EATING HABIT AND NUTRITIONAL KNOWLEDGE OF FITNESS PROGRAM PARTICIPANTS ON WEIGHT MANAGEMENT IN THE CASE OF SELECTED FITNESS CENTERS, DIRE –DAWA, ETHIOPIA

M.Sc. THESIS

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DEDICATION

This piece of work dedicated to my wife.

STATEMENT OF THE AUTHOR

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BIOGRAPHICAL SKETCH

The investigator was born in Southern Nation National State in Hadiya Zone Shone Administration at small village called Shone in 1978 G.C, from his father Mr. Molla Linga and his mother Soyo Washu. He started his primary education in 1988 at Shone Primary school and successfully completed his primary education in 1995 at this school. Then, He completed his secondary education in 1999 at Shone high school.

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ACRONYMS AND ABBRIVIATIONS

ADL	Activities of Daily Living
BMI	Body Mass Index
GERD	Gastro Esophageal Reflux Disease
KDHS	Kenya Demographic and Health Surveys
MSG	Monosodium Glutamate
NAFLD	Nonalcoholic Fatty Liver Disease
NCHS	National Centers for Health Statistics
NHANES	National Health and Nutrition Examination Survey
PCOS	Polycystic Ovary Syndrome
PHE	Physical and Health Education
US	United States
USDA	United State Department of Agriculture

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EATING HABIT AND NUTRITIONAL KNOWLEDGE OF FITNESS PROGRAM PARTICIPANTS ON WEIGHT MANAGEMENT IN THE CASE OF SELECTED DIRE - DAWA FITNESS CENTERS, DIRE – DAWA, ETHIOPIA

ABSTRACT

The purpose of the study was to assess eating habit and nutritional knowledge of fitness program participants on weight managements in the case of selected Dire-Dawa fitness center practitioners. One hundred thirty (130) Dire-Dawa fitness center practitioners were included male and females. The number of male practitioners was highly dominating in the fitness center. As the matter of fact, the investigator realized that the number of the practitioner in each fitness center was dominated by male. That was why the ratio of male practitioner to female practitioner was 10:3. This meant 77% of the practitioners were male while the left23% was female. As source of information for the study. Data were collected from primary sources. The method of data collection employed included questionnaires and interviews. The data obtained through these tools were analyzed both qualitatively and quantitatively. Quantitatively analysis data is made using tables of descriptive percentage and frequency and interpret through percent value and qualitatively using words. The findings revealed that most of the participants were participating in fitness center to create healthy life style while the left were participating for body weight controlling purposively and there was knowledge gap among the practitioners the investigator could identified the reasons for participating in the fitness center. These different purposes aimed for the fitness activities participation were increasing, decreasing or maintaining at where it was, strengths endurance and flexibility. About 68.5% they did not often eat balanced diet. While the left 31.5% of the practitioners knew more about balanced diet. The result was elaborated with more description showed that the finding of this research revealed that only about 8.5% of the practitioners had exactly healthy eating habit and good nutritional knowledge. Finally the result of these findings was concluded as the unhealthy eating habits and lack of nutritional knowledge was affecting the weight management of fitness centers practitioners, in Dire Dawa.

Key words: *eating habits, nutrition, Diet, fitness, weight management.*

1. INTRODUCTION

1.1. Background of the Study

Nutrition is increasingly recognized as a key component of optimal sporting performance, with both the science and practice of sports nutrition developing rapidly. The dietary habits and nutritional knowledge was very important for human to get the healthy lifestyle. (Brunt and Rhee, 2008). Firstly, this study could help athletes, students and others to became aware about the dietary habits which they could apply in their daily life. Dietary habits consisted of balance food intake in daily meal which avoided from taking fast food and junk food. (Yahiya, *et al* 2008).

Improving nutritional knowledge was important for many aspects such as intake balanced diet like carbohydrates, proteins, mineral and vitamins. Since Physical and Health Education (PHE) students could be considered as athletes, the study in dietary habits and nutritional knowledge was important for Physical and Health Education (PHE) students. Nutrients meant to produce the energy sources to whole the body during doing any daily activity. Nutrition played a vital role in the health of athletes. Lack of nutritional knowledge could lead to poor eating habit which could then affect the athlete's performance (Brien and Davies, 2007). Athletes who had the correct nutrition education and knowledge might make better food choices. But athletes who had the incorrect nutrition education and less knowledge might not make better food choices. Likely, according to (Gibney, *et al*. 2009), the obesity epidemic in America continues to grow (Berenson, *et al.* 2004).

Physical activity had been shown to have a modest effect on body weight that is typically < 3% of initial body weight, but it had an additive effect when combined with dietary restriction Yahiya, *et al* (2008). Moreover, physical activity had been shown to be an important behavioral factor for enhancing long-term weight loss and minimizing weight regain; however, this might require relatively high doses of physical activity that approached 300 min / week. Physical activity might concern currently reduced abdominal adiposity, and which might serve

As a path way by which there was also an improvement in health-related risk factors for various chronic diseases. There was an important area of research that required further investigation, with particular needed to further examined the dose of physical activity that significantly affects these health outcomes World Health Organization, (2008).

Obesity played a significant role in causing poor health in women, negatively affecting quality of life and shortening quantity of life American Obesity Association, (2002). There were many obesity related conditions, which uniquely or mostly affected women. These included: osteoarthritis, birth defects, breast and endometrial cancers, cardiovascular and gall bladder diseases, infertility, gynecological complications, urinary stress incontinence, and stigma/discrimination (American Obesity Association, 2002).

These studies had focused on prevention of weight gain, successful weight loss, and maintaining weight. The interest in physical activity as a lifestyle strategy to fight the increasing prevalence of overweight and obesity stems from the fact that it was the one method that could be consistently used to increase energy expenditure. Physical activity was the most variable component of total daily energy expenditure. Therefore, it was important to understand the contribution of an increase in energy expenditure resulting from physical activity on weight loss, long-term weight-loss maintenance, and the prevention of weight gain. Optimal weight control through physical activity might also contribute to reductions in abdominal adiposity and reductions in metabolic risk (Quash, 2005).

The best results were with proper refueling and recovery with protein and carbohydrate before and after workout. They required adequate energy intake to enhance muscle building. This included a high carbohydrate-rich diet for energy and protein and nutrient-rich foods to provide the raw materials for building and maintaining muscle. The diet should vary with training frequency, intensity, and duration. If these eating patterns were maintained during periods of rest, less intense training, or upon retirement, it could lead to weight gain and even obesity in a short period of time. Some are more weight-conscious for performance advantage or for aesthete reasons. Energy needed and expenditure tended to be lower as their focus is more on skill and agility rather than power. Their eating strategies would include smaller, more frequent meals,

low fat, low glycolic foods and high fiber. This should give them a more even energy level and should vary with training (Quash, 2005). These athletes were at high risk of disordered eating and clinical eating disorders.

1.2. Statement of the Problem

Dieting was the practice of eating food in a regulated and supervised fashion to decrease, maintain, or increase body weight.. In other words, it was conscious control or restriction of the diet. A restricted diet was often used by those who were overweight. Obese some times in combination with physical exercise. (Strychar, 2006).

And also it was often used in combination with physical exercise to lose weight, commonly in those who were over weigh to obese. Healthy eating means, eating a variety of foods that gave you the nutrients you needed to maintain your health, felt good and had energy. The nutrients included protein, carbohydrates, fat, water, vitamins and minerals. Nutrition knowledge could be important for dietary choice in other ways, for example, by having direct effects on food choice, without food label information, or by impacting attitudes or beliefs. In addition, food label use could be a moderator of the association between nutrition knowledge and dietary behaviors (Fitzgerald *et al*, 2008 and Satia *et al*, 2005).

Physical activity is defined as any bodily movement produced by skeletal muscles that result in energy expenditure beyond resting expenditure. Exercise is a subset of physical activity that was planned, structured, repetitive, and purposeful in the sense that improvement or maintenance of physical fitness was the objective.

In this study, the researcher aimed to investigate Dire-Dawa fitness center participants on their overall health aspects such as, higher level of physical fitness, mental health and body weight management with regard to exercises and balance diet. However, in our country especially in Dire-Dawa there were fitness centers but they had no enough knowledge about eating habit and nutritional value with its negative effect on weight management for the fitness centers participants. And also many researchers didn't do this problem solving research in Dire-Dawa

fitness center based on this topic. And the researcher proposed to fill this gap. Therefore, this research would aim to provide the answer for the following research questions:-

1. What was eating habits and nutritional knowledge of Dire-Dawa fitness center participants on weight managements?
2. What were the major factors that contributed for eating habit and nutritional knowledge of practitioner on Dire-Dawa fitness center?
3. What was the nutritional knowledge of Dire-Dawa fitness center participants on weight managements?

1.3. Scope of the Study

Thematically, this research aimed to assessment of body weight management through dietary intake and nutritional knowledge of Dire-Dawa administrated city fitness center participants. Geographically, the study would be limited to Dire -Dawa fitness center. The researcher targeted the study area because of consistence of money and time.

1.4. Significant of the Study

The significance of the study was Dire-Dawa fitness center participants would help to have enough knowledge of eating habit, nutritional value and its positive effect on weight management. And improve the nutritional knowledge on weight management for both fitness center coaches and participants. Furthermore it would provide open door to any interested researcher to conduct further research up on it.

1.5. Objectives of the Study

1.5.1. General objectives

The general objective of this study was to assess eating habit and nutritional knowledge of fitness program participants on weight managements in the case of selected Dire-Dawa fitness center practitioners.

1.5.2. Specific objective

- To assess eating habits and nutritional knowledge of weight managements on Dire-Dawa fitness center participants.
- To identify the major factors that contribute for eating habit and nutritional knowledge of practitioner on Dire-Dawa fitness center
- To evaluate the nutritional knowledge of Dire-Dawa fitness center participants on weight managements.

2. RELATED LITRETURE REVIEW

2.1. Nutrition and Diet

Nutrition was the intake of food, considered in relation to the body's dietary needs. Good nutrition was an adequate, well balanced diet combined with regular physical activity and cornerstones of good health. Poor nutrition could lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity (Khokhar, *et al* 2008).A direct association had been found between body weight and deaths from all causes in women, ages 30 to 55. According to the American obesity association, when BMI exceeds 30 kg/m^2, the relative risk of death related to obesity increases by 50 percent (American obesity association, 2002).

Balanced nutrition included drinking plenty of clean water and regularly eating foods from each of six food groups: grains, vegetables, fruits, milk products, meat and beans, and oils. These foods contained six kinds of nutrients: proteins, carbohydrates, fats, minerals, vitamins, and water. A person should regularly eat or drink enough of all of these nutrients to grow and remain healthy. (Gilbert and Khokhar, 2008). If a variety from all food groups was eaten regularly, it was not usually necessary to take supplements. Even carefully chosen vegetarian diets that include dairy products or eggs could be quite sufficient. But if little or no animal products were eaten, then grains must be eaten with legumes (beans, peas, peanuts, and lentils), nuts, and seeds to provide balanced protein Papadakos and Scott, (2002). Food and drink must also be clean and free from disease-causing germs (bacteria, viruses, and parasites) to be healthy. (Nojomi and Najamabadi, 2006).

Foods should be washed free of dirt and then peeled, cooked, boiled, or sanitized before eating Papadakos and Scott, (2002) Food must be eaten in proper amounts to maintain good health. Khokhar *et al* (2008). Eating disorders were serious, negative eating behaviors that could be fatal if untreated. Generally, obesity results from eating more while malnutrition results from eating less food than needed for growth, maintenance, and daily activity. Daily energy needs could be estimated based on age, height, weight, and level of activity (Reeves and Henry, 2000).

Obesity, especially abdominal obesity, was central to the metabolic syndrome and was strongly related to polycystic ovary syndrome (PCOS) in women. Obese women were particularly susceptible to diabetes. And diabetes, in turn, puts women at dramatically increased risk of cardiovascular disease. Overweight and obesity in developing countries, had been neglected as most attention was concentrated on famine and under nutrition or malnutrition of children (Riley, 2001); (Phillip and James, 2005); (WHO, 2008).

The body mass index (BMI) could be a useful measure of the degree of under-nutrition or over-nutrition. More details about each of the underlined topics could be found in this guide on the pages shown in parentheses. Additional information not provided by the Church could be obtained online by clicking on the underlined. Globally, nearly 1 billion people are classified as overweight, 300 million of them being clinically obese (WHO, 2004). Nearly one third of the adult American population was obese, while in South Africa, more than one in two adult women were overweight (World Health Organization, 2008). In Morocco, 40% of the population was overweight. The Kenya Demographic and Health surveys (KDHS) of 2003 and 2009 show that the national prevalence rate of overweight and obesity for women 15-49 years old) was 23%. The proportions of overweight and obese women were higher in urban areas than in the rural areas, with Nairobi having the highest prevalence (41% and 39%) as it was shown in a research done by (Kenya National Bureau of Statistics, 2010) and (Central Bureau of Statistics, 2004) respectively.

2.2. A Balanced Diet

Nutrition is the intake of food, considered in relation to the body's dietary needs. Good nutrition is an adequate, well balanced diet combined with regular physical activity and cornerstones of good health. Poor nutrition can lead to reduced immunity, increased susceptibility to disease, impaired physical and mental development, and reduced productivity (Khokhar *et al* 2008).

Do not eat meat more than once a day. Eat fish and poultry more often than red or processed meats because they were less fattening. Avoid frying food. Fried food absorbs the fats from the cooking oils, increasing your dietary fat intake. Instead, bake or broil food. If you do fry, use

polyunsaturated oils, such as corn oil. Cut down on your salt intake. Limit table salt, or flavor intensifiers that contain salt, such as monosodium glutamate (MSG).Included adequate fiber in your diet (Born and Kauri, 2003). Fiber was found in green leafy vegetables, fruit, beans, bran flakes, nuts, root vegetables, and whole-grain foods. Do not eat more than 4 eggs per week. Although they were a good source of protein, and they were low in saturated fat, eggs were very high in cholesterol. Choose fresh fruit for dessert, rather than cookies, cake, or pudding. Eat a well-balanced diet. Too much of anything calories or a particular type of food had its drawbacks. Follow the recommendations of the food guide plate (Quash, 2005).

Nutrients meant to produce the energy sources to whole the body during do any daily activity. Nutrition plays a vital role in the health of athletes. Lack of nutritional knowledge can lead to poor eating habit which could then affect the athlete's performance. According to we (blow, Fox and Hennema 1978), athletes who had the correct nutrition education and knowledge may make better food choices. According to (Gibney *et al*. 2009), nutrients were expending through the food that we eat and through metabolic process in the digestive system and absorbed at a cellular level in the body (Gibney *et al.* 2009).According to Yahiya et *al*. (2008). Students were left with very little ways to meet the dietary habits and nutritional knowledge was very important for human to get the healthy lifestyle. Firstly, this study could help those athletes especially among students become aware meaning of dietary habits which they could apply in daily life. Dietary habits consist of balance food intake in daily meal which avoid from taking fast food and junk food (Khokhar, *et al* 2008).

Improve nutritional knowledge were important for many aspects such as help intake balancing food such as food that contain of carbohydrates, proteins, vitamins and mineral. Since Physical and Health Education (PHE) students could be consider as athletes, therefore study in dietary habits and nutritional knowledge was important among Physical and Health Education (PHE) students. According to (Gibney *et al*, 2009), nutrients were expending through the food that we eat and through metabolic process in the digestive system and absorbed at a cellular level in the body According to (Yahiya, *et al,* 2008), students were left with very little ways to meet. Need links throughout the PDF version of this document.

Carbohydrates

Carbohydrates, which are composed of carbon, hydrogen, and oxygen, are the major supplier of energy to the body, providing 4 kilocalories per gram. In most carbohydrates, the elements hydrogen and oxygen are present in the same 2:1 ratio as in water, thus “carbon” (for carbon) and “hydrate” (for water). A crab was the most efficient sources of energy or fuel for recovery of the muscle Fuel called “glycogen.” Daily intake should match training requirements and recovery needs. Some crabs have a high or moderate glycolic index like sugars, Fruit juices, most breads and potatoes. They were converted to glucose and glycogen easily and provide quick recovery but short-lived. Low glycolic carbohydrates like some oat bran and whole wheat breads or pasta and some legumes can give a Slower rise in blood glucose and hence a smaller insulin rise. It is helpful to those trying to manage weight but was not as effective in muscle glycogen recovery (Jonnalagadda, Benardot, and Nelson., 1998.)

Proteins

Proteins, like carbohydrates and fats, contain carbon, hydrogen, and oxygen, but they also contain nitrogen, a component of the amino chemical group (NH_2), and in some cases sculpture. Proteins serve as the basic structural material of the body as well as being biochemical catalysts and regulators of genes.

Aside from water, protein constitutes the major part of muscles, bones, internal organs, and the skin, nails, and hair. Protein is also an important part of cell membranes and blood. Proteins are of great nutritional value and are directly involved in the chemical processes essential for life. The importance of proteins was recognized by the chemists in the early 19th century who coined the name for these substances from the Greek *proteins*, meaning “holding first place.” Proteins are species-specific; that is, the proteins of one species differ from those of another species,(Jonnalagadda, Benardot, and Nelson., 1998.)

They are also organ-specific; for instance, within a single organism, muscle proteins differ from those of the brain and liver. Proteins are made up of amino acids and are important for new muscle, hormone and enzyme manufacture as well as existing tissue healing and maintenance.

Most gymnasts had a diet filled with protein-rich foods and do not require supplementation had Excessive protein intake has not been shown to be helpful to training or performance and can be harmful to those with decreased kidney function. It had been shown that a pre-or post-exercise "recovery snack" rich in protein and carbohydrate can enhance protein recovery. The only gymnasts who may difficulty with protein intake, balance and retention were those who severely restrict energy intake or had diets lacking variety (Hovhannisyan, 2007).

Fats

Any substance of plant or animal origin that is nonvolatile, insoluble in water, and oily or greasy to the touch. Fats are usually solid at ordinary temperatures, such as 25 °C (77 °F), but they begin to liquefy at somewhat higher temperatures. Chemically, fats are identical to animal and vegetable oils, consisting primarily of glycerin which are esters formed by the reaction of three molecules of fatty acids with one molecule of glycerol, (Jonnalagadda, Benardot, and Nelson., 1998.)

Need to be a part of a healthy diet just like crabs and protein, but the gymnast needs to educate themselves about the different types of fats found in foods and their own daily dietary target. Saturated fats in foods like cheese, ice cream, whole milk, butter and chocolate can raise cholesterol and should be limited to no more than 7% of your total calories. Tran's fats were liquid fats that were hydrogenated to make a solid fat and could act like saturated fats raising cholesterol. These were present on processed snack foods and baked goods, stick margarine and some fast foods (.Duncan *et al,* 2008), Mono and Polyunsaturated fats were a healthier ways to fill your dietary need for fats. A diet high in fat was especially difficult for the gymnast because each gram of fat (9 KCAL/ gram) provides over twice as many calories as the same amount of carbohydrate or protein (4 KCAL/ gram)(.Duncan *et al,* 2008),

2.3. Nutritional knowledge

Nutritional knowledge impacts attitude and eating habits among the society (Rose bloom, *et al* 2002). The nutritional knowledge could get from many sources like magazines, internet, and others sources. Nutrition education, in any shape or form, would help to provide athletes base for

knowledge. When provided with this knowledge base, athletes then are able to make their own nutrition choices. (Abode, *et al* 2008) State that athletes increase in knowledge when provided with any type of nutrition education. Increase in knowledge, intentions, and self-efficacy if maintain would impact on healthy choices for food. According to (Lafarge, *et al* 1994), people could reasonably estimate specific foods they eat each day, such as the number of fruits and vegetables but not the level of hidden nutrients such as fat or fiber in their diets. People underestimate their dietary fat intake and overestimate their dietary fiber intake (Sharma *et al,* 2012) states that, if the students had previous course in nutrition, they would perform well in nutritional knowledge test rather than whose did not have any nutritional knowledge course. According to (Sharma *et al* ,2012), also said that knowledge of nutrition would encouragement the attitude of nutritional intake in daily life and then could reduce the problem of health and diseases especially among students (Demory-Luce, *et al*, 2004).

CDC conducts an annual survey known as The National Health and Nutrition Examination Survey (NHANES). NHANES was designed to assess the health and nutritional status of adults and children in the United States (Parr, Porter, and. Hodgson., 1984).The survey was unique in that it combines interviews and physical examinations. According to the NHANES 2011-2012 survey, the proportion of the obese US adults was 35.1% and those considered to be extremely obese was 6.4%. It was also found that an estimated 33.9% of adults would considered being overweight. Furthermore, the data from the NHANES 2011-2012 survey indicated that an estimated 16.9% of children and adolescents age 2-19 were obese, and another 14.9% were overweight which must be lost over long time (Perri 2014). Overweight and obesity was determined by dividing weight in kilograms by height in meters squared (kg/m2). The term over Weight is defined as any adult with a Body Mass Index (BMI) greater than or equal to 25 kg/m2 to 29 kg/m2 and obesity is defined as having a BMI of 30 kg/m2 and above (Amanda, 2010).

(Amanda, 2010).Points out, that to improve the performance in any tournament, the nutrition knowledge among athlete s were related to the healthy food choice which very important for their energy. The nutritional Knowledge builds the athletes awareness for the aspect of nutrient intake and then influence for produce energy and nutrient metabolism which depend on eating habits. According to the another model that influence the increase in knowledge affects attitude

and therefore changes the dietary habits which related to the knowledge-attitude-practice model that based on cognitive-affective-behavior theory in the area social psychology (Johansen *et al*, 2006).

2.4. Weight Management

Weight management means keeping your body weight at a healthy level. Information Regular exercise and a healthy diet were crucial when it comes to controlling your weight. A weight management plan depends on whether you were overweight or underweight. An easy way to determine your own desirable body weight was to use the following formula: Women: 100 pounds for the first 5 feet of height plus 5 pounds for each additional inch. Men: 106 pounds of body weight for the first 5 feet of height plus 6 pounds for each additional inch. For a small body frame, 10% should be subtracted. For a large frame, 10% should be added. Body fat and body mass measurements are used to determine whether a person is under-or overweight. A registered die titian or exercise physiologist could help you calculate your body fat. The recommended amount of body fat differs for men and women. (James *et al*, 2001).

The dietary habits and nutritional knowledge were very important for human to get the healthy lifestyle. Firstly, this study could help those athletes especially among students become aware meaning of dietary habits which they could apply in daily life.

Dietary habits consist of balance food intake in daily meal which avoid from taking fast food and junk food. Improve nutritional knowledge were important for many aspects such as help intake balancing food such as food that contain of carbohydrates, proteins, vitamins and mineral. Since Physical and Health Education (PHE) students could be consider as athletes, therefore study in dietary habits and nutritional knowledge was important among Physical and Health Education (PHE) students. Approximately 17 -19% body fat. A man with 25% body fat or higher is considered obese.(James *et al*, 2001).

Women who were overweight or obese were at a higher risk of developing these conditions compared to those who are not. And the morbidity and mortality of obesity-related conditions have resulted in an increase in the associated health-care cost of these conditions. For example,

in the United States, the estimated cost associated with obesity exceeds 117 billion annually. Thus, it was important to consider intervention opportunities to lower the health risk associated with obesity, which in turn may reduce the health-care costs associated with these conditions. One of the lifestyle-intervention opportunities that had been shown to be effective was physical activity due to its importance in body-weight regulation and its independent effect on related health outcomes. There had been numerous studies that had reported on the importance of physical activity for weight control (Quash, 2005).

2.5. Body Mass Index

BMI was an indirect measurement of your body composition. It takes into consideration both your weight and height. BMI helps determine your risk for certain diseases, including diabetes and hypertension. It was important to note that the terms “overweight” and “obesity “do not mean the same thing Weight management for people who had been overweight involves continued physical activity and monitoring the amount of food eaten..(Nojomi and Najamabadi, 2006).

2.6. Underweight

Anorexia nervosa and bulimia were eating disorders associated with a negative body image. Anorexia nervosa was a disorder in which people extremely limit their food intake. This results in dangerously quick weight loss, to the point of starvation. This disorder was most commonly found in adolescent females, but may also occur in males, children, and adults.

Bulimia was binge eating followed by self-induced vomiting. It's often associated with anorexia nervosa. Many people with bulimia don't lose a lot of weight, and may not get medical attention until they seek help. Excessive intentional weight loss can cause a person to be dangerously underweight. To maintain their weight, people with eating disorders must eat enough food to prevent them from losing the weight they have gained (Greiner, Holmes, Hollenbeck, and Sucker, 2005).

Moreover, there was a need for improved interventions to promote the adoption and long-term maintenance of physical activity, which could lead to improved weight control, abdominal adiposity, and chronic disease risk factors. Future research will be needed to understand the physiological/metabolic pathways and mechanisms that explain the influence of physical activity on long-term regulation of body weight. Numerous factors lead to overweight and obesity. Key among them was urbanization which brings with it a reduction in daily energy expenditure through reduction of physical activity and a shift to a higher caloric content diet. (Wengreen, Moncur, and Austin, 2006.)

According to Kenyan medical experts, Kenyans today were eating a fatter oilier diet than ever before, even as they rely more on personal and public vehicles to move even the shortest of distance. The current obesity disease reflects the profound changes that have taken place in the society over the last 20 - 30 years that had created an environment that promotes a sedentary lifestyle and the consumption of a high fat, energy dense diet (WHO, 2004), .Worldwide, more than 60% of adults do not involve in sufficient levels of physical activity which is beneficial to their health. Lack of physical activity in leisure time that leads to people spending increasing amount of time on sedentary behaviors. Such as watching television, using computers, and excessive use of “passive” modes of transport (Cars, Bus and Motorcycles) had also contributed (Albeit partly) to problem of overweight and obesity (WHO, 2004). Physical inactivity is more widespread among women, older adults, individuals from low socio-economic groups (especially in developed countries), and the disabled (WHO, 2004).

2.7. Calories for Weight Maintenance

To maintain your weight, you can use the following formula: 10 calories per pound of desirable body weight if you were sedentary or very obese 13 calories per pound of desirable body weight if your activity level is low, or if you are over age 5- 15 calories per pound of desirable body weight if you regularly do moderate activity 18 calories per pound of desirable bodyweight if you regularly do strenuous activity (Reeves and Henry, 2000).

ACTIVITY LEVELS

Low activity: No planned, regular physical activity; occasional weekend or weekly activity (such as golf or recreational tennis) was the only type of physical activity. Moderate activity: Participating in physical activities such as swimming, jogging, or fast walking for 30 -60 minutes at a time Strenuous activity: Participating in vigorous physical activity for 60 minutes or more at least 4 -5 days per week To successfully manage your weight, follow these basic guidelines: Eat a healthy, well-balanced diet. Balance physical activity with diet to maintain your desired weight. Kocher, *et al* (2008).Aerobic exercise would help increase muscle tissue and burn calories. Gradually adjust your eating habits to encourage a permanent lifestyle change. You may need counseling and behavior modification to change your diet. Avoid alcohol, or drink in moderation.

2.8. Prevalence of Overweight and Obesity

Based on measured data from 2007-2009,in Canada 62.1% of adults had overweight or obesity (a body mass index (BMI) equal to or above 25 kg/m2), and over 25% of adults had obesity (a BMI equal to or above 30 kg/m2).8,9 The prevalence of overweight and obesity was under estimated when based on self- reported data (51.1%).8 Obesity prevalence is 17.4%, with great variance across health regions (ranging from 5.3% to 35.9%) and provinces (12.5% in British Columbia to25.4% in New found land and Labrador). In Alberta, the prevalence of self-reported obesity has increased from 20.5% in 2003 to 23.9% in 2007/08. In 2004, 60.9% of adults in Alberta were overweight or obese. (Brien and Davies, 2007).

The prevalence of obesity was higher in the Aboriginal population. Based on self-reported 2002/03 data, the prevalence was similar for off-reserve First Nations (26.1%), Inuit (23.9%) and Métis (26.4%) but higher for on-reserve First Nations adults (36.0%). The prevalence of measured obesity had doubled across all age groups between the 1981 and 2007/09 surveys Brien and Davies, (2007).

2.9. Risks of Overweight and Obesity

Obesity was associated with: shorter life expectancy. Longevity is decreased by 2 to 4 years in individuals with BMI 30to35kg/m2, and by 8 to 10 years with BMI 40 to 45 kg/m2,

Some of the problem was mentioned below:

- ✓ Increased risk for chronic disease, including coronary artery disease, hypertension, stroke, cancer, type 2 diabetes mellitus, gall bladder disease and osteoarthritis.
- ✓ Increased risk for respiratory problems including asthma, obstructive sleep apnea, obesity hypoventilation syndrome and difficulty with intubation and/or anesthesia.
- ✓ Endocrine abnormalities including insulin resistance, polycystic ovarian syndrome, menorrhagia and impaired fertility.
- ✓ Liver abnormalities including nonalcoholic fatty liver disease (NAFLD).
- ✓ Kidney failure and urinary incontinence.
- ✓ Acid reflux and/or gastro esophageal reflux disease (GERD).
- ✓ Neurological changes including benign intracranial hypertension, pseudo tumor cerebra and neuralgia parenthetical.
- ✓ Joint pain.
- ✓ Mobility problems and difficulties with activities of daily living (ADL).
- ✓ Skin abnormalities including interring, cellulites, lymph edema, ulcers and infections.

3. METHODS AND MATERIALS

3.1. Description of the Study Area

The study would be conducted at Dire-Dawa city selected fitness center. Dire-Dawa is a city in eastern region, Ethiopia. Dire-Dawa was founded in 1902 when the railroad from Djibouti reached the area, and its growth has resulted largely from trade brought by the railroad. Geographically, Dire-Dawa is located about 515 kilo meters from the capital city of the Ethiopia Addis Ababa in the Eastern part of the county and about 47 kilo meter from the Harar city.

Based on the 2007 census conducted by the Central Statistical Agency of Ethiopia (CSA) Dire-Dawa had a population of 341,834of whom 171,461 are men and 170,461women and 233,224 or 68.23% of the population are urban. The mean annual temperature of Dire-Dawa is about 25.4^{0}C. The average maximum temperature of Dire-Dawa is 31.4^{0}C, while its average minimum temperature is about 18.2^{0}C. Specifically Dire-Dawa is found in eastern Ethiopia at (9^{0}36'N latitude and 41^{0}52' longitude) (https;//en.wikipedia.org). The map of the study site is mentioned on page 36.

3.2. Research Design

A descriptive survey research design was used for this study concerning with identifying and counting the frequency of a particular response among the survey group. The survey involved selecting a representative and unbiased sample of subjects drawn from the target group which the investigator wants to study. The methods of data collecting were face-to-face interviews, and using questionnaires. And this research design was supported by qualitative and quantitative approaches.

3.3. Study Population

The study population would be Dire-Dawa fitness center participants (n=192). That means all participants men, women and adult these are attending fitness center during the exercise period.

3.4. Sample and Sampling Technique

From purposively selected fitness center the respondents were selected by convenient sampling technique. The following sampling procedure would be used to collect data from the respondents. The first stage would involve purposive selection of three fitness, MT power (n=42),Smart (n=45) and Triangle (n=43)fitness centers from Dire-Dawa city administration. The next stage of this sampling would be selection of 4 respondents per fitness center and 2 people from per fitness center office. Therefore, a total of 18 respondents would be selected purposively for the interview.

3.5. Sample Size Determination

The sample size is calculated using the following formula. $n = \frac{N}{1+N(e)^2}$, n=192/1+192(0.05)2 = 130. Where: n = is the sample size for the research use N = is the population size (total number of respondents in the selected fitness center) e = is the level of accuracy. Out of the total population 192, at the level of correctness (e) = 0.05. So, that sample size (n) of this study will be 130. Therefore, the sample size at 95% of confidence level will be 130. Then, the proportional representation would be given to each fitness center with respect to number of practitioners in each fitness center.(Yamane, 1997).

Table 1.Sample Size Determination

Fitness center	Sample size	Sample technique	Practitioners
Triangle	42	Random sample	60
Samrat	45	Random sample	69
M T Power	43	Random sample	63
Total	130	Random sample	192

3.6. Source of Data

Identifying the source of data is very important to step forward for research work. Accessing these sources of data is also depended on data colleting method and data collecting instruments (Osborne and Costello, 2004)

The researcher the primary sources of data for they were original materials those have not been altered or distorted in any way. A person with direct knowledge, recordings, and other sources of information that created under study considered as primary sources of data (Osborne and Costello, 2004).Therefore, primary sources of information for this study practitioner's survey, interview from the resource person.

3.7. Data Collection Methods and Instruments

The investigator collected data through instruments like interview and questionnaire. It is impossible to collect necessary information or raw data during research work without data collection instruments (Osborne and Costello,2004).In research, there are different data collection instruments for collecting data. Therefore; the researcher would use two different data

collection instruments in relation to the effect of eating habit and nutritional knowledge on weight managements in the case of Dire-Dawa fitness center practitioners. These important instruments would be questionnaires and interview.

3.7.1. Questionnaires

In this study the researcher for questionnaires where ever it would be necessary. According to (Parmjit, Puzziawati, and Hoon, 2009).Close ended questions would be also used for they are quicker to code up and analyze than word based data. Questionnaire would be the major data gathering tool for this investigation for it would help the researcher to gather data from relatively large number of research participants. It would be also very helpful because it was fairly, easy and manageable (Parmjit, Puzziawati, and Hoon,2009).The investigator would adapt questionnaires from respondent. Then the questioners would be piloted and the reliability was going to be checked.

3.7.2. Interview

An interview was a conversation between the investigator and study subject on a subject of interest. The questions were asked by the investigator or interviewer to elicit statements from the interviewees. These qualitative research tools were used to understand the experiences of the others (Parmjit, Puzziawati, and Hoon, 2009).By the time of interviewing, the investigator were semi-structured and open-ended questionnaires as the main instrument to collect data based on community characteristics, economic characteristics, of the eating habits and weight management. Additionally, 18 purposively selected people would be also interviewed .The investigator was collect data during December 2017 to February 2017. The researcher would assist by coaches and one active participant during his data collection.

3.8. Procedure of Data Collection

Regarding the procedure of data collection, the investigator would assign two data collectors. Hence, the two active data collectors would be trained on how to collect data through questionnaires. Face to face interview with weight management and nutritional knowledge would

be conducted in the health promoting and care center of physical fitness. Finally, the questionnaires would be collected by active participant' data collectors. However, interview would carry out by the investigator.

3.9. Inclusion and Exclusion Criteria

All fitness center participants with the age 25-55 would be included as the study population. After completing their health history and fitness status questionnaire that would help the researcher to obtain information on Weight management care of the subjects participating for the research study. Subjects with any known cardiovascular disease, smokers, taking regular medication or psychiatric disorder and also any recent physical injury were excluded from the study.

3.10. Pilot Study

Before the actual study was carried out, a pilot study was conducted with who were not part of the sample group. The purpose of the pilot study was to assess the relevance of the questionnaires designed to collect data for the study. The objective was also to check the clarity of the questionnaire items. On the bases of the feedback of the pilot study and expert's comments some modification was made on the questionnaire.

3.11. Method of Data Analysis

In order to analyze the collected data, the investigator would follow the following steps: Firstly, data would be collected and organized based on the objectives and would be coded according to the described topics. Next to this, various techniques would be used for the analyses and presentation of data. These would include both quantitative and qualitative techniques. In quantitative technique, the analyses would be characterized by the use one sample T-test by means of statistical package for social science (SPSS version20), and qualitative data from open ended questionnaires and interviews would be analyzed in narration form. Next, the result would be elaborated with more description. Then, the data collected from practitioner's survey with

respect to the objectives of the study. Finally the major findings of the study would report and realistic and feasible recommendations would forward.

3.12. Data Quality Control

First the investigator would inform physical fitness center Instructor about the study, give training data collectors and the questioner would be piloted. To assure the quality of the study uses pre-test study to check the questioner of the research. Furthermore the data collected from the respondent would make sure the completeness of the data.

4. RESULT AND DISCUSSION

Result and discussion contains all the findings that the investigator comes across during his data collection on weight management and nutritional knowledge assessment in the case of Dire Dawa fitness center. The investigator arranged his findings according to their sort in order to make better understanding to the readers.

This research study included the review of data collected from 2002 - 2010 from the purposively selected fitness center, Dire- Dawa. 130 participants were used in this study aging from 25 - 55 years old. Of the total subjects 30 were female and 100 were male. Height and weight were measured for each subject and BMI was calculated and recorded. (Individual fitness center participants).

4.1. The Centre of Practitioners

There were some fitness centers in Dire Dawa. These fitness centers were known by different names based on the type of Gymnasium services or physical fitness center people to doing the different activities and they gave. For instance, selected fitness center, wushu club, the world taekwondo, M.T Power, Samrat gymnasium center, Triangle gymnasium center and etc. The Place of survey provided some information about access to sports facilities in the fitness centers. The data showed that the majority of respondents had used such facilities with more respondents using the fitness centers for they have basic materials like running machine, bike riding, rope skipping, different type's weight lifting and dumbbell. (Individual fitness center participants).

The investigator did his research investigation with the three (3) purposively selected fitness centers. These fitness centers were M.T power; Samrat gymnasium center and the Triangle fitness center for this fitness center were well known and had many practitioners.

4.2. The Practitioner in Each Fitness Centers

Table 2.The Practitioner in each fitness centers

MT Power	Samrat	Triangle	Total	percentage
43	45	42	130	100%

As bit was indicated in table 1 the sample size fitness centers were approached that contained 43, 45 and 42 practitioners for MT, Samrat and Triangle respectively. These practitioners were 130 including male, female, young, old, underweight, overweight, normal, tall, short, very educated or not for it was randomly selected.

4.2.1. The gender of the practitioners

Table 3.The Gender of the Practitioners

No	Sex	Fitness center				
		MT Power	Samrat	Triangle	Total	percentage
1	Male	34	36	30	100	76.9%
2	Female	9	9	12	30	23.1%

As it was indicated in table 3, the number of male practitioners was highly dominating in the fitness center, Dire Dawa. Unfortunately the most suffering of weight abnormality were female. One of the practitioner informed that he was a medical doctor and had evidence that more aged Dire Dawa female were suffering of obesity, and related disease. But very few of them were participating weight management systems like fitness center for they were misunderstanding as it was modernization and lack of motivation.

As the matter of fact, the investigator realized that the number of the practitioner in each fitness center was dominated by male. That was why the ratio of male practitioner to female practitioner was 10:3. Even some of these female practitioners were participating on and off for they did not

have enough time to participate every day. This was also the indicator of knowledge gap with in the practitioners. (Fitness center practitioners).

4.2.2 The age of the practitioners

Table 4.The age of the practitioners

Category	M.T Power	Samrat	Triangle	Total	Percentage
25-35	21	25	26	72	55.2%
36-45	12	11	13	36	27.7%
46-55	10	9	3	22	16.9%

According to the age based data collected from the purposely selected fitness centers about 55.4% of the practitioners were grouped under the age category of 25-35.While about 27.6% and 16.9% were categorized under the age of (36 - 45) and (46-55) respectively. The age of the greater number practitioners in the three fitness center were almost the same. These were (21, 25 and 26 practitioners in M.T Power, Samrat and Triangle with the age category of (25-35). This data can lead to the conclusion most of the Dire -Dawa fitness center participants were the age group of 25-35 years old.

4.2.3 The weight of the practitioners

Table 5.The weight of the practitioners

Category	M.T Power	Samrat	Triangle	Total	Percentage (%
50-60	5	4	3	12	9.2%
61-70	8	7	3	18	13.8%
71-80	22	26	25	73	56.2%
81-90	6	5	6	17	13.1%
91-100	2	3	5	10	7.7%

As it was shown in table 4 about 55.5% of the practitioners were clustered /or/ grouped in the scale of 71-80 kg which was 73 practitioners out of the total sample size of 130. Some of the practitioners said that however, they were not weight they wanted to keep their body weight at its normal and to create the better life style. Some of them had the perception that they need to keep their body weight a where it was while some of them informed that they wanted increase their body weight and the left of them wanted to decrease their body weight. This part also elaborated in table 6.

4.2.4 The height of the practitioners

Table 6. Height of the Practitioners

Category	M.T	Samrat	Triangle	Total	Percentage (%)
50-1.60	11	13	11	35	26.9
61-1.70	14	14	13	41	31.5
71-1.80	15	15	16	46	35.4
81-1.90	3	3	2	8	6.2

The data collected based on the height of the practitioners showed that the height of the practitioners was between 1.50m to 1.90 meters. Most of them were found with the average of 1.75m. Many of these people were at their normal stage when the investigator tested their body mass index.

Many of them were educated people that called simply understand the advantage of participating in fitness activities for creating better life and better health conditioners. The general data based on the height of the practitioners was that about 26.9% were found with the average height of 1.55m, about 31.5% were found with average height of 1.65m, about 35.38% were found with average height of 1.75m, and about 6.1% were found with the average height of 1.85 m. this meant 23.65 of the sample size were found with the average height of 1.75meters. Some of the practitioners clustered at this level were doing the fitness activities to decrease their body weight in some extent.(fitness center practitioners).

When we see as general most of the fitness center participants had high desire and plan to decrease their body weight. Especially the shorter practitioners were participating in order to decrease their weight through the fitness activities they were participating in this part was simply in directing that the height and weight of the participants had direct proportion to body mass

index which enable the investigator to judge that the practitioner was under weight, normal or over weight.(fitness center practitioners).

4.2.5. The body mass index of the participant

Table 7 showed that the investigator had been assessing the body mass index of the practitioners for it was the basic data to say somebody is under weight, normal or over weight based on the scale settled by the professionals and the researchers. The World Health Organization (WHO) has recognized obesity as a worldwide epidemic affecting more than 500 million adults and paradoxically coexisting with under nutrition in both developing and industrialized countries.

Table 7.The body mass index of the participants

Category	M.T Power	Samrat	Triangle	Total	Percentage
Under (below 18)	6	7	5	18	13.85
Normal(18.5-24.9)	13	15	12	40	30.77
Over (above 25)	24	23	25	72	55.38
Total	43	45	42	130	100%

There also have been reports of alarming increase obesity worldwide. Obesity (excess body fat for stature) contributes to adverse health consequences such as high blood pressure, blood lipid abnormalities, coronary heart disease, heart failure, ischemic stroke, type 2 diabetes, gall bladder disease, osteoarthritis, several common cancers (including colorectal, uterine, and postmenopausal breast cancers), and reduced life expectancy. Genes play a significant role in the regulation of body weight. Nevertheless, environmental factors such as calorie-rich diets and a sedentary lifestyle can be instrumental in determining how an individual's genetic heritage will unfold.

Dietary carbohydrates are not the problem in obesity. In some Asian cultures, for example, where carbohydrate foods such as rice are the predominant food, people are relatively thin and

heart disease and diabetes rates are lower than they are in Western cultures. What matters in weight control is the ratio of food energy (calories) consumed to energy expended, over time. (Jonnalagadda, Benardot, and Nelson., 1998).

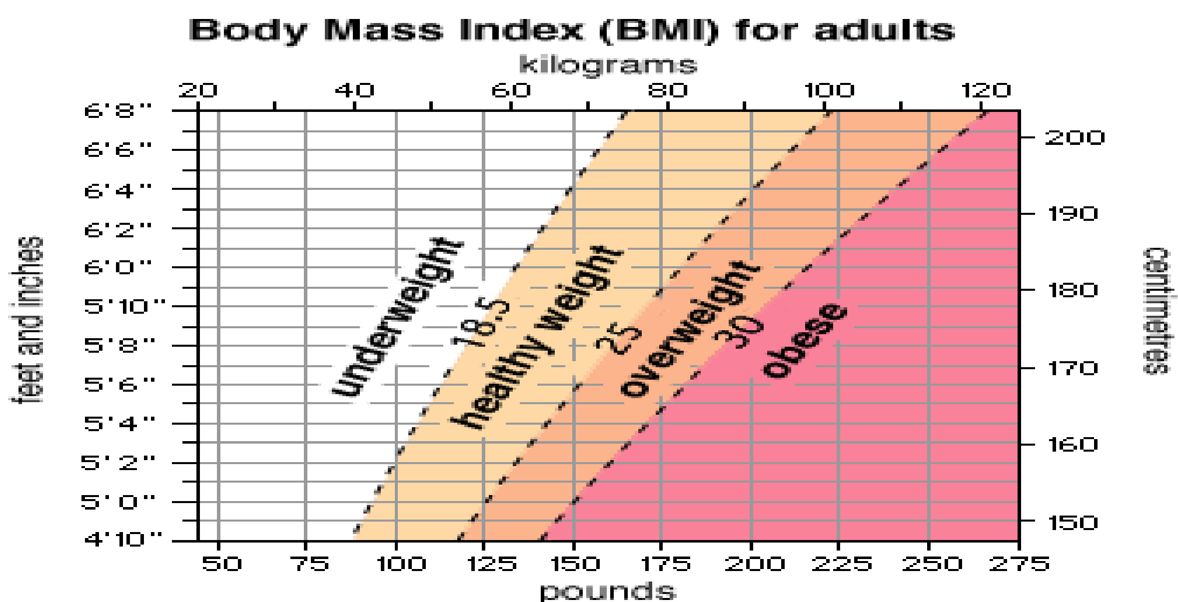


Figure 1. Body Mass Index (BMI) for adults

Height-weight tables as a reference for healthy weights have been supplanted by the parameter known as the body mass index (BMI). The BMI estimates total body fat, although it is less sensitive than using a skin fold caliper or other method to measure body fat indirectly. The BMI is defined as weight in kilograms divided by the square of the height in meters: weight ÷ height^2 = BMI. In 1997 the WHO recommended international adoption of the definition of a healthy BMI for adult women and men as between 18.5 and 24.9. A BMI lower than 18.5 is considered underweight, while A BMI of 25 to 29.9 denotes overweight and 30 or higher indicates obesity. Definitions of overweight and obesity are more difficult to quantify for children, whose BMI changes with age. WHO. (1997).

Based on this scientific truth (fact) the investigator also assessed that 13.85% of the practitioners were considered as underweight practitioners while 30.76% of the practitioners were found at their normal body weight. Unfortunately the greater numbers of the practitioners were overweight. The total numbers of these practitioners were 72. This covered the 55.38% of the total sample size of the practitioners.

All of them were participating in these activities in order to decrease their body weight. The investigating also found that there were some practitioners participating in the fitness center in order to decrease their weight while their body mass index indicated that they were at their normal stage because these practitioners had some expectation that if they stopped the activity their health would be at risk. (Fitness center practitioners).

4.2.6. The aim of the practitioners in each center

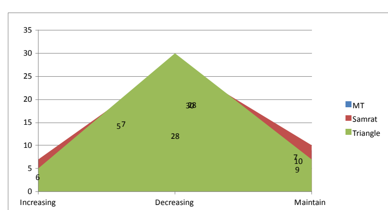
Table 8. Practitioners in each Fitness Centre Were Participating for Different Purposes

Category	M.T Power	Samrat	Triangle	Total	Percentage (%)
Increasing	6	7	5	18	13.85 %
Decreasing	28	28	30	86	66.15 %
Maintaining	9	10	7	26	20 %

As it was gathered from 130 practitioners, the data clearly showed that the practitioners in each fitness center were participating for different purposes they aimed for the fitness activities to adapt and change their fitness and body weight. The adaptation of the body or change in physical fitness is specific to the type of training undertaken. Quite simply, this means that if a fitness objective is to increase flexibility, then flexibility training must be used. If one desires to develop strength, resistance or strengthening exercises must be employed. Many deceptive claims for an exercise product or system promise overall physical fitness from one simple training technique. (Individual fitness center practitioners).

A person should be suspicious of such claims and should consider whether or not the exercise training recommended is the type that will produce the specific changes desired. Individuals frequently make the mistake of attempting too rapid a fitness change. A typical example is that of the middle-aged man or woman who has done no exercise for 20 years and suddenly begins a vigorous training program. The result of such activity is frequently an injury or, at the least, stiffness and soreness. There are no hard-and-fast rules on how rapidly one should progress to a higher level of activity. The individual's subjective impression of whether or not the body seems to be able to tolerate increased training serves as a good guide. However there was knowledge gap among the practitioners the investigator could identified the reasons for participating in the fitness center. These different purposes aimed for the fitness activities participation were increasing, decreasing or maintaining at where it was, strength and endurance of skeletal muscles and flexibility. The investigator assessed and identified the number of people categorized based on their aim of participating in each fitness center.

Figure 2. The Aim of Practitioner Participate In Each Fitness Centre



According to the data collected from the fitness center in Dire Dawa, about 13.85% of the sample size was participating in order to increase their body weight. They know what they have to do. Almost all of these practitioners were very young with the age of 25 to 35 and their height

was at average of 1.75 meters and their weight was at the average 57 kg. Most of this category was educated and social media users. They were not far from the modern technology. They were closer to information on how they could keep their health through fitness activities and nutritional knowledge or eating habit. (Fitness center practitioners).

In spite of the fact that some of them were doing the fitness activities in order to increase their body mass index via fitness activities, there were also some (20%) of the participants were participating to maintain their body mass index at where it was. These practitioners had stronger desire to continue the fitness activities life time.

On the other hand there are some people participating in the fitness center in order to decrease their body weight through the fitness activities. Most of these people were very overweight. The total numbers of the practitioners participating in order to decrease their body weight were 86 out of the total sample size of 130. This decreasing group covered about 66.15% of the total participants. Among those practitioners wanted to decrease up to 2kg per a week. (Participants questioner).

4.2.7. The amount of weight the practitioner wanted to lose.

Table 9.The weight loss amount of the practitioners

Category	M.T	Samrat	Triangle	Total	Percentage (%)
0.5kg	2	3	2	7	5.4
1kg	30	12	5	47	36.2
1.5kg	9	11	4	24	18.5
2kg	1	3	4	8	6.2

Table 9 represented the weight loss amount of practitioners only. The numbers of these practitioners were 86. This means it covered 66.15% of the total sample size. However, these group were the loss group their amount of weight loss was different. About 8.14% wanted to lose

0.5kg per week, about 54.6% wanted to lose about 1kg per week, about 27.9% wanted to decrease about 1.5kg per week, while about 9.3% wanted to decrease about 2kg per week in their scheduled session. The scheduled session is the duration of fitness center. They believed that they can maintain their goal through different activities in the fitness centers like running, Biking, indoor, aerobic and weight lifting some of the practitioners have more understanding was the knowledge of weight management by fitness activities and nutritional knowledge while the other were not.(practitioners questioner).

4.2.8. Expectation of the practitioners for weight managements

Table 10 Expectation of the practitioners

	MT	Samrat	Triangle	Total	Percentage (%)
Yes	10	15	16	41	31.5
No	33	30	26	89	68.5
Total	43	45	42	130	100

Based on the data gathered on how the practitioners express the feasibility of the expectation, about 31.5 % of them expressed that they were hitting their goal. Unfortunately, the more percent covering 69.5 % were participating in the fitness centers without achieving their goal. Specially, it was showed in table 9 that there were 86 participants doing for weight loss. As it was expressed about 8.14% wanted to lose 0.5kg per week, about 54.6% wanted to lose about 1kg per week, about 27.9% wanted to decrease about 1.5kg per week, while about 9.3% wanted to decrease about 2 kg per week in their scheduled session. Unfortunately, most of these participants responded “No” for the question ‘are you hitting your goal?’ The investigator endeavored to reveal the basic reasons why these people were not successful in achieving their goals.(fitness center practitioners).

4.3. Need of Improved Eating Habit and Nutritional Knowledge

Table 11.Need of eating habit and nutritional knowledge on weight management

Category	MT Power	Triangle	Samrat	Total	Per (%)
To eat balanced diet	0	0	0	0	0
To create healthy life style	27	30	29	86	66.15
To control body weight	16	12	16	44	33.85
Total	43	42	45	130	100%

According to the result showed in the table 9, none of practitioners needs eating habit and nutritional knowledge on weight management for the sake of improving his / her appetite / to eat balanced diet in all the three fitness centers.

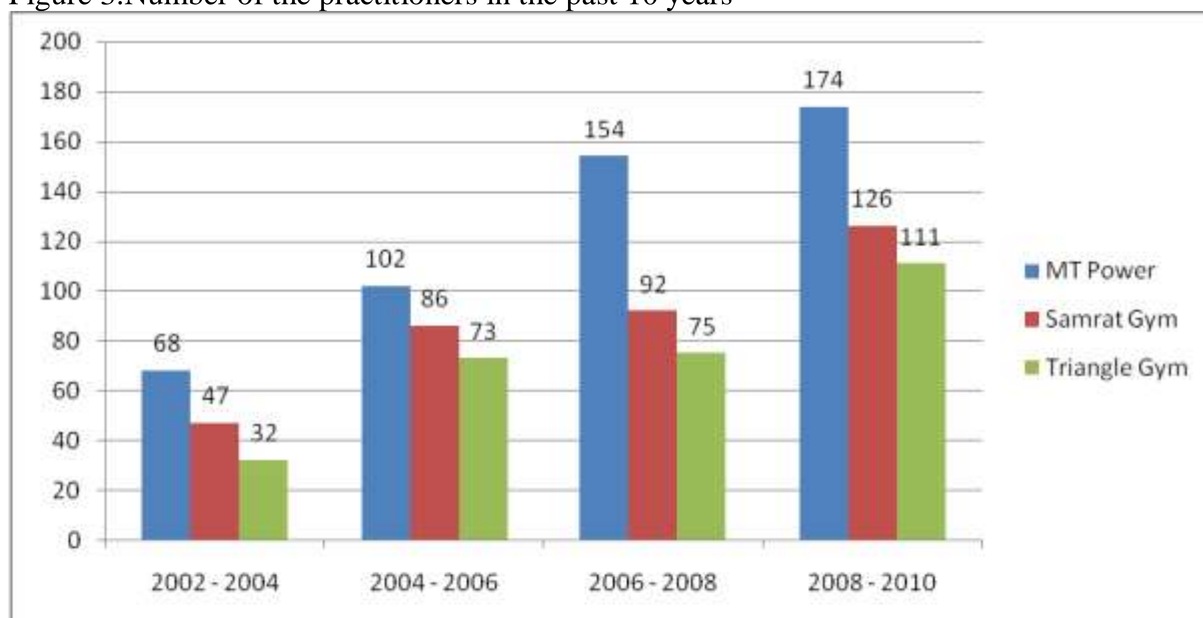
While, 27, 30 and 29 of the practitioners from MT, Triangle and Samrat, believed that eating habit and nutritional knowledge on weight management were very important to create healthy life style. This means about 66.15% of the participants believed that eating habit and nutritional knowledge on weight management were very important to create healthy life style. Most of these people were educated people that the investigator assessed some of them were even medical doctors, engineers, nutritionist and so on. On the other side, there were some practitioners participating to control their body weight. These groups were, 16, 12 and 16 at MT, Triangle and Samrat respectively. (All three fitness center practitioner questioners)

On the other hand about 44 practitioners or 33.85% of them were participating in the fitness center in order to control their body weight. Controlling body weight includes increasing, decreasing and maintaining 7.7, 18.5, and 7.65% were participating to increase, decrease and maintain as it was, respectively. What we could conclude from this discussions that most of the participants were participating in fitness center to create healthy life style while the left were participating for body weight controlling purposively.

Because people without body weight controlling are suffering from different diseases like diabetes, blood pressure. The investigator approved that many practitioners had fear of health disorders unless they participate in fitness activities although they did not consider their eating habit and nutritional knowledge.

In relation to this some doctors from the practitioners said that it was more recommended to improve our eating habit and nutritional knowledge, even though we participate in physical activity. (Individual fitness center practitioner response).

Figure 3.Number of the practitioners in the past 10 years



Graph 1 showed that the number of practitioners was increasing from 2002 – 2010. This meant that the awareness of people on weight management through sport activities like participating in fitness centers was also increasing year after year.

4.3.1. Eating habits of the practitioners

Table 12a.The Eating Habits of the Practitioners

Category	MT Power	Samrat	Triangle	Total	Percentage
Fat	30	21	12	63	48.5
Protein	5	5	6	16	12.3
Carbohydrate	7	18	15	40	30.8
Balanced Diet	1	1	9	11	8.4
Total	43	45	42	130	100

The collected data from the selected fitness centers showed that 66.15 % of the respondents were trying to lose their weight. The investigator asked questions about attitudes / knowledge/ towards weight, weight loss, eating habits and emotional motivations for eating.

Overweight individuals were significantly not taking their weight into account with what they eat often. The questionnaire about the' attitude of the practitioners on eating habits' asked by the investigator revealed that there was knowledge gap with the practitioners on eating habit and nutritional knowledge. Thus, about 48.5% of them were fat eaters.

Unfortunately, the animal fats used by humans are butter, suet (beef fat), lard (pork fat), and fish oils. Important vegetable oils include olive oil, peanut (groundnut) oil, coconut oil, cottonseed oil, sunflower seed oil, soybean oil, safflower oil, rape oil, sesame (gingerly) oil, mustard oil, red palm oil, and corn oil. Fats and oils provide more calories per gram than any other food. This is about fat, 9 kilocalories (38 kilojoules) per gram. But, a small group of fatty acids is essential in the diet. They occur in body structures, especially the different membranes inside and around cells, and cannot be synthesized in the body from other fats (USDA, 2005).

Accordingly, as it was shown in the table 10a that the nutritional knowledge of the practitioner was weak that about 48.5 of them were eating fat /Shang/ Kurt/ mostly and 12.3%, were eating protein while Proteins are of great nutritional value and are directly involved in the chemical processes essential for life. The human body can be thought of as an engine that releases the energy present in the foods that it digests. This energy is utilized partly for the mechanical work

performed by the muscles and in the secretary processes and partly for the work necessary to maintain the body's structure and functions.

The performance of work is associated with the production of heat; heat loss is controlled so as to keep body temperature within a narrow range. Unlike other engines, however, the human body is continually breaking down (catabolizing) and building up (anabolizing) its component parts. Foods supply nutrients essential to the manufacture of the new material and provide energy needed for the chemical reactions involved.

Protein, carbohydrate and fat are, interchangeable as sources of energy. Typically, the energy provided by food is measured in kilocalories, or calories. Protein, 4 kilocalories (17 kilojoules) per gram.

Protein consumed in excess of the body's needs is degraded; the nitrogen is excreted as urea, and the remaining ketone acids are used for energy, providing 4 kilocalories per gram, or are converted to carbohydrate or fat. During conditions of fasting, starvation, or insufficient dietary intake of protein, lean tissue is broken down to supply amino acids for vital body functions.

In the same way, 30.8% of the practitioners were carbohydrate enriched food eaters. And according to USDA,2005 Carbohydrates, which are composed of carbon, hydrogen, and oxygen, are the major supplier of energy to the body, providing 4 kilocalories per gram. In most carbohydrates, the elements hydrogen and oxygen are present in the same 2:1 ratio as in water, thus “carbon” (for carbon) and “hydrate” (for water).

Carbohydrate, 4 kilocalories (17 kilojoules) per gram; protein, 4 kilocalories (17 kilojoules) per gram. Vitamins, minerals, water, and other food constituents have no energy value, although many of them participate in energy-releasing processes in the body.

The fat /Shang/ eater practitioner said that they did not achieve the change they expect from the fitness center. As the matter of fact, excessive accumulation of body fat /overweight/, usually caused by the consumption of more calories than the body can use thus, and. Beverage alcohol (ethyl alcohol) also yields energy 7 kilocalories (29 kilojoules) per gram although it is not

essential in the diet. The excess calories are then stored as fat, or adipose tissue. Overweight, if moderate, is not necessarily obesity, particularly in muscular or large-boned individuals.USDA, (2005).

Table 12b. The eating habits of the practitioners

Category	MT	Samrat	Triangle	Total	Percentage
Delicious (Baqlawa)	29	30	20	79	60.8
Vegetables and fruits	9	11	20	40	30.8
Supplementary	5	4	2	11	8.4
Total	43	45	42	130	100

The investigator assessed their perceptions on sugar enriched eating habits and revealed the data expressed in table 12b. According to the gathered data in the table, the participants have less understanding on nutritional knowledge. Thus, about 60.8% of the practitioners were eating delicious meal without considering about their weight. The worst thing is that this meal is sugar enriched. (From fitness center practitioner's response).

Unfortunately, unhealthy eating habit has unhealthy ramification. As the matter of fact, a healthful eating plan for gradual weight loss in adults will likely contain about 1,200 to 1,500 kilocalories (kcal) per day, probably accompanied by a balanced vitamin and mineral supplement. A desirable weight loss is about one pound per week from fat stores (as opposed to lean tissue), which requires an energy deficit of 3,500 kcal, or about 5000 kcal per day. Consuming less than 1,000 kcal per day is not recommended; a preferred approach would be to increase physical activity, which has the added benefit of helping to maintain lean tissue. Individuals who are severely obese and unable to lose weight may, after medical consultation, consider weight-loss medications that suppress appetite or decrease nutrient absorption or even

surgery to reduce the volume of the stomach or bypass it altogether.(Dietary guidelines for Americans, 2005).

Carbohydrate restricted diets, very-low-fat diets, and novelty diets those in which one food or food group is emphasized may result in weight loss but generally fail to establish the good dietary and exercise practices necessary to maintain the desired weight, and weight is often regained shortly after the diet is stopped. USDA, (2005).

A successful approach to long,-term weight management requires establishing new patterns: eating healthfully, but eating less; engaging in regular physical activity; and changing behavior patterns that are counterproductive, such as eating while watching television. Limiting intake of fatty foods, which are more energy-rich, is also helpful, as is eating smaller portions and drinking water instead of calorie-containing drinks. Low-fat foods are not always low in total calories, as the fat may be replaced by sugars, which themselves provide calories. Individuals who use artificial or nonnutritive sweeteners do not necessarily reduce their total calorie intake.USDA, (2005).

When fat stores increase, lepton sends a signal to the hypothalamus (regulatory centers that stimulates one to eat less and expend more energy. Certain genetic mutations result in insufficient production of functional lepton or in a failure to respond to the lepton signal. Treatment with lepton may prove useful for the small percentage of obese persons who have a defect in the *ob* gene, although it is not yet known whether lepton therapy will induce weight loss in those who are lepton-resistant or who do not have mutations in the *ob.* gene (WHO, 2008).

But, about 60.76% of respondents were less likely than healthy weight respondents to say that they could resist eating delicious food like Dire Baqlawa, Halawa, Mushebak, Melewa, Dench salaxa, cake, and so on. Therefore, unhealthy eating habits made vulnerable to overweight. These data suggested that, compared with people of a healthy weight, the eating habits of overweight individuals are more influenced by emotional motivations.(practitioners individual response) About 30.77% were eating vegetables and fruits while, 8.46% of the practitioners were taking supplementary food. Comparing their weight, the underweight participants were more

emotionally motivated. This means they have more desire to buy / eat something delicious or visually attractive if they see / smell when others doing so walking around. This suggests that emotions tend to motivations for desire to eat more than sensory stimulus, regardless of an individual's BMI status.

4.3.2. Factors affecting the healthy diet of the practitioners

Table 13. Factors affecting the healthy diet of the practitioners

Category	MT	Samrat	Triangle	Total	Percentage
Lack of awareness	15	17	16	48	36.9
Lack of money	7	10	6	23	17.7
Eating culture	21	18	20	59	45.4
Total	43	45	42	130	100

According to the data collected based on the factors affecting the practitioners' healthy diet, it was proved that 45.4 % was the eating culture that affect the healthy diet of the participants. They expressed eating variety food / balanced diet was not well known. Therefore, they preferred eating what they could get. On the other hand, 36.9 % of the practitioners introduced that they had lack of awareness on eating balanced diet. While about 17.7% expressed that they had lack of money to eat balanced diet. (Practitioners individual response).

4.3.3. The dietitian system of the practitioners

Table 14. The dietitian system of the practitioners

Category	MT	Samrat	Triangle	Total	Percentage
Yes	11	13	17	41	31.5
No	32	32	25	89	68.5
Total	43	45	42	130	100

The investigator asked the practitioners whether they often eat balanced diet or not and got 68.5% “No” means they did not often eat balanced diet. While the left 31.5% of the practitioners knew more about balanced diet. Incredibly only 11 participants realized that they had healthy eating habit. This is about 8.5% of the practitioners had healthy eating habit and good nutritional knowledge. Therefore, the result also showed that there were unhealthy eating habit and lack of nutritional knowledge. (Fitness center practitioner’s response). But according to the original USDA Food Guide it is not only physical activity to lead healthy lifestyle but food pyramid was recommended in a liberal daily intake of grain products and a sparing intake of fats, oils, and sugary foods. By the U.S. Department of Agriculture in (2005).

4.3.4. Drinking habits of the practitioners

Table 15. What the practitioners drink

Category	MT	Samrat	Triangle	Total	Percentage
Juice	10	11	9	30	23.8
Alcohol	15	14	14	43	33.2
Soft drinks	2	5	3	10	7.7
Milk	3	3	2	8	6.3
Water only	13	12	14	39	30
Total	43	45	42	130	100

Fruits are a high-moisture, generally acidic food that is relatively easy to process and that offers a variety of flavor, aroma, color, and texture to the diet. They are usually low in calories but are an excellent source of dietary fiber and essential vitamins. Owing to the presence of cellulose, pectin, and various organic acids, fruits can also act as natural laxatives. Fruits are therefore a valuable part of the diet. Fresh fruit is typically between 75 and 95 percent water, a fact that helps to explain the refreshing character of the food. In general, fruits are acidic, with pH ranging from 2.5 to 4.5. The most common acids in fruits are citric acid, malic acid, and tartaric acid. Nadi, Fiji, 20-23 October 2014.

Of all the vitamins present in fruits, the most noted is vitamin C, or ascorbic acid. Actual quantities of vitamin C in fruits are not especially large, but the vitamin is particularly important in the diet because of its role in the prevention of disease and in the general promotion of good health. Citrus fruits, such as oranges, lemons, and grapefruits, are well known for their vitamin C content. Other sources include most berries and melons. Carotene, a chemical common to fruit, is easily converted in the body to vitamin A; cantaloupes, peaches, and apricots are significant sources of this nutrient. But only about 23% of the practitioners had *the opportunity to drink juice most often. Nadi, Fiji, 20-23 October 2014.*

Liquid secreted by the mammary glands of female mammals to nourish their young for a period beginning immediately after birth. The milk of domesticated animals is also an important food source for humans, either as a fresh fluid or processed into a number of dairy products such as butter and cheese. Milk is essentially an emulsion of fat and protein in water, along with dissolved sugar (carbohydrate), minerals, and vitamins. According to the data collected by the investigator only 8.15% of the practitioners were milk drinkers.

Table 16. The drinking system of the practitioners

Category	**MT**	**Samrat**	**Triangle**	**Total**	**Percentage**
Yes	11	13	17	41	31.5
No	32	32	25	89	68.5
Total	43	45	42	130	100

As it was showed in the above about 68.5 % of the practitioners were alcohol drinkers while the left 31.5% of the practitioners were sobers. This result also showed that there were unhealthy eating habit and lack of nutritional knowledge among the practitioners. Whatever the practitioners were participating in fitness activities, when they drank alcohol they automatically replace the energy they lost. Therefore, their participation in fitness center became less valuable in weight losing. This is also true as scientific evidence. (Practitioners response).Alcoholism: Clinical and Experimental Research 29:270–277, 2005.

Alcohols might be oxidized to give aldehydes, ketenes, and carboxylic acids. The oxidation of organic compounds generally increases the number of bonds from carbon to oxygen, and it may decrease the number of bonds to hydrogen.

The energy present in food can be determined directly by measuring the output of heat when the food is burned (oxidized) in a bomb calorimeter. However, the human body is not as efficient as a calorimeter, and some potential energy is lost during digestion and metabolism. Beverage alcohol (ethyl alcohol) also yields energy 7 kilocalories (29 kilojoules) per gram although it is not essential in the diet. Alcoholism: Clinical and Experimental Research 29:270–277, 2005.

Table 17. The thought of the Practitioners on how they are physically active

Activity	**MT**	**Samrat**	**Triangle**	**Total**	**Percentage**
Very active	31	29	18	78	60
Fairly	7	10	20	37	28.5
Not active	5	6	4	15	11.5
Total	43	45	42	130	100

As it was indicated in table 17, the investigator asked participants how physically active they considered themselves to be compared to others of their own age. While the majority of the participants considered they to be ‘fairly’ or ‘very’ physically active. The data gathered from the fitness centers indicated how participation in physical activity changed over the year of their participation.

More than half of respondents (60%) responded that they were doing about the same level of physical activity compared to the previous years of physical fitness participation; while a quarter of them were doing less than a year ago because of a shortage of time. These participants considered themselves as fairly active participants. In contrast, the left amount of the participants was doing less actively.(Purposively selected fitness center practitioner’s response).

The less or not active participants were reasoning time limitations and money limitations to be physically active. This group of participants also had lack of awareness on eating habit that they expressed themselves no food choosers. This means they could eat what they could get. Accordingly, based gender and BMI, respondents who were overweight were more likely than those of a healthy weight to say they were either ‘less’ or ‘not at all’ physically active.

4.5. Motivators and facilitators to participating in physical activity

Table 18.Motivators and facilitators to participating in physical activity

	MT	Samrat	Triangle	Total	Percentage
To change lifestyle	30	29	18	77	59.2
For health matter	7	10	20	37	28.5
For luxury/ time pass	6	6	4	16	12.5
To eat balanced diet	0	0	0	0	0
Total	43	45	42	130	100

According to table 12, the investigator got different responses for the questionnaire ‘what motivates and facilitates you to participate in the fitness center’. Based on this data, about 60% of the participants were participating for the lifestyle change. This group believed that if they changed their lifestyle through fitness activities, they would live better and healthy life. About the quarter of the total participants were preferred participating in the physical activities in order to improve their health matter. As a result, there also have been reports of alarming increase obesity worldwide.

Obesity (excess body fat for stature) contributes to adverse health consequences such as high blood pressure, blood lipid abnormalities, coronary heart disease, heart failure, ischemic stroke, type 2 diabetes, gall bladder disease, osteoarthritis, several common cancers (including colorectal, uterine, and postmenopausal breast cancers), and reduced life expectancy. Understanding this and having some medical advises about 69.23% (13.85 the underweight plus 55.38 the overweight) were doing for the health matter.

The investigator investigated the perceived barriers to physical activity and the factors that would motivate participants to be more physically active. Participants were asked what prevents them from doing more physical activity, exercise or physical activities and provided with a list of practical barriers from which they could give multiple responses.

4.6. Practitioners' Understanding of Healthy Diet

The Dire- Dawa selected fitness centers participants were asked 'how healthy they believe their diets to be. The majority thought that their diet was 'quite healthy' (60 % of 25 to 55 year olds; in contrast, the percent thought that their diets were 'not at all healthy'.

Participants who described their diet as either 'very healthy' were asked to explain their answer. They could give multiple answers like: I eat a lot of fruit, vegetables and protein (21%)

5. SUMMARY, CONCLUSSIONAND RECOMMENDATION

This chapter contains the summary of the thesis, conclusion and finally the proposed recommendations that would be made based on the findings of this study, at Dire Dawa selected fitness centers.

5.1. Summary

The major objectives of this study were to evaluate the impact of eating habit and nutritional knowledge on weight managements, to identify the major factors that contribute for eating habit and nutritional knowledge of practitioners at Dire-Dawa selected fitness center. .

The research was designed to descriptive survey research design which was used for this study concerning with identifying and counting the frequency of a particular response among the survey group. The survey involved selecting a representative and unbiased sample of practitioners drawn from the purposively selected fitness centers which the investigator wanted to study.

The sample size was calculated using the following formula, $n = \frac{N}{1+N(e)^2}$, n = $192/1+192(0.05)^2$ = 130. So, that sample size (n) of this study will be 130. Therefore, the sample size at 95% of confidence level was 130. Then, the proportional representation was given to each fitness center with respect to number of practitioners in each fitness center.

The investigator used data collection instruments like interview and questionnaires. In order to analyze the collected data, the investigator followed different steps like arranging data collected, organizing data, analyzing and presenting of data in both quantitative and qualitative techniques. Next, the result was elaborated with more description showed that the finding of this research revealed that only about 8.5% of the practitioners had exactly healthy eating habit and good nutritional knowledge. The number of male practitioners was highly dominating in the fitness center, Dire Dawa. As the matter of fact, the investigator realized that the number of the practitioner in each fitness center was dominated by male. Even some of these female

practitioners were participating on and off for they did not have enough time to participate every day. This was also the indicator of knowledge gap with in the practitioners.

There was knowledge gap among the practitioners the investigator could identified the reasons for participating in the fitness center. These different purposes aimed for the fitness activities participation were increasing, decreasing or maintaining at where it was, strength and endurance of skeletal muscles and flexibility. The investigator assessed and identified the number of people categorized based on their aim of participating in each fitness center. 13.85% were for increasing /weight gain purpose/, 66.15% were for decreasing / weight loss purpose/ and 20% were for weight maintain purpose.

The practitioners express the feasibility of the expectation, about 31.5 % of them expressed that they were hitting their goal. Unfortunately, the more percent covering 69.5 % were participating in the fitness centers without achieving their goal.

It was proved that 45.4 % was the eating culture that affects the healthy diet of the participants. They expressed eating variety food / balanced diet was not well known. Therefore, they preferred eating what they could get. On the other hand, 36.9 % of the practitioners introduced that they had lack of awareness on eating balanced diet. While about 17.7% expressed that they had lack of money to eat balanced diet.

About 68.5% they did not often eat balanced diet. While the left 31.5% of the practitioners knew more about balanced diet. Incredibly only 11 participants realized that they had healthy eating habit. This is about 8.5% of the practitioners had healthy eating habit and good nutritional knowledge.

Therefore, the result also showed that there were unhealthy eating habit and lack of nutritional knowledge.

Finally, the major findings of the study were reported and feasible recommendations were forwarded.

5.2. Conclusions

The impact of eating habit and nutritional knowledge on weight managements was that healthy eating habit and good nutritional knowledge had positive consequence on weight management while the unhealthy eating habit and less nutritional knowledge leaded to negative outcome on weight management.

There were different limiting factors that restricted the weight management aims of the practitioners participating in selected fitness centers in Dire Dawa. Some of these limiting factors were lack of knowledge of the participants on eating balanced diet, drinking alcohol or beverage alcohol (ethyl alcohol) yielded energy 7 kilocalories (29 kilojoules) per gram and not essential in the diet, usually eating fat /Shang/ Kurt/ that caused not to achieve the change they expected from the fitness center.

As the matter of fact, excessive accumulation of body fat, usually caused by the consumption of more calories than the body could use, thus, it contains 9kca per gram and not essential in the diet, lack of training on nutrition in the fitness centers, culture dependent eating habit and lack of nutritional knowledge.

Although there were many fitness activities participants, there were few knowledgeable practitioners. Therefore, they were simply paying their money and time without achieving their goals. Physical activities without healthy eating habit and good nutritional knowledge leaded the practitioners to zero end vision.

The result of these findings was concluded as the unhealthy eating habits and lack of nutritional knowledge was affecting the weight management of fitness centers practitioners, in Dire Dawa, Ethiopia.

5.3. Recommendation

Based on the findings of this research, it was recommended as the following:

The fitness center coaches should give more emphasis to improve the eating habits of their trainees to be more successful in their weight management plan. The fitness centers practitioners should pay closer attention to their eating habits. They should not be dependent on unhealthy cultural eating habits.

Both the trainers and trainees should give much more consideration to improve ways managing body weight. Special trainings should be given to the Dire Dawa community on weight management via eating habits, nutritional knowledge improvement and physical activities. Increase of education (particularly adult education) and awareness for the cause and importance of healthy eating habits and nutritional knowledge should be given to improve their lifestyle by managing their body weight management.

The culture of fat eating and alcohol drinking should be dwindled for they are not essential diet, to manage body weight of practitioners in selected fitness centers, Dire Dawa, Ethiopia.

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7. APPENDICES

APPENDIX A Health History and Physical Readiness Questionnaires for Subjects

Personal Information

The responses to the following questions are meant only for analysis purposes. Please provide your responses by marking tick (√) in the relevant boxes and/write on the apace provide. Pleas Fill the Following Information.

Appendix Table 1: Personal Information

1.Age (years)level	25-30 □ 31-35 □ 36-40 □ 41-45 □ 46-50 □51-55
2. living place	Sub city_________________ (rural area):_________________________
3.level of education	Illiterate □able to read and write □ 5-8th grade □ 9-10/12th grade□ Diploma□ B.Sc./B.A M.Sc./M.A□ PhD and above □
4.profession(broad category)	Merchant□ Health □ Farmer □Law □Teacher □ student □ Transport (driver) □ Other □
5. Monthly income(birr)	< 1000□ 1000-1500 □ 1500-2000 □2000-2500□2500-3000□ 3000-3500□4000-5000□5000-7000□>7000□> 7000- 10,000
6. Family size	

Questionnaires to be filled by Participants

Questionnaires regarding nutritional knowledge and Physical activity are done weight management. The following questions were about your participation in physical activity in fitness center and nutritional knowledge. Please answer these questions by encircling your choice from the given alternatives.

Part One: General Information about Respondents

1. Name of fitness center_______________

2. Sex __________age _________________weight_______height____________

3. Qualification _______________________

Part Two: The Main Data Information

1. What is your fitness and nutrition goal?

A. Learn to eat balance Diet   C. Create healthy lifestyles

B. Learn to eat Balance activities   D. Improve overall health

2. What is keeping you from achieving your fitness and nutrition goals?

A. Lack of motivation   C. Money

B. Hitting a plateau   D. Time

3. What motivates you?

A. Seeing results   C. Having fun

B. Accountability   D. Feeling better   E. Praise/Rewards

4. What is your activities level?

A. None

B. Little(less than one hour a week)

C. Moderate(less than 5 hour a week)

D. High (over 5 hours a week

5. How often do you eat?

A. 6 or more times a day C. 3-4 times a day

B. 5-6 times a day D. Strictly breakfast, lunch, and dinner

6. How do you feel about your weight?

A. I am comfortable with my present weight

B. Would like to lose a few pounds

C. I feel I have a significant amount of weight to lose

D. I would like to gain weight

7. How do you manage your weight?

A. By nutritional managements B. physical fitness activities C. Other sleeplessness

8. Why you perform physical activities on fitness center?

A. As hobby C. It is prescribed by my physical

B. To be physical fit D. To weight management purpose

9 what kinds of drink do you drink?

A Juice C Milk E Water

B Alcohol D Soft drink

10. How much weight do you expect to lose? Per week____________________________ per month_______________________________

11. Do you know nutritional knowledge on weight managements?

A. Yes

B. No

12. Have you ever a nutrition assessment done before?

Yes,

No, if yes, please explain___________________________________

13. Do you drink alcohol?

Yes, No

If yes, on average, approximately ____

14. Do you have any question for the dictation?

Yes No ____-

15. Do you eat balanced diet every day?

Yes No

16. Do you eat fat often?

Yes No

17. Do you know what you have to eat before and after fitness exercises?

Yes

No

18. What is your opinion about the importance of physical activity and exercise on weight managements?

Source: support @ green field system.com

: Community and recreational center at Boyce may view park

APPENDIX B Interview to be filed by participants

Interview questionnaire regarding nutritional knowledge and Physical activity on weight management. The following interview questions were about your participation in physical activity in fitness center and nutritional knowledge.

Part One: General Information about Respondents

1. Name of fitness center_______________
2. Sex __________age _________________weight________ height____________
3. Qualification _______________________

Part Two: The Main Data Information

1. What is keeping you from achieving your Fitness & Nutrition goals?
2. How important is nutrition to you in creating a client's regimen?
3. Do you recommend dietary supplements to enhance your clients' performance? Which ones?
4. Do you have any questions for the Die titian?
5. Do you have any current or future nutrition or weight-related goals?
6. How do you feel about your weight?
7. How much weight do you expect to lose? Per week __________ Per month _______
8. Do you feel that making lifestyle changes will improve your quality of life and Decrease your risk of health-related disorders?
9. Do you view your health and fitness program as a lifetime goal rather than a short-term? of temporary goal?

Source: support @ green field system.com Community and recreational center at Boyce may view park

APPENDIX C Consent to participate voluntarily in this research study

Thesis title: - Eating Habit and Nutritional knowledge of Fitness Program participants on Weight Managements in the Case of Selected Dire-Dawa , Ethiopia

You are being asked to participate in this research study as described below. All this like research study carried out were governed by the regulations for research on human beings. These regulations require that the researcher should obtain a signed agreement (consent) from you to participate in this research project.

The researcher would explain to you in detail the purpose of the project, the procedures to be used, the potential benefits and the possible risks of participation in this study. You can ask the researcher any questions that you may have about the study, and expect to receive satisfactory answers regarding the same. A basic explanation of the project is summarized below. After discussion, if you agree to participate in the study, please sign this form in the presence of the researcher. You may discontinue at any time from the study if you choose to do so.

1. Purpose and procedure

The purpose of this research project is to investigator the Awareness of eating habit and nutritional knowledge on weight managements. The subjects to be involved in this study will be men105 and 87 women participation in this study.

2. Risks and the Safe guards:

The risks of this research study are small. While there are currently no known adverse risks to both sex of weight managements that are linked with meeting the recommended guidelines of at least 150 minutes of moderate-vigorous physical activity per week.

However, as health and weight management is progresses, the body goes through significant changes, such as increased laxity (looseness) of joints, changes in center of gravity and an increased resting heart rate. Therefore, modifications to programs may need to be considered.

Both male and female participating in activities that require a high degree of balance or rapid changes in direction should consult with their doctor nutritionist first. Your ddoctor recommends that you see a physiotherapist or exercise physiologist for a program that can be developed for you.

3. Confidentiality:

The information obtained about you will be kept in confidence, although you are free to release it to your own physician. The information will be used only for scientific purposes without identifying you as an individual.

Contact Address:

Wegene Walteneguse (PhD)

Phone number: - 0923670360

Email address: - Wegu4025@gmail.com

Shemelis Mekonnen (PhD):

Phone number: -0913893850

Email Address:

Mathewos Molla Linga (MSc Student)

Phone number: -0913102663

Email address: - mathsport2009@gmail.

I certify I have read and fully understand the above project. I willingly consent to participate

Signature of subject: ____

Code of subject: ____

Address: ____

Data: ____

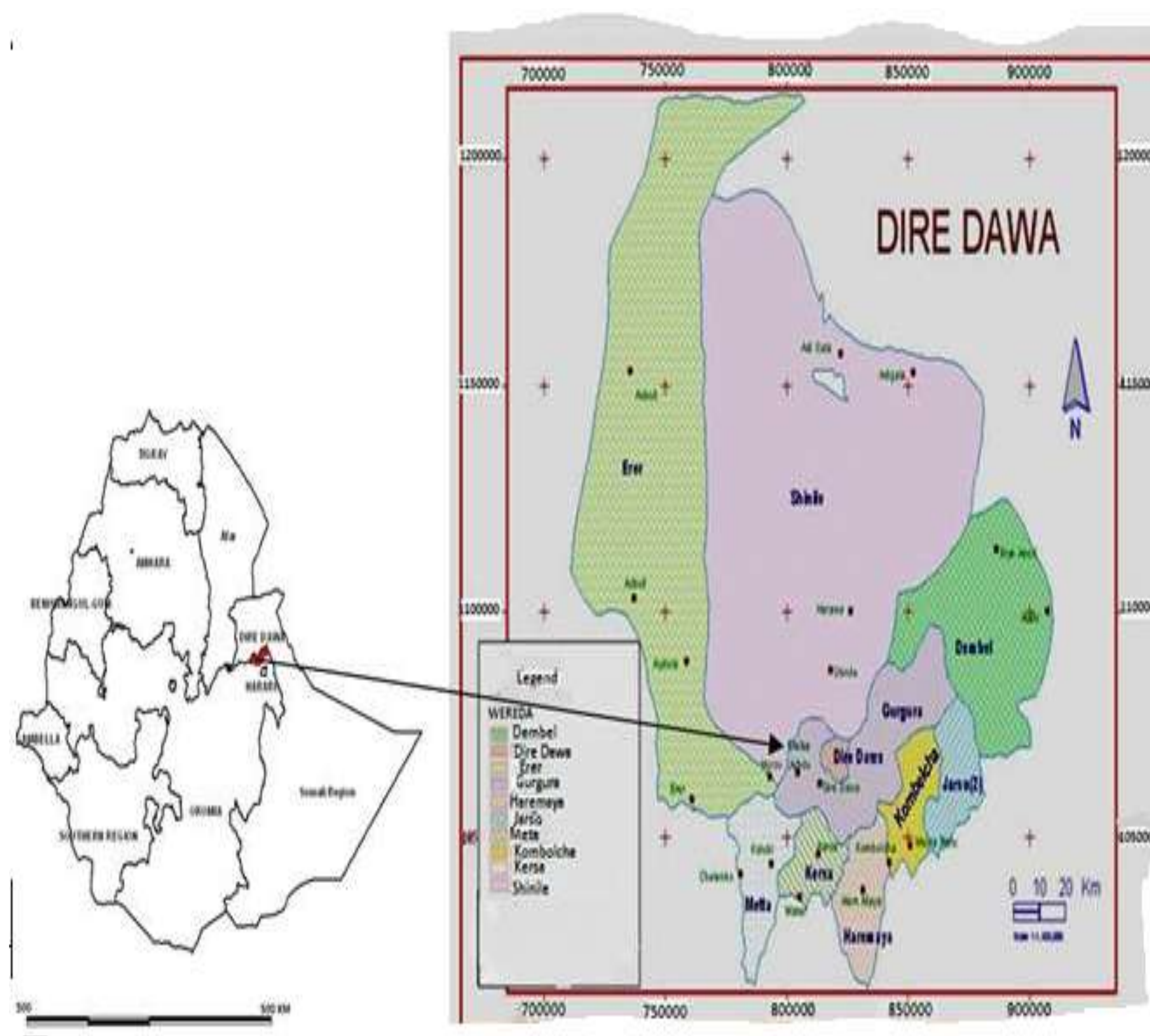
I certify that I have explained fully to the above subject the nature, the purpose, the potential benefits and the possible risks involved in this research study.

Date: ____

Sign of the investigator:_________________________

APPENDIX D Map of the Study Site

Figure. Map of the Study Site



Source; Central statistical agency (CSA) 2007