KNOWLEGDE, ATTITUDE AND PRACTICE OF PHYSICAL EXERCISE AMONG POSTGRADUATE STUDENTS OF UNIVERSITY OF IBADAN, IBADAN

BY

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CERTIFICATION

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DEDICATION

This research work is dedicated to the Almighty God for His abundant blessings and for seeing me through this programme, and to my parents, Mr and Mrs J.A Ojo for their support financially and spiritually during the programme.

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Ojo Keji Samson

ABSTRACT

The growing trend in the prevalence of Non-Communicable Disease (NCD) has been associated with inadequate and improper physical exercise, especially among young people and older adults. Few studies have documented knowledge, attitude and practice of young people towards physical exercise especially in Nigeria. This study, therefore, assessed the knowledge, attitude and practice of physical exercise among postgraduate students of University of Ibadan.

The study was descriptive cross sectional survey that used a four-stage sampling technique to select 405 postgraduate students across eight selected faculties in the postgraduate school of the University of Ibadan. A validated semi-structured questionnaire which contained a 54-point knowledge scale, 22-point attitudinal scale, questions relating to factors influencing the practice of physical exercise and the practice of physical exercise among students was used for data collection. Knowledge scores ≤17, >17-35 and >35 were classified as poor, fair, and good respectively. Attitude scores ≤11 and >11were categorised as negative and positive attitude respectively. The data were analysed using descriptive statistics and Chi-square test at p=0.05.

Respondents' mean age was 28.1±4.4 years, 57.5% of the respondents were male, majority 85.4% were Christians and 81% were single. Mean knowledge score was 38.9±6.7; respondents with poor, fair and good knowledge of physical exercise were 0.2%, 28.4% and 71.4% respectively. Most respondents, 70.9% said physical exercise can also be called physical activity and majority 82.2% affirmed that physical exercise is a subcategory of physical exercise. Some of the respondents 46.9% believed an individual is at risk of getting NCD if he/she does not perform physical exercise. The mean attitudinal score was 17.3±2.9 and 97% of the respondents had a positive attitude towards physical exercise. Majority 84.7% agreed that physical exercise adds value to life and 92.6% claimed they can recommend physical exercise for friends/family. Many of the respondents 57.3% agreed it is difficult to combine regular physical exercise with postgraduate study, 64.2% confirmed that facilities and/or equipment for physical exercise are not readily available and about half 53.1% claimed that kits for physical exercise are not usually affordable. Most 59.8% respondents reported that they do not exercise or play sport regularly, in which 34.6% and 7.9% attached their reasons to lack of time and interest respectively. 43.7% reported that they do perform physical exercise before but stopped, with reasons such as; lack of time (academic/school

work) and majority 62.5% reported planning to initiate physical exercise. Perceived body weight influences participation of physical exercise as respondents who perceived themselves to beoverweight (30%) and normal weight (43.1%) participated in physical exercise compared to those perceived to be underweight.

The respondents' positive attitudinal disposition to physical exercise was high but practice was low. Lack of time to practice was a major hindering factor.Programs to promote the practice of physical exercise should be encouraged and organised by the administration and the students union.

Keywords: Physical exercise, knowledge, attitude, practice, postgraduate students
Word counts:469

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ACRONYMS

CAD: Coronary Artery Disease

CHF: Chronic Heart Failure

CIPM: Chartered Institute of Personnel Management

CVD: Cardiovascular Diseases

HDL: High Density Lipoprotein

IEC: Information Education and Communication

LDL: Low Density Lipoprotein

NBS: National Bureau of Statistics

NCD: Non-communicable Diseases

UN: United Nation

WHO: World Health Organisation

CHAPTER 1

INTRODUCTION

1.1 Background to the study

Accordingto the World Health Organisation on global recommendations on physical activity for health 2011, exercise is a subcategory of physical activity that is planned, structured, repetitive, and purposeful in the sense that the improvement or maintenance of one or more components of physical fitness is the objective. Physical activity includes exercise as well as other activities which involve bodily movement and are done as part of playing, working, active transportation, house chores and recreational activities.

Regular physical exercise has been characterized as a positive health behaviour having physiological benefits. Hassmén, Koivula, and Uutela, (2000)presented a study that evaluated the relationship between physical exercise and a number of psychological factors in a large sample of Finnish adults. The primary findings show that the more physically active participants experienced less depression, less suppressed anger, less cynical distrust, and less perceived stress in comparison to those who exercised less frequently. In addition, frequent exercisers seem to possess a stronger sense of coherence and a stronger feeling of social integration than their inactive counterparts. They also perceived their health and fitness to be better than those who exercised less frequently.

According to Gong, Gallacher, Palmer, and Fone, (2014) physical activities provides an important way for older people to keep healthy. They have a positive effect on health and mortality, personal well-being, life satisfaction, quality of life and preventing disabilities. It is widely documented that the environment in which older people live plays an important role in promoting or inhibiting physical activity.

Physical inactivity (lack of physical activity) has been identified as the fourth leading risk factor for global mortality (6% of deaths globally) and estimated to be the main cause for approximately 21–25% of breast and colon cancers, 27% of diabetes and approximately 30% of ischaemic heart disease burden. It is widely acknowledged that regular and adequate levels of physical activity in adults reduce the risk of hypertension, coronary heart disease, stroke, diabetes, breast and colon cancer, depression and the risk of falls; improve bone and functional health; and are a key determinant of energy expenditure, and thus fundamental to

energy balance and weight control (WHO 2011). Consequently, current public health guidelines relating to physical activity emphasize the weekly participation in moderate-intensity physical activity for at least 30 minutes on at least 5 days, and/or vigorous physical activity for at least 20 minutes on at least 3 days as sufficient for preventive benefits (Xu et al., 2014).

The need for in-school young persons and adults to engage in regular physical exercise as one of the prerequisites for achieving optimum health has long been recognized but this is not seen as a priority in most schools in Nigeria. Participation in physical exercises is vital to the normal growth and development of secondary school children. It has been observed that exercises enhance learning, better concentration, improved self-control, self-confidence as well as promote health and positive life-long attitudes among students (Daviz and Daviz, 1997;Oyerinde, Oyerinde, Oshiname, and Omolayo, 2013).

Physical activity is essential for students in tertiary institutions to stay healthy and to also serve as role model for adolescents and children who aspire to grow up and to obtain University education. The goal of this study therefore is to assess the knowledge, attitude and practice of physical exercise among postgraduate students of University of Ibadan.

1.2 Statement of the problem

According to WHO Global for the prevention and control of non-communicable diseases 2013- 2020, Non-communicable diseases (NCDs)—mainly cardiovascular diseases, cancers, chronic respiratory diseases and diabetes—are the world's biggest killers. More than 36 million people die annually from NCDs (63% of global deaths), including more than 14 million people who die too young between the ages of 30 and 70. Low and middle-income countries already bear 86% of the burden of these premature deaths, resulting in cumulative economic losses of US$7 trillion over the next 15 years and millions of people trapped in poverty.Raheem, Ali and Adekeye, (2010) revealed that health problems suffered by people are significantly related to their sedentary lifestyle or physical activity.

Despite the dearth of data on regional variation and prevalence of physical activity in Nigeria, a study conducted by Adegoke et al, (2011) indicates 41% prevalence of physical inactivity (Oladepo, 2013).

The need for adults to engage in regular physical exercise as one of the prerequisites for achieving optimum health has long been recognized but this is not seen as a priority in most schools in Nigeria. The most important physical exercises that students in Nigeria widely participate in, is football. It is a game that involves the whole body according to Amusa (1986). Many Nigerians have little or no time for leisure (Oyerinde et al, 2013). Meanwhile there are other exercises in which students can participate to promote their health. Studies by Health and Fentem, (1997) revealed that children and adolescents are more physically active than the adults but participation in physical exercisedeclines in adolescents. Various factors include planning to use sporting activity/physical activity and recreation settings to promote health accounted for this (Oyerinde et. al., 2013).

The Global Economic burden of Non-communicable diseases also says that non-communicable diseases have been established as a clear threat not only to human health, but also to development and economic growth. Claiming 63% of all deaths, these diseases are currently the world's most killer. Half of those who die of chronic non-communicable diseases are in their prime of their years and thus, the disability imposed and the lives lost are also endangering industry competitiveness across borders.

The poor levels of physical inactivity will lead to problems such as deaths and disability, Obesity, diabetes, coronary heart problems etc. which will greatly undermine the current weak health systems and which will compromise youth development and achievement of life goals. Thus, the burden and threat of non-communicable diseasespresents a challenge to Nigerians, in term of both medical costs and human suffering which undermines social and economic development of the people.

Physical activity/exercise has widely been a matter of public debate with limited studies to map out the trend among students of tertiary institution in Nigeria which is a critical gap worthy of empirical study. Hence, this study will focus on physical exercise among the postgraduate students of the University of Ibadan.

1.3 Justification of the study

Regular physical activity, fitness, and exercise are critically important for the health and wellbeing of people of all ages. Research has demonstrated that virtually all individuals can benefit from regular physical activity, whether they participate in vigorous exercise or some type of moderate health-enhancing physical activity. Even among frail and very old adults,

mobility and functioning can be improved through physical activity. Physical activity results in increased exercise capacity and cardio respiratory fitness, which may lead to many health benefits (Prasad and Das, 2009). According to Simon et al., (2014), over the last years, besides individual and interpersonal factors, larger contextual characteristics have been recognized as important determinants of physical activity. Ecological models indicate that interventions targeting determinants at all levels, including environmental changes to reduce the barriers limiting the adoption of an active lifestyle, offer the best chance of sustained physical activity changes. Such strategies may also contribute to reducing the gaps in socialand environmental inequities associated with obesity.

In light of the above, this study will shed more light into the knowledge, attitude and practice of physical exercise among students of postgraduate school. This study will also contribute to the growing literature on physical exercise since there is a dearth of studies examining physical exercise among students of postgraduate school in higher institutions in Nigeria.

This study will add value to the field of health promotion and education on physical exercise and will also serve as a point of reference for future researchers who wish to conduct further research work in this field. This study will also explore practice of physical exercise among postgraduate students in order to bring to the fore the various reasons of involving in the practice as it relates to promoting their health.

The wide dearth of knowledge as a result of little work done on this phenomenon will be bridged and members of the public will be informed on the benefits that are inherent in participating in physical exercise. The findings will aid the university policy makers to better understand the phenomenon and undertake a policy reform supportive of formal physical exercise in the University setting.

1.4 Research Questions:

What is the level of knowledge of students on physical exercise?

What are the attitudes of students towards performing physical exercise?

What are the perceived factors influencing the practice of physical exercise?

What is the level of participation of students to practicing physical exercise?

1.5 Objective of the Study

Broad Objective: To investigate the knowledge, attitude and practice of physical exercise among postgraduate students of University of Ibadan, Ibadan

Specific Objectives

To assess the knowledge of respondents on physical exercise

To describe the attitude of respondents towards performing physical exercise

To identify the perceived factors influencing participation in physical exercise

To assess the level of practice of physical exercise among the respondents

1.6 Hypotheses

There is no significant association between knowledge of the respondents on physical exercise and practice of physical exercise

There is no significant association between respondents' sex, age, discipline, father's level of education, mother's level of educationand practice of physical exercise.

There is no significant association between knowledge of the respondents and attitude towards physical exercise.

There is no significant association between perceived body weight of the respondents and the practice of physical exercise

CHAPTER TWO

LITERATURE REVIEW

2.1 Concept of Physical exercise

Exercise as defined by the medical dictionary, is a physical activity that is planned, structured, and repetitive for the purpose of conditioning any part of the body. Exercise is used to improve health, maintain fitness and is important as a means of physical rehabilitation. Exercise is useful in preventing or treating coronary heart disease, osteoporosis, weakness, diabetes, obesity, and depression. Range of motion is one aspect of exercise important for increasing or maintaining joint function. Strengthening exercises provide appropriate resistance to the muscles to increase endurance and strength.A well-balanced exercise program can improve general health, build endurance, and slow many of the effects of aging. The benefit of exercise doesnot only improve physical health, but also enhance emotional well-being.

Physical activity and exercise are widely promotedas effective means to enhance health and physicalfunctioning of elderly persons and there is a linkbetween physical activity and premature mortality andprevention of coronary heart disease, hypertension,colon cancer, and diabetes is well established in thescientific literature, (Keysor, 2003)**.**Physical activity has been defined as "any bodily movement produced by contraction of skeletal muscle that substantially increases energy expenditure". Activities include formal exercise programmes as well as walking, hiking, gardening, sport, and dance. The common element is that these activities result in substantial energy expenditure, although the intensity and duration can vary considerably (Stensel, 2009).

Physical exercise promotes health in a variety of physiological and psychological ways in both adolescents and adults. Exercise, if carried out regularly and with sufficient physical intensity, is associated with increased strength and flexibility, reduced cardiovascular diseases risk, and may contribute to a more effective treatment of stress and depression (Blair et al, 1992; Bijnen et al, 1993; Sallis and Patrick, 1994). Regular exercise may thus contribute to an enhancement of health in all people(Aarts, Paulussen, and Schaalma, 1997).

On the basis of existing literature, it seems safe to accept that physical exercise regimens will have a positive influence on depression, with the most powerful effects noted among clinical

populations. Limited evidence would also suggest that aerobic exercise is most effective, including activities such as walking, jogging, cycling, light circuit training, and weight training, and that regimens extending over several months appear to yield the most positive effects(Scully, Kremer, Meade, Graham, and Dudgeon, 1998). In patients participating in regular physical exercise and low-fat diet, coronary artery disease progresses at a slower pace. Physical exercise has been shown to be relatively safe during supervised training sessions(Schuler et al. 1992).Hambrecht et al., (1998) did a study that provided evidence that long-term aerobic exercise training in patients with chronic heart failure (CHF) restores endothelial function of the skeletal muscle microvasculature of the lower limb. Therefore, a carefully and individually tailored program of physical activity should be made available to patients with CHF to reverse the deleterious effects of endothelial dysfunction, i.e. increased peripheral resistance and reduced oxygen delivery to the working skeletal muscle.

Physical activity, exercise and physical fitness are separate terms which are not synonymous, but people get confused about them and often use them interchangeably. Armstrong and Welshman, (1997) gave a distinct explanation of the terms. They see physical activity as a complex set of behaviours which encompasses any bodily movement produced by skeletal muscles that result in energy expenditure above the resting level. Exercise is equally seen by them as a sub-category of physical activity that is planned, structured, repetitive and often results in the improvement or maintenance of one or more of the components of physical fitness. Exercise training is the systematic use of exercise of specific intensities, duration and frequencies to attain a desired effect. Physical fitness is a concept which refers to a set of attributes that relates to the ability to perform physical activity. Fitness is a phenomenon that is fast becoming a thing of much interest to the people of Nigeria especially at this time when the country is plagued with increased tension and stress which has led to increase inactivity especially among youths. Clarke, (1967) is of the view that fitness is that state which characterizes the degree to which a person is able to function efficiently. The greater the physical fitness the longer the person may keep going (Adesina, 2012).

2.1.1 Aerobic exercise

Aerobic exercise is any exercise that raises the heart rate and increases respiration (breathing). Some examples include walking, running, performing intervals on an elliptical machine, and a resistance training circuit that has little to no rest between exercises, (National Academy of Sports Medicine, 2013).

Colcombe et al., (2006) revealed that significant increases in brain volume, in both grey and white matter regions, were found as a function of fitness training for the older adults who participated in the aerobic fitness training and explained that cardiovascular fitness is associated with the sparing of brain tissue in aging humans. Andersen et al., (1999) found that vigorous aerobic exercise resulted in a significantly greater sparing of lean tissue than did lifestyle activity.

Higashi et al., (1999) explained that a 12-week aerobic exercise program raised HDL cholesterol but lowered total cholesterol and LDL cholesterol. Daily aerobic exercise significantly lowered the systolic blood pressure by 7 mm Hg and the diastolic blood pressure by 4 mm Hg. It is clinically important that walking, a safe form of daily exercise not only can lower blood pressure but also may improve endothelial function in essential hypertensive patients.

DeSouza et al., (2000) also indicate that regular aerobic exercise can prevent the age-associated loss in endothelium dependent vasodilation and restore levels in previously sedentary middle aged and older healthy men. This may represent an important mechanism by which regular aerobic exercise lowers the risk of cardiovascular disease in this population. Regular aerobic exercise is associated with a reduced risk of atherosclerotic vascular disease and acute cardiovascular events, particularly in middle-aged and older adults (DeSouza et al., 2000). Also there is now good evidence that aerobic and resistance exercise enhances mood states, and weaker evidence that exercise can improve cognitive function (primarily assessed by reaction time) in older adults(Fox, 1999).

2.1.2 Anaerobic exercise

Takken et al, 2003 andLelieveld et al.(2007) said that physical fitness should also include anaerobic fitness because there is indication of a strong association between anaerobic physical fitness and daily functional ability.

Anaerobic fitness is needed in more intensive daily activities such as climbing stairs, playing outside, and cycling against a strong wind. Anaerobic fitness is also needed in sports with short intensive bursts of activity such as soccer, volleyball, and athletics(Lelieveld et al., 2007).

Recent evidence indicates that high intensity anaerobic work does result in oxidative modification to the macromolecules in both skeletal muscle and blood. Also, it appears that chronic anaerobic exercise training can induce adaptations that act to attenuate the exercise-induced oxidative stress(Bloomer and Goldfarb, 2004).

Girls are more prone than boys to develop sedentary lifestyle patterns, and sedentary patterns developed in youth and adolescence are likely to persist over time, resulting in a sedentary lifestyle (Garcia et. al., 1995). Decreased anaerobic capacity can therefore be responsible for low physical activity levels, poor exercise behaviour, and impairments in daily functioning (Lelieveld et al., 2007).

2.2 Importance of physical activity/exercise to health

Our society is currently at war against the ominous enemy of chronic disease. Chronic disease presents a heavy burden to society, in terms of both medical costs and human suffering. The good news is that exercise intervention and exercise biology are vital and potentially effective components of our arsenal in the war on chronic disease (Booth, Chakravarthy, Gordon, and Spangenburg, 2002).

The positive role that physical exercise can play in the prevention and treatment of a range of medical conditions has received a great deal of attention over recent years, with numerous high profile reports supporting the popular message that exercise is good for people. In addition, research has identified the long term protection that regular exercise affords against a plethora of somatic complaints, including coronary heart disease, hypertension, a number of cancers, diabetes, and osteoporosis (Scully et al., 1998). They opined that there have been several extensive reviews of the exercise psychology literature, which together offer positive if guarded properly, give support for the role that exercise can play in the promotion of positive mental health. This optimism is founded on growing numbers of controlled studies which have identified the positive effects of exercise, most often among clinical populations.

Physical activity results in increased exercise capacity and physical fitness, which may lead to many health benefits. Individuals who are more physically active appear to have lower rates of all-cause mortality, probably due to a decrease in chronic diseases including coronary artery disease (CAD). This may result from an improvement in cardiovascular risk factors in addition to enhanced fibrinolysis, improved endothelial function, decreased sympathetic tone, and other yet undetermined factors(Adamu, Mu, and Abdu, 2005). Recent findings revealed

the potential of participation in leisure-time physical activities to contribute to positive health not merely the absence of diseases but associated with the capacity to enhance life satisfaction and ability to improve individual's capability to withstand stress (Guatam et al., 2007; Ajibua, Olorunsola, Bewaji, 2013).

Hassmén et al. (2000) also confirmed that apart from physiological benefits associated with regularly performed physical exercise, a number of psychological benefits have also been reported in the literature. These benefits include reduced depression, anxiety, and anger, as well as generally improved mood. Furthermore, a reduction of coronary-prone behaviour has also been associated with physical exercise. Since anger and hostility, both subcomponents of the global Type A behaviour pattern, have been - related to coronary heart disease, the potential significance of exercise in reducing these unhealthy characteristics is appealing.

Müller and Khoo, (2014) said that, an effective non-pharmaceutical way to prevent chronic diseases, increase quality of life and promote general health in older adults is through physical exercise/activity. Recent evidence suggests that physical activity is the strongest predictor of healthy aging and lower probability of disability in older men. Recently, investigators have postulated that even lower levels of weekly energy expenditure may be associated with health benefits. A volume of exercise that is about half of what is currently recommended may be sufficient, particularly for people who are extremely deconditioned or are frail and elderly, (Warburton, Nicol, and Bredin, 2006). Paluska and Schwenk (2000) added that physical activity may play an important role in the management of mild-to-moderate mental health diseases, especially depression and anxiety. Although people with depression tend to be less physically active than non-depressed individuals, increased aerobic exercise or strength training has been shown to reduce depressive symptoms significantly. Moreover, Scully et al. (1998) also said that one review concludes that regardless of anxiety measures taken (trait or state, behavioural, self-report, physiological), or exercise regimen invoked (acute orchronic), the results point to a consistent link between exercise and anxiety reduction. Furthermore, a meta-analysis specifically examining studies that distinguish between those who are coping with stress and those who are not concluded that aerobic exercise training programmes were effective in reducing anxiety, particularly among those experiencing chronic work stresses. In conclusion, while it may be that aerobically fit individuals do show a reduced psychosocial stress response, the role that exercise can play is probably best described as preventive rather than corrective, and the stress response itself remains only partially understood.

Vagetti, Barbosa, et al., (2014) reported that participation in physical activity may play a key role in healthy aging and thus in promoting good quality of life. Previous studies have suggested that elderly patients with adequate physical activity levels live healthier lives and are at lower risk for cardiovascular disease. Additionally, physical activity has positive effects on psychological, physical, and emotionalwell-being.Observational studies also suggest that regular physical exercise may be one of the important preventive factors for the onset of late-life disability. Clinical trials among older persons have shown that exercise programs improve objective indexes of physical performance (aerobic capacity, walking speed, and muscle strength) and self-reported functional scores. Exercises also have various beneficial physiological effects, such as improved muscle strength and bone mass and increased aerobic capacity, flexibility, and balance. (Penninx, Messier, Rejeski, et al, 2001).

Keysor (2003) stated that physical activity and exercise are widely promoted as effective means to enhance health and physical functioning of elderly persons. A link between physical activity and premature mortality and prevention of coronary heart disease, hypertension, colon cancer, and diabetes is well established in the scientific literature. A substantial amount of scientific evidence shows that older adults who engage in progressive resistance training and aerobic exercise are able to increase muscle strength, aerobic capacity, and bone density.Warburton et al., (2006), explained that recent investigations have revealed even greater reductions in the risk of death from any cause and from cardiovascular disease. For instance, being fit or active was associated with a greater than 50% reduction in risk. Furthermore, an increase in energy expenditure from physical activity of 1000 kcal (4200 kJ) per week or an increase in physical fitness was associated with a mortality benefit of about 20%. Physically inactive middle-aged women (engaging in less than 1 hour of exercise per week) experienced a 52% increase in all-cause mortality, a doubling of cardiovascular related mortality and a 29% increase in cancer-related mortality compared with physically active women.Müller and Khoo, (2014) emphasized that physical activity is effective in preventing chronic diseases, increasing quality of life and promoting general health in older adults, but older adults are not sufficiently active to gain those benefits. An effective non-pharmaceutical way to prevent chronic diseases, increase quality of life and promote general health in older adults is through physical activity. Recent evidence suggests that physical activity is the strongest predictor of healthy aging and lower probability of disability in men.

According to WHO (2011), participation in physical activity may play a key role in healthy aging and thus in promoting good quality of life. Previous studies have suggested that elderly

patients with adequate physical activity levels live healthier lives and are at lower risk for cardiovascular disease.Additionally, physical activity has positive effects on psychological,physical, and emotionalwell-being (Vagetti, Filho, et al., 2014).

The health benefits of regular physical activity and enhanced physical fitness include lower all-cause and coronary heart disease mortality. Results from early studies indicated that individuals who were more physically active at work had lower rates of coronary disease compared with peers who worked in sedentary jobs; these findings have since been extended to leisure-time physical activity. Comprehensive reviews of investigations that have examined this association have found that the relative risk of coronary disease associated with physical activity is 1.9 (Young, Haskell, Taylor, and Fortmann, 1996).Keysor (2003), also asserted that a substantial amount of scientific evidence shows that older adults who engage in progressive resistance training and aerobic exercise are able to increase muscle strength, aerobic capacity, and bone density. Huttunen et al., (1979) suggested that mild-to moderate physical activity lowers serum triglyceride and raises High Density Lipoprotein (HDL) cholesterol level in healthy, middle-aged men. The results also indicate that mild to- moderate physical exercise is a useful adjunct to therapeutic measures used in the primary and possibly secondary prevention of coronary heart disease. Fox (1999) explained that exercise has a moderate reducing effect on state and trait anxiety and can improve physical self-perceptions and in some cases global self-esteem.

The Centre for Disease Control and Prevention (2011) highlighted the benefits of physical activities by saying physical activity is one of the most important things you can do for your health. It can also help: control weight, reduce the risk of cardiovascular disease, reduce the risk for type 2 diabetes and metabolic syndrome, reduce the risk of some cancers, strengthen the bones and muscles, improve mental health and mood, improve the ability to do daily activities and prevent falls in older adults and also increase the chances of living longer (CDC Global Health - Non Communicable Diseases, 2011).

Reduce the risk of cardiovascular disease: Heart diseases and stroke are two leading causes of death in the United States, but following the guidelines and getting at least 150 minutes a week of moderate –intensity aerobic activity can put an individual at a lower risk for those diseases. More physical activity can be further used to reduce the risk. Regular physical activity can also lower blood pressure and improve the cholesterol levels. Adamu et al., (2005) asserted that physical activity results in increased exercise capacity and physical

fitness, which may lead to many health benefits. Individuals who are more physically active appear to have lower rates of all-cause mortality, probably due to a decrease in chronic diseases including coronary artery disease (CAD). This may result from an improvement in cardiovascular risk factors in addition to enhanced fibrinolysis, improved endothelial function, decreased sympathetic tone, and other yet undetermined factors. They went further to say that regular exercise results in an increase in exercise capacity and lower myocardial oxygen demand leading to cardiovascular benefits, including lower mortality rates. Physically active individuals suffer from fewer ailments than do less-active individuals.

Reduce the risk of type 2 diabetes: Regular physical activity can reduce the risk of developing type 2 diabetes and metabolic syndrome. Metabolic syndrome is a condition in which an individual have some combination of fat around the waist, high blood pressure, low HDL cholesterol, high triglycerides, or high blood sugar. Research shows that lower rates of these conditions are seen with 120 to 150 minutes a week of at least moderate-intensity aerobic activity and the more the activity, the lower the risk will be. Both aerobic and resistance types of exercise have been shown to be associated with a decreased risk of type 2 diabetes. In a large prospective study, each increase of 500 kcal (2100 kJ) in energy expenditure per week was associated with a decreased incidence of type 2 diabetes of 6% (relative risk 0.94, 95% CI –0.90 to 0.98). This benefit was particularly evident among people at high risk of diabetes (i.e., those with a high body mass index), a finding that has been supported by several other investigators(Warburton et al., 2006).

Reduce the risk of some cancers: Being physically active lowers the risk for two types of cancer: colon and breast. Research shows that: physically active people have a lower risk of colon cancer than the people who are not active and physically active women have a lower risk of breast cancer than the women who are not active. A systematic review of epidemiologic studies revealed that moderate physical activity (> 4.5 METs [equivalent to mowing the lawn]) was associated with a greater protective effect than activities of less intensity. Physically active men and women exhibited a 30%–40% reduction in the relative risk of colon cancer, and physically active women a 20%–30% reduction in the relative risk of breast cancer compared with their inactive counterparts. In summary, there is compelling evidence that routine physical activity is associated with reductions in the incidence of specific cancers, in particular breast and colon cancer and regular physical exercise has also been shown to be associated with an improvement in overall quality of life and health status of patients with cancer(Warburton et al., 2006). Physical exercise is an intervention that may

address the broad range of quality of life issues following cancer diagnosis including physical, functional, psychological, emotional, and social well-being(Courneya and Friedenreich, 1999). Bernstein, Henderson, Hanisch, Sullivan-Halley, and Ross (1994) revealed epidemiologic evidence strongly suggests that cumulative exposure to ovarian hormones is a determinant of breast cancer risk. Because physical activity can modify menstrual cycle patterns and alter the production of ovarian hormones, it may reduce breast cancer risk; most previously identified risk factors for breast cancer are reproductive and menstrual events that cannot be readily altered. The protective effect of exercise on breast cancer risk in the women studied suggests that physical activity offers one modifiable lifestyle characteristic that may substantially reduce a woman's lifetime risk of breast cancer.

2.2.1 Exercise and diabetes mellitus

A well-controlled exercise state is generally believed to be beneficial: it increases glucose utilization and decreases insulin requirements. A training program may increase high density lipoprotein (HDL) -cholesterol levels and perhaps decrease some plasma lipoprotein moieties. The more general effects of exercise relate to improvement of working capacity and reduction of anxiety states. In a recent review, it was stressed that major advances were made with respect to acute effects of exercise in vivo (turnover and net balance methods, hormonal measurements) and in vitro (biochemical and histochemical methods). It was encouraging to learn that a training program in middle-aged non-obese chemical diabetics may normalize oxidative capacity of their muscle and improve glucose tolerance(Vranic and Berger, 1979). Warburton et al. (2006) stressed further that exercise interventions are also effective in the management of diabetes. One prospective cohort study showed that walking at least 2 hours per week was associated with a reduction in the incidence of premature death of 39%–54% from any cause and of 34%–53% from cardiovascular disease among patients with diabetes. Moreover, walking that led to moderate increases in heart and breathing rates was associatedwith significant reductions in all-cause mortality.

2.2.2 Regular exercise and mild hypertension

There is consistent evidence that regular rhythmic physical exercise of the lower extremities decreases both systolic and diastolic blood pressure by 5–7 mm Hg, independent of weight loss, alcohol intake or salt intake. With an established criterion among 26 studies comprising 35 groups or interventions that measured the effects of physical training on blood pressure in

a total of 486 patients with mild to moderate hypertension who were not taking any medication. Most of these studies measured blood pressure with the patient in a seated position; 5 of them also recorded ambulatory blood pressure. One additional open trial recorded only ambulatory blood pressure(Cleroux et al., 1999), they also stressed further by saying physical exercise has been a component of interventions involving multiple lifestyle modifications to treat hypertension. Increased physical activity, together with a reduction in caloric intake alone or in combination with a reduction in alcohol intake and with or without a reduction in sodium intake, reduces the relative risk of hypertension.Cleroux, Feldman, and Petrella, (1999) opined further by saying, there is now excellent evidence that mild hypertension can be treated with moderate physical activity. The antihypertensive effect of physical exercise does not depend on an increase in maximal aerobic capacity, but does correlate with the initial level of activity. The lower the initial level of activity, the greater the expected reduction in blood pressure associated with a given increase in physical activity. This statement on physical activity and blood pressure agrees with the more general US recommendations on physical activity and public health.

Benefits of Exercise as stated by Fletcher et al., (1996): Healthy persons as well as many persons with cardiovascular disease, including those with heart failure, can improve exercise performance with training. This improvement is the result of increased ability to use oxygen to derive energy for work. Exercise training increases maximum ventilatory oxygen uptake by increasing both maximum cardiac output (the volume of blood ejected by the heart per minute, which determines the amount of blood delivered to the exercising muscles) and the ability of muscles to extract and use oxygen from blood. Beneficial changes in hemodynamic, hormonal, metabolic, neurological, and respiratory function also occur with increased exercise capacity. These changes can also benefit persons with impaired left ventricular function, in whom most adaptations to exercise training appear to be peripheral and may occur with low-intensity exercise.

Exercise training results in decreased myocardial oxygen demands for the same level of external work performed, as demonstrated by a decrease in the product of heart rate systolic arterial blood pressure (an index of myocardial oxygen demand). These changes are also beneficial in persons with coronary artery disease, who after exercise training may attain a higher level of physical work before reaching the level of myocardial oxygen requirement that result in myocardial ischemia. Exercise training favourably alters lipid and carbohydrate metabolism. The exercise-induced increase in high-density lipoproteins is strongly associated

with changes in body weight, and greater increases in high-density lipoproteins have been found in women who exercise at higher levels of recreational running. Regular exercise in overweight women and men enhances the beneficial effect of a low-saturated fat and low-cholesterol diet on blood lipoprotein levels. Endurance training has effects on adipose tissue distribution, and the effect on adipose tissue distribution is likely to be important in reducing cardiovascular risk. Exercise training also has an important effect on insulin sensitivity, and intense endurance training has a highly significant salutary effect on fibrinogen levels of healthy older men. In addition, recent data support the role of physical activity in the prevention and treatment of osteoporosis and certain neoplastic diseases, notably colon cancer.

Generally, participants engaging in regular physical activity display more desirable health outcomes across a variety of physical conditions. Similarly, participants in randomized clinical trials of physical-activity interventions show better health outcomes, including better general and health-related quality of life, better functional capacity and better mood states, (Penedo and Dahn, 2005). In addition, Aweto, Oligbo, Fapojuwo, and Olawale (2013), ascertain that a physically active lifestyle has been shown to significantly reduce the risk of developing cardiovascular disease, obesity, type 2 diabetes mellitus, several forms of cancer and depression, strengthen bones and muscles, stabilize mental health and mood, increases one's ability to perform daily activities and prevent falls. Regular physical activity decreases all-cause mortality risk by 20% to 30% compared with insufficient activity

2.3 Prevalence of physical activity- Globally, Developing countries and Nigeria

Hallal, Anderson, Bull, Guthold, Haskell, and Ekelund, (2012) noted that since the industrial revolution, the development of new technologies has enabled people to reduce the amount of physical labour needed to accomplish many tasks in their daily lives. As the availability of new devices has continued to increase, the effects on physical labour and human energy expenditure have grown to include many aspects of the lives of more and more people. The effects of some of these technologies on physical activity are obvious (e.g., steam, gas, and electric engines; trains; cars; and trucks), whereas others are more subtle and complex (e.g., televisions, computers, electronic entertainment, the internet, and wireless communication devices). The use of many of these technologies has been driven by the goal of increased individual worker productivity and reduced physical hardships and disabilities caused by jobs entailing continuous heavy labour. However, the human body has evolved in such a way that

most of its systems (e.g., skeletal, muscle, metabolic, and cardiovascular) do not develop and function in an optimum way unless stimulated by frequent physical activity (Booth, Laye, Lees, Rector, and Thyfault, 2008). Although the technological revolution has been of great benefit to many populations throughout the world, it has come at a major cost in terms of the contribution of physical inactivity to the worldwide epidemic of non-communicable diseases (WHO, 2010). Several behavioural and environmental factors and megatrends (major forces in societal development that affect people's lives) affect population levels of physical activity (Pratt, Sarmiento, Montes, 2012).Hallal et al., (2012) estimated that worldwide, 31% of adults are physically inactive, and 27.5% of people in Africa are inactive, 43.2% in Europe and 17% in southern Asia and added that women are more inactive than men. They said further that physical inactivity is more common in countries of high income than the low income.

Non-communicable diseases already disproportionately affect low- and middle-income countries where nearly 80% of NCD deaths – 29 million – occur. They are the leading causes of death in all regions except Africa, but current projections indicate that by 2020 the largest increases in NCD deaths will occur in Africa. In African nation's, deaths from NCDs are projected to exceed the combined deaths of communicable and nutritional diseases and maternal and perinatal deaths as the most common causes of death by 2030.Accordingto WHO fact sheet about non-communicable disease,tobacco use, physical inactivity, unhealthy diet and the harmful use of alcohol increase the risk of or cause most non-communicable diseases and about 3.2 million deaths annually can be attributed to insufficient physical activity.The global burden and threat of non-communicable diseases constitutes a major public health challenge that undermines social and economic development throughout the world, and inter alia has the effect of increasing inequalities between countries and within populations (WHO Global for the prevention and control of non-communicable diseases 2013- 2020).

Physical inactivity is now identified as the fourth leading risk factor for global mortality. Physical inactivity levels are rising in many countries with major implications for increases in the prevalence of non-communicable diseases and the general health of the population worldwide (WHO, 2010). Despite the well-known benefits of regular physical activity, a global report from 2000, comprising 14 sub-regions (WHO, 2002), indicated that 17.7% of the global population (aged 15 years and over) were not engaged in any kind of physical activity, and that nearly 58% was not achieving the recommended amount of moderate-intensity activity to be considered physically active (2.5 h/week) (USDHHS, 2008). Roughly

one fifth of the world population was inactive. This prevalence was generally higher among women and increased with age. Urban and wealthier countries presented a higher prevalence of physical inactivity (Dumith, Hallal, Reis, and Kohl, 2011).

Heart disease, cancer, diabetes, chronic pulmonary and mental disease became a real burden for health systems in developed countries. For a while, these diseases were associated with economic development and regarded as diseases of the rich. Now, at the dawn of the third millennium, NCDs appeared to be sweeping the entire globe, with an increasing trend in developing countries(Burden of Disease Unit, 1990; Matthers et al., 2003; WHO, 2003; Boutayeb, 2006).

The level of physical activity is another important risk factor for chronic diseases that is undergoing profound change in developing countries. Caused by some of the same sweeping trends that have led to dietary changes—urbanization, modernization, and changes in occupational behaviours—physical activity in general appears to be declining. Reports from the United States estimate that the population-attributable risk of physical inactivity is responsible for 12% of type 2 diabetes and 22% of coronary heart disease, as well as significant shares of other poor health conditions. Such attributable risk studies are not yet available from developing countries; nonetheless, evidence about the epidemiologic transition points to declining physical activity as a cause of greater chronic disease prevalence(Albala, Vio, KainandUauy, 2002).

2.4 Non-communicable diseases and physical exercise/activity

According to World Health Organisation (WHO) on global recommendations on physical activity for health 2011,physical inactivity is now identified as the fourth leading risk factor for global mortality. Physical inactivity levels are rising in many countries with major implications for the prevalence of non-communicable diseases (NCDs) and the general health of the population worldwide. Globally, 1 in 3 adults is not active enough. However, given a supportive environment, increasing levels of physical activity bring health benefits across age groups.

Lee, Blair, and Katzmarzyk (2012)asserted that strong evidence shows that physical inactivity increases the risk of many adverse health conditions, including major non-communicable diseases such as coronary heart disease, type 2 diabetes, and breast and colon cancers, and

shortens life expectancy. Because much of the world's population is inactive, this link presents a major public health issue. There are many benefits of physical activity in adolescents, including improved blood lipid profiles, cardiovascular fitness, bone health, and psychological wellbeing (Metcalf et al., 2014).

Physical inactivity is recognized as a risk factor for coronary artery disease. Regular aerobic physical activity increases exercise capacity and plays a role in both primary and secondary prevention of cardiovascular disease.Exercise training increases cardiovascular functional capacity and decreases myocardial oxygen demand at any level of physical activity in apparently healthy persons as well as in most subjects with cardiovascular disease. Regular physical activity is required to maintain these training effects. The potential risk of physical activity can be reduced by medical evaluation, risk stratification, supervision, and education, (Fletcher et al., 1996). According to WHO Global action plan for the prevention and control of non-communicable diseases 2013- 2020, most of these premature deaths from non-communicable diseases are largely preventable by enabling health systems to respond more effectively and equitably to the health-care needs of people with non-communicable diseases, and influencing public policies in sectors outside health that tackle shared risk factors which also include physical inactivity.

Non-communicable diseases also known as chronic diseases are not passed from person to person. They are of long duration and generally slow progression. The four main types of non-communicable diseases are cardiovascular diseases (like heart attack and stroke), cancers, chronic respiratory diseases (such as chronic obstructed pulmonary disease and asthma) and diabetes. All age groups and all regions are affected by NCDs. NCDs are often associated with older age groups, but evidence shows that more than 9 million of all deaths attributed to non-communicable diseases occur before the age of 60. About 3.2 million of deaths annually can be attribute to insufficient physical activity. In term of attributable deaths, the leading NCD risk factor globally is elevated blood pressure (to which 16.5%of global deaths are attributed). NCDs threaten progress towards the UN Millennium Development Goals. Poverty is closely linked with NCDs. The rapid rise in NCDS is predicted to impede poverty reduction initiatives in low-income countries, particularly by forcing up household costs associated with health care. Vulnerable and socially disadvantaged people get sicker and die sooner than people of higher social positions, especially because they are at greater risk of being exposed to harmful products, such as tobacco or unhealthy food and have limited

access to health services, World Health Organisation (WHO facts on non-communicable diseases, 2013).

Worldwide, Lee et al. (2012) estimated that physical inactivity causes 6–10% of the major non-communicable diseases of coronary heart disease, type 2 diabetes, and breast and colon cancers. Furthermore, this unhealthy behaviour causes 9% of premature mortality, or more than 5·3% of the 57 million deaths in 2008. With elimination of physical inactivity, life expectancy of the world's population might be expected to increase by 0·68 years, they also stressed further by saying, for perspective, other research done in the United State of America estimated that inactive people would gain 1·3–3·7 years from age 50 years by becoming active. In an east Asian population, life expectancy from age 30 years in active people was 2·6–4·2 years greater than that in inactive people.

Xu et al. (2014) pooled an analysis of data from 4,550 urban Chinese adults and revealed that those with sufficient physical activity had a significantly lower risk of developing type 2 diabetes than those with insufficient physical activity, and that those with normal blood pressure were significantly less likely to develop type 2 diabetes than their hypertensive counterparts.

Chronic diseases are a serious threat to health and longevity in developing countries. In all but the poorest countries, the death and disability from chronic diseases now exceeds that from communicable diseases – comprising 49%, compared with about 40% for communicable disease and 11% for injuries (Lopez, Mathers, Jamison, Murray and Ezzati, 2006). The dominance of chronic disease in developing countries is not well recognized among health experts and non-experts alike because these ailments are often less visible than communicable diseases, progress slowly, and are underdiagnosed. Further, the presence of chronic disease has overtaken the communicable disease burden in part because of success in reducing the latter—but tragically, also because poor countries are increasingly adopting the unhealthy lifestyles of the developed world (Rachel, 2008).

A longstanding assumption has been that chronic diseases exist primarily in rich countries and that communicable diseases exist primarily in poor countries. This simple division is no longer true. Finland, Taiwan, and South Korea are examples of relatively rich countries with low prevalence of the major chronic diseases. Canada and the United Kingdom have higher death rates from chronic diseases than from communicable diseases; however, the chronic

disease toll in those countries is still much lower than those prevailing inmany poor countries. Conversely, even very poor countries, such as India and Pakistan, and moderately poor countries, such as Russia and China, show higher death rates from chronic disease than communicable disease (WHO, 2005).

According to the WHO Annual Report (WHO, 2002), it has been estimated that, in 2001, approximately 60% of the 56.5 million total reported deaths in the world and approximately 46% of the global burden of disease were attributable to chronic diseases and cardiovascular diseases (CVD) in particular. Although HIV/AIDS, malaria, TB, haemorrhagic dengue and other infectious diseases are predominant in Africa, Asia and Latin America, deaths caused by chronic diseases dominate the mortality statistics in five out of six regions of WHO, and 79% of all deaths attributable to chronic diseases occur in developing countries. Incidence and prevalence of obesity, diabetes, cancers, respiratory diseases and other NCDs are increasing all over the world (Murray and Lopez, 1996). Contrary to widely held beliefs, the problem is not limited to developed countries (Boutayeb andBoutayeb, 2005); it constitutes a major concern for health authorities in developing countries (Alwan, 1997; Boutayeb, 2006).

2.5 Factors affecting the practice of physical exercise

A large proportion of adults in Western cultures are physically inactive, despite several decades of warnings about the potentially negative health consequences of a sedentary lifestyle. Efforts to promote physical activity have focused on identifying its determinants and designing interventions that might effectively promote regular physical activity. The multitude of factors that induce adults to initiate and maintain programmes of physical activity have been divided into those that are invariable (age, gender, race, ethnicity) and those that are presumed to be modifiable (behavioural and personality characteristics, environmental circumstances and community settings). The lack of consistency in the design, analysis and reporting of interventions in the lives of inactive or sedentary individuals has produced equivocal results. However, several social and environmental factors have systematically emerged as determinants of physical activity in adults, (Seefeldt, Malina, and Clark, 2002)

Aarts et al., (1997), stated that; there are many obstacles to the development of exercise habits. First, the person may not know which type of exercise behaviour promotes health or

that a sedentary lifestyle will have negative effects for health in the long term. Therefore, individuals may not be motivated to start any type of health enhancing exercise behaviour.

Second, despite health beliefs the person may never decide to attempt a certain activity, because it seems not desirable enough. This suggests that the initiation of exercise behaviour does not merely rely on having knowledge about the relationship between exercise and health. In addition, individuals will also base their decision to exercise on other, non-health-related consequences.

Third, after trying the behaviour and learning about its consequences and/or its difficulty, the person may decide to quit the action. This may be because the expected outcomes of the chosen type of exercise are not immediately obtained, basically because they are only visible in the long term (a problem related to many health behaviours). Also, when performing the behaviour, persons may encounter unanticipated negative consequences. On the other hand, individuals may have created personal goals that are rather difficult to achieve. For example, jogging over a distance of 5 km may be a relatively more difficult task for untrained persons than cycling 10 km (notice that both types of activities can be done in 30 min). Therefore, individuals should be encouraged to choose a type of exercise behaviour that leads to immediate satisfactory experiences and can be executed within the boundaries of their personal capabilities. In other words, in order to develop exercise habits, focusing on both proximal outcomes and goals is more effective than directing attention to distal ones.

Fourth, the possibility to carry out the same behaviour any next time constitutes an important link in the chain of repeated exercise behaviour and the development of a habit. For example, time constraints and lack of facilities have been found to be the main reasons why individuals do not maintain an exercise program (Dishman, 1991).

Tappe, Duda, and Ehrnwald, (1989) highlighted that major barriers to exercise were “time constraints,” “unsuitable weather,” “school and schoolwork,” and “lack of interest or desire.” Univariate ANOVAs revealed adolescent males had significantly higher scores than females for “use of alcohol and drugs” and “having a girlfriend,” while “time constraints” was a significantly greater barrier to exercise among females. Discriminant analyses indicated the barriers of “having a girlfriend” and “use of alcohol and drugs” also distinguished highly active males from highly active females. An individual is more likely to participate in regular exercise if he/she enjoys the physical activity; believes that time can be found for exercise;

believes that there are relatively few barriers to getting regular exercise; believes the benefits of exercise outweigh the costs; has friends or family members who exercise and support or both his or her getting exercise; feels safe exercising outdoor, near home, or work; and has access to an attractive and convenient exercise space near home or work (Shimer, 1996; Elendu et. al., 2013).

Therefore, the degree of (internal and external) control over the behaviour is an important element in the process of habit formation and its livelihood (Prochaska, 1994). This suggests that relatively simple exercise behaviours (e.g. walking, cycling) may more easily become habitual than behaviours that are rather complex (e.g. attending an organized fitness program), because the latter behaviours are more subjected to facilities, and probably need more intentional effort and planning to occur.

Garcia et al. (1995) also confirmed that compared to males, females reported less prior and current exercise, lower self-esteem, poorer health status, and lower exercise self-schema. Adolescents, in contrast to pre-adolescents, reported less social support for exercise and fewer exercise role models. In a path model, gender, the benefits/barriers differential, and access to exercise facilities and programs directly predicted exercise.

2.5.1 Physical environment and physical activity/exercise

The built environment in which older people live plays an important role in promoting or inhibiting physical activity. Most work on this complex relationship between physical activity and the environment has excluded people with reduced physical function or ignored the difference between groups with different levels of physical function (Gong et al., 2014), they stressed further that a certain level of physical functional capacity is required to participate in physical activity. As people get older, physical functional capacity declines and people experience a shrinking of their activity spaces and participation in physical activity. In other words, older adults tend to rely more heavily on their local environment for day-to-day activities. Older people with poorer health are found to participate in less physical activity. Walking, as an example, is the most common form of physical activity among adults. But difficulty in walking is commonly observed within older populations.

Neighbourhoods with signs of physical disorder (e.g., graffiti, vandalism) and social disorder (e.g., loitering, drug use) may discourage individuals from engaging in outdoor activities. Concerns for neighbourhood safety may be reported more frequently for girls than boys. Our

study found that agreeing it was safe to walk or jog in the neighbourhood was associated with higher levels of physical activity, (Evenson et al., 2006). Inconvenience, inaccessible programme locations, work conflicts, lack of time and energy, and medical problems can hinder long-term participation in physical activity (McAuleye and Jacobson, 1991; Elendu et. al, 2013). Unfavourable and non-supportive sports environment affects exercise and sports adherence and performance of sports participants. The nature of sports facilities is one of the factors that determine one's exercise behaviour pattern.

Promoting physical activity is a public health priority, and changes in the environmental contexts of adults' activity choices are believed to be crucial. However, of the factors associated with physical activity, environmental influences are among the least understood, (Humpel, Owen, and Leslie, 2002).

2.6 Attitudes and Perception about physical exercise

Attitudes are people's perceptions, ideas or judgments concerning a specific behaviour. Theory and research in social psychology imply that attitudes predict behaviour. The adoption of an active lifestyle is often associated with positive attitudes towards exercise. Thereby, the formation of positive attitudes towards exercise is important, taking into consideration the fact that regular exercise has been shown to be beneficial for public health (Ajzen, 1988; Digelidis, Papaioannou, Laparidis, and Christodoulidis, 2003). An attitude is a hypothetical construct that represents an individual's degree of like or dislike for an object or item. Attitudes are generally positive or negative views of a person about a place, thing or event (Obi-keguna and Isidore, 2004; Donatus et. al., 2014). Individuals' lifestyle or health habits and behaviours constitute what a person does and what he/she fails to do, ranging from smoking, overeating, inactivity, alcoholism, drug abuse and participation in unprotected sexual relationships (Mayoclinic 1999; Raheem, et al., 2011).

Sung, Yu, So, Lam, and Hau, (2004)**,** found out in a study that the overweight children had a significantly lower self-perception of their physical competences than normal weight children—specifically of their appearance, body fatness, sports competence, endurance, coordination, flexibility and general physical self-concept, as well as to a smaller extent, their global self-esteem, without feeling significantly disadvantaged in their general health, levels of physical activity or strength. Notably, they perceived themselves to be significantly stronger. The finding that overweight children did not perceive themselves to be less healthy

despite generally low self-perception of physical competences, suggests that impaired sports performance at this age does not extend to awareness of its risks to long-term health, or of concurrent medical and psycho-social problems (Braet et al., 1997; Berenson et al., 1998; Dietz, 1998; Goran and Gower, 1999; Reilly et al., 2003). Atlantis et al. (2007) proved that overweight and particularly obesity are associated with lower prevalence of sufficient physical activity for health benefits, but many of these associations are weakened by acceptable weight perception. Overweight perception may be another barrier to physical activity participation among men and women with excess body weight. In a sample of young British adults, Wyse et al. found that males were significantly more likely to be in the action or maintenance compared with their female counterparts, (Wallace, Buckworth, Kirby, and Sherman, 2000)

Research has established that goal perspectives differ between individuals and across contexts. High task-oriented students are more intrinsically motivated than low task-oriented students (Roberts, 1992). The perception of a high task-involving climate is positively related to students' intrinsic motivation in physical education (Duda, 1996). On the other hand, the perception of an ego-involving climate is linked with higher levels of somatic anxiety and the belief that ability is an important determinant of achievement(Digelidis et al., 2003).

The relationship between exercise self-efficacy and participation in physical activity has been well documented; individuals with low perceived confidence in their ability to participate in physical activity (i.e. exercise self-efficacy) are less likely to participate in physical activity than individuals who have greater exercise self-efficacy. Therefore, exercise self-efficacy appears to be a critical variable for exercise behaviour regardless of population(Wallace et al., 2000).

Most young children have a very positive attitude towards physical exercise. However, as they grow older, their perception of physical exercise as a positive experience seems to become more ambiguous. From the few studies available, it seems likely that quality physical exercise programmes help to maintain initial positive perceptions, (Trudeau and Shephard, 2005). Furnham, Badmin, and Sneade, (2002) also said that boys were as likely to want to be heavier as lighter, whereas very few girls desired to be heavier. Only girls associated body dissatisfaction with the concept of self-esteem. Male self-esteem was not affected by body dissatisfaction. Specific reasons for exercise were found to correlate with low self-esteem.

Cilliers, Senekal, and Kunneke(2006) ascertained that underweight, normal-weight and overweight students differed significantly with regard to their perception of their weight, their weight goals and their previous weight loss practices. Underweight students mostly perceived their weight as normal, were satisfied with their weight and had not tried to lose weight previously, although almost a third still wanted to lose 1–3 kg. Although two-thirds of normal-weight students perceived their weight as normal, most wanted to lose weight and had tried to lose weight previously. Overweight students were significantly more inclined to be realistic about their perception of their weight and their weight goals. They also explained further that their results indicate that female students do not have a realistic perception of their weight, with perceived weight being higher than actual weight.

In traditional Nigerian society, house-helps or housemaids are mostly girls and women because of the expected domestic assistance and up-keep of the home. Young girls and women receive scolding and discouragement from parents and older members of the society for participating in physical exercise with the cultural belief that it has negative effects on their reproductive system (Elendu et. at., 2013).

2.7 Conceptual framework

The health providers and promoters need to understand that different people in the communities does not only behave differently but also have different reasons and explanations for adopting a way of life and for engaging in different kinds of behaviour either healthy or risky behaviour. Hence, the need to direct health education programmes or intervention based on the diagnosis about health behaviours in each community is very important in the field of Health Promotion and Education. Therefore HEALTH BELIEF MODEL and PRECEED MODEL were used in this study to explain human behaviours as it relate to knowledge, attitude and practice of physical exercise among postgraduate students of the University of Ibadan.

2.7.1 HEALTH BELIEF MODEL

The health belief model is a psychological health behaviour change model developed to explain and predict health-related behaviours, particularly in regard to the uptake of health services. The health belief model was developed in the 1950s by the U.S. Public health Service and remains one of the most well-known theories in health behaviour research. The health belief model suggests that people's belief about health problems, perceived benefits of action, barriers to action, and self-efficacy explain engagement (or lack of engagement) in health promoting behaviour. A stimulus or cues to action must also be present in order to trigger the health promoting behaviour. The theoretical constructs or tenets are as follows:

Perceived susceptibility: it refers to subjective assessment of risk to develop a health problem. The health belief model predicts that individuals who perceive that they are susceptible to a particular health problem will engage in behaviours to reduce their risk of developing the health problem. Individuals with low perceived susceptibility may deny that they are at risk for contracting a particular disease.

Perceived severity: it refers to subjective assessment of the severity of a health problem and its potential consequences. The model proposes that individuals who perceive a given health problem as serious are more likely to engage in behaviours to prevent the health problem from occurring (or reduce its severity).

Perceived benefits: health related behaviours are also influenced by the perceived benefits of taking action. Perceived benefits refer to an individual's assessment of the value or efficacy of engaging in a health promoting behaviour to decrease risk of disease.

Perceived barriers or constraints: health related behaviours are also a function of perceived barriers to taken action. Perceived barriers refer to an individual's assessment of the obstacles to behaviour change. Even if an individual perceives a health condition as threatening and believes that a particular action will effectively reduce the threat, barriers may prevent engagement in the health promoting behaviour.

Cues to action: the model posits that a cue or trigger is necessary for promoting engagement in health promoting behaviours. Cues to action can be internal or external. Physiological cues e.g.pains;symptoms are example of internal cues to action

Self-efficacy: it refers to an individual's perception of his or her competence to successfully perform behaviour. Self-efficacy was added to the health belief model in an attempt to better explain individual differences in health.

Application of Health Belief Model to the knowledge, attitude and practice of physical exercise among postgraduate students

Perceived susceptibility: The belief that non-communicable diseases are becoming rampant; that physical exercise is good for the body and can help to reduce the risk of developing non-communicable diseases. The belief that physical exercise promotes health; if they do not see that they are at risk of getting any non-communicable disease or can't see any importance of physical exercise, they may not be practicing physical exercise.

Perceived severity: Belief that physical inactivity can cause various chronic diseases and put them at risk of not living long to attain their desired age. Belief that non-communicable diseases can hinder an individual from doing certain things due to the danger it poses or restricts an individual. Such belief can influence their decision to be practicing physical exercise.

Perceived benefits: Belief that practicing physical exercise will promote their health, give them quality life and that it will reduce their risk of getting any non-communicable diseases. The beliefthat practicing physical exercise will reduce the susceptibility and severity to develop any non-communicable disease. If they believe this, it can influencetheir decision in participating in physical exercise.

Perceived barriers: the barriers could be factors such as availability of facilities/equipment for physical exercise, affordability of kits for practicing physical exercise and the lack of time to practice physical exercise. The time could be associated with the time being spent to go to class and to study privately or to do assignments. If the perceived barriers outweigh the benefits, this could make them not to participate in physical exercise.

Cues to action: Factors that can prompt them to practice physical exercise such asencouragement from friends and family, religious leader, the mass media etc.

Self-efficacy: Confidence in ability to successfully perform the action. This is the confidence that an individual have to practice physical exercise.

HEALTH BELIEF MODEL

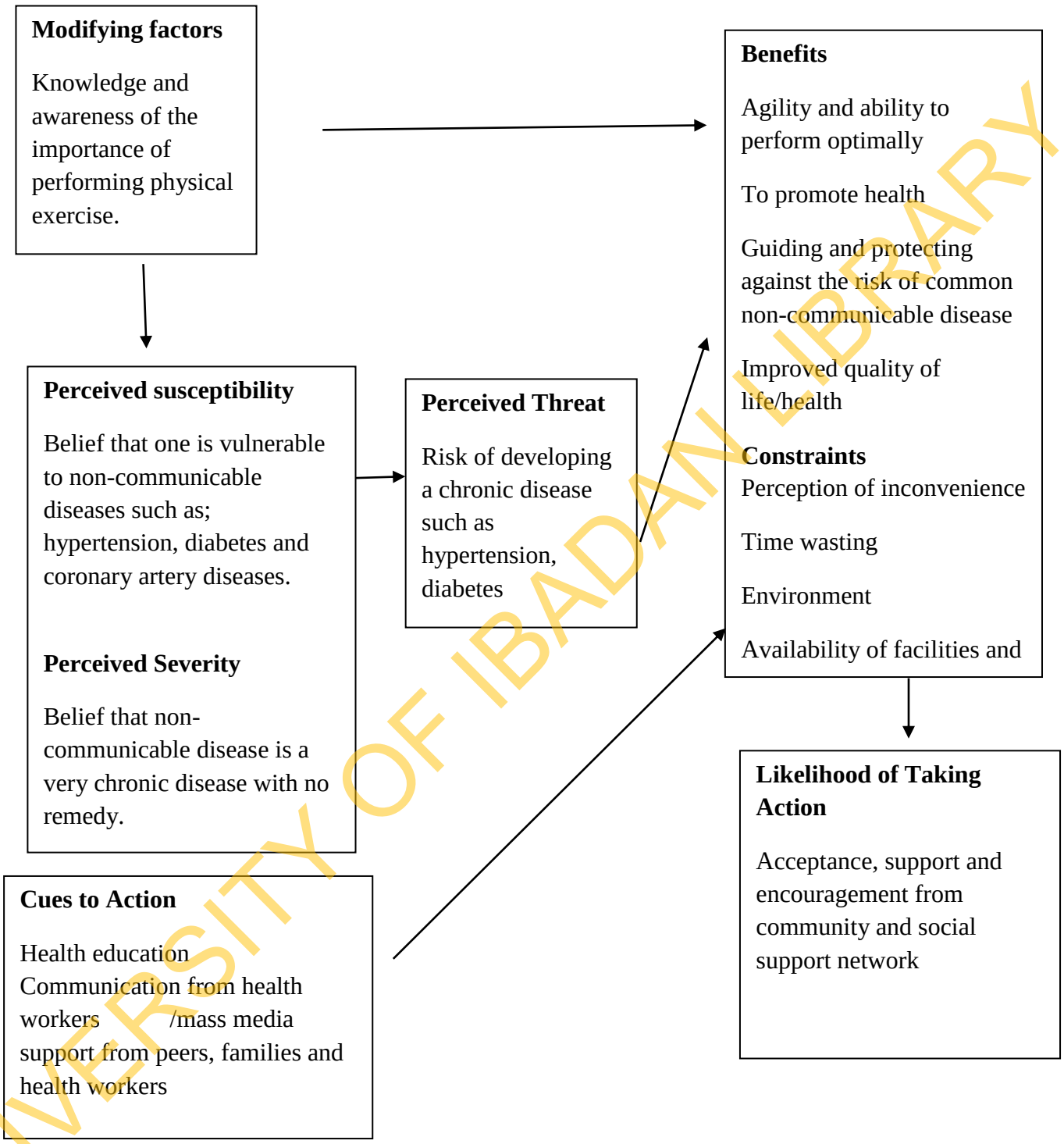

Figure 2.1 Health Belief Model illustrating the factors influencing the practice of physical exercise

Precede Model

The model provides a comprehensive structure for assessing health and quality-of-life needs of the populace and for designing, implementing, and evaluating health promotion and other public health programmes to meet these needs.

Predisposing Factors

The characteristics of individual such as age, gender, education level, knowledge, attitude and behaviour towards physical exercise come to play at this level.Do the students have adequate knowledge about physical exercise? What are the attitudes of students towards physical exercise?

Enabling Factor

These are factors that enable people to act on their predisposition. They include money, education demands (time), availability of sporting facilities and closeness to a recreation centre either in the campus or off campus, and affordability that will allow the students to participate in physical exercise.

Reinforcing Factors

This factor encourages repetition and persistence of behaviour after behaviour has been initiated. The reinforcing factors include influence of significant others such as friends, peer groups, acquaintances and contacts in schools and work place. Friends and peer pressure are relevant factors that can also influence the opinion and belief of the students about the subject matter. Peer group and acquaintances can advise the students to get involved in physical exercise. Interventions targeted at the peer groups, friends and acquaintances will surely help in correcting opinions and behaviours about physical exercise. Other factors that can influence students to participate in physical exercise can also be from religious leaders and lecturers by encouraging physical exercise as they do preach spiritual exercise and lectures in class respectively.

PRECEED MODEL

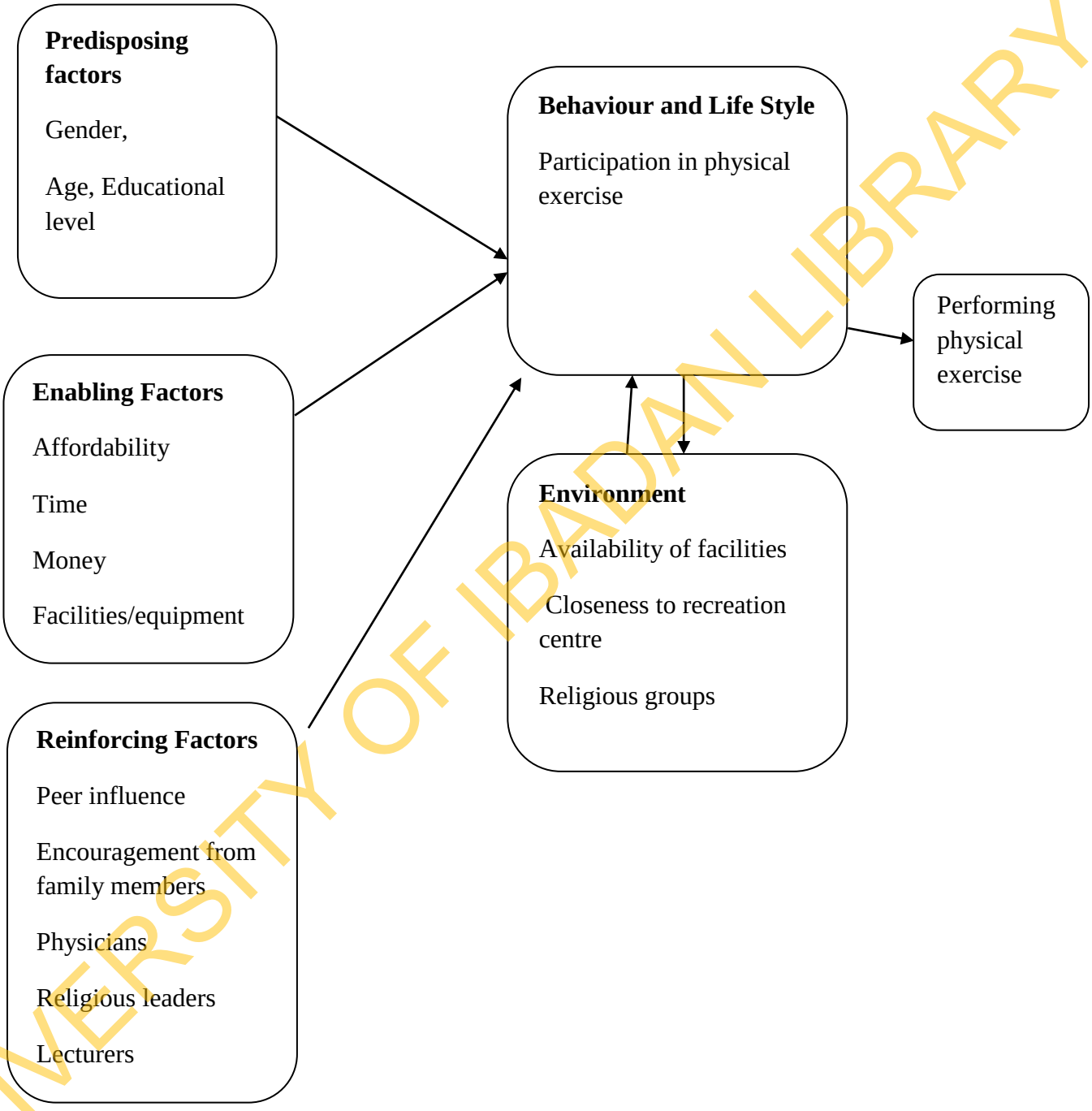

Figure 2.2 Precede Model illustrating the factors that influence the practice of physical exercise

CHAPTER THREE

METHODOLOGY

This chapter presents the description of the study area and describes the research design. The other components of the methodology include the study population, sample size and sampling technique, methods and instruments for data collection, validity and reliability, data collection process, data management and analysis, ethical consideration and limitations of the study.

3.1 Study design

This study utilized a descriptive cross-sectional design involving the use of quantitative methods to obtain information on the knowledge, practice and attitude of physical exerciseamong postgraduate students of University of Ibadan, Ibadan.

3.2 Study site

This study was carried out among the postgraduate students of the University of Ibadan, Ibadan, Oyo state.

3.3 Description of study area

The University of Ibadan started off as the University College, Ibadan (UCI) which was founded in 1948, occupying, at first, the old site at Eleyele. It later moved to the new site which covered over 2,550 acres of land. The establishment of the university could be traced directly to the reports in 1945of the Asquith and Elliot Commissions which were set up by the British Government in 1943. The formal commissioning of the school took place on 25th March, 1948. The University of Ibadan, then University College, awarded its first postgraduate degree in 1952, when the University was under a "scheme of special relation" with the University of London. Since becoming an independent academic institution in 1962, the University has enrolled 81,768 postgraduate students and awarded 45,709 higher degrees, including 2 DSC, 4,366 PhDs,36 MD/MS, 4,700 MPhil/Professional Master's degrees,32,525 Academic Master's Degree and 4,281 Postgraduate Diplomas. Over the years, University of Ibadan students have meaningfully contributed to society in many ways from establishing other institutions of higher learning in Nigeria to impacting various sectors of the global economy. The University College in 1948 had three founding faculties (Arts, Science and Medicine). Today, there are 13 faculties: Arts, Science, Agriculture and Forestry, the social

sciences, Education, Veterinary Medicine, Technology, Basic Medical Sciences, Pharmacy, Clinical Sciences, Law, Public Health and Dentistry.

The vision of the institution is to be a world-class institution for academic excellence geared towards meeting societal needs. And the missions are as follows: to expand the frontiers of knowledge through provision of excellent conditions for learning and research, to produce graduates who are worthy in character and sound judgement, to contribute to the transformation of society through creativity and innovation, and to serve as a dynamic custodian of society's salutary values and thus sustain the integrity.

The Postgraduate School, University of Ibadan as it is presently structured, was approved by Senate (Senate Paper No. 2618 of 29th May 1978). Presently, the postgraduate school consists of thirteen faculties; Arts, Sciences, Basic Medical Sciences, Clinical Sciences, Dentistry, Public Health, Pharmacy, Agriculture and Forestry, the Social Sciences, Education, Veterinary Medicine, Technology, Law, and six Institutes: institute of Child Health, Institute of African Studies, Institute of Education, African Regional Centre for Information Science, Centre for Peace and Conflict Studies, Institute for Advanced Medical Research and Training.

3.4 Study variables

The independent variables consists of the socio-demographic characteristics of the respondents which include their faculty, department, course of study, age, sex, discipline (first degree background), occupation, residence, occupation of father,fathers' level of education, occupation of mother, mothers' level of education, income, religion, ethnicity, state of origin, and marital status.

The dependent variables are the knowledge of physical exercise, attitude towards physical exercise, factors influencing the practice of physical exercise, and the practice of physical exercise among the respondents.

3.5 Target population

The target population for the study constitute Master's students of postgraduate school, University of Ibadan admitted for full time academic programme of the institution. For the purpose of this study, the registered postgraduatestudents of the University of Ibadan were involved in the study.

3.6 Sample size determination

The sample size (n) was determined by using sample size formula as used by Lwanga and Lemeshow (1991):

$$n = \frac{Z^2 p(1-p)}{d^2}$$

Where n=sample size required

Z= confidence limit of survey at 95% (1.96)

P= Proportion taken as 41% prevalence of physical inactivity (Oladepo, 2013).

d=absolute deviation from true value (degree of accuracy) = 5%

$$n = \frac{1.96^2 \times 0.41 \times 0.59}{0.05^2} = 371.7, \text{ approximate} = 372$$

A non-response rate of 10% 0f 372 = $\frac{372 \times 10}{100}$ = 37.2 approximately 37,

Therefore, 37was added to the sample size calculated to make the sample size 409 in order to address any possible case of incomplete response.

3.7 Sampling technique

A multistage sampling technique wasused for this study to select the respondents from the student population. The sampling technique involves the faculties and the departments.

Stage One: simple random technique was used to select 8 faculties among the faculties in the postgraduate school.

Stage Two:simple random technique was also used to select the departments from the 8 selected faculties

Stage Three: Proportionate sampling technique was used to select the total number of respondents needed from the selected departments.

Stage Four: Sample frame of the selected departments was obtained and a simple random technique was used to select the students.

3.8 Instrumentation

A semi-structured questionnaire which was self-administered was used since the respondents were able to read and write. The questionnaire have fivesections which are; section A; (the socio-demographic characteristics of the respondents), section B; (knowledge of respondents on physical exercise), section C; (attitude of respondents towards physical exercise), section D;(information on perceived factors influencing the practice of physical exercise), and section E; (level of practice of physical exercise among the respondents).

3.9 Validity

Validity of the instrument was ensured through the development of a draft instrument by consulting relevant literature, adopting questions from relevant questionnaires of researches related to the study with the help of the supervisor and subjecting the draft to independent, peer and expert reviews, particularly experts in public health.

3.10 Reliability

The instrument used to collect data for the study was pre-tested among the postgraduate students of ObafemiAwolowo University, Ile-Ife in Osun State considering the fact that this postgraduate school share similar characteristics with that of the study site. The questionnaire was administered among 42 (10% of the sample size) eligible respondents. Thereafter, the questionnaires were subjected to a measure of internal consistency using the Cronbach's Alpha model technique. The reliability value obtained for the study was 0.702. The reliability coefficient obtained from this analysis was used to ascertain the statistical reliability of the instrument.

3.11 Procedure for data collection

During this period, the researcher and the research assistants visited the selectedfaculties within five days to first seek consent, followed by administration of the questionnaires. The researcher and the research assistants approached the students during their lecture free times to fill the questionnaires. The team waited for the students to complete the questionnaires and

in case a section is not clear to them, they asked for clarifications and it was explained to them. The completed questionnaires were then retrieved from them.

3.12 Ethical consideration

The confidentiality of the respondents was ensured and protected as there was no request for names and personal addresses. The researcher and the research assistants were of good conduct and did not act coercively or in any unethically unacceptable manner. The nature, purpose and processes involved in the study were well explained to the participants with emphasis on confidentiality, privacy and anonymity of information provided. In other to ensure anonymity of responses, code numbers was given to each participant and any form of identification was not included in the questionnaire. Information gathered from the respondents was stored in the computer package for analysis by the principal investigator and with no access to unauthorized persons while the questionnaires that were filled by the respondents were kept and stored in a safe place. Informed consent was obtained from the respondents before administration of the questionnaire.

3.13 Data managementand analysis

The principal investigator checked all copies of the administered questionnaire one after the other for the purpose of completeness and accuracy. Serial number was assigned to each questionnaire and question for easy identification and for correct data entry and analysis. A coding guide was developed to code and enter each question into the computer for analysis. Analysis was done with the use of Statistical Package for Social Science(SPSS). The data entered into the computer was subjected to Descriptive (mean, median, mode), and Inferential (Chi-Square) statistical analyses. Finally, information obtained was summarized and presented in tables and charts. Knowledge scores ≤17, >17-35 and >35 were classified as poor, fair, and good respectively. Diseases preventable by physical exercise knowledge scores; ≤7, >7-15, and >15 were classified as poor, fair, and good respectively. The attitudinal scores were categorised as ≤11 and >11as negative and positive attitude respectively.

3.14. Limitation of the Study

The study is limited in that it will be carried out in a school environment which has many categories of postgraduate studies involving few selected students which are mainly Master's students, thereby making the research participants very selective. Any generalization of the results of this study must be made with caution.

CHAPTER FOUR

RESULTS

4.1 Respondents' Socio-demographic Characteristics

A total of 405 postgraduate students of University of Ibadan were interviewed and the socio-demographic profile of the respondents is presented in Tables 4.1a, 4.1b, and 4.1c. Majority of the respondents (27.7%) were from the pure sciences background (discipline), followed by 19% of the respondents who belongs to social science, closely followed by 17.3% of the respondents which are from the education background, 15.1% are from the arts background while 9.4% and 2.7% are from the medical science and law background respectively (See Table4.1a).

Two hundred and thirty-three (57.5%) were males while the females are 172 (42.5%). The age of the respondents ranged from 22 – 52 years with a mean age of 28.1±4.4. A large number of the respondents 238 (58.8%) were between 26 – 30 years of age, followed by 100 (24.7%) of the respondents with the age range of 21 – 25 years, 40 (9.9%) of the respondents are between ages 31 – 35 years, 14 (3.5%) of the respondents have their ages between 36 – 40 years, 8 (2%) of the respondents are between the age range of 41 – 45 years, while 4 (1%) falls between 46 – 50 years of age and 1 (0.2%) of the respondents falls between the ages of 51 – 55 years. Close to two-third of the respondents 73.8% stays off-campus while 26.2% stays on campus.

A proportion of the respondents 54.1% reported thattheir father is a civil/public servant, 76.8% of the respondents said that their father had a tertiary education. (See Table 4.1c).Less than half of the respondents 44.9% confirmed that their mothers belong to the civil/public service, followed by 40.5% of the respondents that claimed that their mother is a farmer/trader, 70.4% of the respondents said that their mothers had a tertiary education.

About three-quarter 75.8% of the respondents reported that they are not working. For the income of the respondents, 41% of them said that they receive between ₦20000 and ₦39000 in a month, followed by 18.3% who claimed that they receive between ₦40000 and ₦59000 in a month (see Table 4.1b). Majority of the respondents are 79.8% Yoruba, followed by 10.4% who are Igbo. 81% of the respondents are single while the remaining 19% claimed to be married. The rest are shown in the tables below.

Table 4.1a:Socio-demographic characteristics of the respondents N=405

Variables		Frequency	Percentage (%)
Faculty	Education	78	19.3
	Sciences	72	17.8
	Arts	59	14.6
	Public Health	47	11.6
	Agriculture	39	9.6
	Social Science	66	16.3
	Basic Medical Sciences	34	8.4
	Law	10	2.5
Discipline (Background)	Pure science	112	27.7
	Social science	77	19.0
	Education	70	17.3
	Arts	61	15.1
	Agriculture	36	8.9
	Medical Science	38	9.4
	Law	11	2.7

Table 4.1b:Socio-demographic characteristics of the respondents N=405

Variables		Frequency	Percentage (%)
Sex	Male	233	57.5
	Female	172	42.5
Age in years	21 -25 years	100	24.7
	26 - 30 years	238	58.8
	31 - 35 years	40	9.9
	36 - 40 years	14	3.5
	41 - 45 years	8	2
	46 - 50 years	4	1
	51 - 55 years	1	0.2
Residence	Campus	106	26.2
	Off campus	299	73.8
Income	Less than ₦20000	61	15.1
	between ₦20000 and ₦39000	166	41.0
	between ₦40000 and ₦59000	74	18.3
	between ₦60000 and ₦79000	14	3.5
	₦80000 and above	19	4.7
	Confidential/private	71	17.5
Religion	Christianity	346	85.4
	Islam	57	14.1
	Traditional	1	0.2
	Jehovah witness	1	0.2
Ethnicity	Yoruba	323	79.8
	Igbo	42	10.4
	Hausa	8	2.0
	Others (Edo, Urhobo, Delta, Tiv, Ishan, Ijaw, Ibibio, Igede, and Efik)	32	7.8
Marital status	Single	328	81.0
	Married	77	19.0

Table 4.1c:Socio-demographic characteristics of the respondents

Variables		Frequency	Percentage (%)
Occupation of father	Civil/Public servant	219	54.1
	Farmer/Business man	94	23.2
	Health professionals	6	1.5
	Pensioner/Retiree	43	10.6
	Lecturer	12	3.0
	Artisan/Driver/baker	11	2.7
	Engineer/Surveyor	20	4.9
Father's level of education	Primary education	35	8.6
	Secondary education	48	11.9
	Tertiary education	311	76.8
	No formal education	11	2.7
Occupation of mother	Civil/Public servant	182	44.9
	Farmer/Trading	164	40.5
	Artisan/Caterer/Typist	18	4.4
	Health professional	17	4.2
	Retiree	19	4.7
	Lecturer	2	.5
	House wife	3	.7
Mother's level of education	Primary education	49	12.1
	Secondary education	50	12.3
	Tertiary education	285	70.4
	No formal education	21	5.2
Occupation of the respondent	Civil/Public servant	67	16.5
	Business	19	4.7
	Program officer/Analyst	7	1.7
	Health professional	5	1.2
	Not working/unemployed	307	75.8

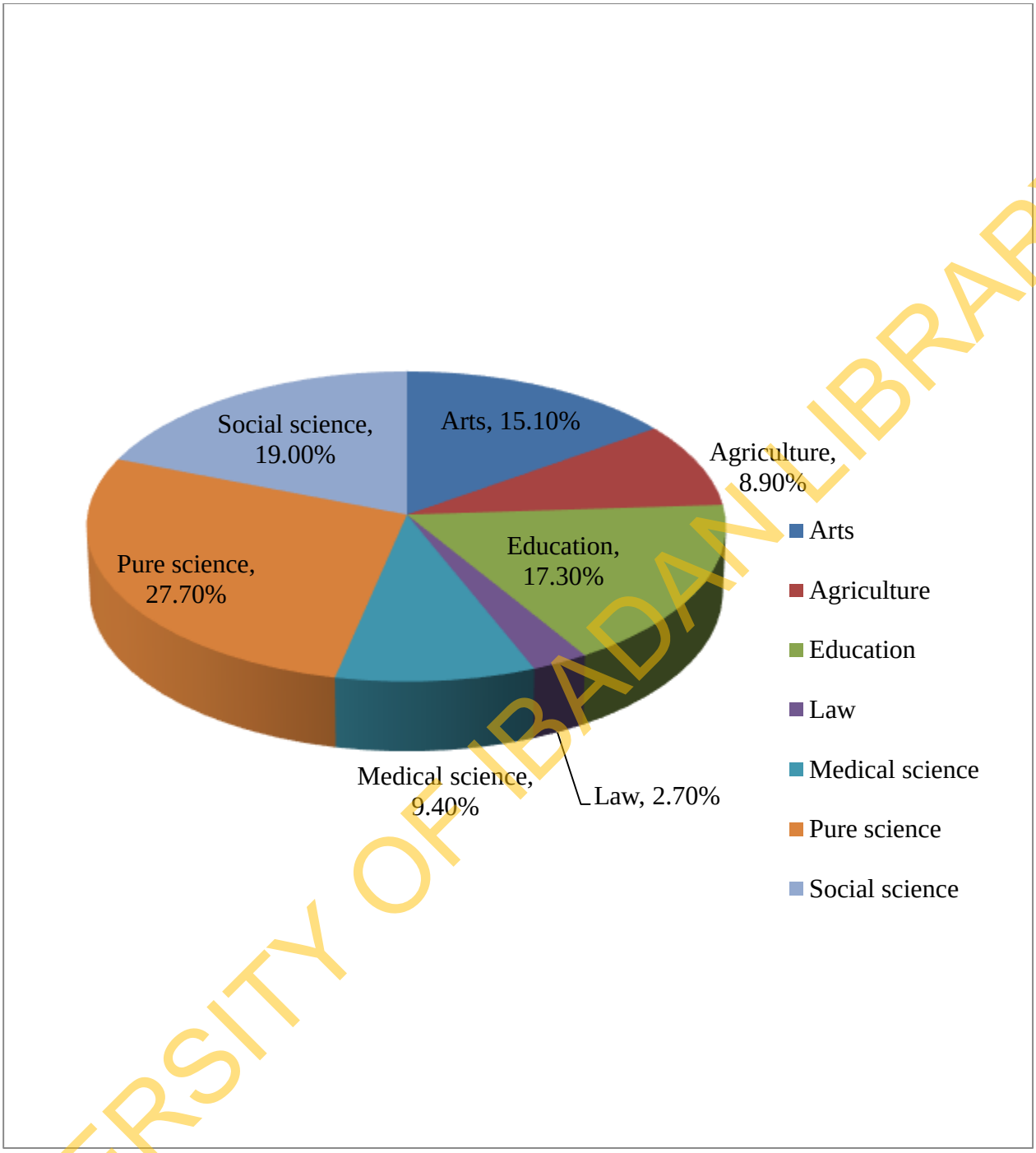

Figure 4.1: Discipline (first degree background) of the respondents

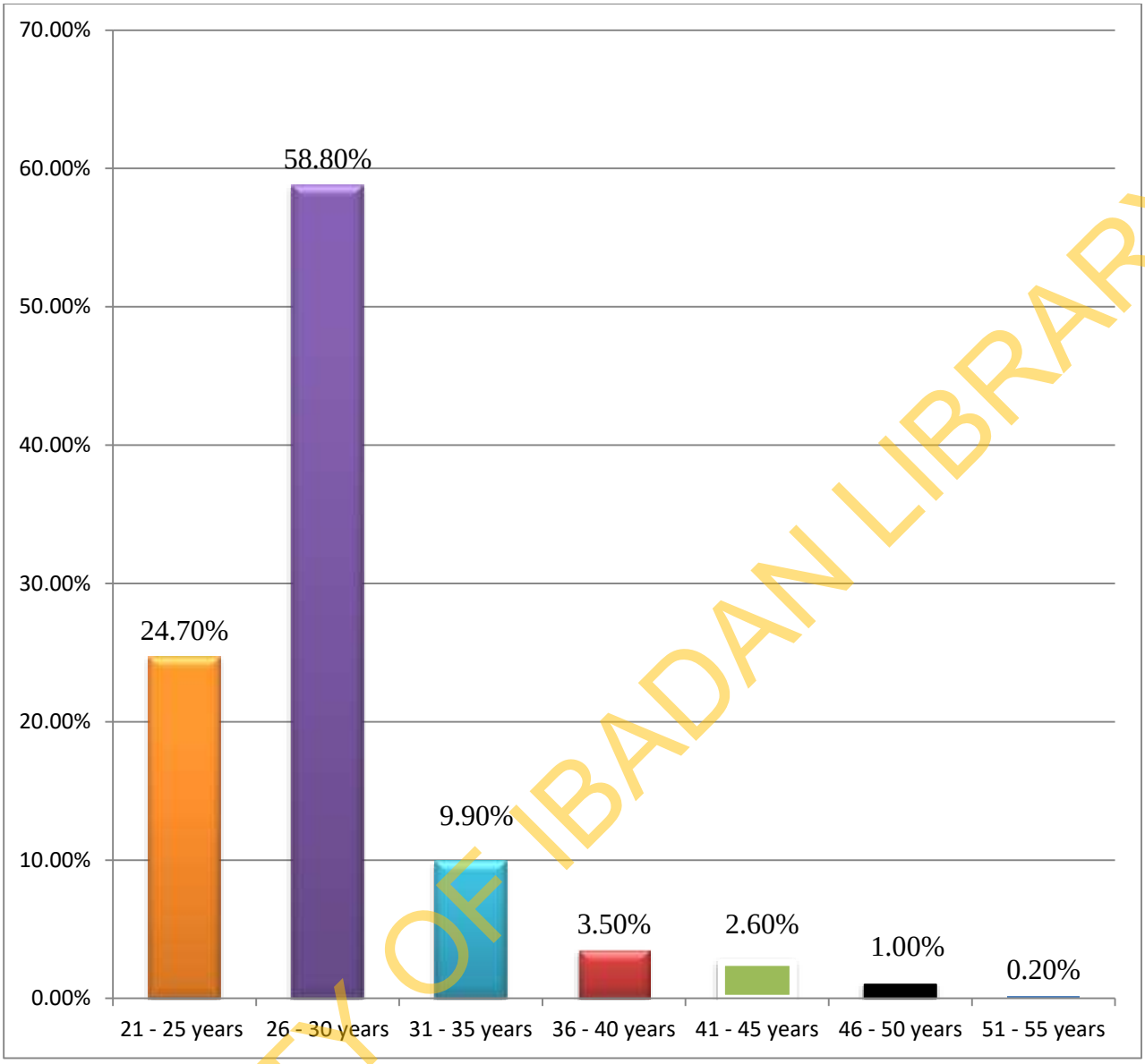

Figure 4.2: Age distribution of the respondents

4.2 Knowledge of respondents on physical exercise

Respondents were asked if physical exercise can also be called physical activity, 70.9% of the respondents said "yes", 25.4% said "no" while the remaining 3.7% of the respondents reported that they "don't know" and question was also asked if physical exercise is a subcategory of physical activity, 82.2% said "yes", 11.1% said "no" while 6.7% claimed they "don't know".

Question was asked to assess the knowledge of the respondents on the benefits of physical exercise, with questions such as physical exercise prevents an individual from non-communicable diseases, about half 51.1% of the respondents said "yes", 29.1% said "no" and 19.8% said they "don't know". Respondents were also asked if participating in physical exercise makes one weak, 75.3% said "no", 19.3% said "yes" while 5.4% said they "don't know". Question was also asked if physical exercise can relieve tension or anxiety, 90.4% of the respondents said "yes", while 4.4% said "no" and 5.2% said they "don't know". 94.1% said "yes" when they were asked if physical exercise can make people sleep better while 1.2% said "no" and the remaining 4.7% said they "don't know". When asked if physical exercise can improve the ability of an individual body to fight diseases, 87.9% said "yes", while 3.7% said "no" and 8.4% said they "don't know". A question was also asked if an individual is at risk of getting non communicable disease if he/she doesn't do physical exercise, 46.9% of the respondents said "yes", 29.6% said "no" and 23.5% said they "don't know". When asked if physical exercise can be used to reduce body weight, 97% of the respondents said "yes", 1.2% said "no" and 1.7% said they "don't know" (see Table 4.2).

Table 4.2: Respondents' knowledge of physical exercise N=405

Knowledge statements	Responses		
	Yes (%)	No (%)	Don't know
Physical exercise can also be called physical activity*	287 (70.9%)	103 (25.4%)	15 (3.7%)
Physical exercise is a subcategory of physical activity**	333 (82.2%)	45 (11.1%)	27 (6.7%)
Physical exercise prevents an individual from non-communicable diseases**	207 (51.1%)	118 (29.1%)	80 (19.8%)
Physical exercise promotes health**	401 (99%)	1 (0.2%)	3 (0.7%)
Physical exercise gives an individual good body shape**	397 (98%)	4 (1%)	4 (1%)
Physical exercise promotes good human relationship**	244 (60.2%)	95 (23.5%)	66 (16.3%)
Participating in physical exercise makes one weak*	78 (19.3%)	305 (75.3%)	22 (5.4%)
Physical exercise can relieve tension or anxiety**	366 (90.4%)	18 (4.4%)	21 (5.2%)
Physical exercise can make people sleep better**	381 (94.1%)	5 (1.2%)	19 (4.7%)
Physical exercise can prevent boredom**	340 (84%)	25 (6.2%)	40 (9.9%)
Physical exercise can improve the ability of an individual's body to fight diseases**	356 (87.9%)	15 (3.7%)	34 (8.4%)
An individual is at risk of getting non-communicable disease if he/she doesn't do physical exercise**	190 (46.9%)	120 (29.6%)	95 (23.5%)
Physical exercise can help build and maintain healthy bones**	378 (93.3%)	6 (1.5%)	21 (5.2%)
Physical exercise can be used to reduce body weight**	393 (97%)	5 (1.2%)	7 (1.7%)
Physical exercise can be used to reduce body fat**	399 (98.5%)	2 (0.5%)	4 (1%)

** Correct

* Incorrect

Respondents were also asked to name three physical exercises that they know, the responses were categorised into three; indoor exercise (skipping, dancing, press-up, badminton, cricket, jumping, table tennis, sit-up, and weight lifting), outdoor exercise (jogging, running, football, cycling, swimming, basketball, volleyball, cricket, tennis, athletics, and skating) and the incorrect answers (walking, sleeping, resting, cartwheel, fasting, sweeping, fetching water, gym, singing, fighting, and the non-response).

Table 4.3 presents the respondents' knowledge on which diseases or health problems that physical exercise can help to prevent. For heart diseases, 68.4% of the respondents said "yes", 16.3% said "no" and 15.3% said they "don't know". For type 2 diabetes, 39.8% said "yes", 33.1% said "no" while the remaining 27.2% said they "don't know", 85.7% said "yes" for obesity while 8.6% said "no" and 5.7% said they "don't know", 56% said "yes" for hypertension, while 27.7% and 16.3% said "no" and "don't know" respectively. For malaria, 8.4% of the respondents said "yes", 78.8% said "no" and 12.8% said they "don't know". 49.3% claimed that stroke can be prevented by participating in physical exercise while 27.7% said "no" and 23% said they "don't know". 67.7% believed that epilepsy cannot be prevented by taking part in physical exercise, 12.1% agreed that cancer can be prevented by participating in physical exercise. The mean knowledge score for the questions asked on physical exercise preventable diseases is 10.6±4.1. Respondents' with good knowledge were 122 (30.1%), while the respondents with fair and poor knowledge were 208 (51.4%) and 75 (18.5%) respectively.Therefore, it can be said that the respondents had a fair knowledge on diseases preventable by practicing physical exercise (see figure 4.4).

The overall mean knowledge score of the respondents is 38.9±6.7.Respondents' overall knowledge of physical exercise can be rated as good; majority 71.4% of the respondents had good knowledge while 28.4% and 0.2% had a fair knowledge respectively (see details in Figure 4.3).

Table 4.3:Respondents' knowledge on the diseases preventable by participating in physical exercise N=405

Diseases	Responses		
	Yes (%)	No (%)	Don't know (%)
Heart diseases**	277 (68.4%)	66 (16.3%)	62 (15.3%)
Type 2 diabetes**	161 (39.8%)	134 (33.1%)	110 (27.2%)
Obesity**	347 (85.7%)	35 (8.6%)	23 (5.7%)
Hypertension**	227 (56%)	112 (27.7%)	66 (16.3%)
Malaria*	34 (8.4%)	319 (78.8%)	52 (12.8%)
Stroke**	200 (49.3%)	112 (27.7%)	93 (23.0%)
Epilepsy*	23 (5.7%)	274 (67.7%)	108 (26.7%)
Cancer**	49 (12.1%)	262 (64.7%)	94 (23.2%)
Diarrhoea*	18 (4.4%)	299 (73.8%)	88 (21.7%)

** Correct

*Incorrect

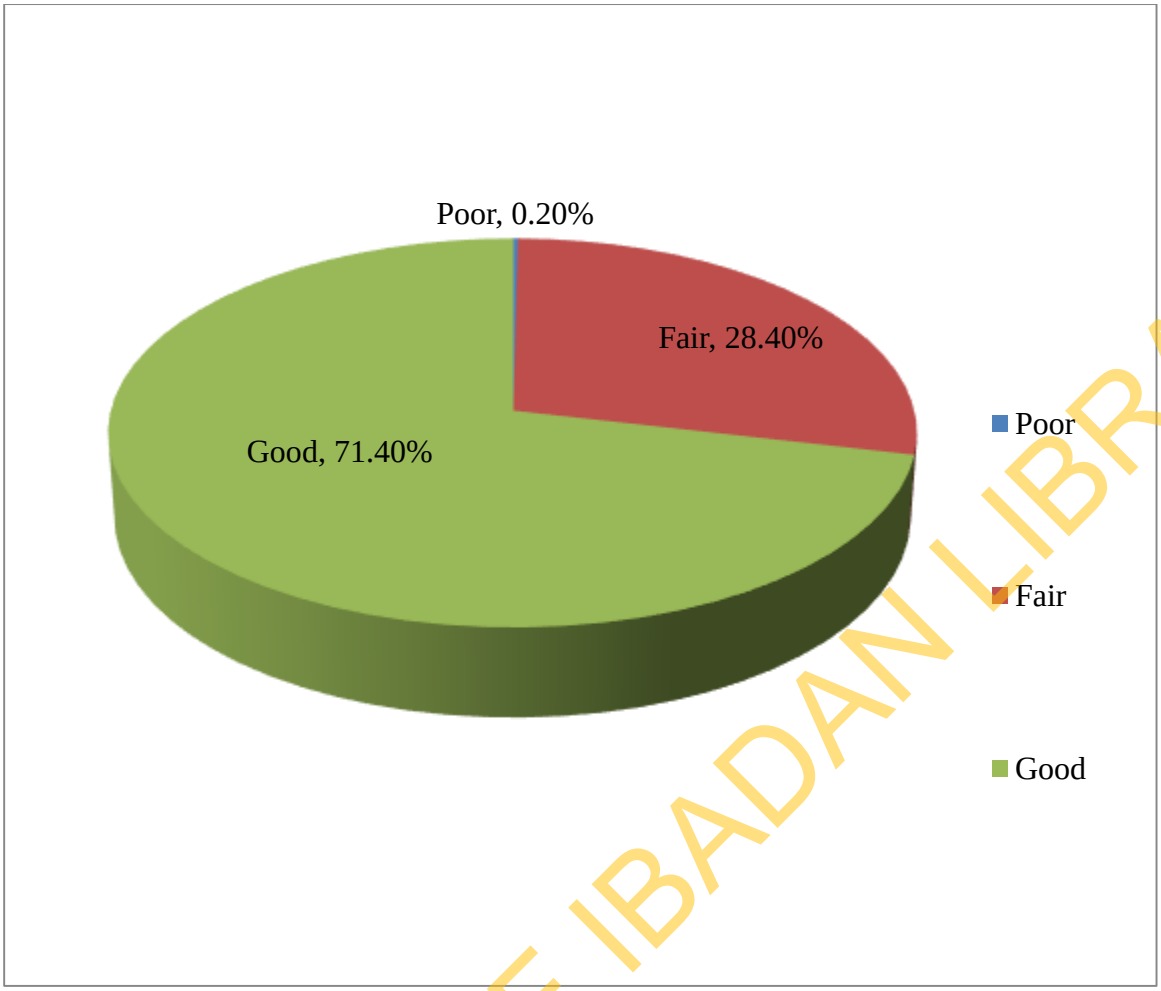

Figure 4.3: Respondents' level of knowledge on physical exercise

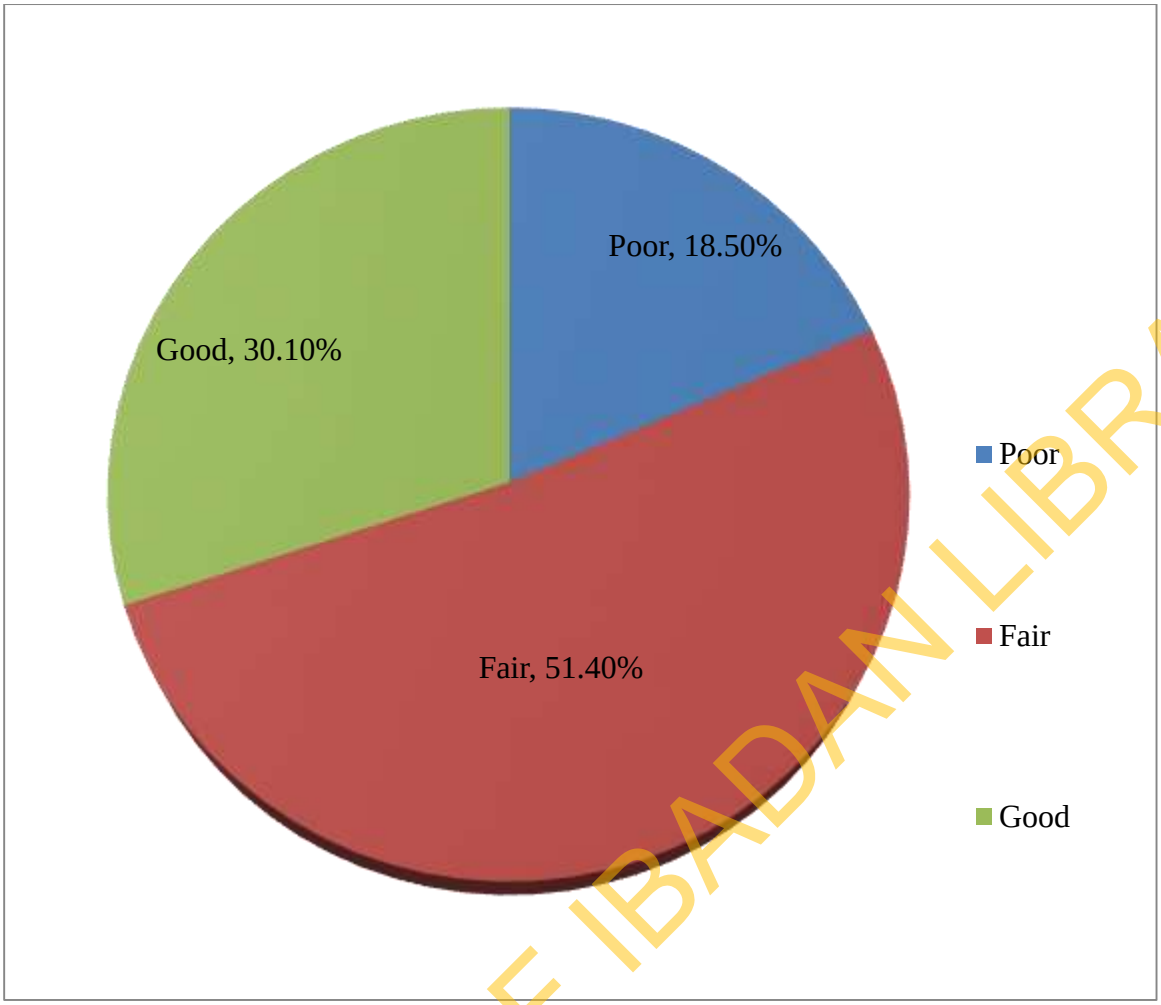

Figure 4.4: Respondents' level of knowledge on diseases preventable by participating in physical exercise

4.3 Respondents' attitude towards physical exercise

Majority 383 (94.6%) of the respondents disagreed to the statement that "physical exercise is mainly for athlete". Majority 379 (93.6%) and 367 (90.6%) of the respondents also disagreed to the statements that "people who spend regular time on physical exercise are unserious" and "physical exercise is strictly for overweight individuals" respectively. Three hundred and ninety (96.3%) agreed to the statement that "people should be encouraged to participate in physical exercise". Three hundred and seventy (91.4%) confirmed that they will recommend physical exercise to a friend and 334 (82.5%) disagreed that physical exercise brings inconvenience. Three hundred and forty-three (84.7%) agreed to the statement "physical exercise adds value to life". Three hundred and fifty (86.4%) disagreed to the statement "I don't take part in physical because I do not have the skills". Three hundred and eighty (93.8%) of the respondents agreed to the statement "taking part in physical exercise makes one feel healthy". Two hundred and six (50.9%) and 114 (28.1%) of the respondents disagreed and agreed to the statement "those who participate in physical exercise do not fall sick" respectively. Three hundred and seventy-five (92.6%) agreed to the statement that "I can recommend physical exercise for friends/family" (see Table 4.4).

The mean attitudinal score of the respondents is 17.3±2.9 and it was shown that 97% of the respondents had a positive attitude towards physical exercise (see Figure 4.5)

Table 4.4: Respondents' attitude towards physical exercise N=405

Statements	Responses		
	Agree (%)	Disagree(%)	Undecided (%)
Physical exercise is mainly for athlete	8 (2%)	383 (94.6%)	14 (3.5%)
People who spend regular time on physical exercise are unserious	5 (1.2%)	379 (93.6%)	21 (5.2%)
Physical exercise is strictly for overweight individuals	8 (2%)	367 (90.6%)	30 (7.4%)
People should be encouraged to participate in physical exercise	390 (96.3%)	10 (2.5%)	5 (1.2%)
I would recommend physical exercise to a friends	370 (91.4%)	9 (2.2%)	26 (6.4%)
Physical exercise brings inconvenience	38 (9.4%)	334 (82.5%)	33 (8.1%)
Physical exercise adds value to life	343 (84.7%)	24 (5.9%)	38 (9.4%)
I don't take part in physical exercise because I do not have the skills	21 (5.2%)	350 (86.4%)	34 (8.4%)
Taking part in physical exercise makes one feel healthy	380 (93.8%)	10 (2.5%)	15 (3.7%)
Those who participate in physical exercise do not fall sick	114 (28.1%)	206 (50.9%)	85 (21%)
I can recommend physical exercise for friends/family	375 (92.6%)	10 (2.5%)	20 (4.9%)

4.4 Perceived factors influencing the practice of physical exercise among respondents

For perceived factors that influence the practice of physical exercise, only 9 (2.2%) of the respondents reported that they have a major health challenge that can hinder them from participating in physical exercise. 3 of the 9 respondents reported that they have physical impairment while 2 reported that they have high blood pressure and another 2 claimed they have asthma. One respondent reported that he has myasthenia gravis and the other one claimed to have fracture. Out of the 9 respondents, 8 said "Yes" that if not for the health challenge, they will be participating in physical exercise while just 1 said "No". Among the respondents that said "Yes", 2 claimed that they will participate in physical exercise "*so as to feel fit and light*" and another 2 respondents said because "*physical exercise contribute to body well-being*". The reasons given by the remaining respondents are that; "*it gives good posture, enjoy doing it, it has many advantage"* and the other respondent said *"not all physical exercise are ok for him"*. The only respondent that said "no" gave his reason to be; don't like stressing the body.

Two hundred and sixty (64.2%) of the respondents agreed to the statement "facilities/equipment for physical exercise are not readily available". Two hundred and thirty-two (57.3%) of the respondents agreed that "it is difficult to combine regular physical exercise with postgraduate study" while 385 (95.1%) disagreed that "participating in physical exercise is a waste of time". Two hundred and fifteen (53.1%) of the respondents agreed that "kits for physical exercise are not usually affordable" and 136 (33.6%) disagreed to that. Three hundred and eighty-nine (96%) of the respondents disagreed that "physical exercise is mainly for male" and 387 (95.6%) agreed that "both male and female benefits from physical exercise". Only 133 (32.8%) of the respondents agreed that "taking part in physical exercise can make menstruation change", 90 (22.2%) disagreed to that while 182 (44.9%) were undecided. Three hundred and twelve (77%) disagreed that "taking part in physical exercise always lead to injuries". One hundred and nineteen (49.1%) of the respondents agreed that "friends around gives encouragement for practicing physical exercise" (see Table 4.5)

Table 4.5: Factors influencing the practice of physical exercise among respondents

N=405

Statement	Responses		
	Agree (%)	**Disagree (%)**	**Undecided (%)**
Facilities and/or equipment for physical exercise are not readily available	260 (64.2%)	115 (28.4%)	30 (7.4%)
It is difficult to combine regular physical exercise with postgraduate study	232 (57.3%)	136 (33.6%)	37 (9.1%)
Participating in physical exercise is a waste of time	10 (2.5%)	385 (95.1%)	10 (2.5%)
Kits for physical exercise are not usually affordable	215 (53.1%)	136 (33.6%)	54 (13.3%)
Physical exercise is mainly for male	6 (1.5%)	389 (96%)	10 (2.5%)
Male and female benefits from physical exercise	387 (95.6%)	14 (3.5%)	4 (1%)
Taking part in physical exercise can make menstruation change	133 (32.8%)	90 (22.2%)	182 (44.9%)
Taking part in physical exercise always lead to injuries	36 (8.9%)	312 (77%)	57 (14.1%)
Friends around you gives encouragement for practicing physical exercise	199 (49.1)	131 (32.3%)	75 (18.5%)

4.5 Practice of physical exercise among respondents

Respondents were asked on what they perceived their body weight to be.Majority 343 (84.7%) of the respondents claimed that they are normal weight, followed by 50 (12.3%) who claimed to be overweight while 10 (2.5%) and 2 (0.5%) claimed to be obese which is presented in the table 4.6 below

Figure 4.6 shows if the respondents exercise or played sport regularly, 162 (40.2%) of the respondents said “yes” while the remaining 243 (59.8%) said “no”

The respondents gave numerous reasons for not practicing physical exercise amongst which are; no time, to keep healthy, no interest etc. table 4.7 shows the response of the respondents to the reason why they participate and does not participate in physical exercise.

Table 4.6: Perceived body weight of the respondents N=405

Perceived weight	Frequency	Percentage (%)
Obese	2	.5
Overweight	50	12.3
Normal weight	343	84.7
Underweight	10	2.5

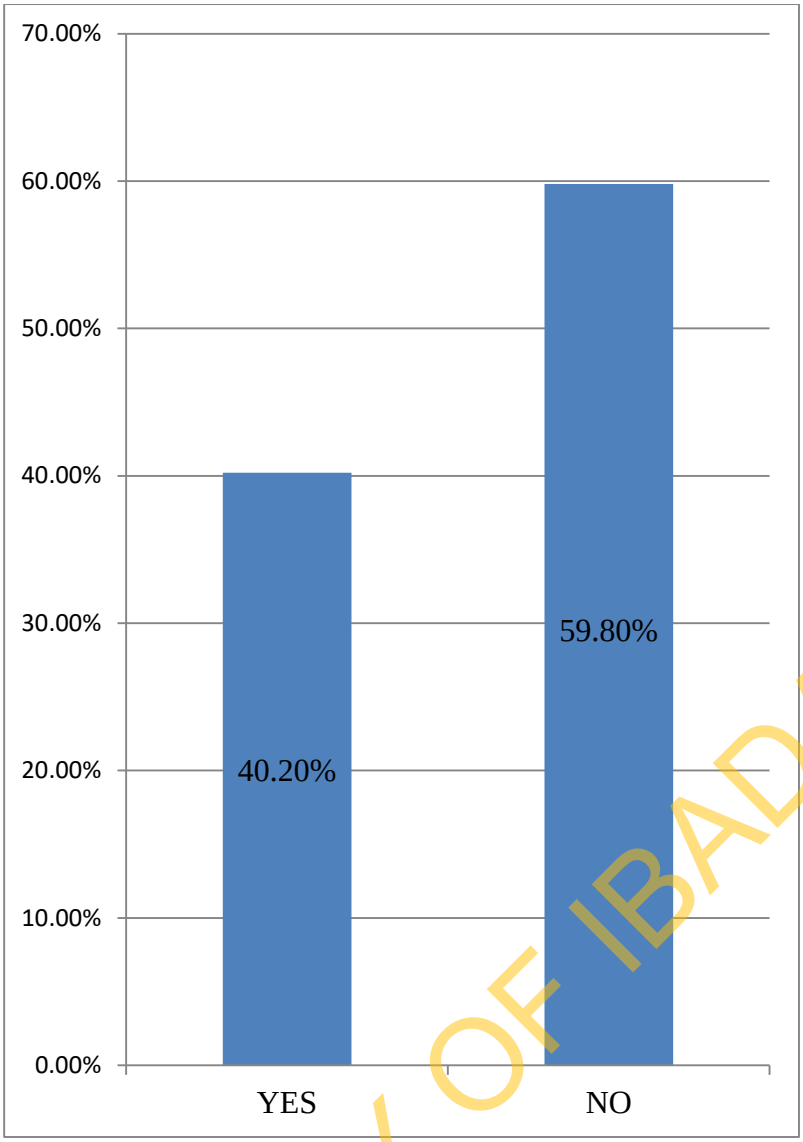

Figure 4.5:Respondents' practice of physical exercise

Table 4.7:Respondents reasons for practicing and not practicing physical exercise

N=405

Response	Reasons for practicing physical exercise	Frequency	Percentage (%)
Yes	To keep me healthy	36	8.9
	To keep fit	37	9.1
	For good body shape	8	2.0
	To promote health	4	1.0
	For pleasure	9	2.2
	No response	65	16.1
	Reasons for not practicing physical exercise		
No	No time (Academic/School work, busy schedule)	140	34.6
	My body is alright/BMI is above 22kg/m	8	2.0
	No interest/not serious about it/don't like sport	32	7.9
	Responsibilities/always forgetting/no encouragement	5	1.2
	No access to facility	5	1.2
	Laziness	7	1.7
	No response	49	12.0

Respondents were also asked if they belong to any sport club; only 27 (6.7%) of the respondents claimed that they belong to a sport club. Ten (2.5%) of the respondents confirmed they do visit their sport club once in a week, 5 (1.2%), 4 (1%), 1 (0.2%), 3 (0.7%), and 2 (0.5%) claimed that they do visit their sport club twice, thrice, occasionally, rarely and everyday respectively.

Eighty-nine (22%), of the respondents claimed they have being participating in physical exercise for weeks, followed by 70 (17.3%) of the respondents who also claimed to have being participating in exercise for months while 10 (2.5%) and 48 (11.9%) of the respondents reported that they have being participating in physical exercise for days and years respectively. Each respondent reported the number of times in which they have exercised or played sports regularly. The table below shows the response of the respondents on how long they have exercised or played sports regularly and the number of times (see Table 4.8 and Figure 4.7).

Respondents were also asked to indicate which physical exercises they practiced in the last two weeks and to also state the number of times they participated and the minutes spent. Thirteen (3.2%) of the respondents claimed that they have participated in three of the specified physical exercise in the last two weeks, 49 (12.1%) reported that they participated in two of the specified physical exercise and 134 (33.1%) claimed that they participated in only one of the specified physical exercise while 209 (51.6%) reported that they have not participated in any (see Table 4.10).

Table 4.8: How long the respondents have exercised or played sport regularly N=405

Number of times	For how long have you exercised or played sports regularly					
	Days	**Weeks**	**Months**	**Years**	**N/A***	**Frequency (%)**
Once	3	16	13	10	0	42 (10.4%)
Two times	1	33	11	3	0	48 (11.9%)
Three times	2	19	11	1	0	33 (8.1%)
Four times	1	7	6	1	0	15 (3.7%)
Five times	0	0	2	1	0	3 (0.7%)
Six times	0	0	4	0	0	4 (1%)
Seven times	1	0	0	0	0	1 (0.2%)
Eight times	0	2	0	2	0	4 (1%)
Numerous	1	0	9	10	0	20 (4.9%)
No response*	1	12	14	20	188	235(58%)
Total (%)	10(2.5%)	89(22%)	70(17.3%)	48(11.9%)	188(46.3%)	405(100%)

*No response; respondents who didn't give the account of number of times they have exercised or played sports

*N/A; Not applicable; respondents who didn't give the account of how long they have exercised

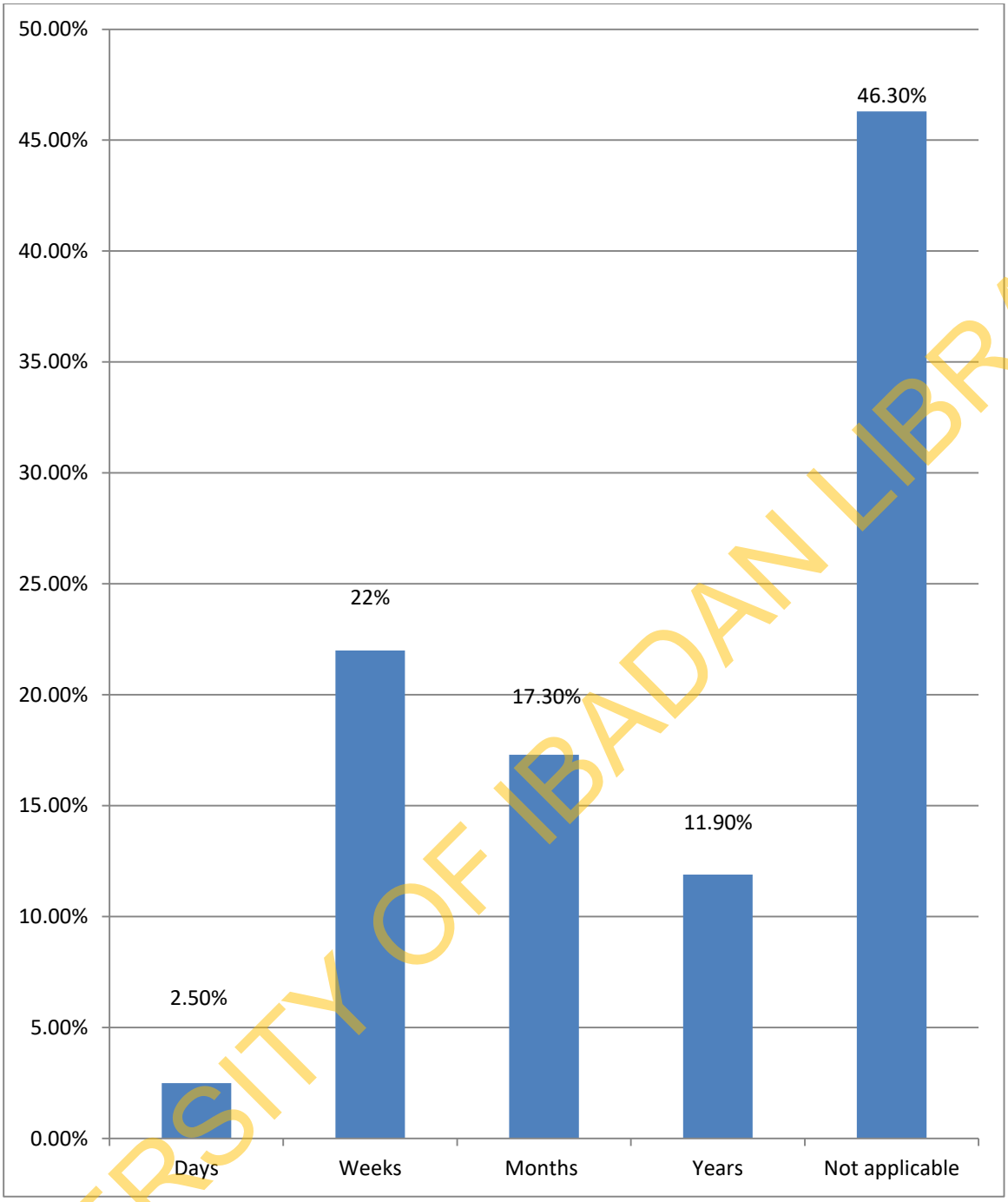

Figure 4.6:Responses on how long respondents have exercised or played sport

Table 4.9: Number of physical exercise that the respondents practiced in the last two weeks N=405

Number of physical exercise/sport participated in, in the last two weeks	Frequency	Percentage (%)
Three physical exercise	13	3.2
Two physical exercise	49	12.1
One physical exercise	134	33.1
None	209	51.6

Table 4.10: Physical exercise practiced in the last two weeks by the respondents

*Multiple responses

Activities	Frequency	Percentage (%)
Basketball	0	0
Football	36	13.4
Tennis	7	2.6
Table tennis	12	4.4
Volleyball	6	2.2
Handball	0	0
Jogging	84	30.9
Swimming	15	5.5
Weight lifting	6	2.2
Dancing	91	33.6
Others**	14	5.2

**Others: press-up/push-up and skipping

Table 4.11: Number of times respondents performed physical exercise in the last two weeks

***Multiple responses

Number times participated in the last two weeks	Frequency	Percentage (%)
Once	62	24.0
Twice	87	33.8
Thrice	36	13.9
Four times	23	8.9
Five times	18	6.9
Six times	7	2.8
Seven times	11	4.4
Eight times	5	1.9
Ten times	9	3.4

Table 4.12: Minutes spent by respondents on physical exercise in the last two weeks

***Multiple responses

Minutes spent	Frequency	Percentage (%)
Less than 16 minutes	37	14.5
16-25 minutes	45	17.6
26-35 minutes	61	23.9
36-45 minutes	17	6.6
46-55 minutes	3	1.2
56-65 minutes	49	19.2
66-75 minutes	3	1.2
76-85 minutes	2	0.8
86-95 minutes	6	2.4
96-115 minutes	1	0.4
116 minutes and above	31	12.2

Respondents were also asked if they have participated in any tournament either as an individual or as a member of an organised team; seventy-five (18.5%) of the respondents claimed “yes” while the remaining 330 (81.5%) said “no”. More than half of the respondents 253 (62.5%) said they are planning to start participating in physical exercise while 41 (10.1%) said they have no intention of starting physical exercisewhich is presented in Table 4.13.

Respondents were asked if they have been participating in physical exercise before but stopped; one hundred and seventy-seven (43.7%) of the respondents said “yes” and the other 228 (56.3%) said “no”to the question. And the respondents that claimed they stopped participating in physical exercise gave numerous reasons which are presented in Table 4.14.

Table 4.13:Respondents' future plan for participating in physical exercise N=405

Questions	Responses		
	Yes (%)	**No (%)**	**No response (%)**
I am planning to start participating in physical exercise	253 (62.5%)	122 (30.1%)	30 (7.4)
I have no intention of starting physical exercise	41 (10.1%)	315 (7.8%)	49 (12.1%)

Table 4.14: Respondents reasons for stopping physical exercise **N=405**

Responses	Reasons for stopping physical exercise	Frequency	Percentage (%)
Yes	No time (Academic/school work)	115	28.4
	No encouragement	7	1.7
	Personal reason	3	.7
	Family pressure	1	.2
	Got too busy	18	4.4
	Just lazy	9	2.2
	Change of location	7	1.7
	Not interested	5	1.2
	No kits	2	.5
	Not priority	3	.7
	Health reasons	6	1.5
	Old age	1	.2
No	Not applicable	228	56.3

4.6 Test of hypotheses

The results of the hypothesis tested are shown below;

Hypothesis 1: There is no significant association between knowledge of the respondents on physical exercise and practice of physical exercise. The result of the finding is shown in Table 4.15. Chi square was used to test if there is an association between knowledge of the respondent and practice of physical exercise and it was found that there isno significant association statistically with P = 0.077. This means that the knowledge of the respondents on physical exercise has no significant influence on their practice of physical exercise. Therefore, the null hypothesis was accepted.

Hypothesis 2: There is no significant association between respondents' sex, age, discipline, father's level of education, mother's level of education and practice of physical exercise. The results of the findings are shown in Tables 4.16a and 4.16b. The table shows a statistical association between sex of the respondents and the practice of physical exercise with P = 0.037, therefore, the null hypothesis was rejected for the variable. However, there were no significant association between age (P = 0.469), discipline (P=0.888), father's level of education (P=0.195), mother's level of education (P=0.582) and the practice of physical exercise. Therefore, the null hypotheses was not rejected for variables; age, discipline, father's level of education, and mother's level of education.

Hypothesis 3: There is no significant association between knowledge of the respondents and attitude towards physical exercise. Table 4.17 shows the result of the finding. Chi square was used to test if there is an association between knowledge of the respondent and attitude towards physical exercise and it was found that there is a significant association statistically with P = 0.000. These means that the knowledge of the respondents on physical exercise have a significant influence on their attitude towards physical exercise. Therefore, the null hypothesis was thus rejected.

Hypothesis 4: There is no significant association between perceived body weight and the practice of physical exercise. The relationship between perceived weight of the respondents and the practice of physical exercise was tested using chi square statistics. The relationship was found to be statistically significant at 95% confidence interval (p = 0.009). Therefore, a statistical association was found between the perceived weight of the respondents and the

practice physical exercise. Thus, the above stated null hypothesis was rejected. The result of the finding is presented in Table 4.18

Table 4.15:Association between knowledge of the respondents on physical exercise and practice of physical exercise

Variable	Do you exercise or play sport regularly			X^2value	df	P value	Null hypothesis
Knowledge	**Yes**	**No**	**Total**				
Poor	0	1	1				
Fair	37	78	115	5.140	2	0.077	Accepted
Good	126	163	289				
Total	163	242	405				

Table 4.16a: Relationships betweenrespondents' sex, age, discipline, father's level of education, mother's level of education and practice of physical exercise

Variables	Exercise or play sport regularly			X^2 value	df	P value	Null hypothesis
	Yes	No	Total				
Sex							
Male	103	130	233	3.576	1	*0.037	Rejected
Female	60	112	172				
Total	163	242	405				
Age							
21 – 25 years	38	62	100				
26 – 30 years	100	138	238				
31 – 35 years	18	22	40				
36 – 40 years	3	11	14	5.602	6	0.469	Accepted
41 – 45 years	2	6	8				
46 – 50 years	1	3	4				
51 – 55 years	1	0	1				
Total	163	242	405				
Discipline							
Education	27	43	70				
Pure science	47	65	112				
Arts	25	36	61				
Agriculture	12	24	36	1.098	6	0.982	Accepted
Social science	30	47	77				
Medical science	14	24	38				
Law	4	7	11				
Total	163	242	405				

***Significant**

Table 4.16b: Relationships betweenrespondents' sex, age, discipline, father's level of education, mother's level of education and practice of physical exercise

Variables	Exercise or play sport regularly			X^2 value	df	P value	Null hypothesis
	Yes	No	Total				
Father's level of education							
Primary	10	25	35				
Secondary	20	28	48	4.706	3	0.195	Accepted
Tertiary	131	180	311				
No formal education	2	9	11				
Total	163	242	405				
Mother's level of education							
Primary	18	31	49				
Secondary	19	31	50				
Tertiary	120	165	285	1.956	3	0.582	Accepted
No formal education	6	15	21				
Total	163	242	405				

Table 4.17:Association between knowledge of the respondents and attitude towards physical exercise

Variable	Attitude scale			X^2 value	df	P value	Null hypothesis
Knowledge	**Negative**	**Positive**	**Total**				
Poor	1	0	1				
Fair	5	110	115	34.308	2	0.000	Rejected
Good	6	283	289				
Total	12	393	405				

Table 4.18:Association between perceived body weight and the practice of physical exercise

Variable	Do you exercise or play sport regularly			X^2 value	df	P value	Null hypothesis
Perceived body weight	**Yes**	**No**	**Total**				
Obese	0	2	2				
Overweight	15	35	50				
Normal weight	148	195	343	11.467	3	0.009	Rejected
Underweight	0	10	10				
Total	163	242	405				

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECCOMENDATIONS

This study explored the knowledge, attitude and practice of physical exercise among postgraduate students of the University of Ibadan. This chapter explains the results given in the previous chapter. The demographic characteristics of the respondents, their knowledge about physical exercise and attitude towards physical exercise were investigated. The perceived factors that influence the practice of physical exercise and the practice of physical exercise among students were also determined. Implication of the findings of this study to health promotion and education was also discussed and recommendations were made at the end of this report.

5.1 Respondents Socio-demographic characteristics

The age range of the respondents was between 22 – 52 years of age with a mean age of 28.1±4.4. More than half of the respondents 58.8% falls between the range of 26 – 30 years of age which shows that most of the respondents are young adults and 81% were singles.

Three quarter, 75.8% of the respondents reported that they are unemployed which shows the rate of unemployment among graduates in Nigeria which is a major issue and concern in the country that needs urgent attention. This is closely related to a statement provided by the director of Professional Development Directorate, Chartered Institute of Personnel Management (CIPM) in 2013 to a daily newspaper (Punch) that the percentage of unemployed graduates from the Nigerian institutions of learning is 80% (Punch, 2013).

Virtually all the respondents reported that their father had a formal education (76.8%; tertiary education, 11.9%; secondary education, and 8.6%; primary education) which is partially a reflection of the claim of the respondents about their mother (70.4; tertiary education, 12.3%; secondary education, and 12.1%; primary education). This can be supported by the report of the national literacy survey by National Bureau of Statistics (NBS) in 2010 which reported that the literacy level of adult male and female is 79.3% and 63.7% respectively. Both variables were subjected to a chi square test to test if there is an association between them and the practice of physical exercise. It was found statistically that there is no association between level of education of father and practice of physical exercise by the respondents with P = 0.195. The association between level of education of mother and the practice of physical

exercise among the respondents was tested using the chi square test and it was also found to be insignificant at P = 0.582.

5.2 Respondents' knowledge about physical exercise

The findings from this study shows that close to three quarter (71.4%) of the respondents have a good knowledge about physical exercise and a contributing factor could be the fact that the study population was postgraduate students and considering their level of exposure. This could be compared with a research conducted by Aweto et al. (2013) that observed that about two thirds of their respondents had a high knowledge of physical activity promotion. On the diseases preventable by participating in physical exercise, 30.1% had a good knowledge, 51.4% had a fair knowledge and the respondents with poor knowledge were 18.5%. This shows that, although, the respondents had a good knowledge about physical exercise generally, they still have low knowledge of diseases preventable by physical exercise.

The respondents possessed a high level of knowledge on the benefits of physical exercise to health. This can be deduced from their responses about some of the benefits of physical exercise they responded to. Most 90.4% of the respondents claimed that physical exercise can relieve tension or anxiety. This is supported by Hassmén et al., (2000) which confirmed that apart from physiological benefits associated with regularly performed physical exercise, a number of psychological benefits have also been reported in the literature. These benefits include reduced depression, anxiety, and anger, as well as generally improved mood. Furthermore, a reduction of coronary-prone behaviour has also been associated with physical exercise. Physical activity may play an important role in the management of mild-to-moderate mental health diseases, especially depression and anxiety. Although people with depression tend to be less physically active than non-depressed individuals, increased aerobic exercise or strength training has been shown to reduce depressive symptoms significantly (Paluska andSchwenk, 2000).Scully et al. (1998) also avowed that one review concludes that regardless of anxiety measures taken (trait or state, behavioural, self-report, physiological), or exercise regimen invoked (acute orchronic), the results point to a consistent link between exercise and anxiety reduction. 51.1% of the respondents agreed that "physical exercise prevents an individual from non-communicable diseases".Müller & Khoo, (2014)opined that, an effective non-pharmaceutical way to prevent chronic diseases, increase quality of life and promote general health in older adults is through physical exercise/activity. Almost all the

respondents (93.3%) agreed to a statement that says “physical exercise can help build and maintain healthy bones” which could be related to Penninx, Messier, Rejeskiet al, (2001) that posited that physical exercise also have various beneficial physiological effects, such as improved muscle strength and bone mass and increased aerobic capacity, flexibility, and balance. Keysor (2003) also asserted that a substantial amount of scientific evidence shows that older adults who engage in progressive resistance training and aerobic exercise are able to increase muscle strength, aerobic capacity, and bone density.

Warburton, Nicol, and Bredin(2006), explained that recent investigations have revealed even greater reductions in the risk of death from any cause and from cardiovascular disease. For instance, being fit or active was associated with a greater than 50% reduction in risk and this can be related to what 68.8% of the respondents claimed; that participating in physical exercise can reduce the risk of having heart diseases. Adamu, Mu, and Abdu, (2005) also confirmed that physical activity results in increased exercise capacity and physical fitness, which may lead to many health benefits. Individuals who are more physically active appear to have lower rates of all-cause mortality, probably due to a decrease in chronic diseases including coronary artery disease (CAD). Fletcher et al. 1996 affirmed thathealthy persons as well as many persons with cardiovascular disease, including those with heart failure, can improve exercise performance with training. This improvement is the result of increased ability to use oxygen to derive energy for work.

To further explain the amount of knowledge in which the respondents displayed, 97% and 98.5% agreed that physical exercise can be used to reduce body weight and body fat respectively. This is confirmed by Fletcher et al(1996) that posited that exercise training favourably alters lipid and carbohydrate metabolism and regular exercise in overweight women and men enhances the beneficial effect of a low-saturated fat and low-cholesterol diet on blood lipoprotein levels. Increasing physical fitness or becoming physically active can reduce the adverse impacts of overweight and obesity on health (LaMonte and Blair, 2006; Fontana and Hu, 2014). Almost all the respondents, 99% believed that physical exercise promotes health and this can be proven by Penedo and Dhan (2005) which reported that, participants who engages in regular physical activity display more desirable health outcomes across a variety of physical conditions. Similarly, participants in randomized clinical trials of physical-activity interventions show better health outcomes, including better general and health-related quality of life, better functional capacity and better mood states.

Amount of knowledge which an individual possesscan not determine if an individual will perform physical exercise, this was shown when the association between knowledge of the respondents and the practice of physical exercise was tested. There was no any statistical association between the variable (P = 0.077). To support this finding, Aarts et al. (1997)avowed that the initiation of exercise behaviour does not merely rely on having knowledge about the relationship between exercise and health. In addition, individuals will also base their decision to exercise on other, non-health-related consequences. A report by Young et al. 1996 revealed that the educational intervention had little, if any, impact on physical activity and this reflected in this finding as the knowledge of the respondents does not have any statistical significant association with the practice of physical exercise.

5.3 Respondents' attitude towards physical exercise

Attitudes are people's perceptions, ideas or judgments concerning a specific behaviour. Theory and research in social psychology implies that attitudes predict behaviour. The adoption of an active lifestyle is often associated with positive attitudes towards exercise. Thereby, the formation of positive attitudes towards exercise is important, taking into consideration the fact that regular exercise has been shown to be beneficial for public health (Digelidis, Papaioannou, Laparidis, and Christodoulidis, 2003).

The mean attitudinal score was 17.3±2.9 and it was shown that 97% of the respondents have a positive attitudinal disposition towards physical exercise. This can be associated with the high amount knowledge which the respondents possessed and this could also be tagged to the fact that the respondents are within the academic setting. This is related to a study conducted by (Aweto et. al. 2013), which shows that about 94.8% of their respondents had a good attitude towards the promotion of physical activity/exercise. And this is contrary to a study carried out by Trudeau and Shephard(2005) which observed that most young children have a very positive attitude towards exercise, however as they grow older, their perception of physical exercise as a positive experience seems to become more ambiguous. Statistically, it was found that there is a strong significant association statistically with p = 0.000 between the knowledge of the respondents and their attitude towards physical exercise when subjected to chi square test. In respect to the positive attitude, 94.6% of the respondents disagreed that physical exercise is mainly for athlete and 91.4% anticipated that they would recommend physical exercise to a friend.

5.4 Factors influencing the practice of physical exercise

Accessibility and availability are important factors in using a health care services or intervention aimed at prevention of diseases. This was revealed when 64.2% of the respondents agreed to a statement that facilities/equipment for physical exercises are not readily available. According to a review by Sallis, Prochaska, and Taylor, 2000 as reported by Evenson et al. 2006 which ascertained that having equipment and supplies available for activity was positively associated with physical activity and this could be a high contributing factor in practicing physical exercise. Evenson et al. 2006 also stressed further that girls who reported sports equipment at home were more than twice likely to report physical activity than girls not having access to equipment. Another factor identified by the study was that, an environment rich in physical activity resources could remain underutilized unless consideration is given to how accessible the facilities are to the population being served. And this can be related to a Khan, Ramsey, and Brownson, 2002 which was reported byEvenson et al. 2006 who recommends creation of enhanced access to place for physical activity, combined with informational outreach services to increase physical activity.

Furthermore, 95.1% of the respondents disagreed that participating in physical exercise is a waste of time, which shows that they understand the importance of physical exercise and this could be as a result of their knowledge as earlier discussed.

With "*time constraints (academic/school work and busy schedule)*" and "*no interest"*which was the major reason stated by the respondents for not practicing physical exercise or playing sport regularly which isrelated with the findings of an earlier study by Tappe, Duda, & Ehrnwald, (1989)which highlighted that major barriers to exercise were *"time constraints," "unsuitable weather," "school and schoolwork,"* and *"lack of interest or desire"*. 57.3% of the respondents agreed that it is difficult to combine regular physical exercise with postgraduate study. A major reason given by the respondents was lack of time; by emphasising on academic/school work and busy schedule. 7.9% of the respondents also attached their reasons to "no interest/not serious about it/don't like sport". This is also related to the fact that 43.7% of the respondents claimed that they do participate in physical exercise before but they stopped. A larger percentage of them gave their reason to be"*lack of time*" which is because of academic/school work and that they are too busy.

Only 49.1% of the respondents reported that friends around them give encouragement for practicing physical exercise and this could be likened to a study by Abramson, Stein, & Schaufele, (2000) that says physician who performs aerobic exercise regularly are more likely to counsel their patients on the benefits of physical exercise and practicing it. This was also revealed when 92.6% of the respondents claimed that they can recommend physical exercise for friends/family. Therefore, reinforcement and encouragement from friends and family could make one participate in physical exercise

5.5 Practice of physical exercise among students

It was found that 40.2% of the respondents only practice physical exercise or play sport regularly while 59.8% claimed that they don't which shows that the rate of participation in physical exercise among postgraduate is low. This can be compared to a study conducted among college students by Calfas et al. (1994) as reported by Wallace et al. (2000)where approximately 33% of the upperclassmen (junior and senior rank) and recent graduates (graduated 5 years ago or less) at a large south-western university were inactive in America. In addition, the relationship between perceived weight and the practice of physical was tested (P = 0.009) and this shows that there is a statistical relationship between the perceived weight of the respondents and practice of physical exercise. This can be supported by what Sung, Yu, So, Lam, & Hau, (2004)**,** found out in a study that the overweight children had a significantly lower self-perception of their physical competences than normal weight children—specifically of their appearance, body fatness, sports competence, endurance, coordination, flexibility and general physical self-concept, as well as to a smaller extent, their global self-esteem, without feeling significantly disadvantaged in their general health, levels of physical activity or strength. And this wasfurther proven by Atlantis et al. (2007) that asserted that overweight and particularly obesity are associated with lower prevalence of sufficient physical activity for health benefits, but many of these associations are weakened by acceptable weight perception. Overweight perception may be another barrier to physical activity participation among men and women with excess body weight. Cilliers, Senekal, and Kunneke,(2006) also ascertained that underweight, normal-weight and overweight students differed significantly with regard to their perception of their weight, their weight goals and their previous weight loss practices.

Among the reasons given by the respondents for not practicing physical exercise are; "time constraints", "their body shape is alright", "no interest/not serious about physical exercise",

"no encouragement", "access to facilities" and "being lazy". The reasons given by the respondents who reported that they practice physical exercise are; "to keep them healthy", "to keep fit", "for good body shape", "to promote health" and "for pleasure".

Only 6.7% of the respondents claimed that they belong to a sport club. 10 (2.5%) of the respondents said they do visit their sport club once in a week, 5 (1.2%), 4 (1%), 1 (0.2%), 3 (0.7%), and 2 (0.5%) claimed that they do visit their sport club twice, thrice, occasionally, rarely and everyday respectively.

It was also found that there was a statistical association between the sex of the respondents and the practice of physical exercise (P = 0.037).It was revealed that about 63.2% of the respondents that claimed they exercise or played sport regularly were males and the rest 36.8% were females, although, 95.6% of the respondents agreed that male and female benefits from physical exercise. This was shown by a study on gender and developmental differences in exercise beliefs among youth and predication of their exercise behaviour that compared to males, females reported less prior and current exercise, lower self-esteem, poorer health status, and lower exercise self-schema. Furnham, Badmin, & Sneade, (2002) also confirmed that boys were as likely to want to be heavier as lighter, whereas very few girls desired to be heavier. Only girls associated body dissatisfaction with the concept of self-esteem. Male self-esteem was not affected by body dissatisfaction. Specific reasons for exercise were found to correlate with low self-esteem, and this can further be explained by Wyse et al. (1998) which found that males were significantly more likely to be in the action or maintenance compared with their female counterparts, (Wallace, Buckworth, Kirby, & Sherman, 2000). This is also related to a finding that affirmed that girls are more prone than boys to develop sedentary lifestyle patterns, and sedentary patterns developed in youth and adolescence are likely to persist over time, resulting in a sedentary lifestyle (Garcia et. al., 1995). According to CDCP, (1998) report; girls are significantly less active than boys at all ages(USDHHS, 1996;Oyerinde et al., 2013). To show the willingness for wanting to start physical exercise, 62.5% of the respondents said that they are planning to initiate the practice of physical exercise.

5.6 Implication of the study findings for health promotion and education

Some of the major component of health promotion and education includes health education, service improvement, creating supportive environment, and to develop personal skills amongst others. In health education; information is directed to individuals, families and communities to influence their knowledge, attitudes and practices.This could be achieved through improvement in quality and quantity of service availability, outreach and input supplies.Creating supportive environment; changing patterns of life, work and leisure have a significant impact on health, it should be a source of health for people. Develop personal skills; health promotion supports personal and social development through providing information, education for health and enhancing life skills, by so doing, it increases the options available to people to exercise more control over their own health and over their environments, and to make choices conducive to health.

This study has identified reasons behind the low practice of physical exercise among postgraduate students. A substantive amount of students reported that they don't participate in physical exercise and some claimed that they do practice it before but stopped. Amongst the reason given by the students for this is majorly lack of time which is associated to busy schedule and academic/school work. Addressing this issue goes beyond the students themselves because it extends to all the stakeholders in the affairs of postgraduate studies as well as health promoters. Service improvement; providing suitable and appropriate facilities and equipment for physical exercise, creating supportive environment; providing a condition that will enhance the practice of physical exercise with respect to time, and developing personal skill; providing encouragement for practicing physical exercise can be used to address the issue.

The impact of information and communication is very essential in health promotion on behaviour change. Providing adequate, appropriate and suitable Information, Education and Communication (IEC) materials can be used to address the low practice of physical exercise and to get students familiar with the risk involve in being physically inactive and to have a good amount of knowledge on diseases preventable by participating in physical exercise. This can be achieved by health promoters in collaboration with key stakeholders in education. By providing adequate and appropriate information, steps must be taken to ensure that well-structured guidelines are set so as to achieve a communication that is effective.

Service improvement and creating supportive environment can be achieved by providing required facilities and equipment needed for the practice of physical exercise. This should be with health education so as to provide the information that will promote the practice of physical exercise.

5.7 Conclusion

According to World Health Organisation (WHO) global recommendations on physical activity for health (2011),physical inactivity is now identified as the fourth leading risk factor for global mortality. And physical exercise being a subcategory of physical activity can help individuals in reducing the risk of major non-communicable diseases. The main objective of physical exercise is to promote health and which has a wide range of importance to human beings amongst which are; it prevents an individual from non-communicable (Muller et al. 2014), it also have something to do with mental health by relieving tension or anxiety and helps to manage depression (Hassmen et al. 2000).

This study has helped to reveal that there is a low practice of physical exercise among the postgraduate students of University of Ibadan, Ibadan. Though there was a high level of knowledge about physical exercise especially, the benefits attached to practicing physical exercise. The students also have a positive attitudinal disposition towards physical exercise but this does not influence the practice of physical exercise. With the amount of knowledge shown by the students on the benefits of physical exercise, they have low knowledge on the diseases preventable by practicing physical exercise. Furthermore, among the reasons provided for not practicing physical exercise is the lack of time, academic/school work, busy schedule and lack of interest. To support the lack of time identified by the respondents, most of them agreed to a statement that says“it is difficult to combine physical exercise with postgraduate study”. Among the factors agreed to by the students are; the availability of facilities and equipment for practicing physical exercise and kits for physical exercise are not usually available.

5.8 Recommendations

In view of the findings of this study, the following recommendations are made:

1. The study revealed a low practice of physical exercise among the postgraduate students which is mostly associated with time and busy schedule. Like the undergraduate students that have various sport competitions that are normally organized by the sport unit of the school, the postgraduate school should also design sport programmes that will suit the schedule of postgraduate students in order to further enhance the practice of physical exercise among the students.
2. Inadequate knowledge about diseases preventable by practicing physical exercise found in this study can be addressed by providing appropriate Information, Education and Communication materials that contain messages that specifically address the issue; the IEC materials should contain information on the diseases that are preventable by practicing physical exercise so that students can have adequate knowledge on the risk associated to being physically inactive.
3. From the study, it was found that majority of the respondents were young adults and non-communicable diseases associated with inactivity also affect young adults and which may not manifest early. Therefore, government should provide policies for the practice of physical exercise in the higher institution of learning especially the postgraduate student in order to help reduce the burden of non-communicable diseases.
4. Suitable facilities and equipment to encourage the practice of physical exercise should be provided for the postgraduate students within their hostels and a proper maintenance culture should also be instigated. This should be done to encourage those willing to start the practice of physical exercise. This should not be done by just focusing on one type sport but various ones.
5. Advocacy and effective campaigns that will increase the level of knowledge and raise the level of awareness should be embarked upon by health promoters.

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APPENDIX 1

QUESTIONNAIRE

KNOWLEGDE, ATTITUDE AND PRACTICE OF PHYSICAL EXERCISE AMONG POSTGRADUATE STUDENTS OF UNIVERSITY OF IBADAN, IBADAN

Dear Respondent,

My name is **OJO KEJI SAMSON**, am currently a postgraduate student of Health Promotion and Education of Faculty of Public Health, college of medicine, University of Ibadan. I'm currently undertaking a study to investigate the knowledge, attitude and practice of physical exercise among postgraduate students of University of Ibadan, Ibadan. The research is primarily in partial fulfilment for the award of the degree of Masters in Public Health in Health Promotion and Education of the University of Ibadan.

Your sincere response is encouraged as participation in this study is voluntary, absolute anonymity and confidentiality shall be maintained as there is no wrong or right answers and the information provided will only be used for the research purpose.

For the purpose of this study, physical exercise is any bodily activity that is planned, structured, repetitive, and purposeful in the sense that the improvement or maintenance of one or more components of physical fitness is the objective.

If you have accepted to participate in the study, please indicate your interest by signing.

Thanks

Respondent's Signature ……..…… Serial Number ……

SECTION A: SOCIO-DEMOGRAPHIC DATA.

NOTE: Please tick as appropriate [√] in the appropriate boxes

1. **Faculty** ……..
2. **Department** …… ….
3. **Course of study** ……
4. **Discipline (first degree background):** ……..
5. **Sex:** 1. Male [ ] 2. Female: [ ]
6. **Age in years** (at last birthday) …….

7. **Residence:** 1. Campus [ ] 2. Off Campus [ ]
8. **Occupation of Father** ……
9. **Father's level of education:** 1. Primary Education [ ] 2. Secondary Education [ ] 3. Tertiary Education [ ] 4. No Formal Education [ ]
10. **Occupation of Mother** ……..
11. **Mother's level of education:** 1. Primary Education [ ] 2. Secondary Education [ ] 3. Tertiary Education [ ] 4. No Formal Education [ ]
12. **If working, your occupation** ……..
13. **How much do you receive from all sources for your upkeep in a month (approximate):** ……..
14. **Religion**: 1. Christianity [ ] 2. Islam [ ] 3. Traditional [ ] 4. Others (specify)……
15. **Ethnic Group**: 1. Yoruba [ ] 2. Igbo [ ] 3. Hausa [ ] 4. Others (specify) ……
16. **State of origin:** …….
17. **Marital status:** 1. Single [ ] 2. Married [ ] 3. Others (specify) ……

SECTION B: KNOWLEDGE ON PHYSICAL EXERCISE

Instruction: Please indicate your responses to the following questions by ticking as appropriate [√]

18. Physical exercise can also be called physical activity. 1. Yes [ ] 2. No [ ]

19. Physical exercise is a subcategory of physical activity. 1. Yes [ ] 2. No [ ]

20. Name three (3) physical exercise activities that you know?

a) ……

b) ……

c) ……

Instruction: Read the following statements, please tick "**Yes**" if you believe it's a benefit ,tick "**No**" if you believe it is not a benefit and tick "**Don't know**" if you are not sure.

	STATEMENT	Yes	No	Don't know
21.	Physical exercise prevents an individual from non-communicable diseases			
22.	Physical exercise promotes health			
23.	Physical exercise gives an individual good body shape			
24.	Physical exercise promotes good human relationship			
25.	Participating in physical exercise makes one weak			
26.	Participating in physical exercise makes one weak			
27.	Physical exercise can make people sleep better			
28.	Physical exercise can prevent boredom			
29.	Physical exercise can improve the ability of an individual's body to fight diseases			
30.	An individual is at risk of getting non-communicable disease if he/she doesn't do physical exercise			
31.	Physical exercise can help build and maintain healthy bones			
32.	Physical exercise can be used to reduce body weight			
33.	Physical exercise can be used to reduce body fat			

34. Below is a list of some diseases or health problems, for each disease, if you think it can be caused by not taking part in physical exercise, tick "Yes"; If you think not taking part in physical exercise cannot cause it, tick "No"; and tick "Don't know" if you are not sure

	Diseases	Yes	No	Don't know
a.	Heart diseases			
b.	Type 2 diabetes			
c.	Obesity			
d.	Hypertension			
e.	Malaria			

f.	Stroke			
g.	Epilepsy			
h.	Cancer			
i.	Diarrhoea			

SECTION C: ATTITUDE TOWARDS PHYSICAL EXERCISE

INSTRUCTION: Here are some statements relating to the attitude towards physical exercise. For each statement, indicate whether you **Agree, Disagree** or you are **Undecided**

S/N	STATEMENT	Agree	Disagree	Undecided
35.	Physical exercise is mainly for athlete			
36.	People who spend regular time on physical exercise are unserious			
37.	Physical exercise is strictly for overweight individuals			
38.	People should be encouraged to participate in physical exercise			
39.	I would recommend physical exercise to a friend			
40.	Physical exercise brings inconvenience			
41.	Physical exercise adds value to life			
42.	I don't take part in physical exercise because I do not have the skills			
43.	Taking part in physical exercise makes one feel healthy			
44.	Those who participate in physical exercise do not fall sick			
45.	I can recommend physical exercise for friends/family			

SECTION D: PERCEIVED FACTORS INFLUENCING THE PRACTICE OF PHYSICAL EXERCISE

Instruction: Please indicate your responses to the following questions by ticking as appropriate [√]

46. Do you have any major health challenge that can hinder you from participating in physical exercise?

1. Yes [ ] 2. No [ ] **(If No, skip to question 51)**

47. If "**Yes**" to the above question, name it, …….

48. If not for the health challenge, will you be participating in physical exercise?

1. Yes [ ] 2. No [ ]

49. If **"Yes" to question 48**, state your reason

……..

50. If **"No" to question 48**, state your reason

…….

INSTRUCTION: Here are some statements relating to the factors that influence the practice of physical exercise. For each statement, indicate whether you **Agree, Disagree** or you are **Undecided**

S/N	STATEMENT	Agree	Disagree	Undecided
51.	Facilities and/or equipment for physical exercise are not readily available			
52.	It is difficult to combine regular physical exercise with postgraduate study			
53.	Participating in physical exercise is a waste of time			
54.	Kits for physical exercise are not usually affordable			
55.	Physical exercise is mainly for male			
56.	Male and female benefits from physical exercise			
57.	Taking part in physical exercise can make menstruation change			
58.	Taking part in physical exercise always lead to injuries			
59.	Friends around you gives encouragement for practicing physical exercise			

SECTION E: PRACTICE OF PHYSICAL EXERCISE AMONG STUDENTS

Instruction: Please indicate your responses to the following questions by ticking as appropriate [√]

60. Do you perceive yourself to be? {Please, tick one (1)}

1. Obese [ ] 2. Overweight [ ] 3.Normal weight [ ] 4. Underweight [ ]

61. Do you exercise or play sports regularly?

1. Yes [ ] 2. No [ ]

62. Give reason to your response above

……

63. Do you belong to any sport club? 1. Yes [ ] 2. No [ ]

64. If "**Yes"** to the above question, how many days in a week do you visit your sport club to participate in any exercise? ……

65. For how long have you exercised or played sports regularly?

		[√]	**Number of times**
a.	Days		
b.	Weeks		
c.	Months		
d.	Years		

66. Below is a list of some physical exercises, indicate by ticking [√] which of the activities in you have participated in the last two (2) weeks

	Activities	[√]	**No of times that you have particpated in the last 2 weeks**	**On the average, about how many minutes did you spend on the activity in the last 2 weeks**
a.	Basketball			
b.	Football			

c.	Tennis			
d.	Table tennis			
e.	Volleyball			
f.	Handball			
g.	Jogging			
h.	Swimming			
i.	Weight lifting			
j.	Dancing			
k.	Others (specify)……..			

67. Do you participate in any tournament either as an individual or as a member of an organized team?

1. Yes [ ] 2. No [ ]

68. I do participate in physical exercise before but I stopped 1. Yes [ ] 2. No [ ]

69. If **"Yes"** to the above question, state your reason

…….

70. I am planning to start participating in physical exercise 1. Yes [ ] 2. No [ ]

71. I have no intention of starting physical exercise 1. Yes [ ] 2. No [ ]

Thanks for your cooperation.