THE PRINCIPLES OF PHYSICAL FITNESS TRAINING AND THEIR APPLICATIONS IN FITNESS CENTERS OF ADDIS ABABA

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LIST OF ABBREVIATIONS

AAALF	Adapted Physical Activity Council of the American Association for Active Lifestyles and Fitness
AAPHERD)	American Association for Physical Education, Recreation, and Dance
ACE	American Council on Exercise
ACSM	American College of Sports Medicine
AHA	American Health Association
AFB	Association for Fitness in Business
AIDS	Acquire Immune Deficiency Syndrome
AMA	American Medical Association
CDC	Centers for Disease Control and Prevention
CPR	Cardio Pulmonary Resuscitation
CR	Cardio respiratory
DHHS	Department of Health and Human Services
ETV	Ethiopian Television
FM	Frequency Modulation
GYM	Gymnasium
HIV	Human Immune Virus
IDEA	International Dance-Exercise Association)
MDGs	Millennium Development Goals
NCDs	Non Communicable Diseases
NGOs	Non Governmental Organizations

NO	No Date
NSCA	National Strength and Conditioning Association
PAR-Q	Physical Activity Readiness Questionnaire
STDs	Sexual Transmitted Diseases
UN	United Nations
UNDESA	United Nations Department for Economic and Social Affairs
U.S	United States
USA	United States of America
WHO	World Health Organization
YMCA	Youth Male Christian Association
YWCA	Youth Women Christian Association

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ABSTRACT

This study was aimed at investigating the principles of physical fitness training and their applications in Addis Ababa fitness centers/gyms. In order to meet this purpose, some basic questions were raised regarding the general conditions of the gyms and gym instructors and mass media physical fitness programs. The basic questions related to instructors qualification, gym facility and the fitness program as a whole. The study employed both quantitative and qualitative research methods, and simple random and purposive sampling techniques for selecting those who took part in the study. In the study 104 trainees, 15 instructors of the eight top level gyms of Addis Ababa, 2 experts of Ministry of Youth and Sports were participated. Questionnaires, interview, observation, and document reviewing were used as tools of data gathering. Accordingly, the overall study revealed that the human capacity of the gyms/clubs could not correspond with the expansion of this industry and attentions were not given for special need groups, and some small but important things like changing rooms, well stocked first aid kit and fire extinguisher were forgotten in the gyms. The study concluded that there is lack of qualified professionals in this area of discipline while special needs are ignored at all. Thus the recommendations for addressing this issue includes higher institutes should produce qualified professionals for the area, gyms should consider some minor but important materials and facilities like changing rooms, fully stocked first aid kit, fire extinguisher, forms which trainees fill in; gyms should also consider special need groups; and finally mass media fitness programs should be a coordinated and cooperative work with governmental and non governmental organizations.

CHAPTER ONE

1. INTRODUCTION

1.1. Background of the Study.

As the world begins a new millennium, man's quest for physical fitness throughout prehistoric time for survival needs such as hunting and gathering, has turned into a means of health enhancement, maintenance, and rehabilitation in addition to its effects in conditioning for competitive sports. The health and fitness industry has come a long way all around the world, with on going advances in a quest for longevity of the healthy lifestyles in a triangle of "mind- spirit- body" (Golding et al., 1989).

The relationship between a healthy life and regular exercise is undeniable. Let as consider the fact that, for example, that exercisers have an all cause mortality rate that is less than one-third that of non-exercisers. Moreover, some forms of regular physical activity, even if it is very mild form of activity, of low and moderate amounts of physical activity, can also have beneficial health results (Carbine, et al 2002).

Many research works including (Wuest, 1999; Orban and Ashton, 1984; Hadfield, 2000; Dick, 1997; Diamond, 2001 and Carbine, et al 2002), and literatures have shown that numerous health benefits have been ascribed to physical exercise. These are:-

- Regular physical activity can lower the risk of disability and death from heart disease,
- Helps to strengthen the cardiovascular system, maintain normal blood pressure, decrease blood cholesterol,

- Increase toleration of stress and maintain weight,
- It increases the energy level of the individual for work and play, leads to improved sleep, strengthens the body,
- Better enabling it to cope up with illness or accidents,
- Increases the ability to withstand fatigue,
- Improves concentration and alertness,
- Improves posture and enhances body appearance,
- Improves individuals mental health,
- Reduce anxiety, help to alleviate depression,
- Increases feeling of accomplishment, work, etc,
- Increases productivity and decreases health cost etc.

In United States of America, in the Healthy People 2010 national health objectives, physical activity is listed as a leading health indicator. Goals have been developed to improve levels of physical activity among adults, adolescents, and children and to reduce sedentary behavior among adolescents (U.S. Department of Health and Human Services, 2001). This report and other related publications provide guidance from the Task Force on Community Preventive Services to personnel in state and local health departments, education agencies, universities, community coalitions, organizations that fund public health programs, health-care systems, and others who have interest in or responsibility for increasing physical activity.

Many studies show that regular physical activity supports learning or increases academic achievement and large studies have found that girls who play sports have lower

pregnancy rates, engage in sexual intercourse less frequently, have fewer partners, and begin sexual activity later than those not involved with sports (Wade, 1998 in United Nations, 2003). And thus, we can fight HIV/AIDS and other STDs.

Sport can be an effective stimulus and catalyst for economic development, education or it is a powerful vehicle for public education and physical education. Physical education is an essential component of quality education and an integral part of lifelong learning. Here the scope of sport viewed in a broad sense. Incorporated into the definition of "sport" are all forms of physical activity that contribute to physical fitness, mental well-being and social interaction. These include play; recreation; organized, casual or competitive sport; and indigenous sports or games (United Nations, 2003).

Physical education is an effective means of promoting physical activity among young people. The neglect of physical education reduces the quality of education, with negative future impacts on public health and health budgets. Education is central to the achievement of all of the MDGs, and sport has a natural place in education, whether the approach used is formal, non-formal or informal (United Nations, 2002, 2003).

All the above discussions indicate a strong relationship that found between physical activity and economic development, learning, education, health and the achievement of MDGs.

Therefore, physical exercise program should be initiated at different levels, areas, age levels, social groups. For developing countries, like Ethiopia, it should be considered as a crucial and burning issue, because of the following:

Developing countries have so many health problems and they could not able to resist them by funding or budgeting money, since they are poor. Thus, by facilitating and supporting fitness program at any level (from small center to nation wide), these countries will minimize and save more money which they could spend for the health care of their nations. In other words, investing in physical activity program of a nation is absolutely cost effective.

Secondly fitness decreases their high mortality rate, and finally, these countries can produce productive citizens those who can successfully achieve in any national development activities or unlocks the development of the country. In other words, human resourcefulness can be also developed in such a way that countries could increase the working capacity of their people.

However, eventhough we realize that physical fitness program has no or little cost, except few, in contrary way, we, developing countries, are more behind to those of the developed ones. Actually, our diversified and series problems should put us ahead of them, but we couldn't. This may be because of cultural influence and lack of understanding up on the practice. This also shows that, as there is clear gap between the society and this practice in our country.

Information about physical exercise routines is found every where in popular magazines, in sports and health magazines and journals, on televisions and videotapes, and in books. These routines are designed by any one, from the physician to the shapely movie personality either with or without consultation from some one trained in safe exercise techniques. Today, with the popularity of aerobic conditioning and exercise programs,

many people with good intentions try various forms of exercising without adequate preparation or guidance only to find that they develop back, leg and joint pain, muscle strain or simple muscle soreness from over or improper exercising. They either become discouraged and feel defeated or persevere and injure themselves. Why this happens can be traced to the observation that some of the exercises chosen are not biomechanically safe for the strength, flexibility, or endurance level of the person doing the exercise (Diamond, 2001).

The above statement strongly underlines that the importance of quality training by the professionals on the area, unless other wise, it indicates, how much it will be dangerous. Therefore, the appropriateness of different physical exercises for different participant groups should be identified by the professionals of the field, as well as, the frequency, intensity and duration of a specific exercise should be directed and guided, or recommended by them. Thus, qualified and trained professionals are the corner stone of this practice, because they have a knowledge about the characteristics of each type of exercise, the method how to teach or train them, how to use a specific facilities and equipments for a specific exercise, etc. In addition to this, they educate the participants, trainees (or the audience who may follow television and radio physical fitness program) the benefit and abuse of a specific physical exercise up on a specific body part, even sometimes by inviting professional guests.

Specially, those physical fitness programs which are open for the mass population through television and radio should given more attention and should exhaustively consider multiple aspects of a given exercise as well as the target population with respect

to the culture of the society, the type of exercise and the target group, the methods of transferring it or the application of training principles as well as teaching or training aids.

In general, although health varies greatly with income, gender, age and family origin, according to WHO (World Health Organization), it was the birth right of any body, which reflects "Health for All "strategy of the organization (Carbine, et al 2002). To achieve this strategy WHO have been given more emphasis for physical fitness.

This indicates that the realization of the health benefit of physical exercise when instructed by qualified personnel with the help of appropriate facilities and equipments which will make the program easy, attractive and effective. More over, there should be a balance among the staff members, number of participants, the amount of contents, facilities and equipments, as well as, if it is fitness center, the capacity of the center, in order to achieve the target of good health of citizens of a nation. That is why this study mainly focused on the principles of physical fitness training and their applications in some selected fitness centers of Addis Ababa.

1.2. Statement of the Problem

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 (WHO, 2003).

Medical evidence shows that participation in physical activity, as part of an overall healthy lifestyle, is the most cost-effective and sustainable way to tackle the rise in non-

communicable diseases. Improving public health through increasing opportunities to participate in sport offers large economic benefits—particularly in developing countries where health resources are already stretched, making prevention especially essential (United Nations , 2003).

Sport directly contributes to the pursuit of the Millennium Development Goals. It is an innovative and effective tool to assist existing efforts to achieve specific targets such as those concerning education, gender equality, HIV/AIDS and the reduction of major diseases. More broadly, well-designed sports programmes are also a cost-effective way to contribute significantly to health, education, development and peace and a powerful medium through which to mobilize societies as well as communicate key messages (WHO, 2003).

Physical activity is an essential component of any strategy that aims to seriously address the problems of sedentary living and obesity among children and adults. Active living contributes to individual physical and mental health but also to social cohesion and community well-being. Opportunities for being physically active are not limited to sports and organized recreation. They exist everywhere – where people live and work, in neighborhoods and in educational and health establishments (WHO, 2006a).

In general here again, these and other literatures interpret that physical activity could be observed in broad sense. It is a collective effect of the involvement of so many agents for its achievement. Health professionals, educators, sport and physical education leaders, local, national, international and NGOs leaders, community at large, etc should work together for the achievement of health, social and economic benefits of physical activity.

Physical fitness is a multidimensional state of wellbeing, which consists of health- related physical fitness component, that are associated with good health, and skill-related physical fitness components, which are more associated with performance than good health (Carbin, et al 2000).

Although the development of physical fitness is the result of many things, optimal physical fitness is not possible without regular physical activity (Ibid).

Today, most people are aware that regular physical exercise can positively affect many aspects of our physical, mental, emotional and social wellbeing. The undeniable fact here is that, no matter what your age is, no matter what your current level of fitness and health is; you will benefit from regular physical activity or exercise.

In order to achieve the health, social, economic and other benefits of physical activity quality training is very important.

Nowadays, so many fitness centers have been functional in and out of Addis Ababa, but many of us, even including those who are involved in the program, may not know how many of them fulfill the basic requirements with respect to the staff members, facilities and equipments, subject matter and method of training in order to give quality training.

That is why, this study mainly focused on the quality of physical fitness training programs with respect to some quality of inputs (trainers, facility and equipment, contents, etc), output (the trainees) and the process (procedures, methods, etc) especially,

the health-related physical fitness training programs, in some selected fitness centers of Addis Ababa, as well as the fitness programs of Ethiopia Television (ETV) and FM radio, under the title "Principles of Physical Fitness Training and their Applications."

In general, the study dealt up on the above qualities and was tried to investigate the status of the programs with contrast to some internationally set standards, guidelines.

1.3. The Purpose of the Study

Health is of interest to economists, first because it is an important element of wellbeing, and second because it is a component of human capital, and as such is of major importance for growth and development. In poor countries, where physical jobs tend to be more abundant, health may be more important than education in determining labor productivity (Ayal, 2002). A physically active population is a healthier population, improving the productivity of the workforce and increasing economic output. Sport and physical activity also provide one of the most cost effective forms of preventive medicine, with the potential to cut health-care costs dramatically (United Nations, 2003 and WHO, 2003). So, even though involving in some forms of exercise, no matter how little or how much, is fine, it will be better if it is carried out in a correct manner. Thus, this study mainly will focus on the following major purposes:

- To investigate the principles and practices that relate to fitness and fitness centers
- To assess the qualification of staff members of fitness centers,
- To check whether the ratio of staff members, and facilities and equipments to the trainees are in healthy proportion,

- To observe the quality and space of the centers for activities,
- To investigate the appropriateness of equipments and facilities in relation with the type and level of participants, and the subject matter or content of a specific program,
- To assess whether their objectives are met or not,
- To assess the effects of different programs up on participants (including special needs),
- To see methods of training assessment and evaluation techniques of the training program of the centers,
- To observe the execution of fitness programs those are transmitted via mass media (Ethiopia Television and FM Addis 97.1).

1.4. Scope of the Study

Actually, physical fitness programs could be given at any level. We may find them in hotels, community fitness centers, in fitness clubs, in universities, colleges, schools, hospitals, etc. We may also get fitness centers in different forms –from those fitness centers which more or less have modern facilities to those centers which have little or none. The purpose of this study was to investigate the principles and practices of physical fitness training and their applications in Addis Ababa fitness centers. The selection of the research to be conducted in Addis Ababa is because of three main reasons:

- In this site we can get a high concentration of fitness centers,
- Here, we can also get enough participants for the study, and
- Television and radio fitness programs have been transmitted from this site.

There fore, by making its site in Addis Ababa the study considered the known eight top level gyms of the city as well as the fitness programs that have been broadcasted via Ethiopia Television and FM Addis 97.1 which are sponsored by Ministry of Youth and Sport of Ethiopia.

1.5. Research Questions

The study mainly focused on evaluation of many aspects of physical fitness centers with respect to or by considering some qualities of standards, guidelines, etc, of the field. Therefore, finally, this study was tried to answer the following research questions:

- ✓ Are staff members of the fitness centers professionally fit?
- ✓ Are there enough trainers to run the fitness programs?
- ✓ Are training facilities and equipments appropriate with respects to the subject matter and the level of the trainees?
- ✓ How is the planning of the program conducted?
- ✓ Do trainers of the centers follow efficient and effective methods of training and apply physical exercise training principles?
- ✓ Are the subject matter or contents of different fitness programs appropriate to the type and level of participants (including special needs) as well as facilities and equipments at land?

1.6. Significance of the Study

Governments face a dramatic increase in the rates of chronic disease, obesity and sedentary lifestyles. Civic leaders can address these challenges by providing

opportunities for physical activity and active living that improve the health and vitality of both their citizens and their cities (WHO, 2006a).

The main benefit of any research is the increase in knowledge- the study which carried out by one researcher may be further studied and will be studied by others many times- which is the increase in knowledge up on a specific issue. Significance of the study is the core and an important point where any research work discusses about the benefits of the study from individual researcher to nation wide, even international level. When we come to this study, it has the following significances:

- It will identify the professional competence of trainers in Addis Ababa fitness centers/gyms,
- It will help us to know the deviation of the training programs of the centers with respect to standards,
- It will also give important information for those who want to involve in this profession, business as well as for the trainees,
- It could serve as an important resource for those who want to purse similar studies, and
- It may help to know our position, in this area, in relation to other countries.

CHAPTER TWO

2. REVIEW OF RELATED LITRATURES

2.1. History of Fitness

As we enter the 21st century, one of the greatest accomplishments to be celebrated is the continuous pursuit of fitness since the beginning of man's existence. Throughout prehistoric time, man's quest for fitness has been driven by a desire to survive through hunting and gathering. Today, though no longer driven by subsistence requirements, fitness remains paramount to health and well-being (Dalleck and Kravitz, www.).

Primitive nomadic lifestyles (pre-10,000 B.C) required the continual task of hunting and gathering food for survival. Tribes commonly went on one- or two- day hunting journeys for food and water. Regular physical activity apart from that, necessary for hunting and gathering was also a principal component of life. **The Neolithic Agricultural Revolution (10,000-8,000 B.C.)** symbolizes the beginning of a more sedentary lifestyle, as man began to alleviate some hardships of life while, simultaneously decreasing daily physical activity (Wuest and Bucher, 1995). In **Ancient civilizations of China and India (2500-250 B.C.)** there is physical activity. In China, the philosophical teachings of Confucius encouraged participation in regular physical activity. It was recognized that physical inactivity was associated with certain diseases were preventable with regular exercise for fitness. Where as in India, individual pursuit of fitness was discouraged as the religious beliefs of Buddhism and Hinduism emphasized spirituality and tended to neglect development of the body. However, an exercise program similar to Chinese Cong Fu gymnastics developed, while still conforming to religious beliefs, known as Yoga (Wuest and Bucher, 1995).

According to Rice, Hutchinson and Lee (1958), Wuest and Bucher (1995), and Dalleck and Kravitz, www.), during **the Near East (4000-250 B.C.),** early political and military leaders within the civilizations of Assyria, Babylonia, Egypt, Palestine, Persia, and Syria realizing the importance of fitness to the efficiency and performance of military forces, encouraged fitness throughout society. Perhaps the best example of a civilization utilizing fitness for political and military purposes is the Persian Empire. Persian leaders demanded strict physical fitness from its people, which was accomplished through the implementation of rigid training programs. The downfall and collapse of the Persian Empire occurred at a time when society could largely be characterized by an overall lack of fitness.

Perhaps no other civilization has held fitness in such high regard as ancient Greece. In **Ancient Greek Civilization (2500-200 B.C.) of Athens,** Greeks believed that development of the body was equally as important as development of the mind. Many founding medical practitioners facilitated the growth of fitness throughout ancient Greece, including the likes of Herodicus, Hippocrates, and Galen. A common saying in ancient Greek times was "exercise for the body and music for the soul ". Exercise in the palaestra and gymnasium was supervised by the paidotribe, who is similar to the modern fitness trainer. This idealistic fitness situation existed most strongly within Athens. Similarly the **Spartans** of Northern Greece valued fitness even more than the Athenians. However, the heightened interest in fitness within Spartan culture was primarily for military purposes. During this era, Greek states were frequently at war with each other. Fighting skills were highly correlated with physical fitness levels, making it imperative for individuals to maintain high fitness levels. The military-dominated culture of Sparta

resulted in one of the most physically fit societies in the history of mankind (Rice, Hutchinson and Lee 1958).

During Roman Civilization (200 B.C.-476 A.D.), the Roman Empire was exactly different and opposite with that of the ancient Greek civilization with the overall physical fitness condition of the Roman civilization, which was the highest level during its time of conquest and expansion. This lifestyle resulted in strong, fit people who conquered nearly all of the Western World. However, the fitness levels of the general Roman population declined as individuals became in love with wealth and entertainment. **The Dark (476-1000) and Middle Ages (900-1400),** Physical activity and fitness were prerequisites for survival. Therefore, despite the cultural setbacks that occurred with the fall of the Roman Empire, fitness experienced a revival during the Dark and Middle Ages (Dalleck and Kravitz, www.).

In the Renaissance period (1400-1600), once again, the ancient Greek ideals, which glorified the human body, gained widespread acceptance. Many individuals, including Martin Luther (religious leader), John Locke (philosopher), Vittorino da Feltra, John Comenius, and Richard Mulcaster (physical educators) maintained that high fitness levels enhanced intellectual learning. Fitness and physical education share a common bond. Physical education became the tool used to spread the value and benefits of fitness throughout society. During the **National Period in Europe (1700-1850),** fitness remained important and continued to follow trends initiated during the Renaissance. Physical education programs expanded within emerging nations of Europe. Intense feelings for nationalism and independence created the atmosphere for the first modern fitness movement (Karolides and Karolides, 1993 and Dalleck and Kravitz, www.).

At the **Colonial Period of America (1700-1776)**, hardships of colonial life ensured that regular physical activity continued to be a lifestyle priority, however during this period no organized exercise or fitness programs existed. During the **National Period (1776 to 1860)**, Fitness was influenced by European cultures. However, early leaders in the United States were conscious of the need for exercise and fitness. Benjamin Franklin recommended regular physical activity, including running, swimming, and basic forms of resistance training for health purposes. President Thomas Jefferson acknowledged the necessity for fitness. Despite the relative lack of interest in fitness existing during the **Early Physical Education** era, J.C. Warren and Catherine Beecher made significant contributions to the future of fitness in America. A medical man Warren recommends physical exercise and began devising exercises for females. Catherine Beecher specifically devised fitness programs to meet the needs of women (Dalleck and Kravitz, www. and Welch, 1996).

The **Post-Civil War (1865-1900),** which was considered as the Industrial Revolution was one of the most important events with respect to modern fitness in the United States. The 20th century symbolized the beginning of a new era of fitness leaders: the Presidents of the United States. Theodore Roosevelt, perhaps the most physically fit President to occupy the oval office, also led the nation into the new century. He recognized the importance of exercise and physical activity, and had the power to encourage the citizens of America to be physically active. During the 1950s, numerous organizations took initiative in educating the general public about the consequences of low fitness levels. Several agencies that have been involved in fitness promotion since the mid-1950s include the American Health Association (AHA), the American Medical Association

(AMA), the American Association for Physical Education, Recreation, and Dance (AAPHERD), and the President's Council on Youth Fitness. These organizations would provide merit and legitimacy to the coming fitness movement. The American College of Sports Medicine (ACSM) was formed in 1954, and has proved to be one of the premier organizations in the promotion of health and fitness to American society and worldwide (Dick, 1997 and Dalleck and Kravitz, www.).

According to Berryman (1995), Cooper (www.) and, Dalleck and Kravitz (www.) during **1960s** of **United States,** President John F. Kennedy was a major proponent of fitness and its health-related benefits to the American people. He furthered the development of the Presidents Council on Youth Fitness. The name was also changed to the President's Council on Physical Fitness. Kennedy spoke openly about the need for American citizens to improve their fitness levels. He said, "We are under-exercised as a nation; we look instead of play; we ride instead of walk". Kennedy prompted the federal government to become more involved in national fitness promotion and started youth pilot fitness programs. Kennedy's commitment to fitness can best be summarized when he said, "Physical fitness is the basis for all other forms of excellence." Dr. Ken H. Cooper widely recognized as "The Father of the Modern Fitness Movement". "It is easier to maintain good health through proper exercise, diet, and emotional balance than it is to regain it once it is lost" he said. Early in his career, Cooper stressed the necessity for providing epidemiological data to support the benefits of regular exercise and health. Data from thousands of individuals became the foundation for his aerobic concepts. Aerobics, released in 1968, sent a powerful message to the American people - to prevent the development of chronic diseases, exercise regularly and maintain high fitness levels

throughout life. Dr. Cooper's message, programs and ideas established the model from which fitness has proliferated up to modern time.

2.2. The Status of Physical Activity in Different Countries of the World

Chronic diseases which mainly caused by physical inactivity (WHO, 2006a), such as diabetes, cancers, respiratory and cardiovascular diseases are responsible for 60% of all deaths worldwide. In 2005, chronic disease claimed nearly 35 million lives worldwide, a number that is expected to rise by more than 40% by 2020. Developing countries bear the greatest burden of this growing public health crisis, further impeding their economic growth. In four countries--China, India, Brazil and Russia—it is estimated that the loss of national income from heart disease, stroke and diabetes totals more than $1.1 trillion (Perrett, 2007).

Some 80% of the deaths from NCDs occur in low- and middle-income countries. There is strong scientific evidence that healthy diet and adequate physical activity (i.e. ≥30 minutes of moderate intensity physical activity, ≥5 days per week) play an important role in the prevention of these diseases. The burden of NCDs has an impact not only on the quality of life of affected individuals and their families, but also on the country's socio economic structure (World Health Organization / World Economic Forum, 2008).

Taking population ageing and risk factors into account, deaths from non communicable diseases are projected to increase by 17% in 2005- 2015 while during the same time period, deaths from communicable diseases, maternal or perinatal-related conditions and malnutrition are projected to decrease (Ibid).

Thus the world witnesses the burden of NCDs moving to poorer and poorer countries. These diseases and their risk factors are moving to lower socioeconomic population groups. The high burden of NCDs, especially in the developing world, means a double burden to health services. In addition to human suffering this means great costs and problems in terms of social development. The financial resources of developing countries are very limited to respond to the great number of NCDs by curative services. Prevention of these diseases through physical activity and healthy lifestyles, based on strong medical evidence, is the most cost -effective and sustainable way to tackle these problems and to support positive social development (WHO, 2003a).

As there are approximately 706,000 deaths in the USA each year from coronary heart disease (459,841 deaths), type 2 diabetes (198,140 deaths), and colon cancer (48,100 deaths), then 30% of the deaths for coronary heart disease, type 2 diabetes, and colon cancer (or 212,000 deaths) would be prevented by moderate-intensity physical activity that expended 1000 kcal/wk (Booth and Chakravarthy, 2002).

In populations as diverse as in China, Finland and in the USA, studies have shown that even relatively moderate changes in lifestyle, especially by increasing physical activity and improving diet, are sufficient to prevent the development of almost 60% of type II diabetes cases. It is likely that one-third of cancers can be prevented by maintaining a healthy diet, normal weight and physical activity throughout one's life (WHO, 2003a).

According to Allison et al. ,(1999) in Booth and Chakravarthy (2002), Obesity was estimated to annually account for 280,000-325,000 deaths in the US using 1991 statistics and this number is likely growing. In the year 2000, a total of 38.8 million US adults

were obese (19.6 million men and 19.2 million women). The risk of getting a cardiovascular disease increases up to 1.5 times in people who do not follow minimum physical activity recommendations. At the same time the level of overweight and obesity is rapidly growing world wide, in developed and developing countries also among young people.

The affected population with obesity has increased with epidemic proportions, with more than one billion adults worldwide overweight and at least 300 million clinically obese. Physical activity is in key position for weight control. In the United States, obesity causes 300 000 deaths annually, a number exceeded only by deaths related to tobacco (WHO, 2003b).

From 1970 to 1990, there were small increases of participation in physical activity in a number of countries, but over the past decade, the trend has been to a decline in the proportion of physically active people in the US and in many other developed nations (Shephard, 2001). Industrialization, urbanization and motorized transport have reduced physical activity. At present, more than 60% of the global populations are not sufficiently active. In Western Europe, more than 30% of adults are not sufficiently active and levels of physical activity are continuing to decline (WHO, 2005).

In the United States, data on sedentary lifestyles disseminated in 2003 by the Centers for Disease Control and Prevention (CDC) showed that the prevalence of physical inactivity between 2000 and 2001 in this country was 27%; in that period, the percentage of those who met physical activity and health recommendations increased from 26.2% to 45.4%. However, data from different countries in the Americas show that more than 50% of the

population is irregularly active. In some countries in the Region, the prevalence of sedentary lifestyles is nearly 60% (Mahecha and Rodrigues, ND).

In several countries of Western Europe, Overweight and obesity prevalence rose from around 10% in the early 1980s to around 20% by the end of the 1990s. In Region many countries over half the adult population has crossed the threshold of overweight, and 20–30% of adults are categorized as clinically obese. For example, one in five adults is obese in Finland, Germany and the United Kingdom. In several areas in southern Europe, one child in three is overweight. In general, lower rates are found in central and eastern European countries, in part related to the economic difficulties of the 1990s. (WHO, 2005).

A recent study conducted by Vaz de Almeida found that the risk for physical inactivity was greater in countries such as Portugal (9.15), Belgium (4.6), Italy (4.25), and Greece (4.21), and that the countries with the most physically active populations in Europe were Austria, Finland, and Sweden (Mahecha and Rodrigues, ND).

Physical inactivity is recognized as a major independent risk factor causing about 3.5% of the disease burden and up to 10% of deaths in the European Region. Based on actual rates of disease and death of physically inactive and active people in the Danish population, a change from inactivity to activity from the age of 30 up to the age of 80, would translate into a gain in life expectancy of between 2.8 and 7.8 years for men and between 4.6 and 7.3 years for women, depending on the degree of activity increase. Another Danish study shows that physically inactive people can expect between 8 and 10 fewer life years without a major disease than physically active people (WHO, 2006a).

Physical activity participation levels in some European countries (at least three times/week) England 21%. Italy (11%), France (24%) and Germany (27%), are a long way behind world leaders: Finland (52%), Australia (46%) and Canada (39%). The adult obesity level in England is 10 times that of Japan and around twice that of Italy, France and Germany. Both Finland and Australia –the leaders in participation levels –have higher relative obesity rates. Similarly Physical activity Participation levels , by age (at least three times/week) Finland's profile is unique in that, whilst participation declines amongst 20 to 40 year olds, it then rises steadily through the age groups, with over 60% of 60 year olds participating frequently. Australia maintains consistently high participation from 16 to 65 years. Whilst levels in Germany, France and Japan ebb and flow with age, England's participation rate declines steadily (Carter, 2005).

Physical activity levels are decreasing among young people in countries around the world, especially in poor urban areas (WHO, 2003b).

Overweight is more prevalent among children of higher-income families in less industrialized countries, especially as they move to urban areas, and among lower-income families in more industrialized societies (WHO, 2005).

Surveys have shown that both adults and children from lower socioeconomic groups are found to be less physically active than those of a higher socioeconomic status. Lower income families are also found to participate less in sports for recreation (WHO, 2006a). Therefore, older adults, women, and individuals at lower socioeconomic and education levels are at greater risk of being physically inactive and, by extension, of developing noncommunicable diseases (Mahecha and Rodrigues, ND).

Several possible reasons have been suggested to explain why individuals from lower socioeconomic groups tend to be less physically active than those of higher socioeconomic status: they have access to fewer attractive facilities, programmes and other opportunities for physical activity to stimulate an active lifestyle; lower socioeconomic groups are in general less educated and have a lower awareness of and a less positive attitude to the benefits of being physically active; they have less income to pay for these activities; and they report feeling more insecure in their local environment and more worried about crime and a lack of safety in their neighbourhoods compared to higher-income groups (WHO, 2006a).

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 (WHO, 2003a).

In Chile, according to the First National Survey on Quality of Life and Health of 2000, the percentage that engages in fewer than 30 minutes of physical activity three times per week (regarded as sedentary by this criterion) was a noteworthy 91% of the population. Some of the studies analyzed by Jacoby, Bull, and Neiman in Brazil, Chile, and Peru clearly show that more than two-thirds of the populations of these countries do not meet the recommendations for the frequency of physical activity needed to obtain health benefits. Results from studies conducted in Bogotá, Colombia, place the rate of physical inactivity at 79% of the population, and only 5.25% of individuals regularly engage in physical activity. These studies also indicate that women practice physical activities less

frequently than men and that physical activity decreases as chronological age increases (Mahecha and Rodrigues, ND).

Another significant result is the fact that physical inactivity differs according to socioeconomic level. People at the lowest socioeconomic levels present the greatest risk of being physically inactive. However, it should be pointed out that the problem of sedentary lifestyles is not exclusive to developing countries, In Brazil, the first data on physical inactivity in the municipality of São Paulo showed a prevalence of sedentary lifestyles of some 60% in men and 80% in women. Data following the national census of 1996 and1997, as analyzed by Monteiro and colleagues, showed that barely 13% of the population engaged in at least 30 minutes of physical activity in their leisure time on one or more days weekly, and that only 3.3% carried out the minimum daily recommended amount of at least 30 minutes five times per week (Mahecha and Rodrigues, ND).

South Africa has recognized the increased risk of physical inactivity and subsequent obesity in children (especially girls) (Shephard, 2001).

2.3. Physical Activity for Various Population Groups

For most of the development of mankind, physical activity has been an essential part of life for virtually everyone. Physical activity was not a choice but a necessity. In the past few decades, rapid changes in transport, communication, urban planning, architecture and leisure possibilities have made physical activity one choice among many (WHO, 2006a). The United Nations 1990 Convention shows that Physical activity and recreation is a human right (WHO, 2006a). The benefits of physical activity appear to extend to all segments of the population. For example, even seniors and those with disabilities and

chronic disease conditions benefit from physical activity, which improves their mobility and physical, mental, and social functioning (Butler et al. 1998 in Transportation Research Board, 2005).

An inactive person generates 32% greater direct annual medical costs than an active one. Sport has been shown to Reduce the risk of premature death by 37%, Reduce incidence of chronic heart disease in middle-aged men by 50%, Reduce the chance of developing type II diabetes by between 33-50%, Provide increased protection against 20 chronic diseases or conditions (Carter, 2005). Physical inactivity is a state of relatively complete physical rest, which does not provide sufficient stimulus for human organs to maintain their normal structures, functions and regulations (WHO, 2006a).

Physical activity provides meaningful movement experiences and health-related fitness for all individuals in order that they may have the opportunity to acquire the motor skills, strategies, and physical stamina necessary for a lifetime of rich leisure, recreation, and sport experiences to enhance physical fitness and wellness (Tripp, Piletic and Babcock, 2003).

2.3.1. Children and Young People and Physical Activity

Regular physical activity provides young people with substantial physical, mental and social health benefits. Regular practice of physical activity helps children and young people to build and maintain healthy bones, muscles and joints, helps control body weight, helps reduce fat and develop efficient function of the heart and lungs. It facilitates developing the skills of movement and helps prevent and control the feelings of anxiety and depression. Engagement in play and sports gives young people opportunities for

natural self-expression, self confidence, and relief of tension, achievement, social interaction and integration as well as for learning the spirit of solidarity and fair play (WHO, 2003a, 2008; Weiss, 2000; Bauer and Steinbrecher, 1998 and A Report to the President from the Secretary of Health and Human Services and the Secretary of Education, 2000). Physical fitness is not only one of the most important keys to a healthy body; it is the basis of dynamic and creative intellectual activity (Kennedy, 2006).

According to United Nations (2003), Physical activity is critical for the holistic development of young people. Physical activity can also boost the immune system and strengthen the psychological wellbeing of people with HIV and AIDS-related illnesses. It has proven benefits to a child's ability to learn, and increases concentration, attendance and overall achievement (May and Phelan, 2005).

Despite this, it is estimated that less than one-third of young people are sufficiently active to benefit their present and future health and well-being. This decline is largely due to increasingly common sedentary ways of life. For example fewer children walk or cycle to school and excessive time is devoted to watching television, playing computer games and other sedentary activities - often at the expense of time and opportunities for physical activity and sports (WHO, 2003a).

Some reports suggest that habitual physical activity begins to decline as early as six years of age. Other critical periods when physical activity is likely to diminish include adolescence, the transition from school to university and from university to the labor force (Shephard, 2001). Furthermore, the largest decreases in physical activity over the past decade have been shown by the youngest cohort, those currently aged 16 to 21 years.

In all age groups, sport participation has been displaced by media watching, home maintenance, eating and resting (Shephard, 2001).

A 1999 national survey in US found that young people aged 2–18 spend, on average, over 4 hours a day watching television, watching videotapes, playing video games, or using a computer. Most of this time—2 hours and 46 minutes per day, on average—is spent watching television. One-third of children and adolescents watch television for more than 3 hours a day, and nearly one-fifth (17%) watch more than 5 hours of television a day. Physical inactivity has contributed to the 100% increase in the prevalence of childhood obesity in the United States since 1980 (A Report to the President from the Secretary of Health and Human Services and the Secretary of Education, 2000).

The Centers for Disease Control and Prevention reports that the percentage of children ages 6 to 11 who are overweight has increased nearly 300 percent over the past 25 years. The numbers are almost identical for teenagers (Cooper, 2005). In Cooper (2005), Klish and Baylor said "Children today have a shorter life expectancy than their parents for the first time in 100 years." Similarly Narayan said, "One in every three U.S. children born after 2000 will become diabetic unless many more people start eating less and exercising more."

According to Mandigo, (2005), in 2000, 57% of Canadian children and youth aged five to seventeen years were not sufficiently active to meet international guidelines for optimal growth and development (Craig, Cameron, Storm, Russell, & Beaulieu, 2001). For adolescents, this number increased from 64% in 2000 (Craig et al., 2001) to 82% in 2002

(Craig & Cameron, 2004). Girls in particular appear to be most at risk. In 2000, only 30% of girls and 40% of boys were considered active enough (Craig et al., 2001). By 2002, this number reached a distressing rate of 12% for girls and 24% for boys (Craig & Cameron, 2004).

Involvement in properly guided physical activity and sports can also foster the adoption of other healthy behaviour including avoidance of tobacco, alcohol and drug use and violent behaviour as well as the adoption of healthy diet, adequate rest and better safety practices. Some studies show that among adolescents, the more often they participate in physical activity, the less likely they are to use tobacco. It has also been found that children who are more physically active showed higher academic performance. Importantly, when patterns of physical activity and healthy lifestyles are acquired during childhood and adolescence they are more likely to be maintained throughout the life-span. Consequently, improving physical activity levels in young people is imperative for the future health of all populations (WHO, 2003a).

2.3.2. Women and Physical Activity

Sport can be an effective tool for empowering girls and women, given that they are often excluded from participating and enjoying the physical and psychosocial benefits offered by sport. By directly challenging and dispelling misperceptions about women's capabilities, integrated sports programmes help to reduce discrimination and widen the role prescribed to women (UN, 2003).

Social inequality, poverty and inequitable access to resources, including health care, result in a high burden of noncommunicable diseases (NCDs) among women worldwide.

Although women generally tend to live longer with NCDs than men, they are often in poor health. Regular physical activity helps prevent cardiovascular diseases (heart disease, high blood pressure and stroke) which account for one-third of deaths among women around the world. Cardiovascular diseases cause half of all deaths in women over 50 in developing countries. Regular physical activity, combined with adequate diet has shown to be one of the most effective means of controlling mild to moderate obesity and maintaining an ideal body weight in women. Diabetes affects more than 70 million women in the world. This figure is projected to double by 2025 (WHO, 2003b).

Women, particularly post-menopausal, have a higher risk of developing osteoporosis than men. Reducing stress, anxiety, depression and loneliness through regular physical activity is particularly important for women, as rates of depression for women are almost double those of men in both developed and developing countries (Ibid).

According to President's Council on Physical Fitness and Sports (1997) in BRADY AND KHAN (2002) and UN, (2003) female athletes tend to do better academically and have lower school drop-out rates than their non-athletic counterparts. For many girls in developing countries, adolescence is characterized by high risk for early and unwanted sexual activity, forced marriage, and early pregnancy-related events (Brady, 1998). In the US, research shows that regular participation in sport correlates to girls being less sexually active, lower rates of teen pregnancy (UN, 2003).

Appropriate policy actions and culturally relevant community programmes would facilitate the regular involvement of greater number of girls and women in sport and physical activities. However, while women should be encouraged to participate in

physical activity, one should not overlook the fact that in rural areas and in low income peri-urban areas of developing countries, women may be already physically exhausted by other forms of day-long "occupational" physical activities in and outside the home. These women groups may need a better-balanced set of support actions such as adequate nutrition. Income generating initiatives, advise on physical activities that are most relevant to their specific conditions and possibly adapted leisure pursuits (WHO, 2003a).

2.3.3. Seniors People and Physical Activity

There is strong, systematic evidence of a direct link between regular physical activity and improved health for people of all ages. A 10% increase in adult activity would prevent around 6,000 premature deaths not to mention bringing economic benefits worth at least £2 billion a year (YMCA, 2004).

According to United Nations Department for Economic and Social Affairs (UNDESA 2007) in UN, (2007) and Shephard, (2001), older people constitute increasingly higher proportions of the total world population. In 2007 people aged 60 and over represented 11% of the world's population and this is projected to rise to 21% by 2050. Most of these older persons will be living in developing countries. Reducing and postponing age-related disability is an essential public health measure and physical activity can play an important role in creating and sustaining well-being at all ages (WHO, 2003a). The prevalence of physical inactivity is high and initial health status is poor in this segment of the population.

No matter what part of the country you live in or whether it is urban, suburban or rural, all communities need to provide physical activity opportunities for older adults (Joseph et

al, 2005). Scientific evidence increasingly indicates that physical activity can extend years of active independent life, reduce disability, and improve the quality of life for older persons as well (Robert Wood Johnson Foundation, 2001 and Dillon, 2006).

Physical activity is important for healthy ageing, improving and maintaining quality of life and independence as people age (WHO, 2003b). More recently, scientists have begun to demonstrate that exercise also may improve cognitive functioning in older adults (Carbin et al, 2002 and The Journal on Active Aging, 2004).

According to WHO, (2003b) for adults and ageing 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 loneliness 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 disease, arthritis, osteoporosis and hypertension.

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 physically 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 (department of health and human service of USA, 2004).

2.3.4. Persons with Disability and Physical Activity

Physical activity provides meaningful movement experiences and health-related fitness for all individuals in order that they may have the opportunity to acquire the motor skills, strategies, and physical stamina necessary for a lifetime of rich leisure, recreation, and sport experiences to enhance physical fitness and wellness (Adapted Physical Activity Council of the American Association for Active Lifestyles and Fitness (AAALF), 2003).

Each of us is affected by disability, whether we have a disability ourselves, or a family member or friend with a disability. As we age, the odds increase that disability will enter our lives in some way, either affecting us directly or someone we know (Busciglio, 2005). A disability is any physical or mental impairment that substantially limits an individual person in one or more of his /her major life activities (such as walking, talking, breathing, or working) (Adapted Physical Activity Council of the American Association for Active Lifestyles and Fitness (AAALF), 2003).

People with disabilities are less likely to engage in physical activity than people without disabilities, yet they have similar needs to promote their health and prevent unnecessary disease (Jones et al, 1998). Students with disabilities can gain very similar benefits from physical activity and the accrued physical fitness as people without disabilities (www.sc-ape.org).

It is estimated that 10-15% of the world population, or 600 million people, have a disability (Blauwet, 2005). Persons with disability should be provided with enough opportunities and support to perform sport and physical activities adapted to their physical conditions. The aim is to help persons with disability improve their muscle strength, their psychological well-being and quality of life by increasing the ability to perform daily living activities. This is an equitable approach to their social and economic integration and to their quality of life (WHO, 2003a).

2.4. Recommended Levels of Physical Activity

Many countries have implemented programmes to increase the physical activity levels of their populations. The main population health message is that adults should undertake at least 30 minutes of moderate-intensity physical activity on most, if not all, days of the week (Shephard, 2001, WHO, 2006b and Ministry of Health of New Zealand, 2003). It was first developed in 1995 by the CDC and American College of Sports Medicine (ACSM) and was based on numerous physiological, epidemiological, and clinical studies confirming the health benefits accrued from this duration and intensity level of physical activity (Mahecha and Rodrigues, ND). This activity can be done in smaller sessions of 10 minutes, three times per day. Where possible, people should include some vigorous activity for extra health benefits. The specific health outcomes that are being pursued for particular population groups will determine what type, intensity, frequency, duration and context of activity are most appropriate (Ministry of Health of New Zealand, 2003). An important but less clearly heard component of the current message is that aerobic activity should be supplemented by at least two days of resistance exercises per week (Shephard, 2001). In 1980, the U.S. Department of Health and Human Services (DHHS, 1980)

stated that adults can achieve significant health benefits from participating in vigorous-intensity activity for at least 20 minutes per day for a minimum of 3 days a week (Transportation Research Board, 2005).

The ACSM recommends that most adults without symptoms of coronary heart disease do not need a formal medical examination and exercise testing if moderate-intensity exercise is prescribed. However, for older individuals with heart disease or for individuals who are over 45 years of age with two or more risk factors for cardiovascular disease, most experts recommend a pre-exercise assessment including a complete medical history and physical examination and an exercise stress test in most cases (Joseph et al, 2005).

Current physical activity recommendations for children and young people are: All young people should participate in physical activity of at least moderate intensity for 60 minutes per day. A recent study suggested that physical activity levels in children should be about 30 minutes higher than the current international guidelines of at least 60 minutes per day of physical activity of at least moderate intensity, to prevent clustering of cardiovascular disease risk factors (WHO, 2006b).

Canada's Physical Activity Guide makes the slightly more demanding recommendation of 30-60 minutes of "moderate" physical activity, and it calls for strength activities 2-4 days per week, and flexibility exercises 4-7 days per week. Details of both sets of recommendations suggest that if the intensity is greater than moderate, the minimum duration of activity can be shortened, and that if the intensity is less than moderate, the duration of activity bouts must be extended (Shephard, 2001).

2.5. PHYSICAL ACTIVITY AND DEVELOPMENT

Physical activity/Sport has twofold development benefits: the inherent benefits of physical activity (principally related to improved health and wellness) and the power of sport as medium for delivering other development objectives (such as education, inclusion and economic development). It is now becoming an important part of poverty reduction strategies. It also Encourage sustainable development (May and Phelan, 2005). A physically active population is a healthier population, improving the productivity of the work force and increasing economic output (UN, 2002).

According to Sport Matters Groups (2005) and Chenoweth (2003), physically active people report better overall health status, are more productive, have fewer mental health issues, report higher levels of satisfaction and happiness, and age better.

A United States study found that physically active people have lower annual direct medical costs than inactive people and showed that increasing regular moderate physical activity among inactive adults might reduce the annual national direct medical costs by many billions of dollars. Employers also benefit, since having a physically active workforce can lead to reductions in absenteeism and increased productivity (WHO, 2006a).

2.5.1. Economic Benefits of Physical Activity

According to WHO (2003a,b), 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 USA, 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.

In Canada, physical inactivity costs about 6% of total health care cost. In companies with employee physical activity programmes/initiatives, the benefit of US$ 513 per worker per year can be reached (from changes in productivity, absenteeism, turnover and injury). No data are available from the developing world. Although presently the costs may still be lower, they are increasing. Reduction of this kind of avoidable costs is, however, potentially important, especially in the developing world with great scarcity of resources (WHO, 2003b). The study carried out in Michigan State indicated that, If 1 in 20 sedentary adults become physically active, a cost avoidance of approximately $575 million per year over the next four years can be realized. This equates to jobs for over 15,400 new employees (Chenoweth, 2003).

In an Australian study, Bauman, Bellew and Booth (1996) found that health savings from increased physical activity could amount to $600 million per annum. New Zealand studies on the cost benefits of physical activity have conservatively suggested that a 5 percent increase in physical activity levels could result in savings of $25 million through reduced health expenditure, additional years of life and decreased incapacity. $55 million could be saved from a 10 percent increase in physical activity and $160 million if all New Zealanders were physically active (Russell et al 1993; Bauman 1997). Two major non-communicable diseases that can be addressed by physical activity, with resulting cost savings, are obesity and osteoporosis. The direct costs of obesity to New Zealand have been estimated in excess of $100 million per year (Swinburn et al 1997). The direct costs

of osteoporosis are estimated to range from $150 to $200 million per year. These costs are projected to increase as the population ages (National Health Committee 1998) (Ministry of Health of New Zealand, 2003).

Estimates put the total cost to England of physical inactivity in the order of at least £2 billion a year. This represents about 54,000 lives lost prematurely (YMCA, 2004).

A sustained reduction of just 10% in body weight can lead to substantial health and economic benefits (Health Enhancement Systems, 2004).

2.5.2. The Cost of Physical Inactivity

Alarming Global Trend of Physical Inactivity World wide, more than 60% of adults do not engage in sufficient levels of physical activity which are beneficial to their health. Physical inactivity is more prevalent among women, older adults, individuals from low socio-economic groups, and the disabled. In many countries, developed and developing, less than one-third of young people are sufficiently active to benefit their present and future health (WHO, 2003b).

Based on epidemiological studies, the economic consequences of physical inactivity have been shown to be substantial on health care costs, but even greater on indirect costs, which include the value of economic output lost because of illness, disease-related work disabilities and premature death. The cost in monetary terms is estimated to be €910 million a year for a population of 10 million where half the population is too inactive to enjoy health benefits from regular physical activity. It is calculated that 3.1 million extra days of sick leave each year are attributable to physical inactivity in a population of 5.5 million people (WHO, 2006b).

According to Chenoweth (2003), Physical Inactivity has direct and indirect costs. Direct Costs of Physical Inactivity are the costs for medical care, workers' compensation, and lost productivity. Indirect Costs of Physical Inactivity are the costs for medical care include inefficiencies associated with replacement workers, lost opportunities, and other eventual costs (e.g., longer rehabilitation times, drug reactions, and additional usage of medical services). Indirect costs are usually substantially higher than direct costs. In order to determine the total cost of physical inactivity, both direct and indirect costs must be calculated.

Data from developed countries indicate that the direct costs of inactivity are enormous. In the USA, 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. Inactivity alone may contribute as much as US$75 billion to US medical costs in the year 2000 (WHO, 2003b). Physical inactivity causes an estimated 600 000 deaths per year in the European Region. A report from England estimated the yearly cost of physical inactivity (excluding the costs of obesity) at £12 billion (€17.5 billion). Based on this study and a similar one in Switzerland, it is estimated that physical inactivity costs between €220 and €440 per person per year (Edwards and Tsouros, 2006). WHO estimates that the loss of national income of different countries will be dramatic. For example, it is estimated that China will lose around 558 billion international dollars from 2005 to 2015 as result of the burden of NCDs (World Health Organization / World Economic Forum, 2008).

These are some of the specific costs associated with remaining inactive and obese given by Health Enhancement Systems (2004) and, Booth and Chakravarthy (2002):

Obesity costs employers more than $12 billion each year in higher healthcare utilization/benefit claims, lower productivity, and increased absenteeism;

About 9.1% of the nation's total annual medical expenditures are attributable to obesity Inactivity costs $670 - $1125/person annually. If more than 88 million inactive Americans over age 15 were to increase regular moderate physical activity, annual healthcare costs might be reduced by as much as $76.6 billion.

The costs of cardiovascular disease ($298.2 billion in the year 2001; American Heart Association) and type 2 diabetes ($98 billion, American Diabetes Association) combine to $396 billion/year. A 30% reduction in these two disorders would save the US economy $119 billion.

The proportion of direct medical costs associated with physical inactivity in inactive US adults with arthritis was $1,250/patient, which is about 12.4% of direct costs, or about $8 billion/year (Wang et al., 2001).

The number of deaths from sedentary living is two times greater than that from microbial agents and also exceeds all deaths from firearms, illicit usage of drugs, sexually transmitted diseases, and motor vehicle accidents (McGinnis & Foege, 1993). Thus, a major cause of death in the US is sedentary living.

2.6. Fitness Centres and Professionals

2.6.1. Fitness Professionals

Throughout most of the history of the fitness center industry, employees were not required to have any formal training. The only exceptions were lifeguards, who were required by law to be certified. Certification of individual employees began in the mid-1980s, but stringent evaluation and certification of facilities were not undertaken until 1989, when the American College of Sports Medicine (ACSM) began a feasibility study of the proposition (Advameg Inc., 2007). For most fitness workers, certification is critical (U.S. Department of Labor Bureau of Labor Statistics, 2008). Certification is desirable because it means that the holder has proven himself/herself to be competent in basic knowledge, skills and abilities pertaining to the discipline. In the case of fitness certification, presumably the goal is to ensure that the practitioner is able to develop and implement exercise programs that will be both safe and effective for the consuming public (Salge, 2004).

Certification tests and programs proliferated in the 1980s from such professional organizations as the American College of Sports Medicine (ACSM), the American Council on Exercise (ACE), the Association for Fitness in Business (AFB), the National Strength and Conditioning Association (NSCA), and IDEA-The Association For Fitness Professionals (formerly the International Dance-Exercise Association) (Advameg Inc., 2007).

The health and fitness industry is a dynamic, expanding, and maturing field (SEKENDİZ, 2005). The dynamic growth and enthusiastic interest in fitness the last few decades has

sparked an expansive evolution of the health and fitness industry. The employment of qualified professionals has significantly improved the credibility of health and fitness delivery systems. Career opportunities in the fitness industry include fitness club owner/manager, fitness director, aerobics director, special programs director, aquatics directors, teachers, exercise physiologists and personal trainers (Kravitz and Rockey,www.).

An increased visibility and knowledge about health and fitness through the media has led to a much more informed consumer. The employment of qualified professionals has significantly improved the credibility of health and fitness delivery systems (Kravitz and Rockey,www.). An increasing number of employers require fitness workers to have a bachelor's degree in a field related to health or fitness, such as exercise science or physical education. The education and training required depends on the specific type of fitness work: personal training, group fitness, or a specialization such as Pilates or yoga each need different preparation (U.S. Department of Labor Bureau of Labor Statistics, 2008).

Fitness directors oversee the fitness-related aspects of a health club or fitness center. They create and oversee programs that meet the needs of the club's members, including new member orientations, fitness assessments, and workout incentive programs. They also select fitness equipment; coordinate personal training and group exercise programs; hire, train, and supervise fitness staff; and carry out administrative duties (Olson, 1997 and Kravitz and Rockey,www.). *Group exercise instructors* conduct group exercise sessions that usually include aerobic exercise, stretching, and muscle conditioning. Cardiovascular conditioning classes are often set to music. Instructors choose and mix the

music and choreograph a corresponding exercise sequence. They are responsible for ensuring that their classes are motivating, safe, and challenging, yet not too difficult for the participants. *Personal trainers* work one-on-one with clients either in a gym or in the client's home. They help clients assess their level of physical fitness and set and reach fitness goals. Trainers also demonstrate various exercises and help clients improve their exercise techniques. They may keep records of their clients' exercise sessions to monitor clients' progress toward physical fitness. They may also advise their clients on how to modify their lifestyle outside of the gym to improve their fitness (U.S. Department of Labor Bureau of Labor Statistics, 2008; Johnston, 2004; Fitness Institute Australia, www. and, Kravitz and Rockey,www.).

Much of the success of fitness professionals in the 21st century will rely on a better understanding of the health needs of target populations and conscientious planning and implementation of appropriate wellness programs. Their role is interlaced with assessing, interpreting, prescribing and designing health and physical activity programs for people in numerous settings. Within the last decade, the profession has become more involved with enhancing the quality of life for deconditioned, disabled, and older populations (Kravitz and Rockey,www.).

The Strength & Conditioning professional should establish written policies and procedures for equipment/facility selection, purchase, installation, set-up, inspection, maintenance and repair. Safety audits and periodic inspections of equipment, maintenance, repair and status reports should all be included. They must be trained and certified in current guidelines for cardiopulmonary resuscitation (CPR) and First Aid training/certification is also necessary if Sports Medicine personnel are not immediately

available during Strength & Conditioning activities (National Strength and Conditioning Association (NSCA), 2001).

They should also develop and maintain various records including: manufacturer provided users manuals, warranties and operating guides; equipment selection, purchase, installation, setup, inspection, maintenance and repair records; personnel credentials; professional standards and guidelines; safety policies and procedures, including a written emergency response plan; training logs, progress entries and/or activity instruction/supervision notes; injury/incident reports, pre participation medical clearance, and return to participation clearance documents (Whitehead, 1984 and National Strength and Conditioning Association (NSCA), 2001). In settings where participants are not otherwise required to sign protective legal documents (e.g., informed consent, agreement to participate, waiver) covering all athletically related activities, the Strength & Conditioning professional should have such legal documents prepared for athletes under his/her care. These records should be preserved and maintained for a period of time determined by professional legal advice and consultation. they should cooperate with a training participants health care providers at all times, and provide service in the participants best interest according to instructions specified by such providers (National Strength and Conditioning Association (NSCA), 2001).

2.6.2. Fitness Centres

The health and fitness industry has come a long way all around the world -no longer regarded as a luxury but more of a necessity- with on going advances in a quest for the longevity of the healthy lifestyles (SEKENDİZ, 2005).

The first health club concept was nonprofit, and developed by The Young Men's Christian Association (YMCA) in 1844, London, England. At the end of the Industrial Revolution it had emerged as a response to unhealthy social conditions in the big cities. In 1866 the influential New York YMCA adopted a fourfold purpose for the improvement of the spiritual, mental, social, and physical condition of young men. Although YMCAs were only run by volunteers in the early days, by 1880s, full time employees started to work due to the construction of new buildings. Gyms, equipped with wooden dumbbells, heavy medicine balls and long-necked bowling pins, swimming pools, big auditoriums and bowling alleys were built in every YMCA building with hotel like rooms that made a major financial contribution to the "*Fore runners of today's aerobic*" for the next century (Golding et. al., 1989).

Health clubs emphasize three aspects of physical fitness: cardiovascular conditioning, strength, and flexibility. Full-service health clubs featured aerobic conditioning equipment, resistance equipment, dance and exercise classes, swimming pools and spa areas, and sometimes even tanning and massage. Spas were the first establishments of the fitness center industry. They emphasized relaxation with a European flavor, featuring whirlpools, steam rooms, and massage services. The American fitness center industry is generally regarded as being a decade ahead of its European counterpart (Advameg Inc., 2007).

Fitness centers exist in colleges, universities, community health agencies, club fitness (profit and non-profit), worksites (business and industry), medical settings (hospitals,

clinics, and health maintenance organizations), hotels, country clubs, government institutions, and recreational programs. (Kravitz and Rockey,www.).

All equipment, including free weights, should be cleaned and/or disinfected regularly as deemed necessary by staff. Exercise devices, machines, equipment and free weights which are in need of repair, as determined by regular inspection or as reported by users, must be immediately removed from service and locked out of use until serviced and repaired; and be re-inspected and tested to ensure that they are working and performing properly before being returned to service (National Strength and Conditioning Association (NSCA), 2001).

Adequate facilities and equipment are critical to support the success of physical activity programs. Programs may be modified and adapted to meet the budget and space available (National Association for Sport and Physical Education, 2001). The following are ACSM's (1997) Standards for Health/Fitness Facility in (National Association for Sport and Physical Education (2001).

1. A facility must be able to respond in a timely manner to any reasonably foreseeable emergency event that threatens the health and safety of facility users. Toward this end, a facility must have an appropriate emergency plan that can be executed by qualified personnel in a timely manner.
2. A facility must offer each adult member a pre-activity screening that is appropriate to the physical activities to be performed by the member.
3. Each person who has supervisory responsibility for a physical activity program or area at a facility must have demonstrable professional competence in that physical activity

program or area.

4. A facility must post appropriate signage alerting users to the risks involved in their use of those areas of a facility that present potential increased risk(s).
5. A facility that offers youth services or programs must provide appropriate supervision.
6. A facility must conform to all relevant laws, regulations, and published standards.

The amount of equipment depends upon specific programs, but should meet the needs of participants so that programs can serve the maximum number of participants under established safety standards. Equipment should be modified according to age, size and / or physical ability of the participants (National Association for Sport and Physical Education, 2001).

2.7. Physical Activity/ Exercise/ Fitness Training Program

2.7.1. Definitions

According to Caspersen et al, (1985) in Ministry of Health of New Zealand, (2003), Physical activity is any bodily movement produced by skeletal muscles that result in energy expenditure. It comprises duration, frequency, intensity, type and context.

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 walking. Physical fitness is a state rather than a behaviour. It is a multidimensional indicator 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 lifespan, as well as physical activity levels (Ministry of Health of New Zealand, 2003).

It still defies exact definition or measurement, partly because fitness is a multifaceted qualitative parameter that is usually specific to the task involved, and the scores of the many different tests available to measure fitness are not closely correlated (Karinharju, 2005). According to Haskell and Kiernan, 1996; Fornicola (ND); Karinharju, (2005) and U.S. Department of Health and Human Services (2000), Physical Fitness is defined as "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".

2.7.2. General Directions for Fitness Program

Many different agencies and organizations have distributed guidelines for various types of physical activity in recent years; the general public may be confused concerning which activity guidelines to follow. The best of guidelines are well supported by scientific evidence and endorsed by respected experts. However, as the American College of Sports Medicine indicates (ACSM, 2000), physical activity prescription is both an art and a science. It is important that all people who apply physical activity guidelines understand the scientific reasons for the guidelines and use them artfully with consideration for those to whom the guidelines are being applied (Carbin et al, 2000).

According to the New Jersey fire department (2007), the fitness program is divided into the following sections: Warm-up, Strength and Muscular Endurance Exercises (Weight Training and Calisthenics), Aerobic Training Exercises, and Cool-Down.

The strength and muscular endurance exercises do not have to be done on the same day or during the same exercise session as the aerobics program. In other words, they may be done on separate days or at different times on the same day. However, every exercise

session should be preceded by a warm-up period and followed by a cool-down period. The warm-up exercises are designed not only to get a person physically and mentally ready for the muscular and/or aerobic exercise sessions, but also to help develop flexibility in various joints (ibid).

2.8. How to develop a Training Program

Mackenzie (1997) explains the steps involved when developing a training programme. The process of creating a training program to help develop an individual's level of fitness comprises of 6 stages: 1. Gather details about the individual. 2. Identify the fitness components to develop 3. Identify appropriate tests to monitor fitness status. 4. Conduct a gap analysis. 5. Compile the program.
6. Monitor progress and adjust program

Stage 1:-The first stage is to gather details about the individual: Age, Reasons for wanting to get fit, Current or recent injuries, Health problems, the sports they play and how often, their dislikes and likes with regards training, and what sports facilities they have access to - gym, sports centre etc. This is not an exhaustive list.

Stage 2:-The second stage is to determine which components of fitness they need to improve. This could depend upon what the individual wants to get fit for.

Stage 3:-The next stage is to identify appropriate tests that can be used to initially determine the individual's level of fitness and then to monitor progress during the training. Identified test should be conducted and the results recorded.

Stage 4:-We now know the individual's background, objectives and current level of fitness. We now need to conduct a gap analysis of the individual's current fitness levels (from test results at stage 3) and target fitness levels (identified at stage 2). The results of this process will assist in the design of the training program so that each component of fitness is improved to the desired level.

Stage 5:-The next stage is to prepare a training program using the results of the gap analysis and FITT principles. "

- F - Frequency - how often should the individual exercise?
- I - Intensity - how hard should the individual exercise?
- T -Time - how long should each session last?
- T – Type or Training activity - what exercise or training activity will help achieve the individual's fitness goals?

Plan the program in four week cycles where the work load in the first three weeks increase each week (easy, medium, hard) and the fourth week comprises of active recovery and tests to monitor training progress. The aim of the four week cycles is to:

Stage 6:-The program has now been agreed and the individual can undertake the program. Every 4 weeks meet and discuss with the individual: how the training has gone, the test results, progress towards target fitness levels, and adjustments to the training program.

2.9. Phases of Fitness Conditioning

The physical fitness training program is divided into three phases: preparatory, conditioning, and maintenance. The starting phases for different units or individuals vary depending on their age, fitness levels, and previous physical activity (Headquarters Department of the US Army (1998). Young, healthy persons may be able to start with the conditioning phase, while those who have been exercising regularly may already be in the maintenance phase. Persons who have not been active, especially if they are age 40 or older, should start with the preparatory phase (Headquarters Department of the US Army, 1998 and, Wuest, and Lombardo, 1994).

2.9.1. Preparatory Phase

The preparatory phase helps both the cardiorespiratory and muscular systems get used to exercise, preparing the body to handle the conditioning phase. The work load in the beginning must be moderate. Progression from a lower to a higher level of fitness should be achieved by gradual, planned increases in frequency, intensity, and time. Recovery days should be evenly distributed throughout the week, and training should progress slowly. This point leads to the conditioning phase.

2.9.2. Conditioning Phase

To reach the desired level of fitness, trainees must increase the amount of exercise and/or the workout intensity as their strength and/or endurance increases. To improve cardiorespiratory endurance, for example, trainees must increase the length of time they run. They should start with the preparatory phase and gradually increase the running time by one or two minutes each week until they can run continuously for 20 to 30 minutes. At

this point, they can increase the intensity until they reach the desired level of fitness. They should train at least three times a week and take no more than two days between workouts.

2.9.3 Maintenance Phase

The maintenance phase sustains the high level of fitness achieved in the conditioning phase. The emphasis here is no longer on progression. A well designed, 45- to 60-minute workout (including warm-up and cool-down) at the right intensity three times a week is enough to maintain almost any appropriate level of physical fitness.

2.10. Components of Physical Fitness

Physical fitness is most easily understood by examining its components, or parts. There is widespread agreement by many literatures like Wuest and Lombardo (1994), National Strength and Conditioning Association (NSCA) (2001) and, Karolides and Karolides (1993) that the following four components are basic:

- Cardio respiratory (CR) endurance- the efficiency with which the body delivers oxygen and nutrients needed for muscular activity and transports waste products from the cells. The best way to improve CR fitness is to participate regularly in a demanding aerobic exercise program.

Muscular fitness has two components: muscular strength and muscular endurance. Although muscular endurance and strength are separate fitness components, they are closely related. Progressively working against resistance will produce gains in both of these components.

- Muscular strength - the greatest amount of force a muscle or muscle group can exert in a single effort.
- Muscular endurance - the ability of a muscle or muscle group to perform repeated movements with a sub-maximal force for extended periods of times.
- Flexibility-the ability to move the joints (for example, elbow, knee) or any group of joints through an entire, normal range of motion.

Body Composition is often considered a component of fitness. It refers to the makeup of the body in terms of lean mass (muscle, bone, vital tissue and organs) and fat mass. An optimal ratio of fat to lean mass is an indication of fitness, and the right types of exercises will help you decrease body fat and increase or maintain muscle mass (Headquarters Department of the US Army, 1998 and Presidents Council on physical fitness and sport (ND).

2.11. Principles of Physical Exercise/Training

Adherence to certain basic exercise principles is important for developing an effective program. The principles of exercise apply to everyone at all levels of physical training, from the Olympic-caliber athlete to the weekend jogger (Headquarters Department of the US Army, 1998). The theory and methodology of training has its own specific principles based on the biological, psychological, and pedagogical sciences. These guidelines and regulations which systematically direct the whole process of training are known as the "principles of training." (Bompa, *1994* in Kernan, (1999*).* Many literatures like Dick, 1997 and Carbin, et al (2002) and others site Law of Overload, Principle of Progression, Principle of Adaptation, Principle of Use/Disuse, Law of Reversibility, Law of

Specificity, Principle of Individualism, Principle of Variety and Principle of Active Involvement as principles of physical fitness training or exercise.

But the following 24 consensus principles from various sport training and science experts, such as Bompa, Harre, Costill, Epley, et al. are presented by John Kernan, (1999). A coach or trainer of any sport or fitness activity will enhance his/her success by following these principles of training when designing and planning training or lesson plans for athletes or trainees and teams (Kernan, 1999). These are:- Principle of Physical Examination, Active Participation in Training, Multi-Lateral Development, Individualization, Feasibility, Specificity/ Specialization, Ground-Based Activities, Multiple Joint Actions, Three-Dimensional Movements, Progressive Overload, Train the Correct Energy System, Interval Training, Train Explosively, Adaptation, Consistency, Variety/Variation, Split Routine, Hard-Easy System, Modeling, Warm up, Cool down, Rest and Recovery, Reversibility, and Long-Term Periodization and Planning

CHAPTER THREE

3. RESEARCH DESIGN AND METHODOLOGY

The focus of this study was the principles of physical fitness training and their applications in fitness centers/gyms of Addis Ababa.

This study utilized both quantitative and qualitative approaches in which one substantiates the other. The design applied for this mixed approach study was descriptive method of multi site case study. Furthermore, the use of multiple data collection instrument (triangulation) could answer the question of validity and reliability (appropriateness and consistently) respectively.

3.1. Sampling Techniques and Sample Population

The selection of sampling techniques for the study was based on the representativeness and resourcefulness of the sample. Therefore, in order to collect a wide range of information for the study from trainees, and to get rich and in-depth information from trainers, from Ministry of Youth and Sport Personnel the researcher used simple random sampling and purposive sampling techniques, respectively. In addition to this, the characteristics of the sample of the study are described in detail. According to Addis Ababa City Administration Youth and Sport Commission report more than 400 gyms were estimated only in Addis A*baba. But those which fulfill the minimum requirement of the commission criteria and registered were reached around 91. From these numbers of gyms, according to the commission, 47 of them were listed under top level gyms and the rest 44 listed under low level gyms. Therefore, from the first 47 top level gyms, the

* Although some of the fitness centres/gyms were registered with Addis Ababa administration Youth and Sport Commission, there were also most which were in process and not yet registered.

researcher has selected the eight (8) leading gyms as a sample, plus the physical fitness program broadcasted via Ethiopia Television and FM Addis 97.1 for his study. The gyms were selected because of two reasons.

1. They are, more or less, found in good condition so as to consider the intended aspects of the study, and

2. They might be considered as model gyms or a springboard for the existing ones and for those which might be come in the future.

3.2. Participants of the Study

This study is based on a study of eight top level gyms, in addition to Ministry of Youth and Sport of Ethiopia which sponsors the television and radio physical fitness programs. Therefore, the research participants were trainers and trainees of fitness gyms/centers/clubs as well as personnel from the Ministry of Youth and Sports. These were used as a data source of the study. These participants were tried to be high experienced, representative, etc, in order to get appropriate, rich and deep information in broad perspectives. In this study, from all extremes, 121 participants, 104 trainees, 15 instructors, 2 experts of the ministry, were involved

3.3. Data Collection Instrument

This study employed both quantitative and qualitative research approach in order to touch important aspects of the problem. Therefore, it used multiple data collection methods or triangulation is conducted. Such as questionnaire, interview, observation, reviewing of different documents as well as the personal experience of the researcher serves as data

collection instrument of the study. This approach helps to substantiate or support the information collected using one instrument by another.

Observation

It is one way of collecting primary data. It is a purposeful, systematic, selective ways of watching and listening to an interaction or phenomenon us it takes place (Kumar, 1999). Anyway for the purpose of this study, non-participant observation mechanism was employed where by the researcher remains passive observer throughout the activity. Hence, by using observation checklist the researcher tried to observe facilities, equipments, exercise machines and other related issues of the gyms.

Interview

With a purpose to collect rich and deep information for the study through a direct interaction with the participants, this study employed unstructured, open-ended or in-depth interview with the guidance of some general questions. However, the researcher has also formulated questions during an interview. Furthermore, this instrument was employed to collect data from 15 gym instructors, two officers of Ministry of Youth and Sports. There were also informal conversations.

Questionnaire

Here data collection through questionnaire was conducted to get large participants for the study. Therefore, 20 lists of questions were prepared for 104 respondents to answer. The questions cover so many important issues of the fitness centers/gyms.

Document Reviewing

In the study different written materials were also reviewed which were considered as relevant for the study.

3.4. Data Analysis

The data gathered through interview, observation, and questionnaire as well as from reviewing of different documents were analyzed and interpreted to establish conclusion portion. Since the study employed a blend of approaches, namely quantitative and qualitative, it applied both types of data analysis methods. Therefore, in order to analyze the qualitative data, the researcher has used descriptive data where these data were interpreted in narrative way. Here the data were coded, categorized and finally patterns of ideas, themes etc, were triangulated. Where as the quantitative data are analyzed using descriptive statistical methods, such as tables and percentage.

3.5. Ethical Issues

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 are 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.

- The purpose, procedures and risks of a study including possible hazards to physical and psychological wellbeing) were explained to the participants in such away that they can understand,
- Participants were aware of the consequences of a study,
- Participants were fully aware of all data gathering techniques,
- The dignity, privacy and interests of the participants were respected and protected,
- Research data were confidential and all participants remain anonymous,
- Participants were able to terminate or stop involvement at any time and will know that they have this option, and
- Participants' welfare and convenience were given priority over all other issues.

CHAPTER FOUR

4. PRESENTATION, ANALYSIS AND DISCUSSION OF THE DATA

In this chapter, two parts of the study were treated based on the data obtained. In the first place the characteristics of the respondents were presented; and secondly, analysis and discussion of the data collected from three groups of sample respondents (gym trainees, gym instructors and personnel of the Ministry of Youth and Sport) through questionnaire, and interview were used in the analysis. Besides, personal observation using checklists and document reviewing were also used in the analysis. The data were presented in tables and analyzed using percentage and descriptive statements.

4.1. Characteristics of the Respondents

The size of the sample population was 121 of which 104 (86.7%) were trainees, 15 (12.5%) were instructors, 2(1.7%) were expert from Ministry of Youth and Sports. From those sample population, 128 questionnaires were mailed and distributed to the same number of gym trainees, and 104 (81.3%) were responded to and returned.

In addition to this, interview with 15 relevant gym instructors, 2 experts of the Ministry of Youth and Sport was employed. In addition, a checklist based observation was conducted, while different documents were reviewed.

Respondents were asked to indicate their personal background information through questionnaire and interviews. In this respect, respondents' sex, age, duration of stay, and heath status were collected as presented in Table 1 and 2 below consecutively. Finally,

the educational background and work experience of gym instructors were also documented as presented in Table 3 below.

Table 1:- Sex, Age and Health Status of Respondent trainees

No	Items		No	%
1	Sex	Male	58	55.8
		Female	46	44.2
2	Age	18-25	25	24
		26-33	36	34.4
		34-41	28	27
		42-49	12	11.5
		50 and above	3	2.9
3	Health status	Excellent	36	34.6
		Very good	27	26
		Good	39	37.5
		Health remark(diabetics &back pain)	2	2

Concerning the sex composition of the respondents as indicated in the items 1 Table 1 above, of the total sample trainees males accounts 58 (55.8%) and females accounts 46 (44.2%), respectively. These figures show that males' participation was a bit higher than females, but their difference was not exaggerated.

When we consider instructors all of them were males, on this aspect male domination totally observed. This idea also supported by researcher's observation, which was seen during gym visits and by informal talk with instructors in the sample. This shows that females are one of the disadvantaged groups in the participation of physical activity (UN,

2003). So that even though, the participation of females, according to this study was not bad, more efforts should be made to encourage and enhance their participation.

As to the age composition of the trainees (respondents) as clearly indicated in item 2 Table l above, more number of trainees 36 (34.6%) , 28 (27%) and 25(24%) were found under the age 26-33, 34-41 and 18-25, respectively. When we consider the rest 12(11.5%) and 3(2.9%) were found under the age 42-49, and 50 and above years old, respectively. This showed that, except the first figure, 25(24%) who were found under the age 18-25, one could see that as the age of an individual increases, physical activity participation will decrease. This idea also supported by WHO, (2003) as older society groups were the disadvantaged one in physical activity participation.

In this respect the researcher tried to deduce the reason why 18-25 year of old age groups who account 25 (24%) were less involved that they might pass a lot in physical activity out side the gyms or fitness centers, so that their participation in physical activity would be higher than 26-33 age level groups.

As to the health status of the respondents as it was shown clearly in item 3 Table 1 above, almost all 102(98%) were found in good to excellent health condition but 2(2%) were diabetic and have back pain, respectively. As we were tried to consider the duration the respondents stay in the gym from Table 2 below, the majority 79(75.9%) were 4 months 4 years. Therefore, those who were considered as a patient might be free from their health problem and were become healthy with in this length of duration. In addition to this, some instructors said during interview that trainees did not like to be patient, so that they refused to tell us their health problem. But after they waste some time in the gym and

became okay, they showed their willing to told us their past health problem they got. The other thing was there were very few trainees who might bring recommendation letter from their doctor. In general, these conditions may enhance the healthy group of the sample of the study.

Table 2:- Trainees duration of stay at the gym

Item		No	%
Duration of stay At the gym	1-15 days	4	3.8
	16-30 days	6	5.8
	1.5-2 month	4	3.8
	2.5-3 month	9	8.7
	4-6 month	31	29.8
	7 month-1 year	23	22.1
	1.5-2 year	15	14.4
	3-4 years	10	9.6
	5 and above years	3	2.9

Concerning the duration that trainees stay in the gym as it was clearly observed in Table 2 above , more respondents 31(29.8%) , 23 (22,1%) , 15 (14.4%) and 10 (9.6%) were found between 4 months and 4 years . When we sum up these we can get 79 (75.9%), so that the majority of the sample population were more or less experienced in the gym practice. Therefore, they might give significant data for the study. Further more, the rest who were found under a day to 3 months, and 5 and above years, who account 29 (27.9%) and 3(2.9%), respectively, were also significant groups of the study.

Table 3: - work experience and educational background of trainer respondents

No	Items		No	%
1	Work experience of trainers	1-2	1	6.7
		3-4	5	33.3
		5-6	0	0
		7-8	6	40
		9-10	2	13.3
		11 and above	1	6.7
2	Educational background of trainers	Degree in HPE& instructor certificate	2	13.3
		Diploma in HPE& instructor certificate	0	0
		Diploma in any field & instructor certificate	1	6.7
		Certificate in both HPE and instructor	1	6.7
		Instructor certificate	10	66.7
		Degree in HPE & has no instructor certificate	1	6.7

When we consider the work experience of instructors item 1 Table 3 above, more instructors 6(4%) and 5 (33.3%) where have 7-8 and 3-4 years of experience, respectively. These figures together accounts 11 (73.3%) of 15 (100%) instructors. This shows that the selected instructors have a number of years of experience, so that, they have so many important information up on the area. Therefore, they can contribute a lot for this study on the different raised issues during data collection. Furthermore, those who account 2(13.3%) who were found between 9-10 years of experience and 1 (6.7%)

which was accounted by each 1-2 years and, 11 and above years of experience, respectively, also have good experience as or than the previous ones because they have more years service on the area and the one who has 1-2 years experience was also a student of health and physical education of degree program. In general, the sample groups of the study were well representative except male domination.

As could be considered the educational background of instructors in the item 2 Table 3 above, 10(66.7%) have gym instructor certificate, 2(13.3%) have both degree in health and physical education and certificate in gym instructor, 1(6.7%) has certificate in both health and physical education and in gym instructor. However, 1(6.7%) who was a health and physical education student of degree program did not has gym instructor certificate and the remaining 1(6.7%) has a diploma in other area and gym instructor certificate.

Most of the sample gym instructors have certificate, except one, and even this one is a student of health and physical education, which means he is expected to know important aspects up on gym instructors. Further more, there were degree graduates of health and physical education. Therefore, the educational background of the instructors, were good enough to deliver pertinent information on different perspective issues of the study.

4.2. Analysis and Interpretation of the Data

4.2.1 General Condition of the Gyms

Table-4:- **Comfort of Facilities**

Item	Response			
	Yes		No	
Are you comfortable with the facilities?	No	%	No	%
	99	95.2	5	4.8

As to shown in Table 4 the majority of the respondents 99(95.2%) replied that they were comfortable with the facilities of their gym. Actually, this idea was very well noted during the observation made by the researcher. All sample gyms, except for adequacy of space and shortage of changing rooms which were revealed in few gyms, were in good condition. Even the above two problems were not considered to be serious because most of the time inadequacy of space observed in the aerobics room. This idea also supported by the Addis Ababa Administration Youth and Sport Commission, which gives the levels of the gyms according to the facilities that they have, so that the commission label the sample gyms as top level gyms.

Table-5: **Issues Related with Gym Equipments and Machines**

No	Items	Responses			
		Yes		No	
		No	%	No	%
1	Do you have enough orientation about equipment?	92	88.5	12	11.5
2	Are equipments simple and easy to operate?	103	99	1	1
3	Are the exercise equipments safe and the exercises done using them are safe?	97	93.3	7	6.7
4	Are there enough machines to avoid having to wait a long time for your turn?	79	76	25	24

The study concerning equipment orientation, as it was observed in the item 1 Table 5 above, 92 (88.5%) respondents replied that they got enough orientation. This figure was took the highest share from the total sample population. This idea was also supported by the information that was got from the interviewees. According to the interviewees (instructors), from the beginning they were tried to introduce equipments and machines, and how to operate and practice with them, for trainees. Further more, one instructor said that trainees were told to inform when ever they face any problem in the operation system of equipments, machines and the like. He added that when trainees follow wrong way during practice using any equipment, machine, he was ready to observe them directly or

in a glance through a mirror, so that he immediately would take the necessary correction and orientation measures.

With regard to the level of complexity and strength to operate with gym equipments, the data as presented in item 2 Table 5 indicates that 103(99%) of respondents agreed that equipments were simple and easy to operate. This issue might be a result of having enough knowledge on how to operate machines and equipments. In addition, when we consider the duration trainees stay in the gym from their personal information in the above Table 2, most of them were regular attendants ranging from a number of months to a number of years. As the result of this, they might have adapted the complexity level through lime, so that they were able to work with equipments simply and easily.

Concerning safety of equipments and the exercise done on them, the above item 3 Table 5 clearly showed that 97(93.3%) respondents responded that the equipments and exercises done using them were safe. This might be a result of the simpleness and easiness of equipments to operate with them. This idea also supported by the results obtained from interview held between instructors. Almost all said that some machines have safety belts and sirens which were responding for a wrong practice without causing any accident up on trainees, and one instructor said that to practice any exercise using these machines, it was a matter of adjustment with the level of trainee. Therefore, any one could adjust a machine by considering his / her level, he said. Moreover, one instructor said that even in a weight room, there were different types of weights based on their size, from free dumbbell to heavy weights, so that trainees select any which they fit with. And he added, we instructors also follow and direct them, especially those who push heavy weights.

As to the availability or accessibility of machines, item 4 Table 5 clearly indicates that the majority of the respondents 79(76%) were indicated that there were enough machines to avoid waiting for a long period of time for their turn. This idea also supported by the results obtained from observation during gyms visit. The observation results indicated that even though there were all types of machines and equipments in every sample gyms, for aerobics, strength, etc. exercises, in few there was a shortage, when we consider them with the number of trainees they have. In addition to this, trainees on their questionnaire suggest that when ever most trainees came to exercise, most of the time, they were enforced to wait a long period of time to got machines and equipments, they want. These groups of respondents might be those who account 25(24%) in the above table, of the total.

Furthermore, one instructor said informally that sometimes shortages were observed, especially during in the morning and late in the afternoon. Therefore, he added that they (instructors) allot a time for a trainees which they stay with the machine.

Table-6: **Supervision and Support of Gym Instructors/ Staff**

No	**Items**	**Responses**			
		Yes		No	
		No	%	No	%
1	Do the trainers closely supervise and assist trainees?	88	84.6	16	15.4
2	Do you get nutritional advises and other guides from the staff members?	61	58.7	43	41.3

As to the study on instructors whether they supervise and assist their trainees or not, item 1 Table 6 above clearly showed that 88 (84.6%) respondents replied that they have healthy relationships with this aspect. These respondents additionally suggested that instructors were put the effort what they have with their (trainees). This idea also supported by the results obtained from interview which held with the instructors. Most said that from knowing their trainees' level of performance to the advanced stage they follow and assist their trainees, even a trainee be skillful and elite sportsmen / women.

The other said that they advise and show how to demonstrate different activates. According to one instructor, trainees should be considered as a child who needs a special attention in every aspect of training. other instructor said that even they (instructors) quarreled with some one (trainee), they would employ another instructor with whom a trainee did not quarreled with, in order to assist and follow him, so that the trainee might not be made any accident or injury up on him.

Concerning nutritional advice and other guides, the above item 2 Table 6 clearly showed that 61(58.7%) respondents were answered that they received nutritional advice and other guides from staff members where as 43 (41.3%) respondents said that they did not get this. Some respondents from this group additionally suggested that if any body who wants to ask instructors about the issue and other things, they were positively cooperative and respond the question, but they (instructors and the rest staff members) by themselves did not say anything.

This idea also supported by the results obtained from interview which showed that instructors advice most of the time those who train for loss weight, so that they might

ignore the rest trainees. The other thing in this issue was that one could extract from instructors educational background as they did not have in depth knowledge up on the issue. Any way, more than half respondents from the total were got nutritional and other advices.

Table 7:-The Goal, Frequency and Duration of Trainees Exercise

No	Items		No	%
1	What is your goal to be in this fitness program? To improve:	strength	8	17.5
		Cardio vascular fitness	40	38.5
		Diet/eating habit	2	1.9
		flexibility	3	2.9
		To Loss weight	19	18.2
		To gain weight	1	1
		Exercise/health habit	10	9.6
		More than one	11	10.6
2	How often do you exercise per week?	3 days	19	18.3
		4 days	22	21.2
		5 days	31	29.8
		6 days	21	20.2
		All days	11	10.6
3	What is the average length of hour/minutes of each workout?	20minute	4	3.8
		30minute	7	6.7
		40-50 minute	18	17.3
		1 hour	53	51
		1:30 hour	6	5.8
		2 hour	16	15.4

As to the trainees goal of exercise the participants were asked through questionnaire. As could be seen in item 1 Table 7 above clearly, most respondents 40(38.5%) exercised to develop cardiovascular fitness, 19(18.2%) and 18 (17.3%) exercised to loss weight and to develop strength, respectively. This idea also supported by interview results. Most of the time trainees join aerobics program. This program, according to many instructors, can help trainees to develop cardiovascular endurance and to loss weight. This idea also supported by different literatures like (Carbin et al, 2002). So that, instructors said, after completing the aerobics session trainees shifted to different machines and equipments which help them to develop other components. This also again supported by observation made during data collection.

In every gym, most of the time, trainees could be observed while they were exercising in aerobics classes, run or walk on different machines as well as bicycling. On the other side, when we consider their personal information almost all respondents were white collars, and most of the time this group of society was attacked by cardiovascular problems, due to over weight and obesity. Therefore, that is why their targets were to develop cardiovascular endurance and to loss weight. Furthermore, 11 (10.6%) respondents were exercising to develop multiple components, but few said that they exercise for both, to loss weight and to gain weight as well, which is impossible. Therefore, this clearly indicated that they did not have or got enough awareness about physical activity.

Other options, except which selected by 10 (9.6%) respondents, were not significantly considered by the trainees as a goal of exercise.

Concerning the number of days of exercise, item 2 Table 7 above clearly depicts that the majority 81(81.7%) exercise from 4-7 days, which was the recommended exercise days sited by different literatures to get significant change on person's health condition. For instance, Shephard, (2001); WHO, (2006b) and Ministry of Health of New Zealand, (2003), state that adults should exercise moderately most or all days of a week to gain significant health benefits. In this respect, when we consider those respondents who practice every day account 11(10.6%) , even when we add those who practice 6 days of a week 21 (20.2%) up on the above figure it will be come 32 (30.8%) which was less than one fourth of the total.

As to the average length of hour(s) or minutes of work out item 3 Table 7 above clearly reveals that most respondents 53(51%) waste 1 hour in each physical exercise. This amount of duration of moderate exercise mostly recommended by different literatures like WHO, (2006b). The rest who work for 40-50 minutes, account 18 (17.3%) and those who work for 1:30 and 2:00 hours account 6(5.8%) and 16 (15.4%), respectively.

In general, those respondents who waste their time in exercise from 40 minute to 2:00 hours were reached 93(89.5%) and when we add those who practice 30 minute per day 7(6.7%) it will become 100 (96.2%). On top of this, some respondents were suggested as they were practiced more than 1:30 and 2:00 hr, even some said 3 hours.

4.2.2. Concerning Special Needs Issues

Table-8:- **Gym Program, Facility and Health Issues**

No	Item	Responses			
		Yes		No	
		No	%	No	%
1	Do your physical activity recommended by your doctor?	25	24	79	76
2	Can people with health issues receive a free, trial visit to assess the degree to which the facility meets their needs?	44	42.3	60	57.7
3	Do the equipments and facilities offer programs designed to address chronic and age related conditions (osteoporosis, cardiovascular diseases, diabetes, balance abnormalities, muscle weakness, etc)?	45	43.3	59	56.7
4	Do you fill any pain and discomfort during exercise?	19	18.3	85	81.7

Regarding the recommendation of doctor to involve in physical activity, item 1 Table 8 shows that less than a quarter 25 (24%) of respondents were started physical exercise by recommendation of their doctor, the rest 79(76%) respondents were joined the gym by their own. Most of this group suggested that they were not patient so that they did not see

a doctor. That means they consider themselves as healthy group. Actually, most literatures like Joseph et al, (2005) said that if a person is 45 and above years old, he should see a doctor before starting any physical Exercise. When we observe the age distribution of the respondents those who found between 42 and above account 15(14.4%), and trainees who account 89(85.6%) were found between 18-41 years old. Therefore, 79(76%) group who responded did not see a doctor could be found in the age between 18-41(85.6%), and those whose age range 42-44 could also be included in this group. This idea also supported by the interview results. Most instructors said that few trainees told them as they were told by their doctor to practice physical exercise and another few were brought recommendation letter from their doctor. Otherwise, the rest of them were come here by their own interest. One instructor also said that most trainees were involved in physical exercises just for recreation.

As to a free trial and visit for those who have health issues to check whether they gym facilities meets their need, the above item 2 Table 8 clearly indicated that 60 (57.7%) respondents were replied that they did not get this chance in the gyms on this issue. some respondents suggested that they did not have any health problem, but they hoped that those who have health issues would get this chance properly. Actually, the data from observation showed that any one who wants to visit the gym before registration has got the chance though he did not told to do so, but there was no free trial. Therefore, any one whether he has health problem or not could get a chance to visit if he wants to visit otherwise there was no free trial unless other wise he pay and register to stat. In addition to this, when we observe respondent health stratus from their personal information in item 3 Table 1 above almost all were found in good health condition, unless other wise

they were in health problem at the beginning. Therefore, at this moment they did not have any health issue.

Concerning whether equipments and facilities offer programs designed to address chronic and age related condition, the above item 3 Table 8 clearly showed that more respondents 59 (56.7%) were replied that this condition was not considered in their gym, and the rest 45 (43.3%) in contrary, were agreed up on the issue. More over, most respondents suggested that since they did not have any health problem, did not know whether equipments and facilities designed to address the chronic and age related conditions. In support of this idea, most instructors said that they classify their trainees as beginners, intermediates and advanced ones, and they apply any program accordingly in every part of exercise from aerobics class to machine, bike to the weight rooms, in order to make the program responsive. So that, they adjust their program according to the performance level of their trainee, especially, if the trainee was a patient one, they gave more attention in every aspect.

One instructor said that it was a matter of adjustment. He said that anyone can adjust the speed of the machine which trainees practice on and the amount of weight, as well as the aerobics classes too. As one said we facilitate a special class for those who could not able to practice with others.

Concerning pain and discomfort during exercise, as could be seen in the above item 4 Table 8 clearly the majority 85 (81.7%) respondents were replied that they were comfortable with the exercise they practiced as well as did not feel any pain so far. But

some respondents said that they felt it when they start exercise at the beginning and they got relief from it gradually.

Normally, most of the time whenever beginners start exercising, they might get some unpleasant feeling which it could be muscle cramp or strap and the like. Therefore, they may felt that. Besides, interview results revealed that there were some trainees who did not want to follow instructors' procedures, so that after they injured themselves they remember what was told to them. According to some interviewees there were trainees who practice greater than their level and when they were told as they follow wrong truck they did not accept, but after they were got any unpleasant phenomenon. In contrary, one instructor said previously that there were instructors who did not know the intensity, the load, duration and the frequency one should do. Therefore, he said, these may damage or injure some trainees.

Table-9:- **Issues of Relevance and Feasibility Relating to Fitness Program Deliveries**

No	**Items**	**Responses**			
		Yes		No	
		No	%	No	%
1	Do trainers employ effective method(s) of training?	94	90.4	10	9.6
2	Does the program designed meet your need?	97	93.3	7	6.7
3	Do the classes have different levels of intensity, duration, loud and frequency which are modifiable to your needs?	90	86.5	14	13.5

Concerning the method(s) instructors employed during training, one can observe from the item 1 Table 9 above that the majority respondents 94(90.4%) replied that instructors employ appropriate method (s) of training during exercise. This idea some how supported by the results obtained from instructors. Some interviewees said that they classify their trainees according to their capacity level from layman to the experienced sport men/women, then after, began exercise from simple to complex and from known to unknown. On the contrary, one instructor who was a degree graduate of health and physical education, informally said that there were some instructors who did not know what to do and practice wrongly, other interviewee specially, said that aerobics instructors were not followed good methods of training because, he said, even though they classify their trainees according to their level, since all practice together in a single class, it was dangerous.

Regarding the designed program whether they meet trainees need or not, the above item 2 Table 9 indicated that the majority respondents 97(93.3%) were agreed on the issue and were interested in the program they got from the gym. In support of this issue one could say something by observing the amount of duration that trainees were stayed in the gym. Therefore, most of they were stayed more than 4 month without shifting to another gym. Hence, they were stayed for such duration if and only if they were almost satisfied. In addition, few also suggested that instructors put the effort they have to satisfy their customers. This idea also supported by interview results. Most interviewees said that they work hard to satisfy their trainees.

With respect to intensity, duration, load and frequency of exercises, item 3 Table 9 clearly show that the majority respondents 90(86.5%) were replied that instructors adjust and modify the intensity, duration, load and frequency of different workouts so as to fit with trainees needs. This idea also supported by the above raised two issues which were supported by the majority respondents. Therefore, items 1, 2 and 3 Table 9 is support each other. Moreover, interview results showed that most interviewee said when asked about principles of physical exercise and preparation of exercise for different groups, that they consider this issue strongly by dividing their trainees according to their age, experience on the exercise, sex, as well as the sickness level of their patient if there is.

Table-10:- **Coordination and Communication System of Trainer-Trainees**

No	**Items**	**Responses**			
		Yes		No	
		No	%	No	%
1	Will the staff work hand in hand with your physician if you have healthy issues?	84	80.8	20	19.2
2	Do staff members ask you about your health history and which movements cause pain, fatigue or other symptom?	63	60.6	41	39.4
3	Do staff members ask you about which activities or exercises feasible for you?	65	62.5	39	37.5

Regarding the cooperative work of staff member with trainees' physician who have health problem, the above item 1 Table 10 indicated that most respondent 84(80.8%) were agreed on the issue. These groups of respondents additionally suggested that they

did not have any health problem but if they have any they hoped that their instructors would do that. Further more, some said that their instructors cooperate with their doctor when ever they got any health problem. Therefore, these groups of respondents might face some health problems during and after joining the gym. In other way, most interviewee said, most of the time trainees who came with health problem told us as they were recommended by their doctor to involve in physical activity and some brought a letter from their doctor. So that we facilitate our program in order to fit with their health issue accordingly. One instructor, in support of this idea said that they also refer the laboratory result of their trainees every time to observe their change.

As to the health history and movement which cause pain, fatigue or other symptoms, the above item 2 Table 10 clearly indicated that 63 (60.4%) respondents were responded that they were asked their health history and movements which cause pain, fatigue or other symptoms by instructors. In support of this idea the interview results revealed that instructors were asked their trainees about their health history but they did not ask anything about the movement which may cause pain, fatigue or other symptoms up on their trainees. In addition to this, observation results showed that except one gym, none of the sample gyms did not have any form which might contain about health history and other issues of the individual and was filled by new comers. The rest significant numbers of respondents who were account 41 (39.4%) responded that they did not asked by any one of the staff member up on the issue, even some suggested that they were started exercising by their own.

As could be clearly shown in item 3 Table 10 above about the feasibility of physical activities or exercises, around 65 (62.5%) respondents were replied as they were asked by

their instructors about the types of activities or exercises which they were active on. Concerning this issue, interview results revealed that most instructors interview their trainees most of the time about their target. The other instructor, as already said above, it was a matter of adjustment. He said, for instance, when one adjusts the speed of the machine, one can develop cardiovascular endurance in one time, when he adjusts it again he will develop strength, another time he will develop another, and so on. Therefore, according to this instructor one can makes any exercise feasible for him/her. But significant number 39(37.5%) of respondents did not agree on the issue. They responded that they did not asked by any one about feasible exercises for them.

4.3. General Interview Results and Suggestions of Instructors and Personnel of Ministry of Youth and Sports.

In this study interview was used as one form of data collection instruments, in addition to questionnaire and observation. Therefore, the general interview results obtained during data collection are summarized as follows.

4.3.1. General Interview Results of Instructors

All instructors were asked to describe their qualification and level of certification they have. Therefore, item 6 Table 1 above showed the educational background of the sample instructors clearly. Most gym instructors said that they got a gym instructor certificate from Addis Ababa Administration Youth and Sport Commission. But one instructor who was a health and physical education student of degree program not took the course so far. In addition to this, from the interviewed instructors three of them have degree in health and physical education including the one who did not take gym instructor certificate

course. Further more, ten of them were took international courses from Life Fitness and Body Wise gyms on the area. More over, four have some certificate or diploma on language, computer, coaching, in doping control, in massage theory, in gym machine instructor. Except those who took a degree program in health and physical education and some other two instructors, the rest did not take any special training concerning special needs as a course or training, but they got some during gym instructor trainings specially, focusing on patients. Most of them were professional sport players in different games for so many years.

They were asked whether they have CPR (Cardio-Pulmonary Resuscitation) and first aid training or not. One instructor said when he asked this question that "physical activity or sport is not risk free but can be minimized." Therefore, he said, "to minimize accidents we should know proper use of first aid." In this respect, those who graduate in health and physical education and one other instructor, took first aid training from colleges and Red Cross, respectively; the rest instructors have no first aid training at all. But all learned it during different level of gym instructors' courses. Besides, none of them have any training concerning CPR (Cardio-Pulmonary Resuscitation).

The other thing what they were asked was that whether they apply pre-program (pre enrolment), in-program and post-program physical fitness tests and how do they go through it. Specifically, all instructors did not take any test, but most said that at the beginning they tried to know (by assessment) the need or interest of their trainees. After that, they understand their level then apply every thing accordingly. And they follow their change throughout their stay by observation, interview, and as one side "by referring their

(trainees) laboratory results." Furthermore, six instructors said that they have a measuring device or machine which shows important aspect of trainees' present condition like his weight, heart beat and blood pressure. Therefore, they said, from the beginning we collect these results in addition to our interview. As a result we know where should a given trainee level be (beginner, Intermediate or advanced) and the amount of exercise he could challenge. Two instructors from one gym said that they have a card of trainee from the beginning up to the end for those who stay (live) with them for a short or long period of time. They said that they follow their progression throughout.

Concerning the components of exercise which was they were asked, one said that he included all components of physical exercise, since, he said "the main objective was health oriented." The majority said, "we tried to get the interest of the trainees, and as domination we accept that but we include all the rest components." one said that "trainees who were involved aerobic session then lead to machine and weight rooms to develop other parts of fitness." According to other instructor, "it was a matter of adjustment." According to this instructor, "from a single machine any one can get all aspects by adjusting the speed, time, load, etc of a machine." Finally other said that "the exercise parts by themselves include all physical fitness components like when we warm up, then to the main part and when we cool down."

The knowledge of physical training principles and professional ethics are the major things which one instructor should know. Therefore, instructors were asked about these things. As to the principle, nine instructors said that they followed exercise principles for those who live with them for a long period of time, so that they adjust the amount of exercise, duration, the level of the trainee and the like. Some said that they used all the

principle but not supported by document, however, they know the progression of their trainees throughout. One said that "as a principle he divided his trainees as beginners, intermediates and advanced ones, and employed the load, duration etc. accordingly." He added that "the principles sometimes difficult to follow in aerobics program." Because he said, "all trainees are getting together, even if they were classified."

As to the ethical issues, one said, "Starting from reception we consider ethical issues." He said, "We ask trainees interest and let them visit the whole gym. Further more, we told them (trainees) about prohibited activities and things." The majority said that they told the right things related with shoes, dressing, drinking and food, for their trainees. One said that, "some times they got fewer trainees like those who consider themselves as a sports man and women and they did not follow the instructors' procedures, steps and the like, what could make trainers nervous" but he said, "Immediately cool ourselves down." He added that "whenever an instructor quarreled with one trainee who he follows, he would inform other instructors to follow him in order to make that trainee free from any danger or accident.'

Regarding the safety that should be taken during exercise was one of the questions which instructors were asked, one said that "sport is not risk free, so that risks are there but we can minimize them. Therefore, to do this we use different strategies from the floor to the stepper and to mats, and some machines by themselves contain risk preventive belts and sirens which respond for a wrong practice", so he said, "we can minimize risks", but he said, "if it was happened, we will use first aid treatment, and if it was more than our level we send a trainee to the higher rehabilitation center." In addition, one said that "we stamp

different risk monitor information on the board or wall of the gym like '*Before using any machine ask permission from the instructor.*' So we would minimize the risk." Most said that trainees were told to stop drinking alcohol, taking any drug and eat some types of foods immediately before training, so that they would minimize the risk. other instructor said, "to minimize the risk we work closely with our trainees throughout, specially we will give more attention for patients" and other said that "trainees will be told to wear proper dresses and shoes, follow the right procedures during exercising so as to minimize the risk."

All instructors were asked whether they prepare lesson plans for their program or not. Most instructors said that they did not prepare any lesson plan for their program; their reason was the inconsistency of trainees. So that they as one said, "prepare him daily for new comers." But, he added, "For those who stay with us only give them some correction and some new things, because they already adapt so many things during their stay in the gym, so that more or less they know what to do every day."

One said that "instructors could have any program personally or when they are a personal trainer other wise this is impossible for a mass sport but they could have three or four types of exercises which could be rotate through out." Other said that "most of the time programs are found in aerobics classes, from selecting the type of music for the program to different exercise types like floor aerobics, stepper aerobics, taboo aerobics and others, so that they can include different exercises for specific type of aerobics at different times." Two instructors said that they have a lesson plan for each trainee, regardless of the duration he/she stays in their gym.

As to the evaluation of their exercise program which was the one they were asked, most said that they evaluate their program through observation and interview. One said that "sometimes they referring lab results of patients." The other said that "he evaluates his program when trainees jump from beginner to the advanced level." According to another, "trainees did take different measurements at different intervals of time, so we evaluate that and the load they challenge every time." Other said that "he evaluated his program when trainees go with him for a prolonged period of times (for a number of months, years of duration), and when most of the time trainees told him their change(s)." finally One instructor said that "first he practices a specific exercise by himself, and then he would try to modify and adapt it on his trainees, according to their level."

Regarding special needs training question, three instructors were trained about how to train special needs during their undergraduate level of education and one from some where, but the remaining said that it was highlighted in different gym instructor courses specially by focusing on patients. In addition, Most, furthermore, said that they got some training from Body Wise gym. Other wise none of them did take any in depth training especially on this issue.

Instructors were asked about the previous bad risks they might face. One said that "sport is not risk free, so that you may get many collapses, fractures, when you instruct." The majority said that trainees sometime ignore what we told them about drinking alcohol, food and the like. So they might come to the gym by drinking and eating before physical exercises, sometimes they might use the machine wrongly like increasing speedy so they may collapse. One said that "sometimes trainees start exercising and stay for a number of

months or years and may disappear for so many times from the gym then back again, so that they should start exercising as a beginner or according to their present level. But they want to start from where they were stopped during when they left the gym, as a result they may collapse or injured." One said "trainees sometimes did not give us respect and consider us a lay man, so that they did not give us any attention to any thing what we told them, but after they made some thing wrong, they will start to cooperate with us." There fore, he said, "some collapses and injuries may occur in this condition." Other said "some trainees push an unnecessary weight without their level, so they may face fracture and collapse" and another instructor said that "some times foreigners were collapsed because of the weather condition and the drug they were used."

4.3.2. General Interview Results of Personnel

As to the question of history of physical fitness in Ethiopia, Yimer from the Ministry of Youth and Sports replied that fitness program was started in Ethiopia previously as a form of mass sport in YMCA Addis Ababa by Ato Alemu Mitku, W/ro Sara Tekeste, Seid and then Yimer Haile, who came later. Then after said Yimer, the aerobics fitness program was began in 2001 by Chachi Tadesse, Mulu Emebet G/ Eyesus and Asrat Yohannes in Ibex Hotel, then Yonas in YWCA, Nebiyu Ageze in Semen Mezegaja came later. During this time, the materials that they used were modified wooden materials, blocks and other similar things. According to Yimer, some years later modern machines like treadmills, bikes, stepper, weight machines, etc were stated to enter in to the country first by Extreme Hotel. After sometimes gyms became expanded and expanded in every part of Addis Ababa and throughout the country. As a result investors were started to involve in to the market highly and import the latest modern machines. In this respect,

Yimer said, now a day any investor can import any gym machine with out any tax. Beside this, from the beginning of aerobics fitness in Ethiopia, Some professionals like Dr. Bezabih Wolde were started to train gym instructors. Further more, the government played a great role in the expansion of this industry, For instance, according to Yimer.

- The government permits any one to open gyms and fitness centers any where in the country,
- The fitness industry was included under the investment code, so that investors can import any machine free of charge,
- Many gym instructors were trained for the industry by the government finally,
- Mass media physical exercise program is also unforgettable roles that the government contributes for the development of this Industry.

Concerning on the assessment of general health aspect of the community, the result(s) and their implication question, Yimer responded that the Ministry of Youth and Sports did not carry out any assessment on the general health aspect of the community, even did not get any information concerning the issue from governmental and non governmental organizations.

He said that the mass media physical fitness program was started by the coordination of individuals who were specialized by different sport fields in foreign countries like in Cuba , USSR and Bulgaria, by considering the experience of these and other developed countries of the world as well as of Africa, at the end of 2000. He added that the Ministry of Health did not want to participate in this program from the beginning.

They did not know the aims and objectives of the public health of the country, but the objective of their physical exercise program was mainly focused on urban citizens' health matters. According to Yimer, now a day's modern diseases are in expansion in all urban towns of Ethiopia, especially in Addis Ababa. Therefore, he said, to fight these and other diseases, the only way we should follow is this type of program. In general, he added, the aims and objectives of our program and of the nation public health of Health Ministry mainly focus on the production of healthy citizens.

Yimer and Haregua Zeleke said that there are 28 physical exercise programs which are transmitted via ETV and FM Addis radio and can also help any group of the society to participate in any or many of them. According to these experts, the programs were prepared well in order to participate all segments of the society like children, beginners, Intermediates, advanced levels, for pregnant and older people, for diabetics and hypertension, for HIV/AIDS patients, for those who have back problem.

As to instructors' selection, Yimer said that instructors were selected by the criteria they set. Therefore, instructors should get level 1, 2, 3 gym instructor certificate from Addis Ababa Administration Youth and Sport Commission, after they complete secondary level education and were working in gyms or fitness centers as an instructor. In addition, those who have additional degree, diploma or certificate in health and physical education were given special attention during selection.

Yimer and Hareg said that they design 28 programs which were focused on different issues. Then any instructor who fulfils their criteria can pick any one program from the 28 and he should prepare and summits a script of exercise to the ministry. After that each

script was evaluated in a committee which has different professionals including physicians, specialists and others. Finally they would select those instructors who prepared well in their exercise script, and have good physique and dressing. In addition to this, both experts said that the committee would take some amendments on those exercise scripts which are ready for transmission; even, they said, did not let any program in air without the agreement of some respected professionals and specialists, especially those program focusing on patients.

4.3.3. Suggestions Given by the Respondents

Almost all the given suggestions of the respondents were concentrated on education.

Most said that now a day the fitness industry is in progress and so many gyms have been built in our country but our level of education up on the area remains constant. They said courses that we took for 15-20 days previously is not enough when we compared it with the expansion of the industry and technology of the machines. Hence it should be increased in quantity and quality for a long period of time so as to strengthen ourselves and serve our society better. Therefore, they said, the government should give more attention for this issue. One instructor said that "gyms were expanded in every parts of the country therefore"; he said "trainings should reach there."

One said that "most instructors are working with out enough knowledge on the area"; he added "they did not follow appropriate method of instruction, so that Addis Ababa Administration Youth and Sport Commission and/or other authorized organization should evaluate the achievement level of instructors at the interval."

Yimer who is an expert in Ministry of Youth and Sports said that "the fitness industry which is in expansion throughout the world creates a hottest market in our country. But the level of education which was give could not satisfy the need of the market." "At this moment, he said in our country, gyms in their facilities and equipments were ahead of the human resource they have." "Therefore, he added finally, universities and colleges should respond this and should produce market oriented graduates."

4.4. Observation Results (see appendix-F)

4.4.1. General condition of the gym/center/club.

Concerning the adequacy of space for proper use of equipments, around 5 (62.5%) gyms did not have adequate space fore proper use of equipments, especially, this condition was observed in the aerobics classes. The other 3(37.5%) gyms which accounts less than the average have enough space.

Regarding to the room temperature and the light in the gym hall, the majority gyms which account 7(87.5%) and 6(75%) have enough light and their room temperature was conducive (comfortable) and well ventilated, respectively. Most of the time the uncomfortable room temperature occurred in the aerobics class, because they enforced to take more people than their capacity, so that they became hotter, even if there were suckers and ventilation. This condition was observed in every sample gym, but 2(25%) of them did not have conducive room temperature and not well ventilated.

As to drinking fountain, shower rooms and changing rooms, 6 (75%) gyms did not have changing rooms, all the gyms however, satisfy more or less. But sometimes, the researcher informally heard that when ever the number of trainees increased the shower

rooms become less in number when we came to again the changing rooms 6 of them were have not separate changing rooms at all for both sex.

Concerning the locker and the availability of staff members, the accessibility of locker rooms in the sample gyms was almost satisfied whether they are imported or locally made. When we consider the accessibility of staff members the majority 7(87.5) have enough number of staff members with respect to the number of trainees. In this issue interview result which obtained from one instructor indicated that sometimes most trainees want to work with a few instructors than others, so that shortage sometimes would happen.

When we observe about staff offices and number of toilet rooms, except 1 (12.5%) gym the rest sample gyms did not have offices for their instructors and for others but all have a reception class. concerning toilet rooms 7 (87.5) gyms have enough number of toilet rooms but sometimes because of shortage of space they have, few gyms face a shortage of toilet rooms, for instance the one sample gym has got this problem. This issues also suggested by few trainees.

Regarding especially needs, none of the gyms were appropriate for special needs and there were no any adapted physical facilities and equipments and other similar conditions. This idea also supported by the interview result held with instructors. Most said that when ever they got a special need trainee they adapt every thing according to the challenge that a trainee has. For instance, they said, those who lost their leg may use their hands, and vice versa, unless other wise, they said we didn't have any program for these groups.

As to the music, the majority gyms 7 (87.5%) music rhythm, especially in aerobics room, not suitable for any exercise and not set at a reasonable voice level. When we consider the rhythm especially in aerobics class it was not match with the beginners and sometimes for intermediates. So these disadvantaged groups could not coordinate their exercise with the rhythm of the music. In support of this idea interview results which was held with one instructor showed that "almost 80% aerobic instructors could not set a music at a reasonable voice, beside this he suggested that "beginner trainee should first practice on the machine until they prepare themselves for advanced form of exercise , he mean, the aerobics one, "because when any one work with the machine he can adjust it as it was appropriate for him", other wise, he said, "I did not want advice any beginner trainee to involve directly in aerobics class", because he said, "it was so intensive which beginners couldn't challenge." Further more, this ideas also shared by other instructors during informal discussions. Specially one said, "because of improper use of music during exercises, the so called aerobics exercises are more or less anaerobics."

Concerning the form which trainees would fill, none of them, except 1 (12.5%) gym have any form which trainees fill about their health status, age and other important aspects.

4.4.2. Mats of the Gyms

Concerning mats and their foam, all sample gyms have mats but some gyms used foamless mats which exactly replace those good mats which have foam in them. In addition, there are mats in few gyms which their foam was not found in good condition.

4.4.3. Concerning Equipments of the Gyms

Equipments were safe, age friendly and working properly. This issue actually supported by the results which were got from questionnaire and interview. For instance 97 (93.3) respondents were replied that equipments and exercise which were done using them were safe. Further more, instructor said that it was a matter of adjustment to make the machine match with any one.

There were cardiovascular machines (e.g. treadmills, uprights and recumbent bikes, steppers elliptical, etc), strength training machines (e.g. free weights, weight machines, etc) flexibility equipments, and balance equipments. All equipments and machines were appropriate and compatible with the capacity level of trainee, since as one instructor said it was a mater of adjustment, and clean.

Concerning equipments modernity and accessibility, 7 (87.5%) gyms have modern equipments and machines where as 1(12.5%) gym use local products by mixing modern ones, like weights, mats and steppers.

4.4.4. Emergency Equipments of the Gyms

Concerning first aid kit, first aid service and fire extinguishers, 5(62.5) gyms did not have fully stocked first aid kit and any trained person with first aid. This idea also supported by the interview results. Most interviewees said that they did not take any first aid training and none of them have got CPR trading. And finally, half of sample gym, 4(5%) were have fire extinguisher.

CHAPTER FIVE

5. SUMMARY, CONCLUSION AND RECOMMENDATION

This final chapter of the study deals with the summary of the findings, conclusions which are drawn on the basis of the findings and the recommendations forwarded based on the findings to solve the problem identified.

5.1. Summary of Major Findings

This study mainly focused on the Principles of Physical Fitness Training and their Applications especially, the health-related physical fitness programs, in eight selected fitness centers/gyms of Addis Ababa, as well as the fitness programs of mass media which are transmitted via Television (ETV) and FM radio. Here the study gave more attention to the quality of the programs with respect to some quality of inputs (trainers, facility and equipment, contents, etc) or output (the trainees) and the process (procedures, methods, etc). Moreover, the study was intended to forward possible solutions for identified problems while implementing the program in to practice with the following specific objectives.

- To investigate the principles and practices that relate to fitness and fitness centers
- To assess the qualification of staff members of fitness centers,
- To check whether the ratio of staff members, and facilities and equipments to the trainees are in healthy proportion,
- To observe the quality and space of the centers for activities,
- To investigate the appropriateness of equipments and facilities in relation with the type and level of participants, and the subject matter or content of a specific program,

- To assess whether their objectives are met or not,
- To assess the effects of different programs up on participants (including special needs),
- To see methods of training assessment and evaluation techniques of the training program of the centers,
- To observe the execution of fitness programs those are transmitted via mass media (Ethiopia Television and FM Addis 97.1).

In order to meet the objectives, the study was guided by the following basic research questions.

- ✓ Are staff members of the fitness centers professionally fit?
- ✓ Are their enough trainers to run the fitness program?
- ✓ Are training facilities and equipments appropriate with respects to the subject matter and the level of the trainees?
- ✓ How is the planning of the program? Yearly? Monthly? And weekly?
- ✓ Do trainers of the centers follow efficient and effective methods of training and apply physical exercise training principles?
- ✓ Is the subject matter or contents of different fitness programs appropriate in relation with the type and level of participants (including special needs) as well as facilities and equipments at hand?

The study was carried out in eight top level gyms of Addis Ababa. The subjects of the study were 104, 15, 2; trainees, instructors, personnel of the Ministry of Youth and Sports, respectively. The data were collected from these groups through questionnaire,

interview. Furthermore, observation using observation checklist and document reviewing were also used for data collection.

The data which were obtained from questionnaire and observation were presented in tables and analyzed in percentages where as of interview analyzed in descriptive statements. Therefore, based on the result of the data analysis done, the following findings, conclusions and recommendations are summarized in their respective sub-headings.

Major Findings:

I. Characteristics of the Respondents

As presented in the data presentation chapter, female respondents accounts 46 (44.2%) and their participation in the gym instructor area were totally diminished.

As to the age of trainees respondents, the study revealed that 36 (34.6%), 28 (27%) and 25(24%) were found under the age 26-33, 34-41 and 18-25, respectively. When we consider the rest 12(11.5%) and 3(2.9%) were found under the age 42-49, and 50 and above years old, respectively.

As to the health status of trainees respondents, almost all 102(98%) except 2(2%) were found in good health condition. This may be the result of the duration trainees stay in the gym for enough period of time because majority respondents who account 79(75.9%) stayed in the gym from 4 months to 4 years of duration in their gyms.

Concerning the educational background of instructors, 10(66.7%) have gym instructor certificate, 2(13.3%) and 1(6.7%) have both degree and certificate in health and physical

education and gym instructor certificate, respectively. 1(6.7%) who was a health and physical education student of degree program has no gym instructor certificate and the remaining 1(6.7%) has a diploma in other area and gym instructor certificate.

II. General Condition of the Gyms

As to the facilities of the gym, the majority of the respondents 99(95.2%) replied that they were comfortable with the facilities of the gym and it was supported by the result obtained from the observation made by the researcher.

The study concerning on equipment orientation, (88.5%) of respondents were replied that they got enough orientation and it was also supported by interview results.

The study on the level of complexity and strength to operate with equipments, 103(99%) of respondents agreed that equipments were simple and easy to operate.

Concerning safety of equipments and the exercise done on them, 97(93.3%) respondents were responded that the equipments and exercises done using them were safe.

As to the availability or accessibility of machines, the majority of the respondents 79(76%) were indicated that there were enough machines to avoid waiting for a long period of time for their turn. This idea is also supported by the results obtained from observation during gyms visit. But the study results show that sometimes shortages were observed, especially during in the morning and late in the afternoon.

As to the study on instructors whether they supervise and assist their trainees or not, 88 (84.6%) respondents replied as they have healthy relationships with this aspect.

Concerning nutritional advice and other guides, 61(58.7%) respondents were answered as they got nutritional advice and other guides from staff members where as 43 (41.3%) respondents did not agree up on this. Suggested results also show that trainees were told about the issue only whenever they ask.

As to the trainees goal of exercise, most respondents 40(38.5%) exercised to develop cardiovascular fitness, 19(18.2%) and 18 (17.3%) respondents exercised to loss weight and to develop strength, respectively. Furthermore, 11 (10.6%) respondents were exercised to develop multiple components, but few said that they exercise for both, to loss weight and to gain weight as well, which is impossible.

Concerning the number of days of exercise, the majority 81(81.7%) exercise from 4-7 days. In this respect, when we consider those respondents who practice every day account 11(10.6%) , even when we add those who practice 6 days of a week 21 (20.2%) up on the above figure it will be come 32 (30.8%) which was less than one fourth of the total.

As to the average length of hour(s) or minutes of work out, most respondents 53(51%) waste 1 hour in each physical exercise, and the rest who work for 40-50 minutes account 18 (17.3%) and those who work for 1:30 and 2:00 hours account 6(5.8%) and 16 (15.4%), respectively. In general, those respondents who waste their time in exercise from 40 minute to 2:00 hours were reached 93(89.5%) and when we add those who practice 30 minute per day 7(6.7%) it will become 100 (96.2%). On top of this, some respondents were suggested that they practiced more than 1:30 and 2:00 hr, even some said 3 hours.

II.I. Concerning Special Needs Issues

Regarding the recommendation of doctor to involve in physical activity, less than a quarter 25 (24%) of respondents were started physical exercise by recommendation of their doctor, the rest 79(76%) respondents were joined their gym by their own. Actually, most literatures like Joseph et al, (2005) said that if a person 45 and above years of old, he should see a doctor before starting any physical exercise.

As to a free trial and visit for those who have health issues to check whether the gym facilities meet their needs, 60 (57.7%) respondents were replied that they did not get this chance in their gyms on this issue. Some respondents suggested that they did not have any health problem, but they hoped that those who have health issues would get this chance properly. Actually, the data from observation showed that any one who wants to visit the gym before registration has got the chance though he did not told to do so, but there was no free trial. In addition to this when we observe respondents health stratus from their personal information, almost all were found in good health condition, unless other wise they were in health problem at the beginning. There fore, at this moment they did not have any health issue.

Concerning whether equipments and facilities are offering programs designed to address chronic and age related condition, more respondents 59 (56.7%) were replied that this condition was not considered in their gym, and the rest 45 (43.3%) in contrary, were agreed up on the issue. More over, most respondents suggested that since they did not have any health problem, did not know whether equipments and facilities designed to address the chronic and age related conditions. In support of this idea, most instructors

said that they classify their trainees as beginners, intermediates and advanced ones, and they apply any program accordingly in every part of exercise from aerobics class to machine, bike to the weight rooms, in order to make the program responsive.

Concerning the method(s) instructors employed during training, the majority respondents 94(90.4%) replied that instructors employ appropriate method (s) of training during exercise. This idea is some how supported by the result obtained from instructors.

Regarding the designed program whether they meet trainees need or not, 97(93.3%) were agreed on the issue and were interested in the program they got from the gym. In support of this issue one could say by observing the amount of duration that trainees were stayed in their gym. There fore, most of them were stayed more than 4 month without shifting to another gym. Interview results were also support this idea.

With respect to intensity, duration, load and frequency of exercises, the majority respondents 90(86.5%) were replied that instructors adjust and modify the intensity, duration, load and frequency of different workouts so as to fit with trainees needs. In addition, interview results also strengthen the idea.

Concerning pain and discomfort during exercise, 85 (81.7%) respondents were replied that they were comfortable with the exercise they practiced as well as did not felt any pain so far. But some respondents said as they felt it when they were started to exercising at the beginning and they got relief from it gradually. Besides, interview results revealed that, there are some trainees who did not want to follow instructors' procedures and practice greater than their level and injured them. Regarding the cooperative work of staff

member with trainees' physician who have health problem, most respondent 84(80.8%) were agreed on the issue. These groups of respondents additionally suggested that they did not have any health problem but if they have any they hoped that their instructors would do that.

As to the health history and movement which cause pain, fatigue or other symptoms, 63 (60.4%) respondents responded that they were asked their health history and movements which cause pain, fatigue or other symptoms by instructors. In support of this idea the interview results revealed that instructors asked the trainees about their health history but they did not ask anything about the movement which may cause pain, fatigue or other symptoms up on their trainees. The rest significant number of respondents who were account 41 (39.4%) responded that they were not asked by any one of the staff member up on the issue.

III. General Interview Results of Instructors

Most gym instructors have got a gym instructor certificate from Addis Ababa Administration Youth and Sport Commission. But one instructor who was a health and physical education student of degree program not took the course so far. In addition to this, three of them have degree in health and physical education including the one who did not take gym instructor certificate course. Further more, most of them were took international courses from Life Fitness and Body Wise gyms on the area. More over, few have some certificate or diploma on language, computer, coaching, in doping control, in massage therapy, in gym machine instructor. Except those who took a degree program in health and physical education and some other few instructors, the rest did not take any

special training concerning special needs as a course or training, but they got some during gym instructor trainings specially, focusing on patients.

Those who graduate in health and physical education and one other instructor, took first aid training from colleges and Red Cross, respectively; the rest instructors have no first aid training at all. But all learned it during different level of gym instructors' courses. Besides, none of them have any training concerning CPR (Cardio-Pulmonary Resuscitation).

Specifically all instructors did not take or apply any pre-program (pre enrolment), in-program and post-program physical fitness tests. But they tried to get the need or interest of their trainees by the means of observation, interview, measuring device or machine, and as one side by referring their (trainees) laboratory results and they follow trainees change throughout. Furthermore, few use cards to follow their trainees.

Concerning physical training principles and professional ethics, all instructors were knowingly or unknowingly apply the principles most of the time for those who stay for a long period of time with them, and in some types of exercise like aerobics they may not used them properly. Ethically they advise the do's and the donot's things and orient their trainees.

Regarding the safety that should be taken during exercise, all instructors take measures like orienting the prohibited activities in the gym related with alcohol, food, drugs dressing, use of machines and proper training procedures before, during and after the beginning of training

Most instructors did not have any lesson plan for their program; their reason was the inconsistency of trainees, so they prepare themselves daily for a new comers. The remaining few use a lesson plan for their trainees despite the number of duration they stay. In addition to this aerobics instructors sometimes use weekly plans for their program.

As to the evaluation of their exercise program, most instructors evaluate their program through observation, interview, using measurement results and suggestion, and even by referring lab results of patients. Regarding the bad conditions which instructors face previously, even though the causes were various, all of them got the problem like feint or collapse and injury.

IV. General Interview Results of Personnel

Concerning on the assessment of general health aspect of the community, the result(s) and their implication, the Ministry of Youth and Sports did not carry out any assessment on the general health aspect of the community, even did not get any information concerning the issue from governmental and non governmental organizations.

There are 28 physical exercise programs which are transmitted via ETV and FM Addis radio and the programs were prepared well in order to participate all segments of the society like children, beginners, Intermediates, advanced levels, for pregnant and older people, for diabetics and hypertension, for HIV/AIDS patients, for those who have back problem.

As to instructors' selection, they should get level 1, 2, 3 gym instructor certificates from Addis Ababa Administration Youth and Sport Commission, after they complete secondary level education and were working in gyms or fitness centers as an instructor. In addition to this, those who have additional degree, diploma or certificate in health and physical education were given special attention during selection.

The Ministry designs 28 programs which were focused on different issues. Then any instructor who fulfils their criteria can pick any program from the 28 and he should prepare and summits a script of exercise to the ministry. After that each script was evaluated in a committee which has different professionals including physicians, specialists and others. Finally they would select those instructors who prepared well in their exercise script, and have good physique and dressing.

They do not know the aims and objectives of the public health of the country, but the objective of their physical exercise program was mainly focused on urban citizens' health matters.

V. Observation Results

V.I. General Condition of the Gym/Center/Club.

Concerning the adequacy of space for proper use of equipments, around 5 (62.5%) gyms from the sample were not have adequate space fore proper use of equipments, especially, this condition is visible in the aerobics classes. The other 3(37.5%) gyms which accounts less than the average have enough space.

Regarding to the room temperature and the light in the gym hall, the majority gyms which account 7(87.5%) and 6(75%) have enough light and their room temperature was

conducive (comfortable) and well ventilated, respectively. As to drinking fountain, shower rooms and changing rooms, 6 (75%) gyms did not have changing rooms, all the gyms however, satisfy more or less.

Concerning the locker and the availability of staff members, the accessibility of locker rooms in the sample gyms were almost satisfied whether there are imported or locally made. When we consider the accessibility of staff members the majority 7(87.5) have enough number of staff members with respect to the number of trainees.

When we observe about staff offices and number of toilet rooms, except 1 (12.5%) gym the rest sample gyms did not have offices for their instructors. Concerning toilet rooms 7 (87.5) gyms have enough number of toilet rooms. Regarding special needs, none of the gyms were appropriate for special needs and there were no any adapted physical facilities and equipments and other similar conditions.

As to the music, the majority gyms 7 (87.5%) music rhythm, especially in aerobics room, not suitable for any exercise and not set at a reasonable voice level. When we consider the rhythm especially in aerobics class it did not match with the beginners and sometimes for intermediates. Concerning the form, none of sample gyms except 1 (12.5%) did not have any form which trainees fill about their health status, age and other important aspects.

V.II. Mats of the Gyms

Concerning mats and their foam, all sample gyms have mats, but some gyms used foamless mats which exactly replaces those good mats which have foam in them. In addition, there are mats in few gyms which their foam was not found in good condition.

V.III. Concerning Equipments of the Gyms

Equipments were safe, age friendly and working properly. There were cardiovascular machines (e.g. treadmills, uprights and recumbent bikes, steppers, elliptical, etc), strength training machines (e.g. free weights, weight machines, etc) flexibility equipments, and balance equipments. All equipments and machines were appropriate and compatible with the capacity level of trainees, as afar as they are adjustable and clean, one instructor said.

Concerning equipments modernity and accessibility, 7 (87.5%) gyms have modern equipments and machines where as 1(12.5 %) gym use local products by mixing modern ones, like weights, mats and steppers.

V.IV. Emergency Equipments of the Gyms

Concerning first aid kit, first aid service and fire extinguishers, 5(62.5) gyms did not have fully stocked first aid kit and any trained person with first aid. Most interviewees said that they did not take any first aid training, and none of them have got CPR trading. And finally, half of sample gym, 4(5%) were have fire extinguisher.

5.2. Conclusions

Considering the data analysis and the major findings, which were drawn from the analysis, the following conclusions could be drawn.

Women often found in poor health than men. Regular physical activity helps prevent cardiovascular diseases which account for one-third of deaths among women around the world. Diabetes affects more than 70 million women in the world. Cardiovascular diseases cause half of all deaths in women over 50 in developing countries 2025 (WHO, 2003). When we consider this study, women were less participants in physical activity than males; even they are totally dominated with respect to gym instructor.

When we consider physical activity with respect to age, we can say the following statement from the finding of study, "as the age of an individual increases, physical activity participation will decreases".

In Support of this, some reports suggest that habitual physical activity begins to decline as early as six years of age. Other critical periods when physical activity is likely to diminish include adolescence, the transition from school to university and from university to the labor force (Shephard, 2001).

The educational background of instructors revealed that almost all of them were certified and took related international trainings from Life Fitness and Body Wise gyms. Furthermore, the educational background of some instructors who were graduated in health and physical education from higher institutes showed the flourishing of well trained instructors towards this area. Furthermore, some were trained in first aid but all did not have CPR (Cardio-Pulmonary Resuscitation) training.

The facilities that are found in the selected gyms are more or less good and the equipments were appropriate with the sex, age and ability level of the trainees. This shows that the equipments and exercises done using them were safe. In addition to this trainees were also informed or orientated about the proper use of exercise equipments and/or machines. Besides, even though there are enough machines in the gym, sometimes it does not coincide with the number of trainees.

Even though the supervision and follow up taken by the instructors are good, their nutritional advice and other guides should be strengthen more, because trainees have healthy relationships with their instructors and were not advised well.

As to the trainees' goal of exercise, more of them are exercising to develop cardiovascular endurance and to loss weight, others to develop multiple components. There are also few who want to develop both to loss weight and to gain weight at the same time what is impossible. There fore, this clearly indicates that they do not have or got enough awareness about physical activity.

Concerning the number of days of exercise, more trainees are engaged in physical activity more days of the week, but their share for each day is not good enough. Beside this, more numbers of trainees are not engaged in physical exercise every day or one day less than the week. And, although we could not know the type, the amount of exercise and the number of days which each trainee practice, all period of times which trainees practice are the recommended times which one can get visible changes on his health. Beside this, the two and above hours which was selected by few trainees is not recommended for those who practice every day for health.

As to a free, trial, visit for those who have health issues to check whether they gym facilities meets their need, no gym permits this except the visits which was also given for those who want. Further more, the designed program and the instructors method training are more or less satisfy the need of trainees, and they adjust and modify the intensity, duration, load and frequency of different workouts so as to fit with trainees needs.

Significant numbers of instructors more or less employ pain free and comfortable practice, even though there are some who cause not only pain but also an accident. They also create good attachment with trainees' doctor even though it is difficult, because a doctor is not a sport physician. However, they did not ask their trainees about movements which cause pain, fatigue or other symptoms and feasibility of physical activities or exercises but their health history.

Specifically all instructors did not take or apply any pre-program (pre enrolment), in-program and post-program physical fitness tests. But they tried to get the need or interest of their trainees by the means of observation, interview, measuring device or machine, and as one side by referring their (trainees) laboratory result and they follow trainees change throughout. Furthermore, few use cards to follow their trainees.

Concerning physical training principles and professional ethics, all instructors were knowingly or unknowingly apply the principles most of the time for those who stay for a long period of time with them, and in some types of exercise like aerobics they may not used them properly.

Regarding the safety that should be taken during exercise, all instructors take measures like orienting the prohibited activities in the gym related with alcohol, food, drugs dressing, use of machines and proper training procedures before, during and after the beginning of training

Almost all instructors did not have any program; their reasons were the inconsistency of trainees and evaluate their program through observation, interview, using measurement results and suggestion, and even by refer lab results of patients. Regarding the bad conditions which instructors face previously, even though the causes were various all of them get the problem like feint or collapse, injury and others.

Concerning on the assessment of general health aspect of the community, the result(s) and their implication, the Ministry of Youth and Sports did not carry out any assessment on the general health aspect of the community, even did not get any information concerning the issue from governmental and non governmental organizations. Furthermore, they do not know the aims and objectives of the public health of the country, but the objective of their physical exercise program was mainly focused on urban citizens' health matters.

More gyms have adequate space for proper use of equipments but significant number lack this. Regarding to the room temperature and the light in the gym hall, the majority gyms have enough light and their room temperature was conducive (comfortable) and well ventilated, respectively. As to drinking fountain, shower rooms and changing rooms, 6 (75%) gyms did not have changing rooms, all the gyms however, satisfy more or less.

Concerning the locker and the availability of staff members, the accessibility of locker rooms in the sample gyms were almost satisfying whether they are imported or locally made. When we consider the accessibility of staff members, the majority have enough number of staff members with respect to the number of trainees.

When we observe about staff offices and the number of toilet rooms, except one gym the rest sample gyms did not have offices for their instructors. Concerning toilet rooms 7 gyms have enough number of toilet rooms.

Regarding special needs, none of the gyms were appropriate for special needs and there were no any adapted physical facilities and equipments and other similar conditions. The majority gyms music rhythm especially, in aerobics room, is not suitable for any exercise and not set at a reasonable voice level. When we consider the rhythm especially in aerobics class it did not match with the beginners and sometimes for intermediates. None of the sample gyms, except one did not have any form, which trainees fill about their health status, age and other important aspects.

Equipments were safe, age friendly and working properly. There were cardiovascular machines, strength training machines, flexibility equipments, and balance equipments. All equipments and machines were appropriate and compatible with the capacity level of trainees and are clean. Concerning equipments modernity and accessibility, almost all gyms have modern equipments and machines, where as one gym uses local products by mixing modern ones, like weights, mats and steppers. Besides, more gyms did not have fully stocked first aid kit and any trained person with first aid, and half of the sample gyms did have fire extinguisher.

5.3. Recommendations

- The health and fitness industry is a dynamic, expanding, and maturing field through out the world. Despite of its expansion, the employment of qualified professionals is not significantly improved, in our country. So it may pull the credibility of health and fitness delivery systems. Career opportunities in the fitness industry including fitness club owner/manager, fitness director, aerobics director, special programs director, aquatics directors, teachers, exercise physiologists and personal trainers and the like. Therefore, as respondents suggested higher institutes should consider this gap and respond to fill the lack of qualified professionals in this industry.

- Even though there were gyms with facilities and activities more or less up to in western standards, they also lack some minor but important things which might be given more attention with respect to the impact they have on trainees' heath. For instance, most do not have separate changing rooms. In this respect, in addition to our cultural and spiritual influence, there are trainees who do not want to show their bare body by others so it may get psychological problem and will let the trainee to leave the gym. The other thing was that most of them do not have forms which are filled by trainees like Physical Activity Readiness Questionnaire (PAR-Q), well stocked first aid kit and fire extinguisher, and others. They should have also offices for their staff members. Hence, all gyms should consider these and others by realizing the impact they have on the health and their internal system.

- Community based Physical activity program could not be led by few number of individuals. It is so broad that it needs separate department which should be executed by a large number of human capacities especially, if it is nation wide. And it should also consider multiple aspects of the culture of a given society exhaustively, to whom the program is prepared. Furthermore; it should work in coordination with different organs, for instance, ministry of health, education, youth and sports, urban development, social affair and other governmental and non governmental organizations like WHO. Therefore, we should apply this and other things in our situation by releasing the experience of other nations, especially, the mass media physical exercise programs.

- In different areas or fields so many things have been improved so as to respond the needs of disabled groups. But, when we come to this area almost nothing was done so far for this group. Therefore, gyms should be opened and modified so as to respond the needs that these large groups they have in the physical exercise or activity.

- The study revealed that participation of women in physical activity was less than males; even they are totally dominated with respect to gym instructor. Therefore different incentives should be made in order to increase their involvement.

- An increased visibility and knowledge about health and fitness through the media has led to a much more informed consumer and accelerates the expansion of the fitness industry. Therefore, our mass media should also apply this by giving high air coverage for the issue consistently.

- Trainees especially who have health problems and those who found in older age groups or seniors should develop the culture of visiting their doctor before the beginning of any physical exercise.

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Appendix 'A'

ADDIS ABABA UNIVERSITY
SCHOOL OF GRAGUATE STUDIES
INSTITUTE OF EDUCATIONAL RESEARCH

QUESTIONNAIRE TO BE FILLED BY TRAINEES OF THE GYM/CENTER/CLUB

Dear respondent:

My name is Mahmud Reshad. I am a graduate student of the Institute of Educational Research (IER) in Addis Ababa University. Currently, I am writing my Masters' Thesis entitled ***"The Principles of Physical Fitness Training and Their Applications in Fitness Centers of Addis Ababa"*** for the partial fulfillment of the Masters of Arts in Educational Research and Development. The questionnaire is designed to collect data from respondents. You are kindly requested to provide your response to the questionnaire prepared. Please be assured that the data collected in this questionnaire will not be used for other purposes than the above stated objectives. Thank you.

General Instruction

In this questionnaire, you will find about nineteen questions which cover two major issues of the fitness gym/center/club. Based on the questions **Yes or No** and **other** alternatives are presented. Thus you are kindly requested to select and encircle the most appropriate one among the given alternatives. Furthermore, if you have any additional suggestion, you may write in the space provided. Finally, I thank you very much for responding to the questions.

A. respondents Personal Data

Fitness gym/centre/club type: governmental--------- or private------------

Sex----- Age------ Type of your job/profession----------------------------------

Duration of stay in the gym/centre/club (In number of days, months and years) ------------

Medical information--

B. Questions Related with General Condition of the Gym/Centre/Club

1. Are you comfortable with the facilities?

A. Yes B. No

Suggestion:

2. Do you have enough orientation about equipment?

A. Yes B. No

Suggestion:

3. Are equipments simple and easy to operate?

A. Yes B. No

Suggestion:

4. Are the exercise equipments safe and the exercises done using them are safe?

A. Yes B. No

Suggestion:

5. Are there enough machines to avoid having to wait a long time for your turn?

A. Yes B. No

Suggestion:

6. Do the trainers closely supervise and assist trainees?

A. Yes B. No

Suggestion:

7. Do you get nutritional advises and other guides from the staff members?

A. Yes B. No

Suggestion:

8. What is your goal to be in this fitness program?

To improve:

1. Strength 2. Cardiovascular fitness 3. Diet/ eating habit
4. Muscular strength 5. Flexibility 6. To loss weight
7. To gain weight 8.To improve exercise/health habit

Suggestion:

9. How often do you exercise per week?

A. 3 days B. 4 days C. 5 days D. 6 days

Suggestion:

10. What is the average length of hour/minutes of each workout?

A/ 1hour B/ 40-50min C/ 30min D/20min

Suggestion:

B. Questions Related with Special Needs

11. Do your physical activity recommended by your doctor?

A. Yes B. No

Suggestion:

12. Can people with health issues receive a free, trial visit to assess the degree to which the facility meets their needs?

A. Yes B. No

Suggestion:

13. Do the equipments and facilities offer programs designed to address chronic and age related conditions (osteoporosis, cardiovascular diseases, diabetes, balance abnormalities, muscle weakness, etc)?

A. Yes B. No

Suggestion:

14. Do trainers employ effective method(s) of training?

A. Yes B. No

Suggestion:

15. Does the program designed meet your need?

A. Yes B. No

Suggestion:

16. Do the classes have different levels of intensity, duration, loud and frequency which are modifiable to your needs?

A. Yes B. No

Suggestion:

17. Do you fill any pain and uncomfort during exercise?

A. Yes B. No

Suggestion:

18. Will the staff work hand in hand with your physician if you have healthy issues?

A. Yes B. No

Suggestion:

19. Do staff members ask you about your health history and which movements cause pain, fatigue or other symptom?

A. Yes B. No

Suggestion:

20. Do staff members ask you about which activities or exercises feasible for you?

A. Yes B. No

Suggestion:

Appendix 'B'

Amharic Version the Questionnaire which to be Filled by Trainees of the Gym

አዲስ አበባ ዩኒቨርሲቲ

የድህረ ምረቃ ትምህርት ክፍል

የትምህርት ጥናትና ምርምር ተቋም

በጂሙ ወይም በፊትነስ ማዕከሉ ወይም በፊትነስ ክለቡ ሰልጣኞች የሚሞላ

የፅሑፍ መጠይቅ

የተከበራችሁ ተሳታፊዎች:

ስሜ ማህሙድ ረሻድ ይባላል። በአዲስ አበባ ዩኒቨርሲቲ በትምህርት ጥናትና ምርምር ተቋም ትምህርት ክፍል የማስተርስ ትምህርቴን በመከታተል ላይ እገኛለሁ። በአሁኑ ሰዓት ለ Masters of Arts in Educational Research and Development, *"The Principles of Physical Fitness Training and their Applications in Fitness Centers of Addis Ababa"* በሚል ርዕስ የማስተርስ ፅሁፌን በማዘጋጀት ላይ ነኝ።ስለዚህም ከናንተ መረጃ ለመሰብሰብ ይህ የፅሑፍ መጠይቅ ተዘጋጅቷል። በመሆኑም ይህ መጠይቅ በመሙላት እንድትተባበሩኝ በትህትና እጠይቃለሁ።ይህ የሚሰበሰበው መረጃ ከታለመለት አላማ ውጭ ለሌላ ጉዳይ የማይውል መሆኑን አጥብቄ ለማሳሰብ እፈልጋለሁ። አመሰግናለሁ።

አጠቃላይ መመሪያ

በዚህ መጠይቅ ውስጥ በጂሙ ወይም በፊትነስ ማዕከሉ ወይም በፊትነስ ክለቡ ላይ ያተኮሩ ሁለት ዋና ዋና ጉዳዮችን የሚዳስሱ ሃያ (20) ጥያቄዎች ይገኛሉ። ጥያቄዎቹም "አዎን" ፣ "አይደለም" እና ሌሎች ምርጫዎች ተሰጥቷቸዋል።ስለዚህ ከተሰጡት አማራጮች ውስጥ ትክክል ነው ብላችሁ ያመኑበትን አንዱን መልስ በመምረጥ እንዲያከቡ በትህትና እጠይቃለሁ። በተጨማሪም ተጨማሪ ሃሳብ ካሎት "ሃሳብ ካሎት" በሚለው ስፍራ ስር መፃፍ ይችላሉ። በመጨረሻም ይህን መጠይቅ በመሙላት ላደረጉት ትብብር እጅግ በጣም አድርጌ አመሰገናለሁ።

ሀ. የግል መረጃ

የጂሙ ወይም የፊትነስ ማዕከሉ ወይም የፊትነስ ክለቡ ዓይነት፡ የመንግስት----ወይስ የግል-------------------- ፣ ፆታ:----- ፣ እድሜ:----- ፣ የስራዎ ዓይነት------------------------------------

በጂሙ ወይም በፊትነስ ማዕከሉ ወይም በፊትነስ ክለቡ ለምን ያህል ጊዜ ቆይተዋል (በቀናት ወይም በወራት ወይም በዓመታት)------------------ የጤንነት ሁኔታ-------------------

ለ. ከጂሙ ወይም ከፊትነስ ማዕከሉ ወይም ከፊትነስ ክለቡ አጠቃላይ ሁኔታ ጋር ተያያዥነት ያላቸው ጥያቄዎች፡

1. የጂሙ ወይም የፊትነስ ማዕከሉ ወይም የፊተነስ ክለቡ የአገልግሎት አቅርቦት ተመችቶታል? ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

2. ስለ ፊትነስ መስሪያ መሳሪያዎች በቂ የሆነ ዕውቀት አግኝተዋል?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

3. ፊትነስ መስሪያ መሳሪያዎቹ ለአጠቃቀም ቀላልና ምቹ ናቸው?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

4. መሳሪያዎቹና መሳሪያዎቹን በመጠቀም የሚሰሩ ኤክሰርሳይሶች ደህንነታቸው የተረጋገጠ ነው? ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

5. ረዥም የተራ ጊዜን ለማስቀረት በቂ የሆኑ መሳሪያዎች ይገኛሉ?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

6. አሰልጣኞቹ ለሰልጣኞቹ ክትትልና ድጋፍ ያደርጋሉ?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

7. ከጂሙ ወይም ከፊትነስ ሴንተሩ ወይም ከክለቡ ሰራተኞች ስለ አመጋገቦና ስለ ሌሎች መመሪያዎች ምክር ይሰጥዎታል? ሀ. አዎን ለ.አይደለም

ሐሳብ ካሎት፡-

8. በጂሙ ወይም በፊትነስ ሴንተሩ ወይም በፊትነስ ክለቡ በሚሰጠው የፊትነስ ፕሮግራም የእርሶ ግብ ምንን ለማሻሻል ነው?

ሀ. የአካል ጥንካሬዎን ለማሻሻል ለ. የአካሉን የደም ዝውውር፣ የአተነፋፈስ እና ሌሎች ተያያዥነት ያላቸውን ሁኔታዎችን ለማሻሻል ሐ. የአመጋገብ ስርዓቶን ለማሻሻል መ. የሰውነትን መተጣጠፍ ለማሻሻል ሠ. ክብደት ለመቀነስ ረ. ክብደት ለመጨመር ሰ. የጤናና የእንቅስቃሴ ልምዶችን ለማዳበር

ሐሳብ ካሎት:-

9. በሳምንት ምን ያህል ቀን ይሰራሉ?

ሀ. 3 ለ. 4 ሐ. 5 መ. 6 ሠ. ሁሉም ቀን

ሐሳብ ካሎት:-

10. አማካይ የመስሪያ ጊዜ ወይም ሰዓት ቆይታዎ ምን ያህል ነው?

ሀ. 1 ሰዓት ለ. ከ40-50 ደቂቃ ሐ. 30 ደቂቃ መ. 20 ደቂቃ

ሐሳብ ካሎት:-

ሐ. ከልዩ ፍላጎት ጋር ተያያዥነት ያላቸው ጥያቄዎች

11. ወደ እዚህ ጂም ወይም ፊትነስ ሴንተር ወይም ክለብ እንዲሄዱ በሃኪም ተፈቅዶሎታል? ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት:-

12. የጤና ችግር ያለባቸው ሰልጣኞች በጂሙ ወይም በሴንተሩ ወይም በክለቡ የአገልግሎት መስጫዎች ላይ ነፃ የሆነ የሙከራና የጉብኝት አገልግሎት ያገኛሉ?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት:-

13. የጂሙ ወይም የፊትነስ ሴንተሩ ወይም ክለቡ አገልግሎት አቅርቦቶች የሚዘጋጁት ከተሳታፊው ካለበት ህመምና የእድሜ አንፃር ነው?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት:-

14. አሰልጣኞቹ ጥሩ የሆነ የአሰለጣጠን ዘዴን ነው የሚከተሉት?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

15. የጂሙ ወይም የፊትነስ ሴንተሩ ወይም ክለቡ የፊትነስ ፕሮግራም የዕርሶን ፍላጎት ያሚላ ነው? ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

16. ጂሙ ወይም ፊትነስ ሴንተሩ ወይም ክለቡ የዕርሶን ፍላጎት ለመጠበቅ በኤክሰርሳይስ አይነቶች ላይ የክበደት (intensity) ፣የመጠን (load) ፣የጊዜና (time) የድግግሞሽ (frequency) ለውጥ ያደርጋል? ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

17. ኤክሰርሳይስ በሚሰሩበት ጊዜ ህመምና ጥሩ ያለሆነ ስሜት ይሰማዎታል?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

18. የጤና ችግር ካለበ የጂሙ ወይም የፊትነስ ሴንተሩ ወይም ክለቡ አሰልጣኞችና ሰራተኞች ከሃኪሞ ጋር እጅ ለእጅ በመሆን ይሰራሉ?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

19. የጂሙ ወይም የፊትነስ ሴንተሩ ወይም ክለቡ አሰልጣኞችና ሰራተኞች ስለ ጤንነትዎ እንዲሁም ህመም ድካምና ሌሎች ምልክቶችን ስለሚያስከትልበ እንቅስቃሴዎች ይጠይቅዎታል? ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

20. የትኞቹስ እንቅስቃሴዎች እንደሚመቾት ይጠይቅዎታል?

ሀ. አዎን ለ. አይደለም

ሐሳብ ካሎት፡-

Appendix 'C'

ADDIS ABABA UNIVERSITY
SCHOOL OF GRAGUATE STUDIES
INSTITUTE OF EDUCATIONAL RESEARCH

Title: "The Principles of Physical Fitness Training and their Applications in Fitness Centers of Addis Ababa"

Dear Interviewee:

My name is Mahmud Reshad. I am a graduate student of the Institute of Educational Research (IER) in Addis Ababa University. Currently, I am writing my Masters' Thesis entitled "The Principles of Physical Fitness Training and Their Applications in Fitness Centers of Addis Ababa" for the partial fulfillment of the Masters of Arts in Educational Research and Development. Interview guide is designed to collect data from participants. Therefore, you are kindly requested to generate important information to the interview prepared. Please be assured that the data collected in this interview will not be used for other purposes than the above stated objectives. Thank you.

Date --------------- Time Interviewed Begin and Completed ---------------------

Qualification--------------------------------------- Experience----------------------

Interview Guides Presented for Trainers

I. Training Qualification:

1. Please describe your qualification and level of certification?
2. What additional certificate or license do you have?
3. Can you mention any trainings or courses that you might be take to work with people who have various health issues, special needs and others that may related with age?
4. How many of you (among the staff members) have CPR (Cardio-Pulmonary Resuscitation) and first aid training?

II. General Training Process:

6. Do you apply pre-program (pre enrolment), in-program and post-program physical fitness tests (Aerobic fitness test, muscular strength test, body composition test, flexibility test) and how do you go through it?
7. Do you have guides for your fitness program? Who prepared them and how they

prepared?

8. Do you include all health related physical fitness components in your workout? If yes, how do you respond the needs of the trainees? And which component(s) dominate your program more?
9. There are physical training principles and professional ethics, do you know and apply them in your fitness program? If yes, in what way?
10. How do you use safety rules for each exercise?
11. How do you prepare lesson plans for your program?
12. How do you evaluate your method(s) of training?

About Special Need:

13. Are some or all of the staff members trained to deal with the special needs? And how do they respond their interest?
14. Do you design and prepare exercise program for different groups of trainees? If yes, would you mention these groups and their corresponding exercise, please?
15. Did you get any problem up on your trainees while training so far like fracture, injury, etc?

Appendix 'D'

ADDIS ABABA UNIVERSITY
SCHOOL OF GRAGUATE STUDIES
INSTITUTE OF EDUCATIONAL RESEARCH

Title: "The Principles of Physical Fitness Training and their Applications in Fitness Centers of Addis Ababa"

Dear Interviewee:

My name is Mahmud Reshad. I am a graduate student of the Institute of Educational Research (IER) in Addis Ababa University. Currently, I am writing my Masters' Thesis entitled "The Principles of Physical Fitness Training and Their Applications in Fitness Centers of Addis Ababa" for the partial fulfillment of the Masters of Arts in Educational Research and Development. Interview guide is designed to collect data from participants. Therefore, you are kindly requested to generate important information to the interview prepared. Please be assured that the data collected in this interview will not be used for other purposes than the above stated objectives. Thank you.

Date --------------- Time Interviewed Begin and Completed ---------------------

Qualification--------------------------------------- Experience----------------------

Interview Guides Presented for the Personnel of Ministry of Youth and Sport of Ethiopia:

1) Do you carry out an assessment on the general health aspect of the community, or get it from the respective agent? If this is so, what (is) are the result(s) of the assessment and their implication?
2) During designing the fitness program, who are your target groups of the population?
3) How do you authorize and select trainers who broadcast fitness program via mass media?
4) How training guides and other materials developed, tested, revised, produced, used and evaluated? And are they distributed to each fitness gym/centre/club?
5) Who is involved and what is the respective role of trainers, professionals and others during program designing and preparation?
6) Are the aims and objectives of the fitness program corresponding to the aims and objectives of public health issues of the nation? How?

Appendix 'E'

Observation Checklist

The objective of this checklist is to assess important issues concerning: General condition of the fitness gym/center/club, Facilities and Equipments, Emergency equipments and other issues of the fitness gym/center/club.

Observation date -------------------- Beginning and Completion Time of Observation------- ------------------------------- observer---------------------------
Place of observation----------------------------No of set of observation------------
Title of a set--------------------------------------

No.	**Observation Lists**			
1	**General condition of the fitness gym/center/club**			
		Yes	No	Remark/Comments
	1.1. Is there adequate space for proper use of all equipments?			
	1.2. Is there enough light in the gym hall?			
	1.3. Is the room temperature conducive (comfortable) and well ventilated?			
	1.4. Is drinking fountain available?			
	1.5. Are there adequate shower rooms for males and females?			
	1.6. Are there changing rooms for males and females?			
	1.7. Is there a locker room?			
	1.8. Are there enough trainers and supportive staff members? (Trainers to trainee ratio)?			
	1.9. Are there offices for trainers and other staff members?			
	1.10. Are there enough toilet rooms?			
	1.11. Is the gym/center/club appropriate for special needs and, adapted physical facilities and equipments, etc available?			
	1.12. Is the music rhythm suitable for exercises and set at a reasonable voice level?			
	1.13.Do trainees fill out pre training form?			

2.	**Mats**			
	2.1. Are mats free of tears and wearing?			
	2.2. Is the foam in the mats in good condition?			
3.	**Equipments**			
	3.1. Are the equipments safe, age friendly and working properly?			
	3.2. Are there cardiovascular machines (e.g. Treadmills, upright and recumbent bikes, steppers, elliptical, etc)?			
	3.3. Are there strength training machines (e.g. Free weights, weight machines, etc)?			
	3.4. Are there flexibility equipments?			
	3.5. Are there balance equipments?			
	3.6. Are equipments appropriate and compatible with the capacity level of trainees?			
	3.7. Are equipments clean?			
	3.8. Are equipments modern ones?			
	3.9. Are there enough in number equipments?			
4.	**Emergency equipment**			
	4.1 Is first aid kit fully stocked and accessible?			
	4.2 Is there someone with first aid training?			
	4.3 Are fire extinguishers available and accessible?			

Appendix 'F'

Observation Results

The Following table describes the general observation result obtained from observation checklist.

No	**Observation Lists**																			
1	**General condition of the fitness gym/center/club**																			
	GYM																			
	Items	1		2		3		4		5		6		7		8		Total		%	
		Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N
	1.1. Is there adequate space for proper use of all equipments?	-		-			-		-		-		-		-	-		3	5	37.5	62.5
	1.2. Is there enough light in the gym hall?	-		-		-		-			-	-		-		-		7	1	87.5	12.5
	1.3. Is the room temperature conducive (comfortable) and well ventilated?	-		-		-		-			-	-			-	-		6	2	75	25

	1.4. Is drinking fountain available?	-		-		-		-		-		-		-		-		8	0	100	0
	1.5. Are there adequate shower rooms for males and females?	-		-		-		-		-		-		-		-		8	0	100	0
	1.6. Are there changing rooms for males and females?	-		-			-		-		-		-		-		-	2	6	25	75
	1.7. Is there a locker room?	-		-		-		-		-		-		-		-		8	0	100	0
	1.8. Are there enough trainers and supportive staff members? (Trainers to trainee ratio)?	-		-		-		-			-	-		-		-		7	1	87.5	12.5
	1.9. Are there offices for trainers and other staff members?	-			-		-		-		-		-		-		-	1	7	12.5	87.5

	1.10. Are there enough toilet rooms?	-		-		-		-		-			-	-		-		7	1	87.5	12.5
	1.11. Is the gym/center/club appropriate for special needs and, adapted physical facilities and equipments, etc available?		-		-		-		-		-		-		-		-	0	8	0	100
	1.12. Is the music rhythm suitable for exercises and set at a reasonable voice level?		-	-			-		-	-			-		-		-	1	7	12.5	87.5
	1.13. Do trainees fill out pre training form?	-			-		-		-		-		-		-		-	7	1	87.5	12.5
2	**Mats**																				
	2.1. Are mats free of tears and wearing?	-		-		-		-		-		-		-		-		8	0	100	0

	2.2. Is the foam in the mats in good condition?		-		-		-		-		-		-		-	-		1	7	12.5	87.5
3	**Equipments**																				
	3.1. Are the equipments safe, age friendly and working properly?	-		-		-		-		-		-		-		-		8	0	100	0
	3.2. Are there cardiovascular machines (e.g. Treadmills, upright and ·cumbent bikes, steppers, elliptical, etc)?	-		-		-		-		-		-		-		-		8	0	100	0
	3.3. Are there strength training machines (e.g. Free weights, weight machines, etc)?	-		-		-		-		-		-		-		-		8	0	100	0

	3.4. Are there flexibility equipments?	-		-		-		-		-		-		-		-		8	0	100	0
	3.5. Are there balance equipments?	-		-		-		-		-		-		-		-		8	0	100	0
	3.6. Are equipments appropriate and compatible with the capacity level of trainees?	-		-		-		-		-		-		-		-		8	0	100	0
	3.7. Are equipments clean?	-		-		-		-		-		-		-		-		8	0	100	0
	3.8. Are equipments modern ones?	-		-		-		-			-	-		-		-		7	1	87.5	12.5
	3.9. Are there enough in number equipments?	-		-		-			-	-			-		-	-		5	3	62.5	37.5

4	**Emergency equipment**																				
	4.1. Is first aid kit fully stocked and accessible?	-			-		-	-			-	-			-		-	3	5	37.5	62.5
	4.2. Is there someone with first aid training?	-			-		-	-			-	-			-		-	3	5	37.5	62.5
	4.3. Are fire extinguishers available and accessible?	-		-		-			-		-	-			-		-	4	4	50	50

Where, Y-yes, N-no

Declaration

This thesis is my original work and all sources of materials used for this thesis have been duly acknowledged. I formally declare that this thesis is not sumibtted to any other institution for the award of any academic degree, diploma or certificate.

Name: Mahmud Reshad

Signature____________

Date July 17, 2008

This thesis has been submitted for examination with my approval as a university advisor.

Name: Wegayehu Tebeje (Ph.D.)

Signature:____________

Date of approval:____________