distance apart. The subject should lie on their front (head to the start line) and hands by their shoulders. On the signal to begin, the stopwatch is started, and the student gets up as quickly as possible and runs around the course.

Scoring: the measurement is time taken to complete the course. This can be compared to established norms.

### **3.6.5 Speed test**

50 meter run

Purpose: to determine the action reaction time.

Equipment's: stopwatch, meter, and record sheets.

Procedure: warming up for 10 minutes then started from the crouching position. On the command 'Ready' and 'Go' the student stands up and run.

Scoring: the measurement is the time taken that used for 50 meter run.

### **3.7 Reliability of test**

The reliability of the test was ensured by providing of necessary and adequate equipment's. Reliability was depending upon how strict the test is conducted and the individual's level of motivation to perform the test. During testing the researcher was considered things that can comfort to test like, weather condition, equipment's and facilities, and the test consistent and stable in measuring what intended to measure.

### 3.8 Selected variables and their criterion measures.

No	Variable	Criterion measures
1.	Cardiovascular endurance	3 minutes step test
2	Body composition	BMI
3	Flexibility	Sit and reach test
4	Speed	50 meter sprint
5	Agility	Illinois agility run

### 3.9 Methods of data analysis

The data were gathered through interview, questionnaire and fitness test. It was analyzed and interpreted in table and percent to establish a certain results. Statistics analysis was performed by using SPSS version 20.0. The values of mean, standard deviations, SEM and "t" test were applied to find out significance of difference between the scores of the select variables and groups. An independent sample "t" test was used to compare the values of physical fitness variables between urban and rural male students. Significance levels were set at  $p < 0.05$ .

### 3.10 Ethical issue

The ethical issues were considered in all stages of research process. In every discipline it is unethical to collect information without the knowledge of participants their informed consent (Bogdan and Biklen, 1998) and (kumar, 1999). Informed consent requires that respondents' are made adequately aware of the type of information collected from them, why the information is being sought, what purpose it will serve to, how they expected to participate in the study, and how it will directly or indirectly affect them (Ibid).

It is important that the consent should also be voluntary and without pressure of any kind. Thus based on the above principles, the researcher followed the following ethical and moral issues throughout the research process:

- Participants were aware of the consequence of a study.
- Research data was confidential and all participants anonymous.

- Participants were fully aware of all data gathering techniques.
- The privacy, dignity, and interests of the participants were respected and protected.
- Participants were able to terminate or stop involvement at any time and will know that they have this option.

## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

This chapter deals with the analysis and interpretation of the data obtained from the urban male students and rural male students, and also teachers. The student's through physical fitness test and questionnaire, and physical education teachers through interview.

#### 4.1 Characteristics of the respondents

Table 4.1.1, Age, weight and height of the respondents

	Items	UMSR		RMSR	
		Number	Percent	Number	Percent
Age	Below 16 years	11	22	-	-
	16-17 years	18	36	7	14
	18-19 years	9	18	18	36
	20 years above	12	24	25	50
	Total	50	100	50	100
Weight	50-55 kg	8	16	15	30
	56-60 kg	12	24	26	52
	61-65 kg	16	32	6	12
	Above 66 kg	14	28	3	6
	Total	50	100	50	100
Height	1.50-1.55m	4	8	6	12
	1.56-1.60m	26	52	24	48
	1.61-1.65m	12	24	11	22
	Above 1.66m	8	16	9	18
	Total	50	100	50	100

According to table 4.1.1, 11 (22%) of the respondents age below 16 years, 18 (36%) of the respondents are between the age of 16-17, 9 (18%) between 18-19 years and, 12 (24%) of them are exist above 20 years. From this the majority respondents exist between 16-17 years. Whereas

the least amount of respondents found between the ages 18-19 for urban made students. For rural male students no respondents at the age below 16 years, 7 (14%) between 16-17, 18 (36%) between 18-19, 25 (50%) of them are exist above 20 years. From this the majority respondents above 20 years and, there is no respondent at the age of 16 years.

In regarding to the weight of urban male students, 8 (16%) of the respondents are between the weight of 50-55 kg, 12 (24%) of the respondents are between the weight of 56-60 kg, 16 (32%) of the respondents are exist between the weight 61-65Kg, 14 (28%) of the respondents are exist above 66 kg. Majority of the respondent found between 61-65 kg and the least between 50-55 kg. Whereas the rural male students, 15 (30%) of the respondents are exist between 50-55 kg, 26 (52%) of the respondents are exist between the weight of 56-60kg, 6 (12%) of the respondents are between the weight of 61-65 kg and 3 (6%) of the respondents are above 66 years .The majority of the respondent found at the weight of 56-60 kg and the least found at above 66 kg.

In the same the table also indicates the height of respondents. The height of the respondents in urban male students, 4 (8%) of them found between 1.50-1.55m, 26 (52%) of the respondents exist between 1.56-1.60m, 12 (24%) of the respondents are between 1.61-1.65m, 8 (16%) of the respondents are exist above 1.66m. The majority of the respondent height found between the height the height 1.56-1.60m and the least of the respondent height found between the heights 1.50-1.55m. Whereas the rural male students, 6 (12%) of the respondent are exist between 1.50-1.55m, 24 (48%) of the respondent are exist between 1.56-1.60m, 11 (22%) of the respondents are exist between 1.61-1.65m, 9 (18%) of the respondents are exist above 1.66m. The majority of the respondents' height found in between 1.56-1.60m and the least between 1.50-1.55m.

## **4.2. Result of fitness test**

This section deals with the analysis and interpretation of the data obtained from the students physical fitness test. The respondents included on the study urban and rural male students in Yeduha general higher education preparatory school.

The mean and standard deviation of selected variable of urban male students and rural male students computed. The results have been stated in table 4.2.1.

Table 4.2.1: The mean and standard deviation value of urban and rural male students.

N0	Variable	Group	Mean	S.D
1	Cardiovascular endurance	Urban	78.32bpm	4.91bpm
		Rural	73.18bpm	2.28bpm
2	Body composition	Urban	25.17kg/m <sup>2</sup>	2.57kg/m <sup>2</sup>
		Rural	22.48kg/m <sup>2</sup>	2.16kg/m <sup>2</sup>
3	Flexibility	Urban	4.52cm	3.09cm
		Rural	3.14cm	2.02cm
4	Speed	Urban	11.11sec	1.21sec
		Rural	9.50sec	0.56sec
5	Agility	Urban	16.20sec	1.41sec
		Rural	16.95sec	1.67sec

Table 4.2.1, indicates that the mean and standard deviation value of physical fitness status of urban male students. These values of each variables recorded as follow cardiovascular endurance 78.32bpm and 4.91bpm, the urban students have good level of cardiovascular endurance; body composition 25.17kg/m<sup>2</sup> and 2.57kg/m<sup>2</sup>, the urban students have over ideal weight; flexibility 4.52cm and 3.09cm, the urban students have poor level of flexibility; speed 11.11sec and 1.21sec, the urban students have needs work to enhance their level of speed; agility 16.20sec and 1.41sec, respectively, the urban students have very good level of agility, respectively.

In the same table, depicts that the mean and standard deviation value of physical fitness of rural male students. These values recorded as variable, cardio vascular endurance 73.18bpm and 2.28bpm, the rural students have excellent level of cardiovascular endurance; body composition 22.48kg/m<sup>2</sup> and 2.16kg/m<sup>2</sup>, the rural students have ideal weight(normal); flexibility 3.14cm and 2.02cm, the rural students have poor level of flexibility; speed 9.50sec and 0.56sec, the rural students have needs work to enhance their level of speed; agility 16.95sec and 1.67sec, the rural students have very good level of agility, respectively.

Table 4.2.2: The t- value of selected variable between urban and rural male students:

N0	Variable	Group	Num ber	Mean	S.D	SEM	T-value	Df	Sig.
1	Cardiovascular endurance	Urban	50	78.32	4.91	0.69	6.704	98	.000*
		Rural	50	73.18	2.28	0.32			
2	Body composition	Urban	50	25.17	2.57	0.36	5.650	98	.000*
		Rural	50	22.48	2.16	0.30			
3	Flexibility	Urban	50	4.52	3.09	0.43	2.642	98	.010*
		Rural	50	3.14	2.02	0.28			
4	Speed	Urban	50	11.11	1.21	0.17	8.491	98	.000*
		Rural	50	9.50	0.56	0.08			
5	Agility	Urban	50	16.20	1.41	0.19	-2.434	98	.017*
		Rural	50	16.95	1.67	0.23			

\*"t" values conclude, p-values < 0.05.

The analysis shows that in table 4.2.2, there were significant differences between the mean and standard deviation value on cardiovascular endurance variable of the urban and rural male students; it recorded as 78.32bpm, 4.91bpm, and 73.18bpm, 2.28bpm respectively. It indicates that the rural male students have performed significantly better as a compared with the urban male students. The intended independent "t" test (t= 6.704) and statistics significant of p-value (p=0.000). Hence, the calculated data using independent "t" test revealed that there were significant differences between CVE of the two groups.

As shown in table 4.2.2, there were significant differences between the mean and standard deviation value on body composition variable of the urban and rural male students, the finding of the study recorded as 25.17 kg/m<sup>2</sup>, 2.57 kg/m<sup>2</sup>, and 22.48 kg/m<sup>2</sup>, 2.16 kg/m<sup>2</sup>, respectively. It indicates that the rural male students have significantly a better body composition than urban male students. The intended independent "t" test (t= 5.650) and statistics significant of p-value (p=0.000). Hence, the calculated data using independent "t" test revealed that there were significant differences between body composition of urban and rural male students.

In table 4.2.2, depicts the physical fitness characteristics of the urban and rural students. As it indicates, there were significant differences between the mean and standard deviation value on flexibility variable of the urban male students and rural male students. It recorded as 4.52cm, 3.09cm and 3.14cm, 2.02cm, respectively. Therefore, the urban male students have performed better than their rural counterparts. The intended independent “t” test ( $t= 2.642$ ) and statistics significant of p-value ( $p=0.010$ ). Hence, the calculated data using independent “t” test revealed that there were significant differences between flexibility of the two groups.

The analysis of table 4.2.2 shows that the mean and standard deviation value on speed variable of the urban and rural male students recorded as 11.11sec, 1.21sec and 9.50sec, 0.56sec respectively. It depicts that the rural male students have performed significantly better than urban male students. The intended independent “t” test ( $t= 8.491$ ) and statistics significant of p-value ( $p=0.000$ ). Hence, the calculated data using independent “t” test revealed that there were significant differences between speed of urban and rural students.

Perusal of the table 4.2.2 indicates that the mean and standard deviation values on the agility variables for urban male students and rural male students recorded as 16.20sec, 1.41sec and 16.95sec, 1.67sec, respectively. Therefore, the urban male students have performed slightly better than rural male students. The intended independent “t” test ( $t= -2.434$ ) and statistics significant of p-value ( $p=0.017$ ). Hence, the calculated data using independent “t” test revealed that there were significant differences between agility of the two groups.

### 4.3. Results of student from questionnaire

Table 4.3.1, Fitness program and health

N o	Items	UMSR				RMSR			
		YES	%	NO	%	YES	%	NO	%
1	Are you physical fit?	32	64	18	36	43	86	7	14
2	Do you have suffered with developing disease?	38	76	12	24	29	58	21	42
3	Do you feel any pain and discomfort during exercise?	23	46	27	54	36	72	14	28



In accordance of the students response as shown in table 4.3.1, in items 1, the urban male students response, 32 (64%) of urban male students response yes and 18 (36%) Of the respondent no. Whereas rural male students, 43 (86%) Of responses yes and, 7 (14%) of the respondent no. Concerning to suffered with developing disease could be Seen in the above item 2 in the same table, clearly indicates the 38 (76%) urban male students were replied that they were suffered with developing disease, 12 (24%) of the urban male students were not suffered with developing disease. With respect the rural male students, 29 (58%) of the respondent suffered with developing disease and 21 (42%) of the rural male students were replied that they were not suffered with developing disease. Regarding to the feeling and pain of students during exercise, 23 (46%) of the urban male students were replied that there were pain and discomfort during exercise, 27 (54%) of urban students were replied that they were not feel pain and discomfort during exercise. With respect the rural male students, 36 (72%) of rural male students were replied that there were feeling and pain during exercise, and 14 (28%) of the respondents were replied they were not feel any pain and discomfort during exercise.

Table 4.3.2: Participation in regular exercise

No	Items	UMSR				RMSR			
		YES	%	NO	%	YES	%	NO	%
1	The interest to develop physical fitness?	46	92	4	8	31	62	19	38
2	Do you currently exercise regularly or participate in the physical education practical class?	11	22	39	78	15	30	35	70
3	Are you participating on physical exercise program out school except physical education period?	27	54	23	46	18	36	32	64
4	Are you participating on the exercise out of school per week for three days to brining the physical fitness?	21	42	29	58	19	38	31	62
5	Do you involve on different type of exercise to bring physical fitness?	26	52	24	48	22	44	28	56
6	Do you know any other reason why you should not do physical activities?	29	58	21	42	32	64	18	36

According to table 4.3.2, item 1, the response of the respondents regarding to the interests to develop physical fitness, 46 (92%) of the urban male students responded “yes”, 4 (8%) of the

urban male students were replied “no”, and 31 (62%) of the rural male students responded “yes”, 19 (38%) of the rural male students were responded “no”. Both groups reason out why they could not interested because of huge amount of hindrances like the absence of adequate supplementary materials, due to work load out of school, time constraints, and there is not awareness about its benefits.

As clearly indicated in the above, item 2 in the same table, 11 (22%) of the respondent response “yes” and, 39 (78%) of the respondents response “no”. And also 15 (30%) of the rural male students response “yes”, 35 (70%) of the rural male students response not participated regularly on physical education practical class.

Regarding the participation of students on regular physical exercise out of school, in the above item 3 table, indicated that 27 (54%) of the urban male students responses “yes” participated on physical exercise out of school, 23 (46%) of the urban male students not participated out of school, reasons why not participated in physical exercise program out of school cited by the urban male students as follows: lack of motivation and interest, lack of adequate facilities, the existence of large number of participant in the field and gym room, poor background of physical education subject, lack of awareness about the use of physical exercise. While, 18 (36%) of the rural male students participated out of school, 32 (64%) of the rural male students were responded not participate out of school, because of unwillingness or permission of student parents, due to work load and homework, lack of parent involvement, constraint of time ,equipment and facilities, due to health problem and carelessness.

As shown in the above item 4, table 4.3.2, the response of the respondents about the student participation on exercise out of school per week for three days to bring physical fitness, 21 (42%) of the urban male students were replied three days needed to develop physical fitness per week, 29 (58%) of the urban male students replied three days needed per week to develop physical fitness. But in item 4, the response of the rural male student, 19 (38%) of the rural male students were responded three days needed to develop physical fitness per week, 31 (62%) of the rural male students were responded per week for three days needed to develop physical fitness. As indicated in the same table, item 5, the response of the urban male students about types of exercise for physical fitness, 26 (52%) of the urban male students responded that they were involve on different exercise to bring physical fitness, 24 (48%) of the urban male students

responded exercise not needed to bring physical fitness. But on the above question in item 1, the response of rural male students, 22 (44%) of the respondent replied regularly participating on exercise used to develop physical fitness, 28 (56%) of the rural male students were not participated in regular exercise to develop the physical fitness.

In accordance of student why not participated in physical activity, item 6, table 4.3.2, clearly shows that 29 (58%) of the urban male students were replied “yes” should not do physical activity, because of unknown of the use of physical activity and its health of benefits and economic benefits, in access ability to the community of available sport facilities, existence of strong barriers to people participation in physical activity, shyness of students to do with other class mate and fear of making mistake, 21 (42%) of the urban male student were replied not any reasons that hindrance to participate in physical activity. And also the majority respondent, 32 (64%) of the rural male students were replied that hindrance to attend in physical activity absence of the permission of family, fear when making mistake, lack of sport clothes, inaccess and ability to the community of available sport facilities and equipment’s and student shyness, 18 (36%) of the rural male students where replied not any reason that hindrance to attend in physical activity.

Table 4.3.3: Knowledge about the contribution physical fitness

No	Items	UMSR				RMSR			
		YES	%	NO	%	YES	%	NO	%
1	Do you have knowledge about the contribution of physical fitness?	27	54	23	46	18	36	32	64
2	Do you have knowledge about the use physical activity?	31	62	19	38	24	48	26	52

As indicate in table 4.3.3, in item 1, the response of the students about the contribution physical fitness, 27 (54%) of urban male students have clear understanding about the contribution of physical fitness, the contribution of physical fitness revealed by the urban male students for improving physical appearance, prevent the disease, reducing fat accumulation, improving immunity system, improving good sleeping habit, and 23 (46%) of urban male students have not clear understanding about the contribution of physical fitness. Whereas, 18 (36%) of rural male students have clear understanding about the contribution of physical fitness, it contribute for

social interaction, resist dangerous activity at agricultural mechanization, and effective work with parent, and 32 (64%) of rural male students have not clear understanding about the contribution of physical fitness. As shown in the same table, in item 2, the majority of urban male students had knowledge about the use of physical activity, 31 (62%) out of the total urban students, since it offers the developed physical fitness, and 19 (38) of urban students had not clear understanding about the use of physical activity. But in the same item 1, the response of the students, 24 (48%) of rural students known the use of physical activity, yet it offers developed physical fitness, and 26 (52%) of the most of urban student not well known the use of physical activity out of the entire rural students.

Table 4.3.4: Factors affecting physical fitness performance

No	Items	UMSR				RMSR			
		YES	%	NO	%	YES	%	NO	%
1	Are there things can reduce the student's physical fitness performance?	45	90	5	10	43	86	7	14
2	Do you have enough equipment and facilities in the school?	20	40	30	60	21	42	29	58
3	Are there any types of problems that affect the physical fitness of students?	42	84	8	16	38	76	12	24
4	Does the time allocated per week enough for physical education class?	27	54	23	46	32	64	18	36

According to table 4.3.4, item 1, things that can reduce the student physical fitness performance, 45 (90%) of urban students responded “yes”, things can reduced the student performance the large class size, inadequate of equipment, drinking alcohols, chewing chat, and work load; but, 5 (10%) of the urban male students performance cannot reduced by different things. On the same table and items, 43 (86) of rural male student give a response on the things that can reduce the student physical fitness performance such as lack of awareness, and parental involvement, work load out of school, and drinking alcohol reduces the performance of student physical fitness; but, 7 (14%) of the rural male students performance cannot reduced by different things. As shown in the same table, in item 2, 20 (40%) of urban students responded that adequate equipment in the

school are provided. But, 30 (60%) of urban students replied that there is not enough equipment and facilities in the school. On the same items 2, 21 (42%) of rural students replied that adequate equipment in the school are provided. But, 29 (58%) of rural students replied that there is not enough equipment and facilities in the school.

As indicates in table 4.3.4 in item 3, the response of the respondent on the problem that affect the physical fitness performance of students, 42 (84%) of urban male student were responded problem that affect the physical fitness performance of students, such as, equipment and facilities, environments nutrition, family background, and dressing style affect the physical fitness performance of the students, but, 8 (16%) of urban male students replied no problems affects the student physical fitness performance. On the same items, the majority of the respondent 38 (76%) of rural male student were replied that equipment and facilities, nutrition, work load, poor background of parents, and dressing style affect the student physical fitness performance, but, 12 (24%) of rural male student replied no problems affects the student physical fitness performance.

In the same table, item 4, more than half, 27 (54%) of urban students replied the time allocated per week enough for physical education class; but, 23 (46%) of urban students responded the time allocated per week not enough for physical education class. On the same items, 32 (64%) of rural students replied the time allocated per week enough for physical education class; but, 18 (36%) of rural students responded the time allocated per week not enough for physical education class.

#### 4.4. Discussions

The study was carried out to compare the physical fitness status of urban males' students and rural male students. The research was conducted by using different kinds of data gathering tools. The result obtained from this study indicated that urban and rural male students have different physical fitness status at Yeduha general higher education preparatory school. The physical fitness test comparison of the two groups in physical fitness status have shown that urban male students in agility and flexibility performed better than that of rural male students and rural male students in cardiovascular endurance, body composition, and speed performed better than urban male students. Moreover, the mean difference between urban and rural male students have shown that the change in urban male students in agility and flexibility over rural students are significant compared to rural male students, and changes in rural male students in cardiovascular endurance, body composition, and speed over urban male students are significant compared to urban male students.

As clearly shown in table 4.2.1, the mean and standard deviation of cardiovascular endurance 78.32bpm and 4.91bpm value is being recorded as a variable respectively. This indicates that the urban students have good level of cardiovascular endurance. The finding of this study is being supported by the normative data evidence of 3 minute step test (Morrow, J.R; Jaccson, A;Disch,J; and Mood, D. 2005). As stated in the normative of data BMI test by NHS Director, (2011), and based on the finding of the mean and standard deviation of body composition 25.17kg/m<sup>2</sup> and 2.57kg/m<sup>2</sup> respectively, the urban students have over ideal weight. The level of flexibility has also being explored with its' mean and standard deviation value, 4.52cm and 3.09cm and conclude that the urban students have below level of flexibility. According to Davis et al., (2000) these finding is significantly related with the normative data of sit and reach test. Furthermore, as ([https://sites.google.com/site/pefitnesstesting/50m sprint](https://sites.google.com/site/pefitnesstesting/50m_sprint)) stated in normative data evidence of 50 meter run test, the mean and standard deviation result of speed 11.11sec and 1.21sec respectively indicated that the urban students have need work to enhance their level of speed. The mean and standard deviation value of agility 16.20sec and 1.41sec, respectively. This implies that the urban students have very good level of agility. The finding of this study is being supported by the normative data of Illinois test (Data from Adam, et al., Foundations of physical activity, 1965). This lower performance of urban students in CVE, body composition, and speed

is being recorded due to lack of students' participation in regular exercise and they spent much of their time with screen watching. As clearly indicated in table 4.3.2 but, rural male students' are busy enough in helping their parents after school (plow agriculture, looking after cattle etc) which pave ways to engage in activities equivalent with regular exercise; they intern strengthen their physical fitness.

As vividly shown in the same table, the mean and standard deviation value recorded as variable, cardiovascular endurance 73.18bpm and 2.28bpm. This implies that the rural students have excellent level of cardiovascular endurance. In support of this fact (Morrow, J.R; Jaccson, A;Disch,J; and Mood, D. 2005) stated the normative data evidence of 3 minute step test and confirmed that the aforementioned result rely on excellent level of cardiovascular endurance. Based on the result of mean and standard deviation 22.48kg/m<sup>2</sup> and 2.16kg/m<sup>2</sup> respectively, the body composition confirms that the rural students have ideal weight (normal). So that the finding of this study has significantly correlate with that of the normative of data BMI test (NHS Director, 2011). Based on the result of mean and standard deviation 3.14cm and 2.02cm, respectively, the flexibility confirms that the rural students have poor level of flexibility. So that the finding of this study has significantly correlate with that of the normative data of sit and reach test (Davis et al., 2000). As ([https://sites.google.com/site/pefitnessstesting/50m sprint](https://sites.google.com/site/pefitnessstesting/50m_sprint)) stated in normative data evidence of 50 meter run test, the mean and standard deviation result of speed 9.50sec and 0.56sec respectively indicated that the rural students have need work to enhance their level of speed. As indicated on mean and standard deviation of agility 16.95sec and 1.67sec, respectively, the rural students have very good level of agility, and the finding of this study in being supported by the normative data of Illinois test (Data from Adam, et al., Foundations of physical activity, 1965). As shown in table 4.3.2 and interview revealed that most rural students not regularly participate in exercise because of unavailability of equipment, time constraints, and most of them are spending their time in helping the families after school. However, urban students are lucky in access of equipment, time and transportation for exercising despite their lack of interest to do so.

In support of this view (Uppal and Sakeen, 2007) conducted a study to find out the comparison on cardiovascular fitness between urban and rural students and revealed that students with rural background performed better than their counterparts in urban area. Youth from rural

communities were more likely to be classified as a physical fit, especially in CRF, compared with urban youth in Oman (Albarwani et al., 2009). As the comparison results indicated in table 4.2.2, the rural male students have performed significantly better as compared with the urban male students because of higher fitness and more activities in rural students.

The finding of the study indicated that the rural male students have significantly a better body composition than urban male students because most of rural students actively participate on their parent involvement like shepherding and farming activity. The finding of this study confirmed that children nowadays are more 'preferred' to be inactive when choosing activities such as eating and sleeping as their top 10 activities (Dollman et al, 2005).

In this study, the results shown that there were significant difference between the mean and standard deviation value on flexibility variable of the urban male students and rural male students. Therefore, the urban male students have performed slightly better than their rural counterparts. The slight difference found between the two groups that depends on the availability of facility and equipment's. Factors such as equipment availability and transportation helps urban children to have higher level of physical activity while some factors lead to the result that rural children have better level of physical activity (Loucaides et al, 2004).

In fact, students in urban areas tend to spend most of their free time at home, adopting sedentary behaviors such as reading, playing computer games, or watching television (Ruel et ai., 1998). Conversely, students living in rural areas tend to engage in activity play in open environments, outside the house. The analysis in table 4.2.2 depicted on the comparison of speed variable that the rural male students have performed significantly better than urban male students. The assumption may be that rural students are more fit compared to their urban peers (Pena Reyes et al., 2003). However, the induction of agricultural mechanization, maintenance of traditional high calorie nutritional habits, and the limited introduction of organized sport facilities and programs with respect to urban areas may put rural children at a disadvantage (Sheehan, 2005).

According to Loucaides et al (2004) there are factors, some lead to the result of the urban children to have higher level of physical activity such as the equipment availability and transportation. The analysis in table 4.2.2, shown on the comparison of agility variables the urban male students have performed significantly better than rural male students.



In this study, attempts have also been made to get information on the reasons to increment and decrement of physical fitness status in group; urban and rural male students. As results shown from the students' questionnaire and teacher interview, most rural students cannot get access to participate on different physical activity, like available equipment and facilities, willingness from their parents, time constraints and transportation. While, most of urban students can get prosperity to participate on different physical activity, but, these students offered priorities to watch television, play video game, sleep, eating, and watching film.

According to Lee et al. (2012) physical inactivity is responsible for more than five million deaths globally per year. It is obvious that regular participation in physical activity contributes to good health across throughout the life. Where as an individual not participate on physical activity or being inactive is one of the exposer of different disease. This fact is affirmed "Sedentary behavior, including time spent sitting each day is emerging as an independent risk of factors for health" (Owen et al, 2010).

The results of the study shown in table 4.3.1, more than half of both group of students have health problem due to physical inactivity.

Table 4.3.2, shown that urban male student have less participation in regular exercise, but, the students get access of available equipment's except in the school, free time, and even transportation. Some related literature view support that living in an urban environment has been associated with inactivity of school children. The most rural male students have not participation due to the prevalent of problems encounter them like lack of adequate facilities, the existence of large number of participant in the field, poor background of physical education subject, lack of awareness about the use of physical exercise, unwillingness or lack of permission from student parents, due to work load and homework, lack of parent involvement, constraint of time, due to health problem and carelessness. Limitation as revealed in table 4.3.2, and teachers interview on the participation of students physical activity for both groups in the school, lack of adequate facilities, the existence of large number of participant in the field, poor background of physical education subject, the time allocation per week, due to health problem and carelessness are some hindering factors which make students inactive and less participants in physical exercise.

According to table 4.3.4, the results of the students and teachers interview shown that both urban and rural male students performance affected with different factors. The urban male students have less participation in physical activity because of different factors such as the large class size, inadequate equipment and facilities, drinking alcohols, chewing chat, and work load, environments, nutrition, family background, and dressing style. All these problems highly affected the physical fitness performance of the students. The majority of rural male students participation in physical exercise have been affected by hindering factors such as, inadequate facilities, the existence of large number of participant in the class, poor background of physical education subject, lack of awareness about the use of physical exercise, unwillingness or permission of student parents, due to work load and homework, lack of parent involvement, constraint of time these affect the student performance. Thus students are physically inactive and are not in a position to perform any thing effectively and efficiently.

The students' knowledge and understanding about contribution of physical fitness are limited in some of the two groups. The urban students offered priorities to watch television, play video game, sleep, eating, and watching film. The rural male students offered priorities to family support in agricultural/or farming habitual physical activity after school turn, even cannot get permission to participate during leisure time in physical activity, so that the rural students by the influence of their family and limited knowledge to the effects of exercise became inactive and less participant. This fact is supplemented by Sheehan (2005) induction of agricultural mechanization, maintenance of traditional high calorie nutritional habits, and the limited introduction of organized sport facilities and programs with respect to urban areas may put rural children at a disadvantage.

The researcher made interview with two physical education teachers and the interviewee said that in order to develop quality physical fitness, the students should understood the use of physical activities, and the teacher also should show good demonstration, give responsibility for students after proper demonstration, follow up the student practice and providing feedback for each exercise, present suitable sport clothes and supervising the group properly. It is obvious that to encourage the students participation on physical activities the school co-cullucluar activity, particularly sport club should be assisted by rewards, make the students in to group and conduct minor game sometimes, and show how locally produced equipment can easily being made. The

two teachers put some possible solution to encounter the factors that affect quality physical education like arrangement of the time schedule per week more than one period, provision of enough facilities and equipment if not use easily produced materials and equipment, treatment physical education equally with other subject, the teacher should arrange the students into group for easily managing and controlling, teachers teaching style also minimize the development of physical fitness, and the teacher should enhance the students motivation and involvement in teaching learning process.

Generally speaking, as in stated in table 4.3.2, both groups, urban and rural male students have less participation in physical activities. Moreover, the urban male students have opportunity to participate regularly because, the students get an access of available equipment's except in the school, and free time, but priority offered to tend to spend most of their free time at home, adopting sedentary behaviors such as reading, playing computer games, or watching television after school. The rural students cannot get opportunity to participate in exercise after school because of the students work load in supporting their family and lack of access to materials. Therefore the two groups' physical fitness status on selected variables is being affected by the aforementioned hindering factors. This less participation on physical activity shows in increment in mean difference and level of significant difference with the urban male students and rural male students' level of physical fitness.

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

This chapter consist the summary of the finding, conclusion of the study and the recommendations reflected based on the results found from the finding of the study to solve the problem that identified with the study findings.

#### **5.1. Summary**

The study focused on the comparison of physical fitness status of urban male students and rural male students: The case of Yeduha general higher education preparatory school. The study was intended to identify the problems and forward the possible solutions for identified problems with the following objectives:

- To identify the physical fitness status in urban and rural male students.
- To examine the physical fitness level of urban and rural male students.
- To point out factors that affects the quality of physical fitness in urban and rural male students.
- To examine the significance different between in urban and rural male student on selected physical fitness components.

The main purpose of the study was to compare the physical fitness status of 50 urban male students and 50 rural male students that selected by systematic random sampling techniques: The case of Yeduha general higher education preparatory school. The data were collected from these groups of urban male students and rural male students through physical fitness test, and questionnaire. The data which were obtained from physical fitness test, analyzed by the mean, standard deviation, standard error of mean and 't' value.

The major findings obtained from the study:

- The results of the study shown that the mean and standard deviation value of cardiovascular endurance variables of urban and rural male students recorded as 78.32bpm, 4.91bpm and 73.18bpm, 2.28bpm respectively. It indicates that urban male students have less cardiovascular endurance than rural male students.

- The value of mean and standard deviation of body composition variables of urban and rural male students recorded 25.17kg/m<sup>2</sup>, 2.57kg/m<sup>2</sup>, and 22.48kg/m<sup>2</sup>, 2.16kg/m<sup>2</sup> respectively. Therefore rural male students have better body composition than urban male students.
- The result of the study indicates that the mean and standard deviation value of flexibility variable of urban male students and rural male students recorded 4.52cm, 3.09cm and 3.14cm, 2.02cm respectively. So that urban male students have a good performance than rural male students.
- The mean and standard deviation value of speed variable of urban and rural male students revealed 11.11sec., 1.21sec., and 9.50sec., 0.56sec., respectively. It indicates that rural male students have performed better than urban male students.
- The value of mean and standard deviation of agility variable of urban and rural male students expressed 16.20sec., 1.41sec., and 16.95sec., 1.67sec respectively. Therefore urban male students have a good agility performer than urban male students.
- The majority of urban male students not participated in regular exercise out of school because of lack of adequate facility and equipment's, lack of motivation and interest, the existence of large number of participant in the field and poor background of physical education subject.
- The majority of rural male students not participated in regular exercise out of school because of unwillingness of parents, due to health problem, work load, and lack of parental involvement.
- The finding of the study shown that the majority of urban male students should not do physical activity because of unclear imagination of physical activity and its health benefits and economic benefits, in access of available sport facilities, the existence of strong barrier to people participation in physical activity, shyness of the students to do with other class mates and fear of when they made mistake.
- The majority of the rural male students replied that there are hindrances to attended in physical activity, the absence of the permit ion of family, fear when making mistake, lack of sport clothes, in access and ability to the community of available sport facilities and equipment and student shyness.

- The results of the study shown that factors influencing on the nature and conduct of physical education in the school; equipment, shyness, and absence of entrance exam in physical education subject.
- The students and teachers revealed that majority of student not active participant in physical education practical aspects because of shortage of facilities, large number of students in one section and time allotment.

## **5.2 Conclusions**

Based on the finding of the study analysis conclusions are stated as a follow. The physical fitness status of urban male students and rural male students are vary on the different components of physical fitness particularly on the selected variables, cardiovascular endurance, body composition, flexibility, speed, and agility. The result shown that urban male students have significantly better than rural male students in agility and flexibility, reasons for the great performance, due to less daily work load, availability equipment, safety, and transportation. The result of the study also shown rural male students have a better achievement than urban male students in cardiovascular endurance, body composition, and speed because of the life style, travel from school to home and home to school, and daily activities or agricultural mechanism to support family after school.

## **5.3 Recommendations**

Depend on the findings of the study and conclusions the following possible suggestions and recommendations are forwarded:

- ✓ The results of the study indicated urban male students are superior to rural male students by agility and flexibility. Therefore rural male students doing additional exercise with their daily activity.
- ✓ The rural male students are superior to urban male students by cardiovascular endurance, body composition, and speed. This indicates that rural male students are actively participated with their parents' daily activity than urban male students. So, urban male students participate on regular exercise in additionally.
- ✓ The teacher of physical education and sport science professionals encourage the students to do different physical exercise in and out of school.

- ✓ There are factors that affect the development of quality physical fitness. However, to solve these problems use locally made equipment and facilities, create awareness for students and families, make the students into groups during exercise to give proper feedback, adjust the time allocation with the concerned body and change the student attitude.
- ✓ The school should be fully equipped with the necessary facilities and equipment as much as possible.
- ✓ Physical education and sports science experts educate and guide the importance of physical exercise to people.
- ✓ Schools should be provided information by the concerned body to adjust a program to prepare for national examinations like other subjects with biology.

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## **APPENDIX A: questionnaire for students**

Bahir Dar University

Sport Academy

Department Sport Science

Questionnaire for students

Dear students: the researcher would like to thank you in advance to your cooperation in filling the questionnaire. This questionnaire is prepared so as to obtain information with possible solution and recommendations on the comparison of physical fitness components of rural and urban male students in yeduha preparatory school.

Directions:

- Please, indicate your response by encircle your correct choice according to the instruction provided there. For open ended questions write your short response.
- Dear respondent upon completing the questionnaire, you are kindly requested to return it to the researcher.
- Writing your name is not necessary.

Personal information:

1. Age: A. Below16 years    B. 16-17 years    C. 18-19 years    D. 20years and above

2. Weight: \_\_\_\_\_

3. Height: \_\_\_\_\_

Encircle your correct choice from the given alternative.

1. Are you physical fit?

A. Yes

B. No

2. Do you have suffered with developing disease?

A. Yes

B. No

3. Do you feel any pain and discomfort during exercise?

A. Yes

B. No

4. Do you have interest to participate on regular exercise to develop your physical fitness?

A. Yes

B. No

If your answer is “yes”, when do you participate? \_\_\_\_\_

\_\_\_\_\_

5. Do you currently exercise regularly or participate in physical education practical class?

A. yes

B. No

6. Are you participate on physical exercise program out of school except physical education period?

A. Yes

B. No

If your answer is “no”, why do not participate?

\_\_\_\_\_

\_\_\_\_\_

7. Are you participate on the exercise out of school per week for three days to bring the physical fitness?

A. Yes

B. No

If your answer is “yes”, for how long please specify \_\_\_\_\_





14. Are there any types of problems that affect the physical fitness of students?

A. Yes

B. No

If your answer is “yes”, List them \_\_\_\_\_

\_\_\_\_\_

15. Does the time allocated per week enough for physical education class?

A. yes

B. No

**THANK YOU!!!!!!!**

## **APPENDIX B: interview question for teacher:**

1. How do you evaluate the students' fitness level?
2. Explain the methods of developing quality physical fitness?
3. What types of problems that affect the quality of physical fitness? List them?
4. How can encourage the students towards developing physical fitness?
5. What types of exercise is the most advisable to develop physical fitness?
6. What things reduce the student physical fitness performance?
7. Are you give advice for students regarding to develop physical fitness? What types of advice given for students?
8. Are all students active participant while you teach them practical aspects of physical education? If your answer is no, why not participates?
9. What is your role in physical education practical class?
10. Are there any possible solutions that help for the development of fitness status of urban and rural male students?

## APPENDIX C: Standard and norms for selected variable

**Table1. The standard norms of 3 minutes step test.**

Sex	Classification	Age					
		18-25	26-35	36-45	46-55	56-65	>65
Men	Excellent	50-76	51-76	49-76	56-82	60-77	59-81
	Good	79-84	79-85	80-88	87-93	86-94	87-92
	Above average	88-93	88-94	92-88	95-101	97-100	94-102
	Average	95-100	96-102	100-105	103-111	103-109	104-110
	Below average	102-107	104-110	108-113	113-119	111-117	114-118
	Poor	111-119	114-121	116-124	121-126	119-128	121-126
	Very poor	124-157	126-161	130-163	131-159	131-154	130-151

**Table 2. The normative data of BMI test.**

Classification	Men
Under weight	17.9-18.9
Ideal weight(Normal)	19-24.9
Over ideal weight	25-27.7
Obese(High risk)	>27.8

**Table 3, The normative data of sit and reach test (Davis et al., 2000)**

Sex	Classification	Age			
		16-19	20-35	36-45	>45
Men	Excellent	>14	>10	>8	>6
	Above average	14-11	10-8	8-6	6-5
	Average	10.9-7	7.9-6	5.9-4	4.9-3
	Below average	6.9-4	5.9-4	4.9-3	2.9-2
	Poor	<4	<3	<2	<1

**Table 4. The normative data of Illinois test.**

Classification	Men
Excellent	15.8 or faster
Very good	16.7-15.9
Good	18.6-16.8
Fair	18.8-18.7
Poor	18.9 or slower

**Table 5. The normative data of 50 meter test.**

Sex	Excellent	Good	Average	Below average	Needs work
Boy	<7.57	7.85-7.58	8.4-7.86	8.78-8.41	>8.79

**The fitness test result of each selected physical fitness components are point out in the following table:**

Table 2: The fitness result of urban and rural male students of cardiovascular endurance

No's of sts	Urban male students	Rural male students
	bpm	Bpm
1	82	76
2	75	75
3	74	74
4	76	69
5	79	72
6	70	71
7	71	72
8	78	73
9	72	76
10	74	79
11	79	71
12	78	72
13	82	70
14	76	70
15	74	71
16	84	69
17	88	72
18	69	72
19	69	74
20	69	73
21	76	73
22	78	72

23	75	75
24	83	74
25	86	71
26	85	72
27	70	72
28	81	74
29	79	75
30	78	71
31	76	74
32	77	76
33	80	78
34	81	71
35	81	72
36	80	73
37	82	74
38	83	75
39	83	74
40	84	73
41	81	72
42	82	72
43	85	75
44	86	76
45	83	71
46	81	72
47	76	78
48	76	77
49	75	74
50	74	72

Table 3: The fitness result of urban and rural male students of body composition

No's of sts	Urban male students			Rural male students		
	Weight	height	BMI	Weight	height	BMI
1	51	1.55	21.25	69	1.65	25.36
2	62	1.50	27.55	50	1.62	19.08
3	70	1.60	27.34	52	1.55	21.67
4	62	1.50	27.55	50	1.52	21.64
5	51	1.55	21.25	53	1.50	23.56
6	68	1.72	22.98	51	1.55	21.25
7	68	1.72	22.98	52	1.60	20.31
8	70	1.60	27.34	53	1.62	24.04
9	51	1.55	21.25	57	1.56	23.45
10	62	1.50	27.55	60	1.51	26.31
11	60	1.75	22.20	52	1.61	20.07
12	60	1.75	22.20	51	1.50	22.67
13	68	1.72	22.98	49	1.50	21.78
14	68	1.72	22.98	51	1.52	22.07
15	70	1.60	27.34	50	1.60	19.53
16	62	1.50	27.55	52	1.61	20.07
17	68	1.72	22.98	55	1.54	23.20
18	62	1.50	27.55	51	1.52	22.07
19	68	1.72	22.98	64	1.60	25
20	51	1.55	21.25	50	1.55	20.83
21	70	1.75	27.34	52	1.50	23.11
22	62	1.50	27.55	61	1.50	27.11
23	68	1.72	22.98	51	1.50	22.67
24	62	1.50	27.55	52	1.55	21.67
25	66	1.70	22.98	51	1.50	22.66
26	70	1.60	27.34	59	1.55	24.58

27	68	1.72	22.98	52	1.60	20.30
28	70	1.60	27.34	67	1.75	21.89
29	62	1.50	27.55	69	1.61	26.64
30	68	1.72	22.98	51	1.55	21.25
31	62	1.50	27.55	67	1.64	24.9
32	70	1.60	27.34	52	1.55	21.67
33	62	1.50	27.55	57	1.60	22.26
34	62	1.50	27.55	61	1.65	22.42
35	66	1.70	22.8	54	1.60	21
36	62	1.50	27.55	51	1.70	17.60
37	62	1.50	27.55	58	1.69	20.35
38	60	1.75	22.20	62	1.56	25.51
39	62	1.50	27.55	61	1.50	27.11
40	62	1.50	27.55	51	1.52	22.07
41	66	1.70	22.8	52	1.60	20.30
42	62	1.50	27.55	61	1.65	22.42
43	62	1.50	27.55	54	1.50	24
44	51	1.55	21.25	55	1.60	21.48
45	66	1.70	22.8	56	1.70	19.37
46	62	1.50	27.55	50	1.50	22.22
47	70	1.60	27.34	56	1.60	21.87
48	66	1.70	22.8	59	1.50	26.22
49	70	1.60	27.34	61	1.60	23.83
50	66	1.70	22.8	51	1.53	21.79

Table 4: The fitness result of urban and rural male students of flexibility



No's of sts	Urban male students	Rural male students
	CM	CM
1	5	0
2	2	1
3	5	2
4	11	4
5	5	3
6	0	3
7	7	0
8	2	2
9	10	6
10	3	2
11	8	1
12	7	2
13	0	1
14	4	4
15	11	9
16	5	5
17	2	2
18	6	1
19	7	5
20	10	7
21	0	4
22	10	6
23	3	3
24	7	3
25	5	4
26	5	5
27	8	5

28	7	6
29	5	4
30	3	3
31	4	4
32	0	1
33	2	1
34	2	2
35	10	8
36	3	2
37	5	4
38	0	2
39	2	2
40	3	2
41	3	3
42	5	5
43	3	2
44	1	0
45	3	3
46	4	2
47	7	4
48	2	1
49	0	2
50	4	4

Table 5: The fitness result of urban and rural male students of agility

No's of sts	Urban male students	Rural male students
	SEC	SEC
1	17.58	15.25
2	16.50	16.50
3	16.25	18.30
4	14.40	18.50
5	17.58	16.35
6	16.25	16.50
7	14.40	18.30
8	16.25	17.25
9	17.40	19.25
10	14.55	15.50
11	14.50	16.50
12	16.50	19.40
13	16.35	17.50
14	14.50	19.25
15	17.58	18.50
16	16.25	18.00
17	17.40	18.25
18	15.55	16.30
19	14.58	16.25
20	16.25	19.50
21	16.50	17.40
22	18.55	19.55
23	16.50	16.50
24	18.25	17.05

25	17.40	17.25
26	17.58	18.35
27	14.40	17.20
28	17.40	16.20
29	19.25	14.20
30	14.40	17.00
31	14.58	15.25
32	15.25	14.35
33	16.50	16.30
34	14.58	19.30
35	18.55	18.50
36	17.40	18.35
37	15.55	19.03
38	17.50	14.40
39	18.50	15.00
40	14.58	13.50
41	15.55	15.40
42	16.35	16.25
43	15.55	16.50
44	14.25	15.25
45	16.25	18.00
46	14.58	13.35
47	18.35	19.30
48	14.50	17.05
49	16.25	16.35
50	14.58	14.50

Table 6: The fitness result of urban and rural male students of speed

No's of sts	Urban male students	Rural male students
	SEC	SEC
1	11.20	10.25
2	13.00	9.50
3	11.50	10.25
4	10.50	10.40
5	12.50	9.50
6	10.40	10.25
7	10.25	9.40
8	8.58	9.25
9	11.25	9.40
10	11.00	9.55
11	9.50	10.25
12	11.50	9.50
13	10.50	9.35
14	12.50	9.50
15	9.50	9.58
16	13.10	9.25
17	12.15	9.40
18	11.25	8.55
19	11.30	11.25
20	10.58	9.35
21	12.05	9.50
22	10.58	8.55
23	11.03	9.50
24	9.35	9.25

25	11.00	9.40
26	11.15	9.58
27	13.05	9.00
28	11.15	9.40
29	9.55	9.25
30	11.25	8.40
31	9.50	8.58
32	13.05	10.25
33	12.30	9.00
34	12.25	10.25
35	9.50	9.55
36	11.35	9.50
37	13.15	8.55
38	12.20	10.50
39	9.50	9.50
40	12.15	9.58
41	12.59	9.55
42	11.00	9.35
43	9.10	8.55
44	12.15	9.25
45	11.05	10.35
46	11.00	9.58
47	11.30	9.35
48	8.55	9.50
49	10.58	9.25
50	11.05	9.58