ASSESSMENT OF THE QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS IN ONDO STATE

BY

ILESANMI FUNMILOLA KEMI

MATRIC NO: 204259

A DISSERTATION SUBMITTED TO DEPARTMENT OF EPIDEMIOLOGY AND MEDICAL STATISTICS, FACULTY OF PUBLIC HEALTH, COLLEGE OF MEDICINE IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTERS IN PUBLIC HEALTH IN FIELD EPIDEMIOLOGY UNIVERSITY OF IBADAN, IBADAN, NIGERIA.

MARCH, 2018

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CERTIFICATION

I certify that this research work was carried by Ilesanmi Funmilola Kemi in the Department of Epidemiology and Medical Statistics, Faculty of Public Health College of Medicine, University of Ibadan under my guidance and supervision.

28/06/18

.....

SUPERVISOR

Dr. A.T. Salawu

MBBS (Ibadan), M.Sc. (Epid) MBA (Ibadan)

Department of Epidemiology and Medical Statistics University of Ibadan, Nigeria.

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DEDICATION

This project is dedicated to the Almighty God who gave me the privilege to complete this programme. Thank you Lord! To my lovely husband (Dr. I.O Oke) and to my children (Joshua, Gideon and Derrick)

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Blessed be the name of the Lord God Almighty for his love, kindness, and faithfulness are immeasurable. I give you all the glory Lord for seeing me through this programme, if not for your mercy, I surely know that I would not have had the privilege to be a partaker of this wonderful course. To you alone be all glory, honor and adoration. my appreciation goes to my supervisors Dr. Babatunde Adedokun and Dr. Salawu. Thank you sir for taking out time from your tight schedules to supervise this project.

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LIST OF ACRONYMS

HIV/AID-		Human Immuno Deficiency Virus/Acquired Immuno Deficiency Syndrome.
SPSS	-	Statistics Package For Social Science Software.
FMC	-	Federal Medical Centre.
HAART	-	Highly Active Anti-Retroviral Therapy.
ARC	-	Anti Retroviral Clinic.
HMB	-	Hospital Management Board.
PLWHA	-	People Living With HIV/AIDS.
WHO	-	World Health Organization.
WHOQOL	-	World Health Organization Quality of Life.
WHOQOL HIVBREF-		World Health Organization Quality of Life assessment Brief tool in Patients with Human Immuno-deficiency Virus Infection.
HRQOL -		Health Related Quality of Life.
QOL	-	Quality of Life.
SSH	-	State Specialist Hospital.
NACA	-	National Agency for the Control of AIDS
ODSACA-		Ondo State Agency for the Control of AIDS
UN	-	United Nation.
CDC	-	Centre of Disease Control
PCV	-	Packed Cell Volume
BP	-	Blood Pressure
VL	-	Viral Load
BMI	-	Body Mass Index
TB	-	Tuberculosis
SD/STD	-	Standard Deviation
UCH	-	University College Hospital
PEPFAR	-	President's Emergency Plan for AIDS Relief
DHS	-	Demographic Health System
NASCP	-	National AIDS/STI Control Programme

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NARHS	-	National AIDS Reproductive Health Survey
SDGs	-	Sustainable Development Goals
OSHREC	-	Ondo State Health Ethical Review Committee

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ABSTRACT

INTRODUCTION: HIV/AIDS, a pandemic disease which is certainly the defining public health crises of our time, with invent of antiretroviral therapy has been converted from a fatal condition to a chronic manageable disease thereby enabling people living with HIV/AIDS to live longer. Hence, it is paramount to assess their quality of life. This study aims to assess the quality of life of PLWHA in Ondo State.

METHOD: A descriptive cross-sectional study comprising of 307 consenting with 18 years and above selected in five health facilities chosen from the LGA of each senatorial district in Ondo State was carried out. Descriptive statistics mainly mean and standard deviation and inferential statistics mainly T-test, Chi square and linear regression were applied for data analysis and the level of significance was set at $p < 0.05$.

RESULT: Female respondent were 82.4% of the respondent were females, the overall mean age of all respondents was 40.6± 8.9 years. Majority had secondary education. Respondents who are married and living together with their sexual partners as at the time of interview were 69.2%. Respondents who are employed were 71.9%. Out of which 77.2% earns low monthly income.

The mean SD scores of physical, social relationship, environmental, spiritual/ religion, level of independence, and psychological domains were 16.22± 3.40, 15.95± 3.19, 15.81± 2.64, 15.61± 3.12, 14.78± 2.96 and 14.13±3.10 respectively. The male respondents had better mean QOL scores in the level of independents, (P= 0.027). The respondents who were more educated had a significantly better mean QOL score in the level of independence domain.

Patients who were married had significant better mean QOL scores in the psychological and social relationship domains (p= 0.029 and 0.019 respectively). Bivariate analysis revealed that the overall perception of QOL was better in patients with high CD4 cells count, employed individuals, asymptomatic, obese, and those who earned high monthly income.

Respondents with TB-coinfections had significantly low mean QOL scores in the physical and psychological domains (p= 0.047 and 0.035 respectively). Asymptomatic patients had significantly better QOL score than the symptomatic patients in the psychological domain.

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Respondents who have high blood pressure had significantly low QOL life in the level of independence (p= 0.006).

CONCLUSION: In addition, patients who have been on Highly Active Antiretroviral Therapy for a longer time had better QOL. Better QOL in the physical, social relationship and environment domain is an indication that PLWHA have free access to quality health care, social support, good social and personal relationship absence of stigma and discrimination. Free accessibility and availability of ART should be put in place for PLWHA, in order to maintain their asymptomatic status. Furthermore, support in terms of employment, financial assistant, financial self-sufficiency should be rendered to PLWHA in order to enhance their QOL.

Keyword: quality of life (QOL), PLWHA (people living with HIV/AIDS), WHO QOL HIV BREF, HIV/AIDS, Ondo State.

Word count: 469 words

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CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

HIV/AIDS is a chronic Infection that affects not only the patient's physical condition but also their social relation, mental health and financial aspects (Samson *et al.*, 2009). Since its existences in 1981, HIV/AIDS has become a major health problem worldwide (WHO, 2016). There have been more than 78 millions of people infected with HIV/AIDS since the onset of the epidemic. It has been reported by WHO that 36.7 million of people were infected with HIV/AIDS globally, 18.2 million people are accessing ART as of June 2015 and 2.1 million of people became newly infected with HIV at the end of 2015 (WHO, 2016). However even with the prophylaxis available for infected persons, it is on record that 1.1 million people died from AIDS related illness at the end of 2015 and 3.5 million of people died from AIDS related illness since the onset of the epidemic. (WHO, 2016)

Epidemic estimate shows that Africa is the most infected region with 1.8 – 1.9 million PLWHA. Nigeria was ranked to have the 2nd highest number of PLWHA after South Africa (WHO reports). Officially, the prevalence of HIV/AIDS in Nigeria is 3.2 percent among adult population giving a total estimate of 3.4 million Nigerians living with HIV/AIDS (UNAIDS). Ondo state was ranked 10th position with prevalence rate of 4.3 percent among top 10 states with the highest HIV/AIDS prevalence in Nigeria (NACA'S reports).

QOL is used as important outcome indicator for health care decision making and intervention effect evaluation. The conquest of access to the antiretroviral therapy, adherence to the antiretroviral therapy, the expansion of the diagnosis identification, and the chronic nature of the disease have created impact on the Quality of life of these people, leading to an increase in survival time, a decrease in morbidity and mortality and an increase in the life expectancy. In this context, the possibility of a longer life is not directly linked to a good quality of life because HIV infection also implies changes related to coping with the HIV status such as regular use of antiretroviral therapy, self-perception and clinical stage of the disease, bodily changes, personal income, victimization due to discrimination, lack of social support, depressive symptoms and stigmatization. From the broad concept of World Health

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Organization (WHO), quality of life is the individual perception of their position in life, in the context of the culture and value systems in which they live; in relation of their goals, standards, expectation and concern. It is a comprehensive evaluation of the individual's perceptions of a number of domains.

QOL therefore, relates to how satisfied an individual is with these lives circumstances (Folasire *et al.*, 2012). Several instruments for measuring QOL have been developed and described but very few studies had used the WHO QOL-HIV BREF scale QOL instrument in PLWHA. WHO QOL is a cross cultural instrument initiated and developed by the WHO and its brief versions to accelerate Health related quality of life (HRQOL) assessment among population worldwide. The WHO QOL BREF has been recommended as the most suitable instrument for assessing the QOL of various people. WHO QOL BREF has been translated into different languages aside the English version. (WHO, 2016)

Socio demographic characteristic such as age, gender, marital status, ethnicity, education level, employment, financial status are primary factors that affect the QOL of people living with HIV/AIDS. However, WHO QOL- HIV BREF is a multidimensional, conceptualized, generic, 31- item QOL instrument. The questions in this instrument will cover the respondent's perception of the overall QOL within the following 6 board dimension:

Physical health domain has four facets: pain and discomfort, energy and fatigue, sleep and rest and symptoms related to HIV.

Psychological health domain has 5 facets: positive feelings, concentration, self-esteem, bodily image and appearance and negative feelings.

Level of independence domain has 4 facets: mobility, activities of daily living, dependence on medication and treatment and work capacity.

Social relationship domain has 4 facets: personals relationships, social support, sexual activity and social inclusion.

Environmental domain has 8 facets: Physical safety and security, home environment, financial resources, health and social care, accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, physical environmental(pollution/noise/traffic/ climate) and transport.

Spirituality, religion and personal beliefs domain has 4 facets: personal beliefs, forgiveness and blame, concerns about the future, death and dying (WHO).

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Women represent half (52%) of all adults living with HIV worldwide. HIV is the leading cause of death among women of reproductive age. Gender inequalities, differential access to service and sexual violence increase women's vulnerability to HIV, and women especially younger women, are biologically more susceptible to HIV (UNAIDs, 2016). Young people with ages of 15 to 24 account for approximately a third of new HIV infections. In Eastern and Southern Africa, young women account for 26% of new HIV infections in 2016, even though they represent only 10% of the population (WHO, 2016). HIV testing capacity has increased overtime, enabling more people to know their HIV status, about 3 in 10 of people with HIV are still unaware they are infected. HIV has led to a resurgence of tuberculosis (TB) particularly in Africa, and this resurgence is a leading cause of death for people with HIV worldwide. In 2016, approximately 10% of new TB cases occurred in people living with HIV. However, between 2000 and 2016, TB deaths in people living with HIV has declined systematically, largely due to the scale up of joint HIV/TB service (WHO 2017). Although, there is not yet successful preventive vaccines and antiviral cures. But people infected with HIV are now living longer, productive lives through aggressive multi drug medical therapy (Norene *et al.*, 2017).

1.2 Problem Statement

HIV/AIDS has a great adverse effect on the lives of individual and families ranging from physical health as well as psychological, economic and social aspect of life. People that are affected with HIV/ AIDS have compromised QOL. In Africa, especially Nigeria, social services have been underserved because the countries do not give priority to basic infrastructure for their people (Folasire *et al.*, 2012). Approximately, 180,000 people died from AIDS related illness in Nigeria in 2015 (WHO report). Since 2005, the reduction in the number of annual AIDS related death has been indicative of the fact that only half (51%) of those living with HIV in Nigeria are accessing antiretroviral treatment. (WHO Report). Nearly all indications assessed on HIV/AIDS in Nigeria show stagnation and suggest that Nigeria is still facing significant hurdles despite all the resources invested. (NACA'S Report, 2016)

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From the most recent data of National Agency for the Control of AIDS (NACA, 2016), Ondo State was ranked 10th position with prevalence rate of 4.3 percent among top 10 states with the highest HIV/AIDS prevalence in Nigeria. An estimated 3.1 percent of adults between ages 15 – 49 are living with HIV/AIDS in Nigeria. (Fatiregun *et al.*, 2009). Nigeria was placed 156 out 187 countries in a new United Nations study which ranks countries on their education, income and life expectancy. With this poor economic position, it means that Nigeria is faced with huge challenges in fighting HIV/AIDS epidemic.

1.3 Justification

People living with HIV/AIDS experience both deterioration of physical health and psychological stress resulting from the fear of AIDS and associated stigma as well as from discrimination.(Folasire *et al.*, 2012). Programme on HIV/AIDs by UNAIDS have proposed that improvement of QOL should be one of the primary goals in providing care and support to people living with HIV/AIDS (UNAIDs, 2016). With invent of HAART, PLWHA now enjoy appreciable longevity and there is a need to enhance their QOL. However, the social stigma and side effect of medication interfere with the well being of patients. (Akinboro *et al.*, 2014). Report has shown that HIV/AIDS is more rampant among the age groups 15-50 years which are the working age. When working age are unable to work effectively, it would have great adverse effect on the economy of a country. Therefore, it is imperative to assess the quality of life of PLWHA and how they are living longer. However the finding in this study is hoped to be of optimal help to the physician, health care providers and health policy makers, to design appropriate intervention to improve patient life. In addition, publication of this data can help identify needs for health policies and legislation to allocate resources based unmet needs, guiding the development of strategic plans and monitoring the effectiveness of the broad interventions of the quality of life of people living with HIV/AIDS.

1.4 Research Questions

1. Do PLWHA in Ondo State have good quality of life?
2. Does placing HIV/AIDS patients on HAART guarantee that they enjoy good quality.
3. Do disclosure of HIV-Sero status guarantec better QOL?
4. Does knowledge about HIV/AIDS affect the QOL of PLWHA?

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(5) Do disease related variables have effect on the QOL of PLWHA?

1.5 Objectives

1.5.1 General Objective

This study is aimed to assess the Quality of life of people living with Human Immuno-Deficiency Virus/Acquired Immuno Deficiency Syndrome (HIV/AIDS) in Ondo State.

1.5.2 Specific Objectives

The specific objectives of this study are to:

1. Determine the Quality of life PLWHA
2. Describe the influence of demographic characteristics on QOL of PLWHA
3. Assess the influence of HIV knowledge on the QOL of PLWHA
4. Assess the impact of disclosure on the QOL of PLWHA
5. Asses the influence of disease related variables on the QOL of PLWHA.

1.6 Research Hypothesis

(1) There is no association between QOL and HIV/ AIDS.

(2) There is no association between the demographic characteristics and the QOL of PLWHA.

(3) There is no association between the knowledge of HIV/AIDS and the QOL of PLWHA.

(4) There is no association between disclosure of HIV sero status and the QOL.

(5) There is no association between disease related variables and the QOL of PLWHA.

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CHAPTER TWO

2.0 Review of Literature

Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome (HIV/AIDS) is one of the top 10 communicable diseases (Norene *et al.*, 2017). HIV (Human Immunodeficiency Virus), causes AIDS (Acquired Immunodeficiency Syndrome) in the late stage of infection. HIV is in the semen, vaginal fluid and blood of infected persons. Unprotected sex and shared needles or syringes with HIV or AIDS carriers are the main modes of disease transmission. The most common viral sexually transmitted infection (STI) is the Human Papilloma Virus (HPV) while the best known viral sexually transmitted infection (STI) is HIV. This increasing Pandemic of HIV/AIDS at present is a major global concern and a significant development issue (WHO, 2015). However, the recent advance in knowledge about the disease better diagnostic methods, new treatments and strengthened HIV progress has provided great hope for HIV positive patients to live a longer life. For this reason, the health related Quality of Life (HQOL) of this large number of people becomes a great concern. Unfortunately, there is still relatively little empirical research in understanding the quality of life of PLWHA in developing countries. (Hadajani *et al.*, 2002)

A number of studies centered on the health related QOL of HIV positive individuals using different types of QOL measuring tools have reported various associations between HQOL and other factors. HIV infection mainly have effect on six (6) domains of QOL i.e. physical, psychological, social environment, level of independence, environment and spiritual which varied in term of socio-demographic characteristics and disease related variable (Mwegire *et al.*, 2015). Socio demographic characteristics such as age, gender, education, income, employment status and disease related variables such as disease clinical stage, opportunities infection, CD4 count, Blood Pressure, HAART, PCV etc. have been found to be strongly associated with the QOL of PLWHA. (Gemechu *et al.*, 2012). However, various studies on the issues of QOL of PLWHA has been conducted in the developed and developing countries (Pearson *et al.*, 2009; Eyawo *et al.*, 2010; Suzan-Monti *et al.*, 2011; Nglazi *et al.*, 2014; Zhu *et al.*, 2017; Folashire *et al.*, 2012; Samson *et al.*, 2009).

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2.1 Epidemic of HIV/AIDS

HIV/AIDS has become one of the world most serious health and development challenges. (WHO, 2014). There were approximately 33.2 million PLWHA in 2010, increasing to 36.7 million in 2016 and as a result of continuing new HIV infections, people living longer with HIV and AIDS have generally increased in the population (UNAIDs, 2016). One million people died of AIDS in 2016, a 48% decrease since its peak in 2005. Death have declined due in part to the scale up of antiretroviral treatment (ART). HIV remains a leading cause of death worldwide and the leading cause of death among women of reproductive age globally (UNAIDs, 2016). There were about 1.8million new infections in 2016 or about 5,000 new infections per day while a significant decline in new infections since the mid-1999s and the pace of decline varies by age group, sex and region (WHO, 2016). Most infections are transmitted heterosexually. Although, risk factors vary in some countries, men who have sex with men, injecting drug users, sex workers, transgender people and prisoners are dis proportionately affected by HIV (Lonbiere *et al.*, 2009).

2.2 Prevalence of HIV/AIDS

The prevalence of HIV/AIDS varies globally. Although, it is estimated that 1.8 million people are living with HIV in Latin America (WHO, 2015). Between 2010 and 2016, the number of AIDS related deaths in the region over all fell by 12% but rose in some countries including Guatemala and Paraguay (UNAIDs, 2016). In 2016, nearly half (49%) of new HIV infections in Latin America occurred in Brazil, which has the greatest number of people living with the disease (830,000) in the region (UNAIDs, 2016). An estimated 2.1 million people are living with HIV in western and central Europe and North America (UN, 2016). Although, high coverage of ART plays a key role in the reduction of AIDS –related deaths decreased by 32%. In Asian and the pacific, an estimation of 5.1 million people are living with HIV (UN, 2016). The annual number of new HIV infections declined by 13% in these region. (UN, 2016). However, since 2010, trend vary from country to country. New HIV infections decreased annually by 50% in Thailand since 2010, but increased by 14% in the Philippines during the same period (UNAIDs, 2017). The region is also home to two most populous nations in the world (China and India) and even relatively low prevalence translates into large numbers of people. (UNAIDs, 2017).

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Eastern and South Africa is home to more than half (53%) of all people living with HIV, despite the significant impact, new infections in the region has declined by 29% since 2010 (UNAIDs, 2017). South Africa has the highest number of people living with HIV in the world (7.1 million), Swaziland has the highest prevalence (UNAIDs, 2015). Among the Caribbean, an estimated 310,000 people are living with HIV. The number of people living with HIV on treatment is more than doubled since 2010 (from 69,000 in 2010 to 162, 000 in 2016) (UNAIDs, 2017). However, the percentage of people living with HIV who have suppressed viral loads in the region (34%) is below the global average (44%) (UNAIDs, 2017). The estimated number of persons living with HIV in Eastern Europe and Central Asia amount to 1.6 million people, including 190,000 newly infected in 2016 (UNAIDs, 2017). New HIV infections in the region increased by 60% between 2010 and 2016. The epidemic is driven primarily by infecting drug use, although intersexual transmission also pay an important role. (UNAIDs, 2017).

In Middle East and North African estimated 230,000 people are living with HIV in the region (UNAIDs, 2016). Treatment coverage among people living with HIV in this region is 24% (The lowest of any region). (UNAIDs, 2017). Criminalization of key populations and stigma serve as barriers to coverage in the region. The region is also one of two in the world where the number of AIDS – related deaths is increasing (the other region is Eastern Europe and Central Asia); the number of AIDS – related deaths increased by 19% since 2010 (UNAIDs, 2017). An estimated 6.1 million people are living with HIV in western and central Africa. (UNAID's report). Annual new HIV infections among adults remained stable between 2010 to 2016 while the annual number of new infections among children declined by a third during the same period; this declined is to primarily to increased provision of prevention of mother to child transmission service in the region. (UNAIDs, 2017). Nigeria has the fourth largest tuberculosis epidemic in the world, with and TB co-infection now becoming an increase concern for PLWHA. (WHO, 2016)

2.3 The Global Response to HIV/AIDS

In 2000, all nations agreed to global HIV target to halt and begin to reverse the spread of HIV by 2015, as part of the UN Millennium Development Goals (MDGS) and the World Bank launched its multi country AIDS program (MAP). As of 2015, the AIDS – related targets of

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MDGs were met (UNAIDs, 2016). In 2015, the international community agreed upon new Sustainable Development Goals (SDGs), which included a target to end the AIDS epidemic by 2030 (UN, 2015). On world AIDS Day 2014, UNAIDs set targets for 2020 aimed at ending the epidemic by 2030. The targets include achieving "90%" of people living knowing their HIV status; and 90% of people who know their HIV-positive status on treatment and 90% of people on treatment with suppressed viral loads (UNAIDs, 2016).

2.4 HIV/AIDS in Nigeria/Response

Nigeria has the second largest HIV epidemic in the world and has one of the highest new infection rates in sub-Sahara Africa (WHO, 2016). The official prevalence of HIV/AIDS in Nigeria is 3.2 percent among adult population giving total estimation of 3.4 million Nigeria living with HIV/AIDS (UNAIDs, 2017). Many people living with HIV/AIDS in Nigeria are unaware of their status due to the country falling short of providing the recommended number of HIV testing and counseling sites. (NACA, 2012). Low access to ART treatment remain an issue for PLWHA, meaning there are still many AIDS related death in Nigeria. (NACA, 2012). Nigeria is highly dependent on donor funding for its HIV and AIDS response, with only 8% of programme financing coming from domestic sources. (NACA, 2012). The President's Emergency Fund for AIDS Relief (PEPFAR) and the Global fund accounted for 48% and 33% of the total budget respectively. (NACA, 2012). The institutional response to HIV and AIDS in Nigeria is led by National Agency for the control of AIDS (NACA), supported by state Agency for the control of AIDS (SACAs) and Local Government Action committee on AIDS (LACAs). (NACA, 2012). These bodies coordinate HIV and AIDS responses, bringing together different stakeholders at all levels, including NGO's, community based organizations (CBOs), networks of PLWHA, donors, international agencies and the private sectors. (NACA, 2012).

2.5 HIV/AIDS in Ondo State

The first case of HIV was diagnosed in 1989 in Ondo State. Ondo State had one of the lowest HIV prevalence in the general population (0.9%) (NARHS, 2007) in the South West region but this has changed with the 2012 NARHS, Plus report of 4.3%. The state has a significantly higher HIV prevalence among ANC women (2.3%) compare to the population prevalence.

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(NARHAS, 2017). However, surveys had revealed evidence of multiple sexual partnership such as 19% of males reported having multiple sexual partners in the past years compared to only 0.2% of female (DHS, 2008). 48% of male respondents have non – marital partner. Despite the fact that the same proportion of males and females reported knowing where to get HIV test (61% and 62% respectively) fewer males had ever been tested (7% compared to 17%) (DHS, 2008). There is a high prevalence rate among the young adult (15-24 years) and HIV prevalence rate is higher in the urban area compared to the rural area. Owing to scale up of interventions in the state, there has been a decrease in the prevalence rate (ODSACA, 2015). Ondo state being one of the States in the country with HIV prevalence (4.3%) higher than the national HIV prevalence (4.1%), there is the need to attain the zero new infection target, zero discrimination and zero AIDS related death through evidence based intervention. (ODSACA 2015)

2.6. Quality of Life

The resent advance in knowledge about HIV/AIDS, better diagnostic method, new treatments and strengthened HIV anti-discriminating law progress has provided great hope for HIV positive patients to live a long life. (Costa *et al.*, 2014) For this reason quality of life (QOL) of people living with HIV/AIDS (PLWHA) becomes a great concern. Unfortunately, there is still relatively in the empirical research in understanding the quality of life of PLWHA in developing countries. (Imam, *et al.*, 2011).

2.6.1 Definitions of the term "quality of life"

The term Quality of Life has been defined in various ways by different people: Someone's quality of life is the extent to which their life is comfortable or satisfying (Harper Collins). The patient's ability to enjoy normal life activities (med term medical dictionary). The CDC defined QOL as an individual's or group's perceived physical and mental health overtime (CDC, 2000). Quality of Life (QOL) is the general wellbeing of individuals and societies, outlining everything from physical health, family, education, employment, wealth, religious belief, finance and environment. (Charles, *et al.*, 2012). QOL has a wide range of contexts, including the fields of international development, health care, politics and employment. (Dasilva *et al.*, 2013).

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WHO defines Quality of Life (QOL) as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way of the person's physical health, psychological state, personal beliefs, social relationships and their relationship to salient features of their environment. (WHO's Report)

The term "QUALITY OF LIFE" has meaning for nearly everyone and every academic discipline, individuals and groups can define it differently and that is what makes it challenging to measure. (Gail, *et al.*, 2012). Although, Health is one of the important domains of overall quality of life, there are other domains as well – for instance jobs, housing, schools, the neighborhood. Aspects of culture, values and spirituality are also key domains of overall quality of life that add to the complexity of its measurement. (Friedland, *et al.*, 2010). Nevertheless, researchers have developed useful techniques that have helped to conceptualized and measure these multiples domains and how they relate to each other. (Feng *et al.*, 2002)

QOL is a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life (WHO QOL Group, 1998).

2.6.2 Importance of quality of life

Quality of Life is important to everyone. Although the World Health Organization (WHO) defined health very broadly as long as a half century ago, but health is seen by the public health community as a multidimensional construct that includes physical, mental and social domains (WHO). As medical and public health advances has led to cures and better treatments of existing diseases and delayed mortality, it was logical that those who measure health outcomes would begin to assess the population's health not only in the basis of saving lives but also in terms of improving the quality of life (Mc Homey, 1999). World Health Organization (WHO) defines Health as "A state of complete physical, mental and social wellbeing not merely the absence of disease". This follows that the measurement of health and the effects of health care must include not only an indication of changes in the frequency and severity of disease but also an estimation of wellbeing and this can be assessed by measuring the improvement in QOL related to heath care. (Razeera *et al.*, 2008). Although, there are generally satisfactory ways of measuring the frequency and severity of diseases, this

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is not the case in so far as the measurement of wellbeing and quality of life are concerned. (Mwesiare, *et al.*, 2015)

2.7 WHO QOL HIV BREF Instrument

WHO QOL HIV BREF instruments provide an invaluable supplementary appraisal of health care service, by yielding a measure of the relationship between the health care service and patient's quality of life and also by directly presenting a measure of patient's perception of quality and availability of health care (WHO). The WHO QOL instruments also provide new insight into the nature of disease by assessing how disease impaired or impacts the subjective wellbeing of a person across a whole range of area. (WHO)

2.7.1 Structure of WHO QOL – HIV BREF

The six broad domains of quality of life and the twenty-nine facets covered are shown below. Four items are included for each facet, as well as from general items covering subjective overall QOL and health producing a total of 100 items in the assessment. All items are rated on a five points scale (1-5). (WHO)

2.7.2 Domains and Facets of WHO QOL HIV BREF

The domains and facets of WHO QOL HIV BREF includes overall Quality of Life and general of health. Physical health domains constitutes energy and fatigue, pain and discomfort, sleep and rest. Psychological domain constitute bodily image and appearance, negative feelings, positive feelings, self-esteem, thinking, learning, memory and concentration. Level of independence domain constitutes mobility, activities of daily living, dependence on medical substance and medical aids. Social relationship domain constitute personal relationships, social support and sexual activity. Environment domain constitutes financial resources, freedom, physical safety and security and security, health and social care: accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation leisure, physical environment (population/noise/traffic/climate) and transport (WHO)

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A number of studies centered on the health related QOL of HIV positive individuals using WHO QOL HIV BREF have reported various associations between health-related QOL and other factors. (UNAIDs, 2014). HIV infection mainly have effect on six (6) domains of HRQOL i.e. physical, psychological, social environment, level of independence, environment and spiritual which varied in term of social demographic characteristics and disease related variable. Socio demographic characteristics such as age, gender, education, income, employment status and disease related variables such as HIV clinical stage, opportunistic infections, CD4 Cells Count, Blood pressure, HAART, PCV, Viral load etc. have been found to be strongly associated with QOL of PLWHA. (Mwesiare *et al.*, 2015). Several factors associated with better QOL among PLWHA has been documented in literatures all over the worlds majorly on the impact of HIV/AIDS on QOL. The impact of HIV/AIDS on QOL falls under four major socio demographic characteristics such as being a male, younger age, being married, being employed and higher economic status have been associated with improvement in QOL. (Costa *et al.*, 2014). Health related variables such as greater CD4 cells count, lower viral load, higher level of hemoglobin, asymptomatic status have been shown to be important clinical immunological indicators of better QOL. (Venter *et al.*, 2009). Patients that have no difficulty in assessing ART and those who have good adherence attitude tends to have improved QOL. (Oguntibeju, 2012).

2.8 Demographic Factors Affecting QOL

This includes income, marital status depression, stigma, occupation etc. A Brazilian study stated that PLWHA who were married tends to have a better QOL than those who are singles (Soares *et al.*, 2015). The stages of HIV/AIDS and marital status significantly influenced general QOL. (Mayungbo, *et al.*, 2017). The lower the monthly income the worse the physical and mental health of PLWHA (WelSun *et al.*, 2013). Not being gainfully employed and earning lower income negative impact on the QOL of PLWHA.

2.9 Impact of Health Related Factors on Quality of Life

Health related quality of life assessment is useful for documenting the patients perceived burden of chronic disease, tracking changes in health overtime, assessing the effects of treatment and quantifying the return on health care investment. (Nnamdi *et al.*, 2009).

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2.9.1 Highly Active Anti Retro Viral Therapy (HAART)

The development of combined ART has shifted the perception of HIV/AIDS from a fatal to a chronic and potentially manageable disease. There are six (6) major types of drugs used to treat HIV/AIDS called anti retro virals because they act against the retrovirus HIV, to prevent strains of HIV from becoming resistant to a type of antiretroviral drugs, healthcare providers recommend that people infected with HIV take a combination of antiretroviral drugs in an approach called Highly Active Anti-Retroviral Therapy (HAART) (WHO, 2016). ART treatment is the greatest contributor to good general QOL of those living with the virus. PLWHA who received ART treatment were more likely to have good general QOL than those not using ARV drugs. (Oguntibeju, 2012). ART is capable of improving survival, reducing the occurrence of HIV related opportunistic infections and improving the patient QOL (Oguntibeju, 2012). Beneficial effects of ART on QOL might be explained by decreasing intensity of clinical symptoms of the disease (Oguntibeju, 2012). ART treatment is the greatest contributor to good general QOL. PLWHA who received ART treatment were more likely to have good general QOL as well as better physical and social QOL as compared to those not using ARV drugs. (Phaladze, 2015).

PLWHA with longer ARV therapy had better QOL in all the domains except in the level of independence and spirituality domains (Akinboro *et al.*, 2014). Some previous reports also documented that ARV treatment did not appear to have effect on QOL – (Razera etal.2008), (Ming *et al.*, 2008). Those with longer ARV therapy had better QOL in all the domains except in the level of independence and spirituality domains. (Ekaterine *et al.*, 2010).

2.9.2. Adherence to Antiretroviral therapy

Antiretroviral Therapy has led to a substantial reduction in HIV associated morbidity and mortality. (Mohamed *et al.*, 2013). Efficacy of antiretroviral treatment in HIV/AIDS is showing inhibition of viral replication and reduction of viral load to a point where viral particles are undetectable in the blood of infected individuals. (Tesfey *et al.*, 2015). Adherence to medication has been defined as degree of concurrence between the client's behavior (taking medicine, sticking to dict, taking the right dose and at the right time) and following medical advice on medication regimens. (Naar-King *et al.*, 2006). Empirical evidence has further shown that person with HIV/AIDS that adhered to medication for at least

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one year are less likely to experience AIDS related mortality. Therefore, the critical goal for person with HIV/AIDS is to understand how to enhance medication (Huang *et al.*, 2006). Poor adherence to ART drugs could lead to rapid replication of the HIV (Reynold *et al.*, 2011). Antiretroviral regimens are demanding and difficult, with numerous possible side effects and patients need to take the pills for indefinite periods of time. If patients do not take antiretroviral drugs essentially as prescribed and if doses are misused or taken improperly, resistance is expected, leading to clinical failure. (Oguntibeju, 2012). Resistant HIV may be transmitted leading to an untreatable form of the disease. Hence, adherence to antiretroviral regimens is imperative not only their health and also the health of the public as a whole (Robert *et al.*, 2004). Better understanding of the pathogenesis of HIV and viral activity has suggested that for the highly active antiretroviral therapy (HAART) regime to be effective nearly perfect (95%) adherence is necessary to minimize viral load and prevent HIV resistance. (Mweeba *et al.*, 2010)

Non adherence has public health implications as well. High transmission during risky behavior and non-adherent individuals may be more likely to transmit drug resistant strain of virus (Onyeonoro *et al.*, 2013). The degree of patient adherence to antiretroviral drugs is increasingly recognized to be a key factor. A number of studies have found that 90-95% of doses must be taken for optimum viral load suppression. Low adherence to antiretroviral drugs could be directly related to treatment complexity. (Mweeba *et al.*, 2010). ART regimens are among the complex regimen ever prescribed. Adherence declines with number of tablet, the frequency of the dosages and the increasing complexity and duration of treatments. Poor adherence can be attributed to complexity regimens, the large number of capsules that must be taken, the numerous side effects, the variety of dosages, the various interactions among the medications may easily lead to confusion and this poor adherence. However, HIV infection has entered the stage of chronic disease management (Mweemba *et al.*, 2010).

Non adherence may mean not taking medication at all, taking reduced amounts, taking more medication than prescribed, not taking doses at prescribed frequencies or intervals or matching medication to food requirements and self-initiated holidays are factors associated with non-adherence including lower income, lower education alcohol use and higher dose frequency (Liping *et al.*, 2015). The frequency and severity of side effects conflicts with daily

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routine, dietary recommendations, frequency of indication dosages, number of medication dosages, psychological factors such as stress, anger, or denial and physical consideration such as fatigue and sleep (Garcial *et al.*, 2003).

2.9.3 CD4 cell counts:

The main cells of HIV attacks are the T-helper cells or CD4 + cell. The pathogenesis of HIV infection is largely attributed to the decrease in the number of T-cells. The Immune status of a patient living with HIV can be assessed by measuring the absolute number (per/mm^3) or percentage of CD4 + cells, and this is regarded as standard way to access and characterize the severity of HIV related immune deficiency. Progressive depletion of CD4 cells is associated with progression of HIV disease and a higher likelihood of opportunistic infections and other clinical event associated with HIV including wasting and death. In Uganda, study reported no significant association between CD4 count and QOL (Mwesigire, 2015). Studies in South Africa showed weak correlations between CD4 counts and the QOL measures (Bekker *et al.*, 2009; Igumbor *et al.*, 2013). A significant positive association between the CD4 cell count and emotional status of PLWHA has been reported (Findley *et al.*, 2007; Zheng *et al.*, 2011; Wu *et al.*, 2012).

2.9.4 Body Mass Index (BMI):

The body mass index (BMI) or "Quetelet Index" is a value derived from the mass (weight) and height of an individual. The BMI is defined as the body mass divided by square of the body height and is universally expressed in units of kg/m^3 resulting from mass in kilograms and height in meters. An Indian study documented that PLWHA with lower BMI, has poorer QOL (Anand *et al.*, 2013). A study in China stated that the obsessed showed the best HRQOL especially in psychological domain and the worst HR QOL was found in the underweight (Zhu *et al.*, 2017). A study documented that increased BMI is associated with an increased CD4 cell count and with lower rates of the events that characterize the progression of HIV disease (Nobre *et al.*, 2016).

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2.9.5 Viral Load:

Viral load refers to the actual number of virus in the blood. The viral load can be counted by doing a blood test. The viral count is indicated in copies per/ml. In other word, viral load is an indication of how sick an HIV infected person is and it is also used to measure a person's response to anti-retroviral treatment. There is a special relationship between the viral load and the CD4 cell count and if considered together they can predict whether a person's journey towards AIDS (the final stage of disease) will be rapid or slow. Viral load and CD4 cells varies together which mean that a higher viral load will lead to a lower CD4 count because the virus destroy CD4 cells, while a lower viral load will go hand in hand with a higher CD4 cell count because less virus in the blood give the immune system a chance to build up its resources again. Disease progression will depend on the viral load as well as the CD4 cells count in the blood. The higher the viral load and the lower the CD4 cells count, the easier it will be for all kinds of infection to attack the body, thereby reducing quality of life of the patients. (Venter *et al.*, 2009).

2.10 Impact of Psychological Factors of QOL of PLWHA

PLWHA struggle with numerous social problems such as poverty, stigma, depression, social exclusion, rejection, discrimination and some personal belief which can affect their QOL not only from the physical aspect but also from mental and social health point of view and cause numerous problems in useful activities and interest of the patients. The impact of social, psychological and spiritual factors on QOL in HIV infection has been well recognized. (Gerbi, 2016). Stressful event and social support were related to HIV disease progression to AIDS. (Poteat *et al.*, 2017). Research on the psychosocial aspects of HIV – positive status shows that living with HIV is associated with a large measure of stress and depression. (Liranso *et al.*, 2016)

2.10.1 Stigmatization

HIV related stigma and discrimination refers to prejudice, negative attitude and abuse directed at PLWHA. In 35% of countries with available data, over 50% of people reported having discriminatory attitudes towards PLWHA (UNAIDs, 2015) and (WHO, 2015). Cites of fear of

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stigma and discrimination is the main reason why people are reluctant to get tested, disclose their HIV status and presents their self to clinic for ARV drugs. (Jaquet *et al.*, 2013). In March 2016, UNAIDs and WHO's Global Health Force Alliance launched the agenda for zero discrimination in health care. (WHO, 206). PLWHA experience various forms of stigma and discrimination which includes self-stigma (internalized stigma), governmental stigma, and community and household stigma. (Reynolds, *et al.*, 2011).

A survey of married HIV positive women (15-29 years) in India found 88% of respondent's experiences stigma and discrimination from their family and community. Women with older husbands and from households with lower economic status were significantly more likely to experience stigma and discrimination from their husband's family as well as from friends and neighbours (Helli *et al.*, 2010). One study found that participants who reported high levels of stigma were over four times more likely to report poor access to health. (Pearson *et al.*, 2009). This contribute immensely to the extension of global HIV epidemic and a higher number of AIDS related death. Some PLWHA are shunned by family, peers and the wider community while others face poor treatment in educational and work settings, which can lead to psychological damage. These all limit access of HIV testing, treatment and other HIV service. (Poteat *et al.*, 2017). In a study to explore HIV stigma and QOL of a persons living with HIV infection (Holzemer *et al.*, 2009) documented that perceived HIV stigma had a significantly negative impact upon quality of life for a broad sample of PLWHA.

2.10.2 Depression

Commorbid psychiatric illness, including depression, are common in HIV infected patients (Bhati and Sehil, 2013). The prevalence of depression in HIV-infected clinic populations has ranged from 20% to 40% among younger age (WHO, 2016). Unemployment, lack of health insurance, low CD4 cell counts, HIV related symptoms, not having a partner, poor quality of social support were significant predictors of depression. In the study of Bhati and Sehil. (2013), patients with HIV infection who are older than 35 years are more likely to suffer from depression, anxiety, confusion and fatigue. Insomnia, pain and emotional control correlated with depression. After controlling for disease stage, physical symptoms and CD4 counts, the degree of physical limitation in a study predicted depression (Wagner *et al*., 2011).

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The impact of Psychiatric comorbidities, specifically depression, on the Health Related Quality of Life of patients with HIV disease has been well documented. Depression rate is as high as 60% in some settings. (World Health Day, 2017). The presence of a major psychiatric disorder (independent of HIV–related disease progression) was associated with a negative impact on the QOL dimensions of mental health, social functioning and general health perceptions but not on physical health, role functioning or pain. A larger study showed that patients with comorbid mood disorder (mood swap) had significantly worse functioning and wellbeing. (Wagner *et al.,* 2011). Treatment of depression in patients with HIV disease may not prolong life but can lower the risk of suicide and improve QOL, both directly and through increased adherence to complex medical regimens. Nevertheless, previous studies documented that individuals with depressive symptoms presented lower mean QOL scores than individuals without these symptoms (Reis *et al.,* 2011; Takada *et al.,* 2012; Charles *et al.,* 2012; Manhas *et al.,* 2014; Mo *et al.,* 2016; Rueda *et al.,* 2016; Nobre *et al.,* 2017). Women were presented more severe symptoms of intensity of depression than men (Nobre *et al.,* 2017). PLWHA who had severe personalized stigma and negative self-image had 3.4 and 2.1 times higher risk of severe depression respectively (Charles *et al.,* 2012). PLWHA who had severe depression had experienced 2.7 time significantly poorer QOL (Charles *et al.,* 2012).

2.10.3 Spirituality

Spirituality is an important contributor of feelings of wellbeing. Spirituality among HIV – infected individuals has perceived as a bridge between hopelessness and meaningfulness in life. (Gail and Heidemark, 2012). More than religious experience was found to correlate with psychological wellbeing in a large sample of African American men and women with HIV/AIDS.

2.10.4 Employment

As PLWHA adjust to living with a chronic illness, many new challenges emerge, among them are issues of occupational functioning and employment (Basavaraj *et al.,* 2016). For working individuals, employment not only be a financial benefits but may also be a source of structure, social support, role identity and meaning (Goldrick *et al.,* 2012). Adult with HIV/AIDS

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infection often struggle with vocational dilemmas unlike acute medical conditions in which patients may return to pre-disease state of functioning after treatment. Patient with HIV infection must frequently adapt to an unpredictable illness course (Goldrick *et al.*, 2012). Even when physical health is stable, fear and uncertainty about how HIV disease will affect economic, occupational and health care security complicate vocational decision making (Bialock *et al.*, 2012) .While some leave the workforce and receive disability benefits, others remain employed to varying degrees. Those who do work often find their occupational functioning limited by HIV-specific factors such as episode illness, fatigue, physical and cognitive limitations, medication schedules and side effects, and frequent medical appointments (Goldrick, 2012). Previous research has demonstrated that unemployed individuals generally report more depression, anxiety, social isolation and low self-esteem than the employed (Basavaraj *et al.*, 2016).

In the HIV/AIDS literatures, studies that have incorporated employment as a variable interest have yielded similar findings. (Bialock *et al.*, 2012) found that unemployment was one of several factors associated with suicidal ideation in HIV-Seropositive patients. In a study of psychosocial vulnerability in HIV-Seropositive gay men, Goldrick. (2012) reported that younger men who lacked full time employment were at greater risk for psychiatric symptoms and syndrome depression. In a cross-sectional study by Rueda *et al.* (2011), it was suggested that there may be physical and mental health benefits associated with obtaining or keeping employment. Previous studies had documented that patients who were not gainfully employed were presented with a significantly lower QOL (Dossantos *et al.*, 2007; Tlda-costa *et al.*, 2014; Feng *et al.*, 2015; Yeboah *et al.*, 2017).

2.10.5 Coping

This is also one of the variable influencing QOL. Coping was defined as cognitive and behavioral effort made to tolerate, reduce or master demands that challenge or exceed a person's resources. Individuals who confronted stress with problem solving and behavior modifying approaches had a significantly better QOL than those not using such coping skills (Melissa, 2013). It has been proposed that education and behavioural oriented interventions that enhance problem solving and active decision making are likely to be more beneficial than

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emotionally supportive interventions that encourage passive acceptance of the illness, coping by denial has associated with a significantly lower QOL in a previous study. Although denial has been showed to be an effective coping method in non-HIV settings (Friedland *et al.*, 2010). Denial has been shown to correlate with low self-esteem and depression in HIV patients. Indeed, coping by denial may be an expression that these patients may, in fact, be in need of psychological intervention (Friedland *et al.*, 2010).

2.10.6 Social Support

Social support for patient with HIV/AIDS has shown a strong potential to influence HRQOL. The three major components of social support and emotional tangible, informational support (Poteat *et al.*, 2017). Distinction among the different types of social support is relevant, since their functions may not be necessarily inter changeable. Emotional sustaining function of social support which serves to fulfill and gratify one's heed for nurturace, belonging and alliance, is well recognized to buffer stress in Non-HIV settings. Previous studies had reported that emotionally sustaining support was considered more desirable and was more often used than other form of support (Gerbi *et al.*, 2012; Mellisa, 2013; Olley, 2016).

2.10.7 Suicidal ideation suicide attempt in PLWHA

Suicidal attempted and suicidal behavior are complex clinical issues associated with life-threatening conditions such as HIV infection. Suicide in person with HIV infection has been reported in most cases to be associated with a concomitants psychiatric disorder (Pughk *et al.*, 1993). The risk of suicide may extend to those fearful of contracting HIV infection as well as the family and partners of those infected (Schlebusch and Govender, 2015). Elevated life time rate of affective disorders (particularly major depression) and substance use disorder have been reported in studies of HIV positives (Dabaghezadeh *et al.*, 2015). Furthermore, certain patterns of behavior associated with the risk of acquiring HIV infection (e.g. injection during use) may be associated with higher levels of suicidal ideation and psychiatric disorders (Basavaraj *et al.*, 2010). Although, patterns of attempted suicide and suicidal thoughts may differ. Throughout the progression of HIV infection, there are at least two high risk periods "The initial 6 months after diagnosis of infection with HIV" and "The onset of physical complications of AIDS". The period of greater risk may be the first 3 months.

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2.11 Impact of Knowledge on HIV Transmission and Prevention Quality of Life

Poor knowledge of HIV transmission and prevention contributed to HIV transmission risk. Knowledge in this domain is low in many sub-saharan African countries (Mathews *et al.*, 2013). The world health organization and UNAIDs highlighted that knowledge of HIV/AIDS among women may be especially low (WHO, 2014). In many African countries especially in South African and Nigeria, HIV/AIDS knowledge has been the focus of country. Awareness programs and media campaigns are on the increase (Salaam *et al.*, 2014). Despite the increased coverage of these campaigns, knowledge of HIV/AIDS especially, in the aspect of prevention, remain poor (Human Sciences Research Council 2009). Poor knowledge of HIV/AIDS contributed to low HIV testing which can have negative influence on the quality of life. People knowledge and beliefs about HIV transmission varies: some belief that a woman could not get HIV if she had sex during her menstrual period, similarly, many people thought and continued to think that all HIV positive mothers give birth to babies with AIDS. The proportion of respondents who believed that a person could get HIV by deep kissing a partner with HIV remain high. Likewise, many people have misconception about casual transmission such as sharing a tub, mosquito bites, coughing. As regards HIV prevention, a quite larger proportion of people knew that medicine can be provided to prevent perinatal transmission and that condom usage can prevent HIV. However, many people thought that the use of HIV medication in an infected person does not reduce chances of transmission. Likewise, many thought that there is a vaccine that can prevent adults from getting HIV. More so, many belief that the use of Vaseline or baby oil with condoms lowers the chance of getting HIV as reported by Williams *et al.* (2015). With respect to these, HIV/AIDS education and campaign should be put in place to enlighten people about this ailment. Although, most public policy emphasis has been placed on education and particularly information campaign which have been successful in reducing HIV prevalence and incidence (Markus *et al.*, 2007) in his study to determine the effect of HIV knowledge and risk behavior in HIV status in Kenya, Ethiopia and Tanzania stated that 'if everyone knew and understood the basic facts about AIDS, would this reduce HIV rates to (almost) zero? If so public policy should target groups with incomplete knowledge.

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Information campaigns aim to deliver knowledge and awareness about HIV/AIDS (the consequence of HIV, transmission routes, preventives methods and available medical treatments) to induce individuals to preventive and prudent behaviour (Becker *et al.*, 2010). Yet, information and knowledge may be insufficient to eradicate new infections if individuals are not infinitely risk averse (Markus *et al.*, 2007). The percentage of individuals who unknown to them are HIV positive and at the same time have no knowledge or insufficient knowledge about HIV/AIDS is significantly larger than those who are HIV positive but are sufficiently aware about HIV/AIDS (Wall *et al.*, 2012). Eight percent (8%) of those with poor HIV/AIDS knowledge are HIV positive whereas 5% of those with sound HIV/AIDS knowledge are HIV-positive. Thus, from these very basic unconditional correlations, there seems to be positive relations between low or poor knowledge and becoming HIV-positive (Markus *et al.*, 2007).

2.12 Physical Domain

Physical domain constitutes of four facet which includes: pain and discomfort, energy and fatigue, sleep and rest and symptom related to HIV. According to Fatiregun *et al.* (2009) in a cross sectional study conducted on two hundred and fifty PLWHA selected from five health centers located across the three zones of Kogi State, a self-administered questionnaire was adopted to assess participants at interview. The questionnaire contained data on socio-demographic, medical and WHOQOL HIV-BREF. The findings shows that patients had higher QOL mean score in the physical health domain. Similar result was found in the descriptive survey of one hundred and twenty PLWHA conducted in Cross River State which also documented that the participants had highest QOL mean scores in the physical health domain (Samson *et al.*, 2009). Likewise, Kumar *et al.*, (2012) reported that patients from the urban area have highest QOL mean score in the physical domain. Folasire *et al.*, (2012) also reported highest mean QOL score in the physical domain in a study to assess the QOL of PLWHA in UCH Ibadan. Similarly, the findings by Morandi *et al.* (2012) in South Africa and Okunoye *et al.* (2015) in Port Harcourt also reported highest mean quality of life score in the physical domain.

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However, a study conducted in Indian to assess the QOL of PLWHA reported that family support was positively associated with health related QOL in the physical domain (Peter *et al.*, 2014). In addition, subject without TB-CO infection and those on Anti-retroviral therapy (ART) reported significantly better QOL in the physical domain (Akinboro *et al.*, 2014). Most studies to access the QOL of PLWHA in Africa reported higher QOL mean scores in the physical domain. A cross sectional study conducted Ghana to assess the QOL of PLWHA reported highest QOL mean scores in the physical domain (Yeboah *et al.*, 2017). Likewise, in Botwana, a cross sectional study conducted on four hundred and fifty-six respondents revealed that respondents highest mean QOL score was in the physical domain (Ndubuka *et al.*, 2017). In contrast, a study conducted in Taiwan reported worst QOL mean score in the physical domain among the Taiwanese PLWHA. (Feng *et al.*, 2015).

2.13 Psychological Domain

Psychological health domain comprises of 5 facets which includes positive feelings, concentration, self-esteem, bodily image and appearance and negative feelings. A cross sectional study conducted in UCH Ibadan reported that PLWHA held better QOL score in the psychological domain (Folasire *et al.*, 2012). Fatiregun *et al.* (2009) reported high QOL mean score in psychological domain among PLWHA in Kogi State. While, Samson *et al.* (2009) in a cross sectional study conducted on the QOL of PLWHA in Cross River stated that psychological domain fell at the intermediate score. Okunoye *et al.* (2012) reported in Port Harcourt, higher QOL scores in psychological domain. The findings in a cross sectional study performed by Oliveira *et al.*, (2015) with 146 PLWHA, shows that psychological domain had a better evaluation of QOL followed by other domains. Likewise, in a Brazilian study to assess the QOL of PLWHA in Saopaulo, Brazil, documented highest QOL score in the psychological health domain (Elisabete *et al.*, 2007). Morandi *et al.* (2007) and Kumar *et al.* (2014) stated that PLWHA from the urban had a better QOL mean score in the psychological domain. However, Peter *et al.* (2014) reported that family support was positively associated with Health related QOL in the psychological domain. Furthermore, a study on carried out in LAUTECH Osogbo (Southwest) documented that respondents without TB-CO infections and those on Anti-retroviral therapy had better QOL in the psychological domain.

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2.14 Level of Independence Domain

Level of independence domain constitutes of four (4) facets which includes: mobility, activities of daily activities, dependence on medication and treatment and work capacity. According to a cross-sectional study performed with 146 people living with HIV/AIDS, questionnaire and WHO QOL-HIV BREF were used for the QOL evaluation. The findings show that the level of independence had the worst QOL mean score (Oleiveira *et al.*, 2015). In a descriptive cross sectional study to assess the QOL of five hundred PLWHA in port Harcourt shows that the overall mean QOL scores were lowest in the level of independence and a significant differences in the mean QOL scores was observed among men compared to women in the level of independence (Okunoye *et al.*, 2015)

Participants with AIDS had significantly lower QOL mean score in the level of independence domain. (Akinboro *et al.*, 2014). Subjects with CD4 cells count greater than 350 cells/mm^3, subjects without TB co-infections and those on antiretroviral therapy had better QOL scores in the level of independence (Akinboro *et al.*, 2014). A research conducted in South India to assess the QOL of PLWHA in Udupsi District hospital reported that family support was positively associated with level of independence domain (Peter *et al.*, 2014).

2.15. Social Relationship Domain

Social relationship domain has four (4) facets which include: personal relationship, social support, sexual activity and social inclusion. Previous studies majorly reported that people living with HIV/AIDS usually have poor mean QOL score in social relationship domain due to stigma and discrimination. A study carried out to assess the QOL of PLWHA in Kogi State shows that patients had lower mean QOL scores in social relationship domain (Fatiregun *et al.*, 2009). Likewise study conducted by Samson *et al.* (2009) in Cross River reported low QOL mean score in social relationship domain. Akinboro *et al.* (2014) also documented low overall mean QOL score in the social relationship domain in the study conducted in Osogbo (southwest). Likewise, the findings of Kumar *et al.* (2012) stated that PLWHA had lowest overall mean QOL score in the social domain. Across sectional study to assess the QOL of people living with HIV\AIDS in Port Harcourt also reported that the overall QOL mean score was lowest in social relationship domain (Okunoye *et al.*, 2015). Similarly, an India study

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revealed that family support was positively associated with health related QOL in social relationship (Peter *et al.*, 2014). In contrast, Folasire *et al.* (2012) reported highest mean scores in the social relationship domain in Ibadan. Akinboro *et al.* (2014) stated that those in relationship had better QOL in the social relationship domain. The more extensive social support was perceived better the QOL of PLWHA.

2.16 Environmental Health Domain

Environmental health domain constituted of eight (8) facets which includes: physical safety and security, home environment, financial resources, health and social care, accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activity physical environmental (pollution /noise/traffic/climate) and transport. Most studies reported low mean scores in the environmental domain due to stigma, discrimination, marginalization and rejection attached to HIV/AIDS ailment. In a cross sectional study conducted on four hundred and ninety one PLWHA in Osun State, the findings reported lowest mean QOL score in the environmental domain, this study also stated that the participants aged above 40 years had better QOL in the environmental domain (Akinboro *et al.*, 2014). The findings of a cross sectional study performed with 146 PLWHA shows that environmental domain had the worst QOL mean score compare to other domains (Oliveira *et al.*, 2015). Peter *et al.*, (2015) study indicated that family support was positively associated with health related QOL in the environmental domain.

Likewise, a cross sectional study conducted to assess the QOL of PLWHA in Botswana shows lowest mean QOL score in the environmental domain (Ndubuka *et al.*, 2017). Contrarily, a descriptive cross sectional study on PLWHA in Port Harcourt shows that the overall mean QOL score was highest in the environmental health domain (Okunoye *et al.*, 2015). This corroborate the study of Kumar *et al.* (2012) which also stated highest QOL mean scores in the environmental domain. In addition, the study of Kumar *et al.* (2012), also revealed that participants age less than or equal to 30 years had better mean QOL scores in the environmental domain. This report is contradicts that of Akinboro *et al.* (2014), which stated that participants age greater than 40years had better QOL in the environment domain.

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2.17 Spirituality/Religion/Personnel/Beliefs/Domain

Spirituality/religion/personal beliefs domain consist of four (4) facets which includes personal beliefs, forgiver and blame, concerns about the future and death and dying. Previous studies reported that PLWHA had higher mean QOL scores in the spirituality domain especially studies carried out in Africa. Fatiregun *et al.* (2009) reported higher mean QOL score in the spirituality domain. Likewise, Oliviera *et al.* (2015) also documented better mean QOL score in the spirituality domain among PLWHA. Furthermore, a study in Port Harcourt stated that the mean QOL score was highest in the spirituality/religion domain (Okunoye *et al.*, 2015). An Indian study shows that family support was positively associated with spirituality/religion domain (Peter *et al.*, 2014). In addition, a study in Ghana, also reported highest QOL mean score in the spirituality domain likewise, Akinboro *et al.*, 2014 stated that patients had better QOL score in the spirituality domain. It is believed that Africans are generally religious when confronted with life issues that defy medical solution.

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CHAPTER THREE

METHODOLOGY

3.1 Study Area

This study was carried out in Ondo State. Ondo State is one of the 36 States in Nigeria. It was carved out of the old western State as one of the seven States created on February 3rd 1976. The State originally included what is now Ekiti State, which was spilt off in 1996. It had a population of 3011,407. Akure is the state capital. The state is dominated by Yoruba who speak various dialects of Yoruba language and minority speaking the Ijaw language. Ondo State is bounded in the East by Bendel State, in the North by Kwara State, in the West by Oyo and Ogun State, in the South by Atlantic Ocean. Ondo State has various Health facilities located in each Local govemment area (LGAs). The major LGAs in Ondo State include Akure, Ondo, Akoko, Owo and Okitipupa.

There are three (3) Senatorial Districts in Ondo state, each of these senatorial districts consist of six (6) local government areas each, summing up to 18 local government area present in Ondo State. The local government areas (LGA) allocated to each Senatorial District are as follows:

A. NORTHERN SENATORIAL DISTRICT

i. Ose ii. Owo iii.Akoko South East iv. Akoko South West v. Akoko North East vi. Akoko North West.

B. CENTRAL SENATORIAL DISRICT

i. Ondo East ii. Ondo West iii. Akure South iv. Akure North v. Idanre vi. Ifedore.

C. SOUTHERN SENATORIAL DISRICT

i. Ilaje ii. Ese-Odo iii. Irele iv. Okitipupa v. Odigbo vi. Ile Oluji-Okeigbo.

Each of these Senatorial District has a State Specialist Hospital that act as referral Centre for all the LGAs in the senatorial zones.

Therefore, people living with HIV/AIDS were recruited from antiretroviral clinics in Federal Medical Centre and the state specialist Hospitals which serves as referral centres for each of the senatorial districts.

Hence, patients were recruited from Federal Medical Centre (FMC) Owo, State Specialist Hospital Ikare (Northern Senatorial District), State Specialist Hospital Akure and State

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Specialist Hospital Ondo (Central Senatorial District) and State Specialist Hospital Okitipupa (Southern Senatorial District).

Information about HIV/AIDS in Ondo State was obtained from Ondo state Agency for the Control of AIDS. (ODSACA).

3.2 Study Design

A descriptive cross sectional study design was used in the study

3.3 Study Population

The study population was made up of HIV/AIDS patients receiving longitudinal care at the ARV clinics in various referral Health Facilities in Ondo State.

3.3.1 Inclusion Criteria

- Confirmed diagnosed HIV patients.
- Patients who were 18 years and above.
- Patients who gave informed oral and written consent to be part of the study.
- Patients who are mentally competent to answer questions.
- Both males and females PLWHA were enrolled for this study.

3.3.2 Exclusion Criteria

- PLWHA below 18 years of age
- Patients who were very sick that require medical or surgical treatment or admission, pregnancy, gross cognitive dysfunction.
- Patients who refuse to be part of the study.

3.4 Study Duration

This study was carried out over a period of six (6) weeks.

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3.5 Sample Size Estimation

The minimum sample size for this study was determined using the formula for estimating single proportion (Cochran's sample size calculation).

$$n = \frac{2\alpha^2 KQ}{d^2}$$

Where:

n = minimum sample size

$2\alpha^2$ → Standards normal deviate corresponding to a two-sided level of significance of 5% (1.96).

K→ is the proportion with the outcome of interest 25%. (Akinboro *et al.*, 2014)

Q →1 – K

d→ The desired level of precision → 5%

$$n = \frac{(1.96)^2 x\ 0.25 x 1 - 0.25}{(0.05)^2}$$

$$n = 288$$

Assuming a non-response rate of 10%

$$\frac{100xN}{100 - r}$$

Where;
N = Sample Size
r = non-response rate (10%)

Therefore, n = 320

3.6 Sampling Techniques

A simple random sampling technique was used to select the health facilities. Systematic sampling is a type of probability sampling method in which sample numbers from a larger population pre-selected according to a random starting point and a fixed "periodic interval" this interval, called the sampling interval, is calculated by dividing the population size by the desired sample size. The random sampling technique followed by systematic selection of respondents was used by following procedures:

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1. List of referral health facilities in each of the six (6) LGA in the three (3) senatorial district in Ondo State were ranked anonymously and five (5) centres were chosen to meet the required sample size proportionately from the lottery.
2. Systematic sampling method was done to select the patients at the Anti-retroviral clinic as thus:

The total number of HIV/AIDS patient attending ARV clinic in each health centres was derived and divided by the sample size of the research study to obtain a "fixed interval for data selection.

Patients were selected at fixed interval and the interval varies for different health facilities.

1. List of referral health facilities in each of the six (6) LGA in the three (3) senatorial district in Ondo State were ranked anonymously and five (5) centres were chosen to meet the required sample size proportionately from the lottery.
2. Cluster sampling method was applied to select the patients in each health facilities chosen as thus:
3. The total number of HIV/AIDS patients that were booked for clinic each day was derived. Thereafter, patients were grouped according to their sex due to some questions specifically assigned to each sex especially females.
4. Serial numbers were given to each patients.
5. participants were then randomly selected.

Patients were selected at fixed interval and the interval varies for different health facilities.

3.7 Data Collection Techniques

3.7.1 Data collection instrument

A semi-structured, pretested and interviewer administered questionnaire were administered to the study participants. The questionnaire was divided into six (6) sections A – F as follows:

SECTION A: Comprises of Socio Economic and Socio Demographic Questions.

SECTION B: HIV History and Status.

SECTION C: Knowledge about HIV/AIDS Transmission and Prevention.

SECTION D: Disclosure/Stigma and Discrimination.

SECTION E: Sexual Behaviour/Partner's HIV Characteristics.

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SECTION F: WHOQOL – HIV BREF questionnaire.

Questions in section A – E were develop by the principal investigator based on information gathered from extensive review of literatures.

The questions in section F was developed by adopting "31 Item World Health Organization BREF (WHO QOL-HIV BREF) instruments". It is a multi-dimensional, conceptualized, generic 31-Item QOL Instrument. It covers the respondents perception of the overall QOL within the 6 (six) broad domains: Physical Psychological, Level of Independence, Social environmental and spiritual. There was also a general feat and measures the overall QOL and general health perceptions. The physical domain describes 4 facets: pain and discomfort, energy and fatigue, sleep and rest and symptoms related to HIV. The psychological domain describes 5 facets: positive feelings, concentration, self-esteem, bodily lineage and appearance and negative feeling. The level of independence domain describes 4 facets: mobility, activities of daily living, dependence on medication and treatment and work capacity. The social relationship domain describes 4 facets: personnel relationships, social support, Sexual Activity, Social Inclusion. The environment domain describes 8 facets:- physical safe & security, home environment, financial resources, health and social care: accessibility and quality, opportunities for acquiring new information and skills, participation in and opportunities for recreation leisure activities, physical environment, transport. The spiritual, religion and personnel belief domain describes 4 facets: personnel beliefs, forgiveness and blame, concerns about the future, death and dying.

Patients who were literate were given the questionnaires to complete themselves after going through the questionnaire with them while the illiterate patients were given the Yoruba translated version of the instrument. A check list was used to obtain clinical and laboratory information from medical record. Thereafter, the study population were subjected to a face to face interview and a physical examination. The physical examination entailed the measurement of height, weight, body mass index, blood pressure and determination of the WHO clinical staging of HIV of each participants. Health talk and counseling was given to the participants after data collection.

Conceptual framework for WHO QOL-HIV BREF is as shown in Figure 1 below.

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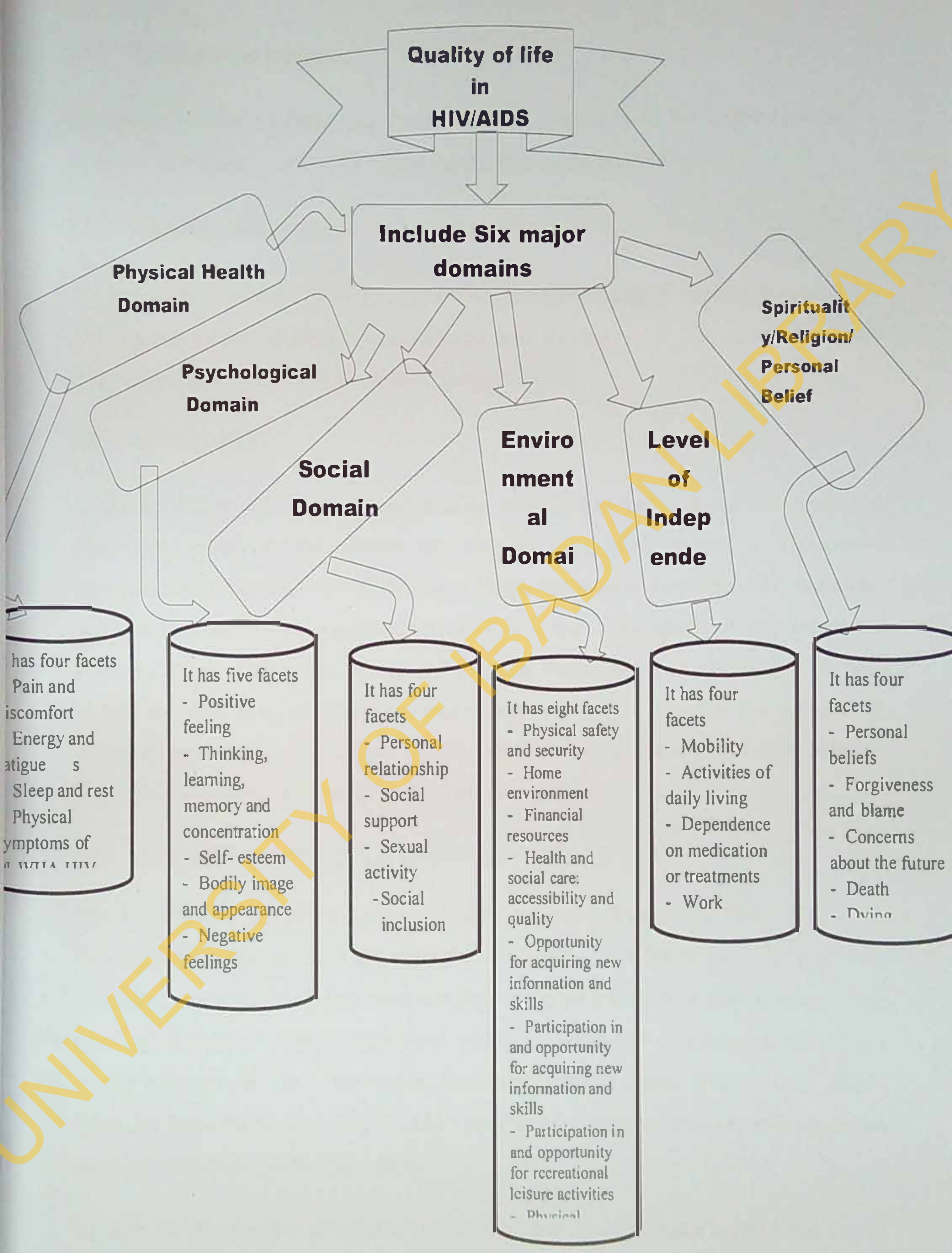

Figure 1. Conceptual framework using WHO QOL Domains

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3.7.2 Translation of protocol

Questionnaires were translated into Yoruba language (purposely for the illiterate patients) to facilitate understanding and uniformity of information by the interviewers.

3.7.3 Reliability and validity of the instrument

The instrument to be used for data collection was pre-tested using 20 respondents at Adeoyo State Specialist Hospital Ibadan. (Area different from the study area). Thereafter, appropriate modifications were made after the pre-test as necessary.

3.8 Data Analysis

At the end of each field day, the questionnaires were checked for errors and omissions. The data were carefully entered, cleaned and analyzed using SPSS version 20. Descriptive statistics including means, standard deviations, range, minimum and maximum for continuous data and frequencies and proportion for categorical data were calculated. For inferential statistics, mainly T-test, Chi- square and multiple linear regression statistical tools was applied for data analysis. Statistical significance was set at 5%. For the purpose of interpretation of quality of life, scores between 4 and 10 was considered as low level, between 10 and 14.9 as intermediate and between 15 and 20 as high level.

3.8.1 Scoring of the WHO QOL – HIV BREF

The WHO QOL – HIV BREF produces six domains scores. Whereas the WHO QOL – 100 has four items to present each facet while the WHO QOL – HIV BREF has only "one" item included. In these, there are two items that examine general Quality of Life: question 1 ask about an individual's overall perception of quality and question 2 asks about an individual's overall perception of his or her health. Hence, there are 31 items. WHO – QOL BREF, individual items are rated on a 5 point likert scale where 1 indicates low, negative perception and 5 indicates high, positive perception.

As such, domain and facet scores are scaled in a positive direction where higher scores denote higher quality of life. Some facet (Pain and Discomfort, Negative feeling, Dependence on Medication, Death and Dying) are not scaled in a positive direction, meaning that for those

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facets higher scores do not denote higher quality of life. Therefore, it was recorded so that high scores reflect better QOL. Instructions for calculation of scores are given below.

3.8.1.1 Scoring procedures

First, all scores need to be checked that they are in the appropriate range between of 1 to 5.

Check all items from assessment have range 1-5

Steps	SPSS syntax for carrying out data checking, cleaning and computing total scores
Check all 26 items from assessment have a range of 1-5	Record – Q1 Q2 Q3 Q4 Q5 Q6 Q7 Q8 Q9 Q10 Q11 Q12 Q13 Q14 Q15 Q16 Q17 Q18 Q19 Q20 Q21 Q22 Q23 Q24 Q25 Q26 Q27 Q28 Q29 Q30 Q31 (1=1) (2=2) (3=3) (4=4) (5=5) This recodes all data outside the range 1-5 to system missing

Domain scores were scaled in a positive direction where higher scores denotes higher quality of life. Some items are not scaled in a positive direction (e.g. pain and discomfort, negative feeling, dependent on medication, death and dying), meaning that for these facets higher scores do not denote higher quality of life. These were recoded so that high scores are scaled in a positive direction (i.e. higher scores denote higher quality of life).

Instructions for calculation of scores are given below.

Reverse negatively phrased items

Reverse 6 negatively phrased items	Record –Q3 Q4 Q5 Q8 Q9 Q10 Q31 (1=5) (2=4) (3=3) (4=2) (5=1) This transformed negatively framed questions to positively framed questions

The mean scores of HIV within each domain was used to calculate the domain score. Mean scores were then multiplied by 4 in order to make domain scores comparable with the scores used in the WHO QOL, so that scores range between 4 and 20. (4) Worse possible QOL to 20 best possible QOL.

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Compute domain score	Domain 1 (Q3 + Q4 + Q14 + Q21)/4*4 Domain 2 (Q6 + Q11 + Q15 + Q24 + Q31)/5*4 Domain 3 (Q5 + Q22 + Q23 + Q20)/4*4 Domain 4 (Q27 + Q26 + Q25 + Q17)/4*4 Domain 5 (Q12 + Q13 + Q16 + Q18 + Q19 + Q28 + Q29 + 30)/8*4 Domain 6 (Q7 + Q8 + Q9 + Q10)/4*4 These equations calculate the domain scores. All scores are multiplied by 4 so as to be directly comparable with scores derived from the WHO QOL 100

This instrument has been validated and used widely in HIV studies.

3.8.2 Study variables

3.8.2.1 Dependent variables

Quality of life

3.8.2.2 Independent variables

This study measured variables such as blood pressure CD4 Cells Count, packed cells volume (PCV), source of infection, duration on high active anti-retroviral therapy (HAART), HIV sero-status and body mass index (BMI).

3.8.3 Measures

Measures taken in this study include weight, height, BMI and Blood pressure.

3.8.3.1 Weight:

Body weight was measures using calibrated bathroom scale with a capacity of 130kg and 0kg precision. Weight was recorded with the subject standing erect without shoes and weight to the nearest 0.1kg. The scale were standardized each morning with a known weight and adjusted to zero marks before each reading.

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3.8.3.2 Height:

The height was performed using stadiometer with subject erect without shoes with the back placed against the stadiometer and the head in frank furt place to the nearest 0-1cm. Body mass index (BMI) was calculated as the weight in kilograms divided by height in meter squared. Weight category was divided into underweight, normal weight, overweight and obesity.

3.8.3.3 Blood pressure:

The blood pressure of the patients was taking by subjecting the patients to a sitting position with arm flexed at the level of the heart. Any patient that was noticed to be anxious were allowed to wait a few minutes before taking the blood pressure so as to get the accurate result. A properly sized blood pressure cuff was wrapped around the upper arm with the cuff's lower edge one inch above the ante cubital fossa. The stethoscope ball was lightly pressed over the branchial artery just below the cuff's edge. The cuff was inflated to 180mmHg and air was released from the cuff at a moderate rate (3mm/sec). The stethoscope was listened to and simultaneously observed the sphygmomanometer. The systolic and diastolic sound was recorded for each patient.

3.9 Ethical Consideration

Ethical approval to conduct the study was obtained from Ondo State Health Research Ethics Committee (OSHREC) and Health Research Ethics Committee Federal Medical Centre Owo.

3.9.1 Voluntary participation

Informed consent was taken from all participants who were willing to participate in the study. Participation in the study was entirely voluntary and participants were free to decline or withdrew from the study at any time without any loss of benefit. The participants were also assured respect for the personal and religious beliefs.

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3.9.2 Confidentiality of data

As personal details were part of the information obtained from participants, all information and data obtained from each participant were treated with utmost confidentiality. Information (such as names, address phone numbers etc.) that could lead to the identification of participants were not collected. The completed questionnaires were kept under lock, the data entered on the computer was pass worded, protected and access to this data was only limited to the researcher.

3.9.3 Beneficience of participants

During the data collection, counselling and health talk was given to the patients, incentives such as condom and flyers which contain information on how PLWHA can maintain good health with the usage of ART, types of diet to be taken and steps to take in case of diarrhea. Patients were also enlightened about the network of people living with HIV/AIDS in Nigeria (NEWPHAN) which many PLWHA were ignorance of. Furthermore, at the completion of this study, information will be disseminated to the Ondo State Government through Ondo State Agency for the Control of AIDS for proper interventions on how to improve the QOL of PLWHA in the State.

3.9.4 Non- maleficence to participants

There was no invasive procedures that could cause harm or injury to the participants in the process of conducting the study. Only interview was conducted. However, participants spent some time attending to the interviewers.

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CHAPTER FOUR

RESULTS

4.1 Socio-demographic Characteristics

Out of the 320 questionnaires administered, a total of 307 completely filled questionnaires was obtained during the study, representing a response rate of 96.3%. The socio-demographic characteristics of the respondents is presented in Table 1 below. The study population consisted of 307 patients out of which 253 (82.4%) and 54 (17.6%) were females and males respectively.

The age range of respondents were between 18-75 years with a mean of 40.64 years and standard deviation of 8.978 years. Majority of the respondents were Christians. An overall of 31%, 44%, and 25% of the respondents had secondary, primary and tertiary education respectively. However, males had the highest education (46.3%) in secondary and females the lowest education (24.5%) in tertiary. Although, males were highly educated (27.8%) in tertiary. As at the time of interview, 69% were married and 54% were staying always with their spouse/sexual partners while 35% were not staying with spouse. Males recorded the highest always staying with their spouse (64.8%) while 9.3% of the males sometimes stay with their spouse. Although, 52.2% females stay with their spouse always while 36.7% never stay with their spouse.

The descriptive statistics on the age of the respondent is presented in Figure 2 below. An overall mean, median, standard deviation, minimum and maximum age duration of the respondent were 40.64, 39.00, 8.98, 18 and 75 respectively.

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Table 1. Socio-demographic characteristics of the respondents

Socio demographic	Variables	Males (%)	Females (%)
Gender		54 (17.6)	253 (82.4)
Mean age in years ±std.		43.94±9.78	39.94±8.66
Religion	Christian	45 (83.3)	223 (88.1)
	Islam	9 (16.7)	27 (10.7)
	Traditional	0 (0.0)	3 (1.2)
Education level	Primary	14 (25.9)	81 (32.0)
	Secondary	25 (46.3)	110 (43.5)
	Tertiary	15 (27.8)	62 (24.5)
Marital status	Single	6 (11.1)	19 (7.5)
	Married	42 (77.8)	171 (67.6)
	Divorced	5 (9.3)	36 (14.2)
	Widowed	1 (1.9)	27 (10.7)
Currently live with	Alone	8 (14.8)	73 (29.0)
	Spouse/partner	37 (68.5)	135 (53.6)
	Family member	9 (16.7)	14 (17.5)
Stay with spouse	Always	35 (64.8)	132 (52.2)
	Sometimes	5 (9.3)	29(11.5)
	Never	14 (25.9)	92 (36.4)

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4.2 Socio-economic Characteristics

The socio-economic characteristics of the respondents is presented in Table 2 below. Out of the 307 respondents, 72% were employed and this was statistically significant (P= 0.041). The males were commonly employed than females and this represent 83.3%. Also, females were highly unemployed (30.4%). Out of the employed, females were highly low paid (80.2%) compared to males which were highly paid (37%). This is statistically significant (P= 0.006).

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Socio-economic	Variable	Males (%)	Females (%)	P-value
Employment status	Yes	45 (83.3)	176 (69.6)	0.041*
	No	9 (16.7)	77 (30.4)	
Income	Low	34(63)	203 (80.2)	0.006*
	High	20(37)	50 (19.8)	

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4.3 Clinical and Disease Related Variables

The clinical and disease related variables of respondents is presented in Table 3 below. At the year 2010 and beyond, 62.2% of the respondents had been positively diagnosed to have HIV virus and this represents 61.3% and 66.7% of females and males respectively. Although, 37.8% of the respondent were diagnosed to positive HIV status before the year 2010. The differences was not statistically significant (P= 0.457). Majority of the respondents (91.2%) ascertain their source of infection to be through sexual intercourse. Females recorded higher acquired infections more (91.3%) through sexual intercourse compared to males (90.7%). Although, the differences was not significant (P= 0.750). Most of the respondents (77.2%) reported to the clinic at the early stage I of the infection while only 0.4% of the respondents reported to clinic at the WHO clinical stage IV. Majority of the male respondents (77.8%) reported at WHO clinical stage I compared to females. This was not statistically significant (P= 0.245). Majority of the respondents (83%) had no complications while 11.4% had TB-co infections. Majority of the respondents have normal weight (69.1%) and this is followed by an overweight (20.5%). However, 4.6% were obese. Males were more overweight (26.4%) compared females while females were commonly obese (5.3%) compared to males. This was not statistically significant (P= 0.426). Majority of the respondents (94%) had access to HAART out of which 37% had been on treatment before 2010. Mean treatment duration was 55.2 months and range 10-180 months. Also, 93% patients strongly adhered to the treatment.

The descriptive statistics on the treatment duration of the respondent is presented in Figure 3 below. The overall mean, median, minimum and maximum treatment duration of the respondent were 55.2, 60.00, 10 and 180 respectively.

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Table 3. Clinical and disease related variables of the respondents

Clinical characteristics	Variables	Males (%)	Females (%)	P- value
Diagnostic year	<2010	18 (33.3)	98 (38.7)	0.457
	≥2010	36 (66.7)	155 (61.3)	
Source of infection	Sex intercourse	49 (90.7)	231 (91.3)	0.750
	Blood transfusion	4 (7.4)	10 (4.0)	
	Sharps	1 (1.9)	12 (4.7)	
WHO clinical stage	I	47 (77.8)	190 (75.1)	0.245
	II	11 (20.4)	39 (15.4)	
	III	1 (1.9)	23 (9.1)	
	IV	0 (0.0)	1 (0.4)	
Complications	Yes	5 (9.3)	48 (19.0)	0.086
	No	49 (90.7)	205 (81.0)	
Associated TB	Yes	5 (9.3)	30 (11.9)	0.585
	No	49 (90.7)	223 (88.1)	
BMI group	Underweight	7(13.2)	24(9.7)	0.426
	Normal	31(58.5)	181(65.2)	
	Overweight	14(26.4)	49(19.8)	
	Obese	1(1.9)	13(5.3)	
ART drug access	Yes	51(94.4)	237(93.7)	0.831
	No	3 (5.6)	16(6.3)	
Treatment duration	<2010	20(37.0)	94(37.2)	0.897
	≥2010	34(63.0)	159(62.8)	
Adherence	Adhered	50(92.6)	236(93.3)	0.772
	Less adhered	4(4.74)	17(6.7)	

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4.4 Anthropometric and Some Clinical Measures

The distribution of means, standard deviation according to anthropometric and some clinical measures of the respondents is presented in Table 4 below. Males were relatively heavier than the females with the mean weight of 64.4 vs 62.4 respectively with a total mean weight of 62.8. The difference in mean weight was statistically significant (P= 0.03). Males were taller than females (mean of 1.68) and this was statistically significant (P= 0.003).

Higher CD4+ cells count was observed in among the male respondents (mean of 390.3) compared to the females. Although the difference was not statistically significant (P= 0.250). A higher blood pressure was also observed in male respondents (126.3) compared to females. This difference was highly significant (P= 0008). Female respondents had a higher mean body mass index (23.0). There was no statistical significance in the mean BMI observed (P= 0.479). The mean knowledge score was higher in the female respondents (7.15) and the total mean score was 7.09.

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Table 4. Distribution of means, standard deviation according to anthropometric and some clinical measures of the respondents

Characteristics (x)	Males	Females		P-value
	Mean±Sd.	Mean±Sd.	Total mean± Sd.	
Weight (kg)	64.4±12.8	62.4±1.5	62.8±11.7	0.030*
Height (m)	1.68±008	1.65±007	1.65±0.07	0.003*
CD4+ cells count (mm^3)	390.3±199.8	355±218.1	361.2±215	0.250
BP(mmHg)	126.3±16.5	119.4±19.8	120.6±19.4	0008*
BMI (kg/m^2)	22.6±3.74	23.0±4.03	22.9±3.98	0.479
Knowledge Score	6.78±2.13	7.15±1.95	7.09±1.98	0.235

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4.5 Knowledge on the Transmission and Prevention of HIV Infections

The knowledge of respondents on transmission and prevention of HIV infections is presented in Table 5 below. Majority of the patients had good knowledge on how a person can be infected with HIV virus. Generally, females was observed to have better knowledge on the prevention and transmission of HIV/AIDS. Approximately, 83%, 78% and 73% attested that a person can be infected through sharing needles, transfusion of unscreened blood and sharing disinfected razor blade respectively. 71.3% and 72.6% of the respondents had the knowledge that a woman can transmit HIV to her child during pregnancy and through breast feeding respectively. While 64.2%, 63.8%, 76.5%, 78.5% responded that a person can reduce his/her risk by abstaining from sexual intercourse, maintaining healthy diet, using new syringe and always using condom during sex respectively. Few of the study participants had knowledge on contracting HIV virus through mosquito bite, many are still living in fear especially the women, of transmitting HIV virus to their children via mosquito bite. The total mean knowledge score was 7.09. A total of 269 patients representing 87.6% respondents had Good knowledge while 38 (12.4%) had poor knowledge on the transmission and prevention of HIV infection. The difference was not statistically significant (P= 0.549).

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Table 5. Knowledge of respondents on the transmission and prevention of HIV infections

Knowledge	Males (%)	Females (%)	Total (%)
A person can trans infected with HIV by			
Sharing needles	40(74.1)	214(84.6)	254(82.7)
Receiving blood not screened for HIV	41(75.9)	197(77.9)	238(77.5)
Getting a mosquito bite	14(25.9)	59(23.3)	73(23.8)
Sharing disinfected razor blade	37 (68.5)	187 (73.9)	224 (73.0)
A woman can transmit HIV to her child			
During pregnancy	37 (68.5)	182 (71.9)	219 (71.3)
Through breastfeeding	40 (74.1)	183 (72.3)	223 (72.6)
A person can reduce his or her risk by			
Abstain from sexual intercourse	35 (64.8)	162 (64.0)	197 (64.2)
Maintain healthy diet	35 (64.8)	161 (63.6)	196 (63.8)
Using new or unused syringe	35 (64.8)	200 (79.1)	235 (76.5)
Always using condom during sex	42 (77.8)	199 (78.7)	241 (78.5)
Mean knowledge score (sd.)	6.78 (2.13)	7.15 (1.95)	7.09 (1.98)
P value	0.235		
Knowledge category			
Good	46 (85.2)	223 (88.1)	269 (87.6)
Poor	8 (14.8)	30 (11.9)	38 (12.4)
P value	0.549		

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4.6 Disclosure and discrimination

The disclosure and discrimination of respondents is presented in Table 6 below. Approximately 96% of the study participants had disclosed their HIV sero status out of which 73% disclose to their sexual partners only while 21%, 22%, 15%,12%, and 4% disclosed to mother, child, relative, religions leaders (Pastor/Imam) and friends respectively. Only 13.3% had been rejected. This study result shows that higher percentage of the males (82%) disclosed to their sexual partners while (71%) of female disclosed to their sexual partners.

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Table 6. Disclosure and discrimination of respondents

Disclosure status	Males (%)	Females (%)	Total (%)	P-value
Have informed people about my status	49(90.7)	245(96.8)	294(95.8)	0.058
My sexual partner is aware	40(81.6)	174(71.0)	214(72.8)	0.128
My mother is aware	6(12.2)	55(22.4)	61(20.7)	0.108
My child is aware	8(16.3)	58(23.7)	66(22.4)	0.261
My relative are aware	7(14.3)	38(15.5)	45(15.3)	0.828
My religious leaders are aware	5(10.2)	30(12.2)	35(11.9)	0.687
My friends are aware	1(2.0)	10(4.1)	11(3.7)	0.698
Discrimination status				
Have been rejected because of my status	4(8.2)	35(14.3)	39(13.3)	0.356
Have been rejected in my religious places	0(0.0)	2(0.8)	2(0.7)	1.000
Have been rejected in work place	3(6.1)	10(4.1)	13(4.4)	0.460

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4.7 Sexual behavior

The sexual behavior of the respondents is shown in Table 7 below. A total 85% of the participants had sexual partners as at the time of interview. A total of 62.5% of the respondents disclosed their HIV status to their sexual partners out of which 75.9% and 59.6% were males and females respectively. There was a significant difference between the male and females (P value = 0.030). 36.3% attested that their sexual partners/spouse were infected with HIV virus. 55.6% of males that attested that their spouse were infected with HIV compared to females and this was statistically significant (P= 0.002). 57.2% of the respondents were currently living with their spouse. 57.5% and 58.2% of the respondents discuss with their spouse and was tested together with sexual partner. Both was statistically significant at P= 0.048 and 0.023 respectively. 73% of the respondent said they had sex after been tested positive, out of which 82% were males. Only 69.5% of the respondent used condom all the time since tested positive for HIV virus out of which 80% were males. 79% of the respondent perceived that their sexual behaviour has changed since tested positive while 27% have not sex since tested positive. There was a significant difference between number of male (70.4%) and female 54.2% that used condom more frequently (p = 0.010). A significant difference was also observed between males (5.6%) and females (0.8%) that used condom less frequently (p = 0.040).

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Table 7. Sexual behavior of the respondent

Sexual behaviour	Males (%)	Females (%)	Total (%)	P-value
I have sexual partner	47(87.0)	214(84.6)	261(85.0)	0.834
My spouse is aware of status	41(75.9)	149(59.6)	190(62.5)	0.030*
My spouse have HIV	30(55.6)	81(32.1)	111(36.3)	0.002*
I live with spouse before contracting HIV	40(74.1)	148(58.7)	188(61.4)	0.045*
I am currently living with sexual partner	31(57.1)	144(57.1)	175(57.2)	1.000
I discuss HIV with my sexual partner	38(70.4)	138(54.8)	176(57.5)	0.048*
I was tested together with sexual partner	39(72.2)	139(55.2)	178(58.2)	0.023*
I had sex after been tested positive	44(81.5)	180(71.1)	224(73.0)	0.121
I had sex with my spouse or sex partner	38(86.4)	162(83.5)	200(84.0)	0.820
I had sex with my boy/girlfriend	4(9.1)	15(7.8)	19(8.0)	0.760
I had sex with sex workers	1(2.3)	0(0.0)	1(0.4)	0.186
I had sex with casual partner	4(9.1)	16(8.3)	20(8.4)	0.771
I used condom all the time since I tested positive	35(79.5)	129(67.2)	164(69.5)	0.146
My sexual behaviour has changed	45(84.9)	198(78.3)	243(79.4)	0.351
Because I have not had sex since I tested positive	10(18.5)	73(29.0)	83(27.1)	0.131
Because I used condom frequently	38(70.4)	128(50.8)	166(54.2)	0.010*
Because I have fewer sexual partners	2(3.7)	5(2.0)	7(2.3)	0.358
Because I used condom less frequently	3(5.6)	2(0.8)	5(1.6)	0.040*
Because I have more sexual partner	2(3.7)	3(1.2)	5(1.6)	0.214

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4.8 Pearson's Correlation Coefficient Matrix of the Domains

The person's correlation coefficient matrix between the domains of the WHO QOL-BREF is shown in Table 8 below. The inter-domain correlations showed significant association between all the domains of the entire test instrument. Strong correlations were observed between social relationship and environment domains ($r=0.537$, $p< 0.01$). The weakest correlation were observed between spirituality / personal belief and psychological domains ($r= 0.158$, $p < 0.01$).

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Table 8. Pearson's correlation coefficient matrix between the domains of the WHO QOL-BREF.

Domains	Physical	Psychological	Level of inde.	Social relat.	Environment	Personal belief
Physical	1.000					
Psychological	0.273*	1.000				
Level of independence	0.418*	0.243*	1.000			
Social relationship	0.443*	0.303*	0.426*	1.000		
Environment	0.336*	0.308*	0.289*	0.537*	1.000	
Personal belief	0.347*	0.158*	0.297*	0.478*	0.323*	1.000

*Correlation coefficient significant at the 0.01 level (2 tailed)

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4.9 The Overall Mean QOL Scores of all the domains

The means SD score of quality of life of all the domains among the respondents is presented in Table 9 below. Physical domain was observed the domain with the highest scores with the mean score of 16.21±3.40. The mean SD score of social relationship, environment and spirituality/personal belief domains were 15.95±3.19, 15.81±2.64 and 15.61±3.12 respectively. However, psychological domain and level of independent domains had lower mean SD score at 14.42±3.10 and 14.78±2.96 respectively.

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Table 9. The overall means score and standard deviation of QOL of all the domains

Domains	Mean	Standard deviation	Minimum	Maximum
Physical	16.22	3.40	9.00	20.00
Psychological	14.42	3.10	8.00	19.00
Level of independence	14.78	2.96	7.00	19.00
Social relationship	15.95	3.19	9.00	20.00
Environmental	15.81	2.64	8.00	19.00
Spiritual/personal belief	15.61	3.12	5.00	20.00

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4.10 Gender influence on QOL

The influence of gender on quality of life of respondents is presented in Table 10 below. Majority of the study participant were females (253). The mean QOL score was better in the male respondents than the females across all the domains and a significantly better QOL scores was observed in the level of independence domain ($p = 0.027$).

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Table 10. Influence of gender on quality of life

Domain	Male n= 54	Female n= 253	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.75±3.40	16.10±3.39	0.201
Psychological	13.75±3.30	14.56±3.03	0.106
Level of independence	15.64±3.15	14.60±2.89	0.027*
Social Relationship	16.51±3.07	15.82±3.20	0.138
Environmental	16.18±2.50	15.73±2.65	0.242
Personal belief	15.90±2.80	15.54±3.19	0.298

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4.11 Age Influence on the QOL of the Respondents

The influence of age on the quality of life of the respondents is presented in Table 11 below The respondents of age less than 40yrs (<40yrs) have lower quality of life mean score in all the domains than those who were above 40years of age except in the physical domain Although, the difference was not statistically significantly.

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Table 11. Influence of age on the Quality of Life

Domain	Age <40yrs n= 180	Age ≥40yrs n= 127	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.44±3.16	15.90±3.70	0.165
Psychological	14.41±3.15	14.43±3.01	0.965
Level of independence	14.63±2.94	14.99±2.89	0.298
Social Relationship	15.67±3.20	16.33±3.15	0.072
Environmental	15.80±2.62	15.83±2.67	0.968
Personal belief	15.51±3.24	15.76±2.97	0.485

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4.12 Influence of education on the Quality of Life

The influence of education on the Quality of Life of respondents is presented in Table 12 below. Out of the 307 respondents, 77 respondent were more educated. Respondents who are more educated had better QOL mean score in the psychological, level of independence and spirituality/ personal belief domains. There was a significant difference in the level of independence (P= 0.047).

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Table 12. Influence of education on the Quality of Life

Domain	Less educated n= 230	More educated n=77	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.36±3.45	15.79±3.23	0.191
Psychological	14.32±3.19	14.70±2.78	0.316
Level of independence	14.59±2.98	15.35±2.84	0.047*
Social Relationship	15.95±2.99	15.93±3.76	0.955
Environmental	15.83±2.64	15.73±2.64	0.777
Personal belief	15.49±3.18	15.99±2.95	0.208

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4.13 Influence of marital status on the Quality of Life of respondents

The Influence of marital status on the Quality of Life of respondents is presented in Table 13 below. Respondents who were married and living together with their spouse had better mean QOL scores across all the domains when compared to those who are living alone. A significantly higher score was observed in the psychological domain and social relationship domain (P= 0.029 and 0.019 respectively).

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Table 13. Influence of marital status on the Quality of Life

Domain	Married/Living with spouse	Others	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.39±3.27	15.84±3.67	0.217
Psychological	14.67±3.06	13.83±3.11	0.029*
Level of independence	14.92±2.98	14.47±2.91	0.214
Social Relationship	16.24±3.03	15.27±3.44	0.019*
Environmental	15.97±2.57	15.44±2.77	0.117
Personal belief	15.75±3.07	15.32±3.24	0.283

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4.14 Influence of employment status on the Quality of Life

The influence of employment status on the Quality of Life of respondents is presented in Table 14 below. 253 participants were unemployed. As regards the mean QOL scores, the respondents who are employed had better mean QOL score across all the domains when compared with the unemployed. A significant difference was observed in the physical domain (P= 0.032).

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Table 14. Influence of employment status on the Quality of Life

Domain	Employed n= 54	Unemployed n=253	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.48±3.33	15.54±3.49	0.032*
Psychological	14.55±2.99	14.08±3.35	0.259
Level of independence	14.94±2.85	14.37±3.19	0.151
Social Relationship	16.16±3.17	15.40±3.19	0.061
Environmental	15.99±2.60	15.35±2.69	0.062
Personal belief	15.80±3.20	15.14±2.89	0.086

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4.15 Influence of income on the Quality of Life

The Influence of income on the Quality of Life of respondents is presented in Table 15. Only 70 respondents were earning above 20,000 naira monthly. It was observed that respondents who earns above 20,000 had better mean QOL scores across all the domains when compared with those who are earning lesser than 20,000 naira monthly. A significant better quality of life was observed in the physical domain (P= 0.007).

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Table 15. Influence of income on the Quality of Life

Domain	**<20,000 in naira n= 237**	**≥20,000 in naira n= 70**	**P-value**
	Mean ± Std.	Mean ± Std.	
Physical	15.95±3.45	17.13±3.07	0.007*
Psychological	14.45±3.14	14.31±2.97	0.728
Level of independence	14.66±2.99	15.20±2.84	0.169
Social Relationship	15.80±3.17	16.41±3.23	0.161
Environmental	15.72±2.64	16.10±2.63	0.293
Personal belief	15.72±3.14	15.98±3.07	0.265

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4.16 Quality of Life of Patients who Perceived Illness

The quality of life of respondents who perceived that they are ill is presented in Table 16 below. This study shows that only 53 respondents perceives illness. The respondent who perceives illness had lower mean QOL scores than those who do not perceive illness across all the domains. A significant lower mean QOL score was observed in the physical domain (P< 0.001).

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Table 16. Quality of life of respondents that perceived illness

Domain	Yes n= 53	No n= 254	P-value
	Mean ± Std.	Mean ± Std.	
Physical	14.49±3.36	16.58±3.30	<0.001*
Psychological	13.91±3.31	14.52±3.04	0.222
Level of independence	14.15±3.09	14.91±2.92	0.103
Social Relationship	15.38±3.42	16.06±3.14	0.184
Environmental	15.26±2.24	15.88±2.68	0.138
Personal belief	15.28±3.23	15.81±3.05	0.162

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4.17 Influence of TB- coinfection on Quality of Life

The influence of TB- coinfection on Quality of Life of respondents is presented in Table 17 below. A total of 35 respondents in this study has TB-co infection. The patients with TB co infection had poor mean QOL score across all the domains. A significantly lower score was observed in the physical and psychological domains (P = 0.047 and 0.035 respectively).

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Table 17. Influence of TB- coinfection on Quality of Life

Domain	TB Yes n= 35	TB No n= 272	P-value
	Mean ± Std.	Mean ± Std.	
Physical	15.09±3.49	16.36±3.36	0.047*
Psychological	13.33±3.12	14.55±3.07	0.035*
Level of independence	13.83±3.37	14.90±2.89	0.078
Social Relationship	15.75±3.10	15.97±3.21	0.693
Environmental	15.26±2.24	15.88±2.68	0.138
Personal belief	14.72±3.01	15.73±3.13	0.070

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4.18 Effect of treatment duration on Quality of Life

The effect of treatment duration on Quality of Life of respondents is presented in Table 18 below. Patient who has been on treatment before 2010 had better QOL scores in the entire domains except in the level of independence and in the spirituality domain. Although, the differences were not statistically significantly.

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Table 18. Effect of treatment duration on Quality of Life

Domain	**<2010 n= 114**	**≥2010 n= 193**	**P-value**
	Mean ± Std.	Mean ± Std.	
Physical	16.29±3.63	16.18±3.26	0.784
Psychological	14.55±2.76	14.34±3.28	0.541
Level of independence	14. 56±3.06	14.91±2.90	0.324
Social Relationship	15.98±2.93	15.93±3.34	0.883
Environmental	15.96±2.46	15.72±2.74	0.438
Personal belief	15.28±3.23	15.81±3.05	0.162

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4.19 Influence of Body mass index on Quality of Life

The influence of body mass index on Quality of Life of respondents is presented in Table 19 below. The respondents who had BMI of greater than twenty five (>25) had better mean QOL score across all the domains and a significantly better score was observed in the level of independence domain (P= 0.007).

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Table 19. Influence of Body mass index on Quality of Life of respondents

Domain	<25 n= 229	>25 n= 78	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.20±3.46	16.22±3.21	0.963
Psychological	14.36±3.21	14.53±2.75	0.665
Level of independence	14.51±2.99	15.56±2.72	0.007*
Social Relationship	15.83±3.13	16.34±3.35	0.236
Environmental	15.68±2.65	16.18±2.59	0.148
Personal belief	15.55±3.21	15.82±2.87	0.478

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4.20 Effect of CD4 cells count (cells/mm^3) on QOL

The effect of CD4 cells count (cells/mm^3) on the Quality of Life of respondents is shown in Table 20 below. The respondents who had CD4 cells count above 350 cells/mm^3 had better QOL across all the domains than those who had CD4 cells count below 350cells/mm^3. Although, the differences were not statistically significantly.op

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Table 20. Effect of CD4 cells count (cells/mm^3) on the Quality of Life of respondents

Domain	<350 n= 27	>350 n= 280	P-value
	Mean ± Std.	Mean ± Std.	
Physical	15.98±3.60	16.39±3.25	0.304
Psychological	14.31±2.93	14.49±3.21	0.613
Level of Independence	14.62±3.12	14.89±2.83	0.512
Social Relationship	15.75±3.22	16.08±3.18	0.365
Environmental	15.53±2.52	15.93±2.71	0.326
Personal belief	15.56±3.21	15.65±3.06	0.797

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4.21 Impact of Blood pressure on Quality of Life

The impact of blood pressure on Quality of Life of respondents is presented in Table 21. Majority (282) of the respondents had normal blood pressure. The respondents with normal blood pressure were observed to have a better mean QOL scores across all the domains and a significant higher score at the level of independence (P = 0.006).

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Table 21. Impact of blood pressure on Quality of Life of respondents

Domain	High BP n= 24	Normal BP n= 283	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.20±3.42	16.29±3.17	0.892
Psychological	14.40±3.13	14.44±2.71	0.942
Level of independence	14. 66±2.94	16.38±2.63	0.006*
Social Relationship	15.91±3.22	16.40±2.92	0.437
Environmental	15.82±2.66	15.63±2.36	0.699
Personal belief	15.58±3.17	15.93±2.65	0.542

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4.22 Impact of Sources of Infection on QOL

The comparison of mean QOL score according to the sources of infection of PLWHA is shown in Table 22. This study shows that 280 respondents contracted HIV through sexual intercourse.

However, the result on the table below did not show any significant differences in the mean QOL scores of the patients who contracted HIV through sexual intercourse and other means of infection. It was observed that the mean QOL scores in all the domains did not show a wide variations. Though, the respondents infected through other means of infection had better QOL score in the psychological, level of independence and environmental domains and no significant difference was observed.

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Table 22. Impact of sources of infection on QOL of PLWHA

Domain	Sexual intercourse n= 280	Others n= 27	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.2±3.4	16.1±3.4	0.867
Psychological	14.4±2.9	14.5±4.0	0.924
Level of independence	14.7±2.9	15.2±2.9	0.429
Social Relationship	15.9±3.2	15.9±3.09	0.871
Environmental	15.9±2.6	16.0±2.6	0.668
Personal belief	15.7±3.1	15.1±3.8	0.496

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4.23 Influence of WHO clinical stage at presentation on QOL

The influence of WHO clinical stage at presentation on quality of life of respondents is presented in Table 23. Majority of the study participants (232) reported to clinic at early stage 1 of the infection. The patient who reported to clinic at early stage I of the disease had a better mean QOL scores in the physical domain and spirituality/religion domains. A significantly better QOL score was observed in the psychological domain (P= 0.025).

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4.23 Influence of WHO clinical stage at presentation on QOL

The influence of WHO clinical stage at presentation on quality of life of respondents is presented in Table 23. Majority of the study participants (232) reported to clinic at early stage 1 of the infection. The patient who reported to clinic at early stage I of the disease had a better mean QOL scores in the physical domain and spirituality/religion domains. A significantly better QOL score was observed in the psychological domain (P= 0.025).

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Table 23. Influence of WHO clinical stage at presentation on quality of life of respondents

Domain	WHO clinical stage n= 232	Others clinical stages n= 75	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.4±3.3	15.7±3.6	0.129
Psychological	14.6±3.0	13.7±3.2	0.025*
Level of independence	14.7±2.9	14.9±3.2	0.726
Social Relationship	15.9±3.3	15.9±2.9	0.919
Environmental	15.9±2.7	15.4±2.2	0.112
Personal belief	15.6±3.1	15.5±3.3	0.747

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4.24 Effect of Adherence on Quality of Life

The comparison of mean QOL score based on ART adherence of the respondents is shown in Table 24 below. Two hundred and eighty-six (286) of the respondents strongly adhered to ART. The result of the table below shows that patients who adhered strongly to ART have better mean QOL scores than the patients who are less adhered. Furthermore, a significantly better mean QOL score was seen in the level of independence (P= 0.038).

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Table 24. Comparison of mean QOL score based on adherence to ART by respondents

Domain	Adhered n= 286	Less adhered n= 21	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.3±3.4	15.3±3.1	0.169
Psychological	14.5±3.0	13.7±3.5	0.352
Level of independence	14.9±2.9	13.2±3.3	0.038*
Social Relationship	16.0±3.1	14.6±3.5	0.072
Environmental	15.9±2.6	15.2±2.7	0.301
Personal belief	15.7±3.1	14.7±3.0	0.152

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4.25 Influence of HIV Knowledge on Quality of Life

The influence of knowledge on the quality of life of respondents is presented in Table 25. Respondents who have good knowledge about HIV transmission and prevention had better mean QOL scores in all the domains except in physical domain. Although no significant difference was observed.

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Table 25. Influence of knowledge in QOL of respondents

Domain	Knowledge good	Knowledge poor	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.2±3.5	16.3±3.0	0.924
Psychological	14.5±3.0	14.1±3.6	0.525
Level of independence	14.9±2.9	14.1±3.4	0.183
Social Relationship	16.0±3.2	15.3±3.4	0.990
Environment	15.8±2.6	15.8±2.8	0.990
Personal belief	15.7±3.2	15.3±2.9	0.441

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4.26 Impact of Disclosure on Quality of Life

The impact of disclosure on Quality of Life of respondents is shown in Table 26 below. Two hundred and ninety-three (293) respondents had disclosed their HIV sero-status. It was observed that patients who disclosed their HIV sero-status had better QOL in the level of independence, social relationship and environmental domains. Although, there was no significant difference observed.

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Table 26. Impact of disclosure on Quality of Life of respondents

Domain	Yes n= 294	No n= 13	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.2±3.4	16.5±2.9	0.762
Psychological	14.4±3.1	14.8±3.1	0.676
Level of independence	14.8±2.9	14.0±3.5	0.418
Social Relationship	15.9±3.2	15.3±2.8	0.390
Environmental	15.8±2.6	15.6±3.2	0.826
Personal belief	15.6±3.1	15.6±3.4	0.986

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4.27 Influence of Sexual Behaviour on the Quality of Life

The influence of sexual behaviour on the Quality of Life of respondents is presented in Table 27. Majority (224) of the study participants have had sex after being tested positive for HIV. This study revealed that the respondents who had sex since tested positive for HIV had better quality of the mean scores across all the domains and a significantly better score was observed in the psychological domain ($p= 0.006$) and level of independence domain ($P= 0.017$).

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Table 27. Influence of sexual behaviour on the Quality of Life of respondents

Domain	**Had sex n= 224**	**No sex n= 83**	**P-value**
	Mean ± Std.	Mean ± Std.	
Physical	16.4±3.3	15.8±3.7	0.223
Psychological	14.7±3.2	13.7±2.8	0.006*
Level of independence	15.0±2.7	14.1±3.4	0.017*
Social Relationship	16.1±3.2	15.6±3.2	0.202
Environmental	15.9±2.6	15.4±2.7	0.089
Personal belief	15.8±3.1	15.2±3.2	0.198

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4.28 Influence of condom usage on the Quality of Life

The association between condom usage and Quality of Life of PLWHA is presented in Table 28. One hundred and sixty-four (164) patients use condom always since tested positive. More so, the respondents that uses condom always had better mean QOL scores in physical, level of independence, social relationship and spirituality / religion domains. A significant better mean QOL score was observed in the spiritual / personal belief/ religion domain (p= 0.022).

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Table 28. Association between condom usage and Quality of Life of PLWHA

Domain	Use condom n= 235	No condom n= 72	P-value
	Mean ± Std.	Mean ± Std.	
Physical	16.4 ± 3.3	15.9±3.4	0.421
Psychological	14.6±3.0	14.8±3.4	0.627
Level of independence	15.0±2.9	14.8±2.4	0.563
Social Relationship	16.0±3.2	15.8±3.2	0.616
Environmental	15.9±2.7	15.9±2.4	0.853
Personal belief	15.9±2.9	14.8±3.6	0.022*

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4.29 Factors associated with the respondent's physical health

Discoveries of the influence of demographics and disease-related factors on quality of life using linear regression. Each of the six domains assessing the quality of life of the respondents was subject to a multivariate analysis using linear regression to determine the factors that were significantly associated with quality of life of the respondents.

Factors associated with the respondents physical health is presented in Table 29 below. The independent variable combined in the table below significantly ($P< 0.05$) predicted the physical health of the respondents. This includes factors such as employment, monthly income, perceived illness and TB- coinfection. The multiple linear regression correlation coefficient for the model on physical health was $R= 0.272$ while the adjusted R^2 was 0.074 = 7.4%. The adjusted correlation coefficient of 7.4% is an indication that the independent variables (employment, monthly income, perceived illness and TB- coinfection) explains 7.4% of the variation in the physical health of the respondents (i.e. dependent variable).

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Table 29. Physical health model

Independent variable	Categories	Unstandardized coefficients		standardized coefficients	T	P-value
		β	Standard Error	Beta		
(Constant)		15.688	0.595		26.375	0.000
Employment	Yes	0.835	0.446	0.111	1.871	0.062
	No (ref)					
Monthly income	High	0.244	0.422	0.034	0.578	0.563
	Low (ref)					
Perceived illness	Yes	-1.913	0.521	-0.213	-3.676	0.000
	No (ref)					
TB-coefficient	Yes	-0.618	0.617	-0.058	-1.001	0.318
	No (ref)					

a. Dependent variable $R = 0.272$, $R^2 = 0.074 = 7.4\%$

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4.30 Physical Health Domain Adjustment

Since perceived illness is the only predictor of the physical domain, Hence, we exclude other variables in the model giving rise to the table below.

INTERPRETATION

$Y = a + bx$

Y = dependent variable (physical domain)

a = constant

b = slope

x = predictor variable (i.e. perceived illness)

$Y = a + bx$ = physical domain = 16.579 + (-2.088) perceived illness

This means that the mean QOL score in the physical health domain for those who perceived illness are 2.088 point lower (because of the negative variable sign) than those who do not perceived illness. R^2 of 5.4% means that the independent variable (perceived illness) explains 5.4% of the variation in the physical health domain.

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Table 30. Physical health model 2

Domain		Unstandardized coefficients		standardized coefficients	t	P-value
		B	Standard Error	Beta		
Constant		16.579	0.208		79.831	0.000
Perceived illness	Yes	- 2.088	0.500	-0.233	-4.178	0.000
	No (ref)					

a. Dependent variable $R = 0.232$, $R^2 = 0.054 = 5.4\%$

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4.31 Factor associated with the respondents' psychological health

The independent variable combined in the table below significantly (P< 0.05) predicted the psychological health of the respondents. This includes factors such as marital status, TB-coinfection and WHO clinical stage.

INTERPRETATION OF THE MODEL RESULT

$Y = a + bx$

Y = dependent variable (physical domain)

a = constant

b= slope

X = predictor variables (marital status, TB co infection, and WHO clinical stage at presentation)

Psychological domain = 13.327 + (0.850 marital status) + (-1.283 TB – co infection) + (0.0852 WHO clinical stage at presentation). This indicated that the mean QOL score in the psychological domain of respondents who were married are 0.850 points higher than those who are living single. The mean QOL score in the psychological domain for the respondents that have TB co-infection was 1.283 point lower than those without TB co infection. The mean QOL score in the psychological domain for the respondent who were presented to the clinic at WHO clinical stage I are 0.852 points higher than those presented to clinic at other clinical stages. In addition, the adjusted coefficient correlation R^2 of 4.8% means that the independent variables (marital status, TB co infection, and WHO clinical stage at presentation) explains 4.8% of the variation in the psychological health (dependent variable).

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Table 31. Psychological model of PLWHA

Independent variables	Categories	Unstandardized coefficients		standardized coefficients	T	P-value
		β	Standard Error	Beta		
Constant		13.327	0.426		31.294	0.000
Marital status	Married	0.850	0.378	0.127	2.247	0.025
	Living single (ref)					
TB coinfection	Yes	-1.283	0.547	-0.132	-2.344	0.020
	No (ref)					
WHO clinical stage	Yes	0.852	0.405	0.118	2.105	0.036
	Others (ref)					

a. Dependent variable (psychological domain) R= 0.22, adjust R^2=0.048 = 4.8%)

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4.32 Table shows factors associated with the respondent's level of independence.

The independent variable combined in model below significantly (P< 0.05) predicted the level of independence of the respondents. This include factors such as gender, education, BMI, blood pressure and adherence to ART.

INTERPRETATION

The adjustment of correlation coefficient R^2 of 8.1% is an indication that the independent variables (gender, education, BMI, blood pressure and adherence to ART) predicted 8.1% of variation in the level of independence of the respondence.

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Table 32. Level of independence

Domain		Unstandardized coefficients		standardized coefficients	T	P-value
		B	Standard Error	Beta		
Constant		12.826	0.629		30.379	0.000
Gender	Male	0.940	0.430	0.122	2.185	0.030
	Female (ref)					
Education status	More	0.510	0.384	0.076	1.330	0.185
	Less (ref)					
BMI	> 25	0.749	0.387	0.111	1.938	0.054
	< 25(ref)					
BP	Normal	-1.349	0.620	0.125	2.176	0.030
	High (ref)					
Adherence	Adhered	1.424	0.646	0.124	2.204	0.028
	Less adhered (ref)					

a. Dependent variable: $R = 0.29$ $R^2 = 0.081 = 8.1\%$

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4.33 The Level Predictors of the Level of Independence

Since gender, blood pressure and adherence to ART predictors of the level of independence domain hence we exclude other variables in model.

INTERPRETATION

$Y = a + bx$

Y = dependent variable (physical domain)

a = constant

b = slope

x = predictor variables (gender, BP and Adherence to ART)

Level of independence domain 12.967 + (1.016, gender) + (-1.629 Blood pressures) + (1.636 adherence)

The mean QOL score in the level of independence of the respondents that has high blood pressure (hypertension) was 1.629 lower than those with normal blood pressure.

The mean QOL score in the level of independence of the male respondents was 1.016 times better than their female counter parts.

The mean QOL score in the level of independence of the respondents that strongly adhered to ART was 1.636 better than those who are less adhered. In addition, the adjusted correlation coefficient R^2 of 6.1% is an indication that independent variables (gender, blood pressure and adherence to ART) predicted 6.1% of the variation in the level of independence of the respondents.

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Table 33. Predictors of level of independence

Independent variables	Categories	Unstandardized coefficients		standardized coefficients	T	P-value
		β	Standard Error	Beta		
Constant		12.967	0.633		20.486	0.000
Gender	Male	1.016	0.431	0.131	2.357	0.019
	Female (ref)					
BP	Normal	-1.629	0.611	0.149	2.664	0.008
	High (ref)					
Adherence	Adhered	1.636	0.650	0.140	2.516	0.012
	Less adhered (ref)					

a. Dependent variable: $R = 0.247$, $R^2 = 0.061 = 6.1\%$

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4.34 Factors Associated with the Respondent's Social Relationship

In this model, marital status was the only factor that was significantly ($P< 0.05$) associated with the social relationship of the respondents.

INTERPRETATION

$Y = a + bx$

Y = dependent variable (physical domain)

a= constant

b = slope

x = predictor variables (marital status)

Y =a+bx = social relationship domain = 15.268 + (0.976 marital status)

The result above shows that the mean QOL score in the social relationship domain is 0.976 better in the respondents who were married than those living single. In addition, the adjusted correlation coefficient of 2.0% is an indication that independent variable (marital status) predicted 2.0% of the variation in the social relationship of the respondents.

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Table 34. Social relationship domain

Independent variables	Categories	Unstandardized coefficients		standardized coefficients	T	P-value
		β	Standard Error	Beta		
Constant		15.268	0.326		46.777	0.000
Marital status	Married	0.976	0.392	0.141	2.491	0.013
	Living single (ref)					

a. Dependent variable: R= 0.141, R^2= 0.020= 2%

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4.35 Distinct Models for QOL

The four (4) distinct models for QOL is shown in Table 35. The multiple linear regression model identified the physical domain related factors to be perceived illness (β = -2.088) and also showed that psychological domain related factors includes marital status (β = 0.850), TB coinfection (β = -1.283) and WHO clinical stage (β= 0.852) are associated factors. For level of independence domain, Gender (β = 1.016), blood pressure (β = -1.629) and adherence attitude (β= -1.636) and for social relationship domain, marital status (β= 0.976) was the associated factor.

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Table 35 Results of Multiple Stepwise Regression Analysis For QOL.

Dependable variable	Independent variable	Coefficient (β)	Standard error	T	P value
QOL physical domain	Perceived illness	-2.088	0.500	4.178	0.000
QOL psychological domain	Marital status	0.850	0.378	.127	0.025
	TB- Co infection	-1.283	0.547	-132	0.020
	WHO clinical stage	0.852	0.405	.118	0.036
QOL- level of independence domain	Gender	1.016	0.431	2.357	0.019
	Blood pressure	-1.629	0.611	2.664	0.008
	Adherence attitude	-1.636	0.650	2.516	0.012
QOL social domain	Marital status	0.976	0.392	2.491	0.013

Note: P<0.05

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CHAPTER FIVE

DISCUSSION

5.1. Quality of Life

The Socio-demographic and Socio-economic pictures of the respondents in this study indicated that most of the study participants hailed from low socio-economic status. This findings was similar to a study in Bangladesh by Imam *et al.* (2011). In a study on health related QOL among PLWHA which reported that most PLWHA were from lower socio-economic class. The findings of previous studies also documented low socio-economic status among PLWHA (Timilsina *et al.*, 2015; Katerine *et al.*, 2016). The mean QOL score was highest in the physical health domain which measures pain and discomfort, energy and fatigue, sleep and rest, and symptoms related to HIV/AIDS. These findings were similar to that of Ndubuka, *et al.* (2010) which documented highest mean score in the physical domain among PLWHA. Social relationship, environmental health and spirituality/personal belief domains also had higher mean scores (above 15) of the WHO QOL BREF scale. Social relationship health domain measures personal relationships, social support, sexual activity and social inclusion. Environmental health domain assess physical safety and security, home environment, financial resources, health and social care, accessibility and quality, opportunities for recreation/leisure activity, physical environment and transport. While the spiritual/personal belief domain measure personal beliefs, forgiveness and blame, concerns about the future, death and dying. Higher scores in all these domains is an indication that people living with HIV/AIDS had good QOL. Furthermore, similar findings was observed in the study carried out among PLWHA attending Anti-Retroviral clinic in UCH Ibadan which stated higher QOL in the physical and environmental domains (Folasire *et al.*, 2012). The study of Fatiregun *et al.*, 2009 also documented higher scores in the physical and environmental domain. Similar to this was the study conducted in Ghana which stated that social and environmental domains could be said to be better in Homunicipality than other Jurisdictions (Yeboah *et al.*, 2017). However, the highest mean QOL score noticed in physical health domain in this study can be attributed to free accessibility and availability of ART, immediate report of cases at early stage, good adherence attitude, which in turn suppress viral load and boost their CD4 count and energy, eliminating fatigue, pain, discomfort and

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symptom related to HIV/AIDS. However, previous reports contradicts the findings of this study (Folashire *et al.*, 2012; Samson *et al.*, 2013; Akinboro *et al.*, 2014). The higher mean QOL scores observed in the social relationship and environmental health domains in this study can be linked to the fact that majority of the study participants were married and staying together with their partners always. Contrary to the findings of this study, previous studies reported that PLWHA had lowest mean QOL score in the social and environmental domains due to stigma and discrimination attributed to HIV/AIDS (Dossantos *et al.*, 2007; Folashire *et al.*, 2012; Akinboro *et al.*, 2014).

High mean score observed in the spiritual/personal beliefs domain corroborates the work of Akinboro *et al.* (2014), Yeboah *et al.* (2017) and Tasfay *et al.* (2010). Akinboro et al. (2014) observed that Africans are generally religions particularly when confronted with life issues that defy medical solutions. Also, the study of Tasfay *et al.* (2015) carried out in Northern Ethiopia, stated that people tends to be spiritual and religious when confronted with issues that are beyond them; they engaged in the spiritual and religious reflections treasuring the gifts in their lives accepting and surrendering to the approach of death. A Brazilian study by Hipolito *et al.* (2016) confirmed that PLWHA use their religion/spirituality to cope with the stressors associated with HIV/AIDS.

However, lower mean QOL score was observed in the level of independence and psychological health domains in this study. Level of independence domain measures mobility, activities of daily living, dependence on medication, treatment and work capacity. Psychological health domains assess positive feelings, concentration, self-esteem, bodily image, appearance and negative feelings. Lowest mean scores in these domains indicates poor QOL. The lowest means QOL scores observed in the psychological and level of independence domains in this study corroborates a Brazilian study where lower mean QOL scores in psychological and level of independent domains was reported (Dossantos *et al.*, 2007). Despite the choice to a free and quality health care, social support networks, reduction of discrimination, stigma, rejection, and marginalization, free accessibility and availability of ART and asymptomatic status of PLWHA, mean QOL score in psychological and level of independence domains werelow. The possible explanation for this could be that PLWHA were overwhelmed psychologically with the thought of harbouring an incurable virus within

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their body system and solely dependability on medication all through their life time. Failure of adherence to medication is a threat to their health and life as a whole. These thoughts negatively affect their feelings, self-esteem and concentration there by reducing their work capacity hence, affecting their daily living activities which can in turn negatively impact their quality of life.

In addition to improving the quality of life, a new antidiscrimination bill has been signed into law to protect the rights and dignity of PLWHA. This law makes it illegal to discriminate against people based on their HIV status. It also prohibit any employer, individual or organization from requiring a person to take an HIV test as a precondition for employment or access to service. This law makes provision for the prevention of HIV related discriminations, protection of the human right and dignity of the PLWHA in Nigeria (NACA, 2015). With the enactment of this law, there is renewed hope as all sources of discrimination against PLWHA such as recruitment and termination of employment, denial access to services including health care, education, association and other social services has reduced, unlike before where PLWHA AIDS were denied of employment, sacked from work because of their HIV sero status. All this had positively contributed to the QOL of PLWHA.

5.2 Influence of Demographic Characteristics on Quality of Life

Previous studies have documented that demographic characteristics such as gender, age. marital status. employment, income etc. have influence on the quality of life of people living with HIV/AIDS. (Yeboah et al., 2017) in a study to assess the QOL of PLWHA in Ghana stated that majority (73.4%) of the study participants were females. The study of Akinboro *et al.* (2014) and Lonbiere *et al.* (2009) confirmed that gender vulnerability to HIV infection is tilted towards females in Nigeria and Africa at large. This study recorded an approximate ratio of 1:5 for male and female respondents. This may be due to the fact that the chances of transmission to women from infected men is wider compared to the slimmer chances in the reverse during sexual intercourse. Previous studies carried out in Africa and in Asian countries had also documented that females are more infected than males (Akinboro *et al.*, 2014; Folashire *et al.*, 2012; Donsantos *et al.*, 2007; Omueonoto *et al.*, 2013). On the contrary, a study on the assessment of QOL of PLWHA in Cuba posited higher numbers of males than

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females (Argonese-Lopez *et al.*, 2012). Likewise the report of Dossantos *et al.*, (2007) and Eyuero *et al.*, (2011). Females reportedly had a lower mean QOL scores across all the domains with a significantly lower scores in the level of independence when compared with their male counterparts. Likewise, the study of Hipolito *et al.* (2016) reported better perception of QOL in males in the level of independence domain. Women were reported to have lower mean score in the psychological health and environmental domains (Dossantos *et al.*, 2007).

A study in India documented that women living HIV/AIDS (WLHA) tends to have lower QOL than their male counterparts (Manhas *et al.*, 2014). In line with this present study, another Indian study by Anand *et al.* (2013) reported females as having significantly lower mean QOL score in social relationship and environment domain. A Brazilian cross sectional study to evaluate the QOL and its associated factors among PLWHA in Southern Brazil showed that the lowest results for quality of life were associated with being a female (Passos *et al.*, 2015). Likewise, (Absiubong *et al.*, 2010) in the study to asses QOL of PLWHA in Niger Delta region using three hundred and nine PLWHA reported that females showed lower QOL in comparable domains than males. Okunoye *et al.* (2015) findings shows a significant differences in the mean QOL scores among men when compared to women in the level of independence domain. A contradictory results was observed by Imam *et al.* (2011) in the study to assess the health related QOL in PLWHA in Bangladesh which stated that WLWH had better overall general health perception than men in most aspect of life. This negates the observation in this study. The study of Fatiregun *et al.* (2009) supports the findings that there was a significantly low mean QOL scores in the level of independence domain observed among women. Furthermore, Folasire *et al.* (2012) reported no significant differences in the mean QOL scores of men compared to those of women, in all domain assessed. According to Tostes *et al.* (2012), negative impacts on QOL of PLWHA seems to be more profound in women because they have lower earnings and schooling. They are financially dependents on their partners, overwhelmed with home chores, caring for their children and other relatives. Their socio-economic condition deteriorates as disease progresses and since the majority were infected by their (current or former) partners, this could arouse feelings of great sorrow, anger and disappointment. As women try to meet all their home, family and work commitments, they may disregard their health care and prioritize all other activities. In other words, gender

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inequalities have an impact on women's quality of life. Women who represent more than half of all PLWHA, face a number of gender inequalities that can exacerbate clinical disease and psychosocial concern associated with HIV infection. Furthermore, the decision concerning their desire to have a family are contributory factors to lower mean QOL scores observed in the females. Difficulties in disclosing status may be linked to cultural and gender inequalities, fear of rejection, changes in sexual and affective life. In addition, low quality of life in women may be due to factors associated with women psychological health as well as their job (pregnancy, delivery, milking, home making etc.).

The mean age was higher in the males than their female counterparts. This finding is in line with previous studies by Akinboro *et al.* (2014), Folasire *et al.* (2012) and Liping *et al.* (2015). The findings in this study also indicated that respondents who were above 40 years (>40) had better mean QOL score in all the domains except in the physical domain. Similar findings was also reported in a Brazilian study which stated that younger people living with HIV/AIDS had lower quality of life (Katherine *et al.*, 2016). According to the findings of Alicen-Burns *et al.*, (2013), PLWHA of 50 years of age and older had better mean QOL score in the physical domains compared for their younger counterparts. This study congruent with previous studies of Jaquest *et al.* (2013) and Skevington *et al.* (2012). Their study reported that QOL were better in older people irrespective of the domains. The possible explanation for low QOL observed among the younger PLWHA is that the younger ones especially those that are not married and young couples are more faced with stigmatization, social exclusion, worry, anxiety, fear of the future as regards their desire to have a family. These in turn negatively influence their quality of life. However, the higher mean QOL score noticed among the younger respondents in the physical health domain could be as a result of strong immunity, energy to suppress the negative effect of ART and the stress attached with the HIV infection.

Majority of the respondents in this study were less educated. Majority have secondary education and only few had tertiary education. Similarly, a study in sub-Sahara Africa stated that there was a significant difference in the study participants that had low education when compared with those that had higher education (Phalandze *et al.*, 2005). Also, a Ghanaian study confirmed that most PLWHA had not attained secondary school (Yeboah *et al.*, 2017).

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The findings of Hipolito *et al.* (2016) reported that PLWHA with low level of education had lower mean QOL score in the level of independence and environmental health domains. Adewuya *et al.* (2008) study in Nigeria also found that lower education level and poor social support were associated with low QOL. In fact, low education level is a risk factor for the treatment of PLWHA. The less educated may have difficulties in following the prescribed therapeutic recommendations. (Morandi *et al.*, 2017). In contrast, the report of a study in Osun State reported better QOL among the less educated (Akinboro et al., 2014). The possible explanation to why more educated PLWHA had better mean QOL scores in most of the domains especially in the level of independence could be due to the fact that their educational status enable them to secure better jobs and earn higher than the less educated ones. This is couple with the fact that the more educated can better understand the disease state and the instructions given on drug usage which invariably enhance their QOL.

This study showed that higher number of the respondents were married and living with their spouse always as at the time of interview. The observation as regards mean QOL scores revealed that respondents who were married had higher mean QOL scores across all the domains and a significantly higher mean QOL scores in the psychological and social relationships domains when compared with those living alone (P= 0.029 and 0.019respectively). The study conducted in Kenya stated that PLWHA that were married and have stable relationship had better QOL (Geteri *et al.*, 2013). This is consistent with a Brazilian study on social support for PLWHA who reported better QOL in PLWHA that were married (Pendrosa *et al*, 2011). Similar findings was reported by Akinboro *et al.* (2014) in Nigeria that observed a significant better QOL in the social relationship domain in the subjects who were married or had relationship when compared to those who were separated, singled and widowed. A study by Oliveira *et al.* (2015) reported that non-sexuality active PLWHA had significant poorer QOL compare to sexually active patients. Being married will go a long way to improve the QOL of PLWHA especially in the social and psychological domains because their partners are there to lean on, to share their sorrows, pain and joy with. They would also enjoy good interpersonal relationships, satisfactory sexual activities and social inclusion better than the singled, widowed and separated which will on the other hand contribute positively to their QOL.

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This study revealed a higher percentage of employed subjects. That is, participants have one job or the other they are engaged with. Majority of them were engaged with artisan jobs and small scale businesses due to their level of education. The comparison of the mean QOL score revealed that respondents who were employed had a better mean quality of life across all the domains than their unemployed counterparts and a significant better mean quality of life scores was observed in physical domain P= 0.032. The finding of this study correspond with the study carried out in Bangladesh which revealed a significant relationship between being employed and overall perception of health related QOL (Imam *et al.*, 2011). Also, corresponding to this study is the study conducted in Ghana which stated that the patients who were not gainfully employed presented a significantly lower QOL which was more than five times when compared with those who were employed (Yeboah *et al.*, 2017). Hipolito *et al.* (2016) stated that a small sample of workers in more stable situation presented better QOL in the physical and personal relationship domains, compared to those in less stable situations and unemployed. Employment provides not only financial benefits but can also be a source of structure, social support, role identity and meaning (Rūūtel *et al.*, 2009). A previous study has demonstrated that unemployed individual generally report more depression, social isolation, low self-esteem and anxiety than employed individuals (Dahlui *et al.*, 2015). Providing employment financial assistance, financial self-sufficiency and making appropriate job safety for patient are the interventions for promoting their QOL.

People with high income had better health and quality of life (Faijao *et al.*, 2016). Another important observations from this study was that despite that majority of the study participants were employed, a higher number (77.2%) of the respondents earns low monthly income. The result is not surprising because most of respondents had primary and secondary education, and majority were involved in small scale businesses and artisan jobs which will fetch them low income. A study proofed that most PLWHA were from low economic status (Passos *et al.*, 2015). As regards the mean QOL score, this study showed that respondents who earns low income monthly had low mean quality of life score in all the domains except in the psychological domain. A significant low score was observed in the physical domain (P= 0.007). This study had much similarities with findings from Brazil which stated that greater individual earning positively affect the perception of QOL in the spiritual, physical, social and environmental domains which indicates a significant relationship between greater economic

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power and better QOL (Leite *et al.*, 2017). Low QOL attached with low income could probably be due to the fact that financial incapability is a barrier in meeting essential daily needs such as getting healthy diet and transportation. This can be factors to non-compliances to treatment which invariably impact their life negatively especially in the physical domain. In addition to this, most of the respondent in this study belongs to primary and secondary school levels whose earning may not be adequate for personal and social needs.

5.3 Impact of HIV/AIDS Knowledge on QOL of PLWHA

This study showed that majority of the respondents had good knowledge of HIV/AIDS. Knowledge was categorized based on good or poor. Majority of the study participant had good knowledge (87.6%). Meanwhile, the overall mean knowledge score was 7.09 ± 1.98. Generally, poor knowledge of HIV transmission and prevention contribute to HIV risk. Knowledge about HIV/AIDS is low in many Sub-Saharan African countries (Mathews *et al.*, 2013). The world health organization and UNAIDs highlighted that knowledge of HIV/AIDS among women may be especially low (WHO, 2014). In many African countries especially in South African and Nigeria, HIV/AIDS knowledge has been the focus of country. Awareness programs and media campaigns are on the increase (Salaam *et al.*, 2014). Despite the increased coverage of these campaigns, knowledge of HIV/AIDS especially, in the aspect of prevention, remain poor (Human Sciences Research Council, 2009). Poor knowledge of HIV/AIDS contributed to low HIV testing which can have negative influence on the quality of life.

However, it is noteworthy that despite the good knowledge score on the transmission and prevention of HIV/AIDS attributed to the respondents in this study, majority of them still dwells in fear that HIV virus can be transmitted through mosquito bite especially the mothers who are afraid of infecting their children with the virus through bites by mosquito. A study has shown that people's knowledge and beliefs about HIV transmission varies (Williams *et al.*, 2015). Some belief that a woman could not get HIV when sex is performed during menstrual period. Similarly, many people thought and continued to think that all HIV positive mothers give birth to babies with AIDS. The proportion of respondents who believed that a person could get HIV by deep kissing a partner with HIV remain high. Likewise, many people have misconception about casual transmission such as sharing a tub, mosquito bites, coughing

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etc. As regard HIV prevention, a quite larger proportion of people knew that prophylaxis can be provided to prevent perinatal transmission and that condom usage can prevent HIV transmission. However, many people thought that the use of HIV medication in an infected person does not reduce chances of transmission. Likewise, many thought that there is a vaccine that can prevent adults from getting HIV, More so, many belief that the use of Vaseline or baby oil with condoms lowers the chance of contracting HIV (Williams *et al.*, 2015). With respect to these, creating more HIV/AIDS education and campaign would better enlighten people about this ailment. Education is one of the factors influencing quality of life of people living with HIV/AIDS. Education is vital in building people's skill and ability to process information for livelihood choices including issues related to HIV/AIDS prevention (MDG Report 2003). Furthermore, this study also indicated that respondents who had good knowledge had better mean QOL scores across all the domains when compared with those who had poor knowledge. This is in accordance with a study carried out in Botswana which proved that people with good knowledge of HIV generally had better QOL in all domains (Ndubuka *et al.*, 2016). Similar findings was observed in a study carried out in Zambia and South Africa by Thomas *et al.* (2017). The use of WHOQOL HIV-BREF to assess the QOL of PLWHA in this study was also employed in a cross sectional study conducted in Southern Brazil by Passos *et al.* (2015) to evaluate the QOL and its associated factors among people living with HIV/AIDs at a regional reference center, the findings showed that lowest QOL were associated with low level of education. More so, a study in Ghana which adopted this tool reported that patients with tertiary level education had excellent quality of life (Yeboah *et al.*, 2017). Similar findings was reported in Taiwan by Liping *et al.*, (2015). Contrarily, Akinboro *et al.* (2014) reported better QOL mean score among the illiterate. The reason behind a strong positive association between the people with higher education and higher QOL may be that people with higher educational attainment have a more enlightened attitude towards the disease with the increasing public awareness. More so, patients who are more educated have better understanding of the disease state and the instruction given on drug usage.

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5.4 Effect of Disclosure on Quality of Life

Out of the 95.8% respondents who disclosed their HIV sero status, over 70% disclosed only to their sexual partners and this burdened a bit relief on PLWHA. Few of the respondents in this study disclosed their HIV status to neighbours, friends, and family members. HIV-related disclosure concerns are associated with higher rates of concealment and poorer wellbeing, including poorer health-related HIV quality of life. Studies revealed that most women disclosed their HIV status and they often have poorer quality of life. Fakete *et al.* (2016), in the study conducted on gender differences in disclosure concerns and HIV-related quality of life reported that the relationship between disclosure and poorer QOL to be stronger in women living with HIV (WLWH) than in men living with HIV (MLWH). This study further suggested that more disclosure concerns were associated with poorer mean quality of life score but in general, men and women did not differ in their levels of mean QOL scores.

In addition, this study further revealed that disclosure concerns were associated with increase health worries and poorer sexual functioning for WLWH but not for MLWH. The expression fatigue and stigma is closely linked with disclosure of HIV status (Laura *et al.*, 2017). Contrarily, a study by Butler *et al.* (2009) reported that disclosure did not significantly impact QOL in any domain. However, a studies reported nondisclosure as a way of limiting stigma

(Adeoye *et al.*,)

Almost all of the studies highlighted that there is fear of stigma and social exclusion associated with disclosure (Peretti *et al.*, 2006; Loubiere *et al.*, 2009). Disclosure is known to be a correlate of safer sexual practices and better adherence to ART and as such must be encourage to assure improved treatment responses. However, this present study shows that majority of the respondents had disclosed their HIV sero-status.

Disclosure is a double-edge sword for sero positive people. On the one hand, it may expose to stigmatization, other negative social interactions and detrimental to PLWHA psychosocial wellbeing. On the other hand, it is considered to be a key component for positive prevention in PLWHA in terms of reducing HIV transmission risk to sexual partners especially in sero discordant married or cohabiting couples, considered to be major contributors to HIV/AIDS epidemics in sub-Saharan Africa (Matovu *et al.*, 2010). Disclosure is also a key component for treatment effectiveness. Besides disclosure to one's spouse/steady or casual sexual

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partner(s), disclosure to family members and friends is indeed necessary to ensure social and /or material support. (Ssali *et al.*, 2010).

Individual factors, access to psychosocial and economical support interventions were found to be associated with disclosure to one's main partner (Susan-Monti *et al.*, 2011). Few studies have described the evolution of disclosure overtime and particularly in resources-limited countries. In Mozambique, Pearson *et al.* (2009) reported that one year after ART initiation, disclosure to friends was associated with less stigma, compared to disclosure to family or to a partner. In South Africa, Wouters *et al.* (2009) highlighted the positive, immediate and long term impact of community support on disclosure to family members. Furthermore, this study showed that female respondents (95.8%) discloses their HIV sero status than their male counterparts. This is contrary to the case of cross sectional study in Ethiopia which highlighted that participant gender was not found to be significant in regards to disclosure (Deribe *et al.*, 2009).

Rates of disclosure to steady partners varied widely from about 20% to 91% depending on the study population, population and setting investigated (Suzan-monti *et al.*, 2011). Unlike this study, none of these studies reported an association between disclosure to the steady partner and disclosure to other relationship categories. One possible explanation for the result found in this study is that although disclosure to one's steady partner exposes PLWHA to the risk of rejection. None the less, disclosure can improve PLWHA wellbeing and reduce HIV transmission. As regards the mean QOL scores, a better mean quality of life scores was observed in the level of independence, social relationship and environmental domains among the respondents who disclosed there HIV sero status when compared to those that did not disclosed their HIV status. Although, not statistically significant.

5.5 Influence of Clinical and Disease Related Variables on the QOL

Few of the subjects contracted HIV through blood transfusion and sharps while greater part of the subjects were infected by means of sexual intercourse (91.2%). The QOL of PLWHA can also be influenced by the mode of infection. This study did not show any significant differences in the mean QOL scores of the patients who contracted HIV through sexual intercourse and other means of infection. It was observed that the mean QOL scores in all the domains did not show a wide variation. Although, the mean quality of life scores of

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respondents infected through other means of infection were a little bit better in the psychological, level of independence and environmental domains. This findings was in line with previous studies especially studies carried out in African countries (Deribe *et al.*, 2009; Wong *et al.*, 2009; Suzan *et al.*, 2011; Yeboah, *et al.*, 2017) and an Indian study by Anand *et al.* (2013). Furthermore, the findings in this study shows that the respondents who had sex since when tested positive for HIV had better mean quality of life scores than those who did not have sex since tested positive across all the domains and a significantly better score was observed in the psychological domain. ($p = 0.006$). This is consistent with the study of Matovu, *et al.* (2010). More so, the respondents that uses condom always had better mean QOL scores in physical, level of independence, social relationship and spirituality/religion domains. A significant better mean QOL score was observed in the spiritual/religion domain. ($p=0.022$).

This study showed that majority of the participant reported to clinic at the early stage 1 of the infection. Previous studies had shown that majority of PLWHA who reported promptly to clinic were asymptomatic (Pedroso et al 2011; Wu *et al.*, 2012; Zhu *et al.*, 2017). With respect to the mean QOL scores, the patient who reported to clinic at early stage of the disease had a better mean QOL scores in the physical domain and spirituality/religion domain. A significantly better QOL score was observed in the psychological domain. ($P=0.025$). No wonder majority of the study participants were asymptomatic.

This study showed that majority of the respondents were predominantly on treatment but there were still few not on treatment. This study showed that respondents that had been on treatment before 2010 (< 2010) are few in numbers compared to those that had been on treatment beyond 2010(> 2010). As regards the mean QOL score, the subject that had been on HAART before 2010 had better mean QOL scores in the physical, psychological, social relationship and environmental health domains. Although, this was not statistically significant. Similar findings was observed in the study carried out in Southwestern part of Nigeria to assess the QOL of Nigerians living with HIV, which showed that PLWHA placed on HAART had improved in their QOL (Akinboro et al., 2014).

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Interestingly, both people who had been diagnosed as HIV-positive and had been on ART for more than 5 years and those who were HIV-positive but not aware of their diagnosis showed similar health related QOL scores to those of HIV-negative individuals from the same communities. A study in Zambia and South Africa revealed by Donald *et al.* (2017). The findings of this present study correlated with previous studies. For instance, a study in Uganda showed that duration of less than one year was significantly associated with a low mean QOL score in the physical health domain (Bejunniwe *et al.*, 2009). Hadajani *et al.* (2012) in a study involving 88 out patients living with HIV showed a significant association between duration of HAART and physical domain. PLWHA on HAART for over twelve (>12) months treatment duration experienced higher mean scores documented by a study in Ethiopia (Beyene *et al.*, 2010). A study participant who had lived with HIV for a longer period of time also experienced a greater vitality of QOL (Argones-lopez *et al.*, 2012. The possible reason behind this could be because PLWHA who had been on drugs for a longer time had developed mechanism to cope with stress and hurdle of the disease.

Higher percentage of the study participants had no complications, only about 17% had complications. More so, majority perceived themselves to be healthy. The subjects who perceived themselves to be ill had lower mean QOL scores across all the domains and a significantly lower mean score was observed in the physical domain ($P < 0.001$). The findings in this study are/were in line with previous study in Ghana who documented that patients self-appraisal of their health significantly predicted their quality of life and that lower QOL was recorded among those who perceived themselves as ill (Yeboah *et al.*, 2017). Likewise, this report supports an international study which observed that illness perception can affect the QOL of Brazilians living with HIV/AIDS (Reynold *et al.*, 2011). The more the illness was perceived as threatening, the worst the QOL perception of PLWHA (Catunda *et al.* 2016).

The overall mean CD4 cell count in this study was 361.20. The findings in this study showed that the mean CD4 cells count for males were higher than that of their female counterparts. This contradicted the finding from UCH Ibadan which reported higher mean CD4 count in females (Folasire *et al.*, 2012). Furthermore, the findings of this study reflect that subjects who had higher CD4 cells count (>350 cells/mm^3) had better QOL score across all the domains when compared with the subjects who had low CD4 cell counts <350 cells/mm^3.

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Although, no significant difference was observed. The findings of a study in South Africa showed that improvement in the CD4 cell counts were associated with higher Health Related QOL scores (Nglazi *et al.*, 2014). The possible reason why more than half of the respondent had higher CD4 count could be attributed to their good ART adherence attitude because the better the adherence to ART, the lesser the viral loads, the higher the CD4 cells count and the better the QOL of the patients.

The discovery in this study buttressed that over 66.2% of the study participants had normal weight and this was followed by subjects who were overweight. The overall mean weight, height and BMI were 62.7, 1.65 and 22.95 respectively. This study showed that respondents who had BMI above twenty-five (>25) Kg/m^2 (i.e. over weight to obese) had better mean QOL scores across all the domains and a significantly higher mean QOL score in the level of independence (P = 0.007) when compared with subjects who weighed below twenty-five (>25) Kg/m^2 (normal - underweight). Similar to the result in this study was an Indian study who reported that the PLWHA with lower BMI had poorer QOL (Anand *et al.*, 2013). Although, wasting was common in early HIV epidemic. It has become less common with the adventure of Highly Active Anti-Rectro Viral Therapy (HAART). A study in South Africa made it clear that increased BMI is associated with an increased in CD4 cells count and lower rate of the event that characterize the progression of the disease (Venter *et al.*, 2009). BMI correlated significantly with psychological, level of independence and environmental health domain (Zhu *et al.*, 2017). A possible explanation for this result is that an obese stature boost the confidence and self-esteem, hence enabling social inclusion and interaction. Weight gain in HIV/AIDs appears to improve their health status as severe weight loss and wasting has been traditionally associated with infected status. Psychosocially, wasting patient will always live in suspense that people are aware of their HIV status which may cause stigma, depression and social exclusion.

Arterial hypertension is a major risk factor of HIV/AIDS. This study showed that two hundred and eighty-two respondents had normal blood pressure. The overall mean blood pressure was 120. 58. There was a statistically significant difference in the mean blood pressure of the male and female respondents (126.3 versus 119.4) P= 0008. The mean blood pressure observed in this study is similar to the report of Sub-Sahara African region which documented that blood

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pressure is slowly emerging among PLWHA. The overall rate of hypertension among HIV positive patients in Sub-Sahara African region was estimated to be 8-11% and slightly higher in men compared to women. Previous studies also attributed high blood pressure to males PLWHA than the females (Hajazi *et al.*, 2012; Ami-dejumour *et al.*, 2010). A study in Kenya reported that HIV positive patient have on average low to normal blood pressure (Bloomfield *et al.*, 2008). Meanwhile, as regard the mean QOL scores, subjects that had normal blood pressure, were observed to have a significant better mean QOL scores in the level of independence (P = 0.006). More so, respondents who had high blood pressure had poor mean QOL scores in all the domains except in the environmental health domain. Studies have not shown a consistent association between blood pressures and quality of life domains. However, there are few studies that have shown the relationship between blood pressure and HIV infection. Ogunmola *et al.* (2012) reported no significant difference in the prevalence of hypertension between HIV-negative, HIV-positive on Highly Active Anti-retroviral Therapy (HAART) and HIV-positive HAART naive patients. Several studies has reported higher prevalence of hypertension among HIV-infected patients on HAART among are (Dimela *et al.*, 2016; Ekalli *et al.*, 2013, Mohammed *et al.*, 2013; Bernardino *et al.*, 2010). In addition, a study in Kenya, reported that HIV positive patients have on average low blood pressure (Gerald *et al.*, 2014). The occurrence of two chronic diseases such as that of high BP in conjunction with HIV/AIDS will definitely reduce the quality of life especially in the level of independence. PLWHA with high BP tends to depend more on medications and treatment which can go a long way to affect mobility, work capacity and daily living activities. Thereby, negatively impacting their QOL.

Tuberculosis and HIV/AIDs can be worsened by each other. TB is the most common opportunist disease and cause of death for those infected with HIV. Similarly, HIV infection is one of the most important risk factors associated with an increased risk of latent TB infection progressive to active TB disease (Meya *et al.*, 2007). Patients act differently when confronted with co infection diagnosis, ranging from indifference to despair. For this reason, the desire to die or even the idea of suicide is sometimes part of the feelings experienced after a positive serum status, mainly when the co-infection diagnosis is discovered simultaneously. On the opposite, TB can accelerate the course of the HIV infection and the diagnosis frequently becomes difficult. However, this present study showed that 11.4% of the study

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participants had TB co-infections. Tunilsina *et al.* (2015) reported on the assessment of quality of life and depression among PLWHA and TB-HIV co-infection in NEPAL that PLWHA with TB-coinfection suffers from more depression than PLWHA without TB. This present study revealed that the respondents that had TB – co-infection had lower mean QOL scores across all the domains and statistically significant scores were observed in the physical health and psychological domains (P= 0.047 and 0.035 respectively). The findings of Akinboro *et al.* (2014) also stated that PLWHA with TB-coinfection had lower mean QOL score in all the domains. But contrary to this study, a significant difference was observed in the level of independence. The findings of Deribe *et al.* (2009) is in line with the findings of this study which reported that there was low mean QOL scores across all the domains in PLWHA with TB co-infection. And also, there was a significant difference in the mean QOL scores in the social relationship, environmental, level of independence and spirituality domains. HIV and TB co-infection, combination of two prolonged and stigmatizing diseases can negatively impact the quality of life of PLWHA.

Optimal adherence can contribute to the maintenance of PLWHA health and their quality of life. This study shows that two hundred and eighty six of the respondents strongly adhered to ART. The patients who adhered strongly had better mean QOL scores than the patients who were less adhered and a significantly better mean QOL score was seen in the level of independence domain P= 0.03. Tran. (2012) reported in a study involving the QOL outcome for ART for HIV/AIDS patients in Vietnam reported that patients were significantly poorer in the physical and social domains in the first year ART, but moderately better performance in spirituality and environment domain from the second year on ART compared to those not yet on ART. This study is in accordance with that of Galvao *et al.* (2015) which stated that people living with HIV/AIDS with impaired QOL are those with poor adherence attitude. Adherence to ART improves patient's QOL and life expectancy (Langebeek, 2017). Previous studies also proved that adherence to ART have positive impact on QOL of PLWHA (Huang *et al.*, 2006; Achappa, 2013; Liping *et al.*, 2015).

Majority of the respondents rated their quality of life as good and very good. Regarding been satisfied with health, majority of the respondents said they were satisfied with their health. This result is not surprising due to the fact that majority of the respondents were presented at

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the early stage of the disease. Thereafter, placed on highly active anti- retroviral therapy (HAART) promptly. More so, majority of the respondents had good adherence attitude to HAART which will in turn suppress viral load and boost their CD4 count. Thereby, making them to be asymptomatic. Hence, good and satisfied health patients will have.

Only about 13% of the respondents had been faced with rejection. All these factors will enhance sexual activities, personal relationships and social inclusion which will enable them to feel safe and secured. Thereby, impacting their QOL positively.

5.6 Conclusion

Females were more prone to HIV/AIDS infection than males in various studies. Infact, this study recorded an approximate ratio of 1:5 for males and female respondents.

This can be because a chance of transmission to women from infected men is wider compared to the similar chances in the reverse during sexual intercourse.

Negative impacts on quality of life of PLWHA seem to be deep-rooted in women because they face a number of gender inequalities that can exacerbate clinical disease and psychosocial concern associated with HIV Infection.

They are financially dependent on their partners, overwhelmed with home chores, caring for their children and relatives. As women try to meet all their home, family and work commitments, they may disregard their health care and prioritize all other activities.

Their socio-economic condition decline as disease progresses and since majority were infected by their partners, this could evoke feelings of great anguish, anger and trepidation which in-turn impact their life negatively.

Low quality of life observed among younger PLWHA compared to the older ones may be because the younger ones especially those that were not married and the young couples were more faced with stigmatization, social exclusion, self pity worry, anxiety, fear of the future as regards their desire to have a family.

In fact low education is risk factor for the treatment of PLWHA. Better mean QOL scores observed PLWHA among who are more educated especially in the level of independence may

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be as a result that their educational status enables them to secure better jobs and earn higher than the less educated ones. The more educated PLWHA can better understand the disease state and the INSTRUCTIONS given on drug regimen.

This study observed that respondents who were married and living together with their partners have better mean QOL scores then those who are living alone especially in the psychological and social relationship domains. This is because those who are married and living together with their partners enjoys good interpersonal relationship, satisfactory sexual activities and social inclusion which in-turn impacts their QOL positively

Low QOL attached with low income in this study, may be due to the fact that financial incapability is a barrier in meeting essential daily needs such as getting healthy diet and transportation. This can also be factors to non-compliances to treatment which invariably impact their QOL negatively especially in the physical domain.

Respondents who disclosed their HIV sero status to their partners had better QOL because Disclosure is known to be a correlate of safer sexual practices and better adherence TO ART and as such must be encourage to assure improved treatment responses.

In addition, Normal blood pressure BMI >25kg/$m^{2,}$ CD4 count >350 cells/mm^2, Coupled with strong adherence to HEART have positive impacts on the Quality of life of PLWHA while TB infection negatively impact the QOL of PLWHA

5.7 Recommendations

- Government should continually make available to PLWHA free access to highly active anti-rectro viral drugs so as to maintain a good quality of life and asymptomatic status which can help to reduce stigma and the spread of HIV virus.
- Although, various researches have suggested relationship between various psychosocial, spiritual factors, symptomology and physical health. More research are needed to document their potential influences on immune function as well as health status, disease progression and QOL among persons living with HIV infection.
- Routine QOL assessment should be rendered to people living with HIV/AIDS should be inculcated during medical check-ups in various antiretroviral clinics.

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- Stress management intervention for HIV-infected persons is a promising approach to facilitate positive adjustment.
- Further studies should encompass the evaluation of more determinants of QOL in HIV/AIDS. More so, studies should be carried out in Ondo State, using a broader sample size.
- Since it was observed that majority of the patients in this study were from low socio-economic group and earned low, people living with HIV/AID in Ondo State should be assisted with employment, accessibility to loans and be empowered so as to have a means of livelihood. Financial self-sufficiency and appropriate job safety for patients are intervention for promoting QOL of PLWHA because the burden of HIV/AIDS and lack of finances are highly frustrating and deadly.
- With the advances on HIV infections, majority still lack the knowledge about transmission and preventions of HIV even among the people living with the virus. In view of this, continuous, unrelenting campaigns and programmes to sensitize the masses about the existence, modes of transmission and preventive measures of this deadly disease are needed. In fact, information campaign should be nailed recurrently in ARV clinics because PLWHA are the once harbouring the disease and it cannot spread without them. Thus, adequate knowledge on the transmission and prevention of the disease should be made known to PLWHA so as to stop the spread of HIV.
- Since the prevalence of HIV/AIDS is high among females and greater percentage of women do not use condom, appropriate orientation on the necessity of condom usage should be given with special focus on the poor and the illiterates in order to eradicate the spread of this infection.
- Furthermore, the mind of the young ones should be captured at early age by organizing awareness programs in schools (primary schools not excluded) to enable them to know the dangers attributed to contracting HIV/AIDS and other sexually transmitted diseases so that every individual will be risk avert (in fact this is the best life insurance we can give to these children).
- Information campaigns alone are bound to fail and more stronger interventions are required to eradicate AIDS.

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- As a matter of fact, to achieve the SDG agenda for ending AIDS as a public health threat in 2030 by a fast-track, 90-90-90 (meaning 90% of people are aware of their HIV status, 90% of infected persons are on HIV treatment and 90% are virally suppressed) strategized by UNAIDS, the quality of life of the PLWHA should be put into consideration in other word, the needs of PLWHA should be met for the 90-90-90 agenda to be achievable.
- Adequate food supply should be made available for PLWHA because malnutrition has a significant and negative impact on quality of life especially the quality of life of PLWHA, for optimum compliance to instruction and adherence to ART. This would go a long way to reduce HIV infections and AIDS related death.
- Finally, hunger, unemployment, and financial incapability coupled with the burden of HIV/AIDS is highly frustrating! In fact, it is a disaster!

5.8 Limitations

- This study had some limitations that should be acknowledge. It was a cross sectional study which limit drawing conclusion about the direction of relationship or causal relationship between outcome variables and independent variables.
- Ondo State has various health facilities for taking care of PLWHA, this study was only conducted in ARV clinics of FMC Owo, SSH Akure, SSH Ondo, SSH Akoko and SSH Okitipupa. In five HIV service providers and during a very short period of time for enrollment, result may not reflect the state overview especially in the rural areas of Ondo State. However, these five structures were chosen for their large trooping in of PLWHA in Ondo State and they are good representation of people living with HIV/AIDS in Ondo State.
- In addition, some of the predictors such as viral load, hepatitis and diabetes which may also affect the efficacy of therapy and quality of life of the patients were not considered in this study due to lack of time and resources.
- Limitation also include the use of clinic based convenient samples of three hundred and seven (307) PLWHA in Ondo State. Which means that the samples generated here may not be generalizable to the broader population of PLWHA in Ondo State. Further studies should be carried out using a broader sampled size.

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APPENDIX 1

Definitions of Variables Measured in the Study

(A) INDEPENDENT VARIABLES: Demographic characteristics such as age, marital status, monthly income, duration on treatment, WHO clinical stage, adherence to ART, educational status, religion, study participants, respondents etc age at least birthday (in years)

(i.) Study participants/respondents: This referred to as the people living with HIV\AIDS who completely filled the questionnaires in the study.

(ii.) Duration on ART: Months or years in which the patients has being using HIV drugs.

(iii.) WHO clinical stage: The stage of the infection at which the patient reported to the hospital.

(iv.) Marital Status: Referred to whether the participants was single, cohabiting married, separated, divorce or widow as at the time of interview.

(v.) Education status: Referred to the educational qualification of the participant which could be non- formal, primary, secondary, or tertiary and post graduate.

(vi.) Religion: Referred to Christianity, Islam and any other religion the participants belong to.

(vii.) Average Monthly Income (In Naira): Referred to the average monthly earned if the participants is a salary earner or profit made from goods sold monthly.

(viii) ARV Clinic: This referred to clinic specifically created for HIV infected persons.

(ix) HIV sero status: This referred to the state of health of PLWHA whether they show any physical signs of HIV (Symptomatic) or they did not show any physical symptoms (Asymptomatic) or AIDS convert.

(x) TB Co-Infection: referred to as when an HIV patient also have tuberculosis.

(xi) Sources of Infection: Referred to as the mode of infection of HIV. It can be through sexual intercourse, blood transmission, sharps. etc.

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(xii) Employment Status: This referred to as whether a person has a job or not.

(xiii) Diagnostic year: Referred to as the year in which a PLWHA knows that he/she has been infected with HIV. In other word, the year in which a person first went to the hospital to do test and he/she was confirmed HIV positive.

(xiv) Adherence to ART: This means that a person with HIV/AIDS is always using his/her medication without missing any dose.

(xv) Disclosure Status: This referred to whether a person living with HIV/AIDS has informed anyone about their HIV sero status.

(xvi) Discrimination Status: This referred to whether the person living with HIV/AIDS has ever been rejected because of their HIV status.

B. ANTHROPOMETRIC MEASURES

For the purpose of this study, height and weight were the only anthropometric parameters measured for the determination of the body mass index (BMI)

Height- The overall of the body from crown (the top of the head) to the sole of the feet usually taken in standing position, and it was measured with stadiometer.

Weight- The sum of the protein, fat, water etc. in the body and was measured with a bathroom scale in kilogram (kg).

(xvi) Body Mass Index (BMI): Referred to participant measured weight (kg) divided by height (m^2).

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ONDO STATE GOVERNMENT

ONDO STATE HEALTH RESEARCH ETHICS COMMITTEE (OSHREC)

MINISTRY OF HEALTH

Email: oshrec@ondostatemoh.gov.ng

Website: www.ondostatemoh.gov.ng

Health Research Ethics Committee Assigned Number: NHREC/18/08/2016

Protocol Number: OSHREC/21/09/2017/018

RE: ASSESSMENT OF THE QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS IN ONDO STATE, NIGERIA

Name of Investigator: Ilesanmi Funmilola Kemi

Address of Investigator: Department of Epidemiology and Medical Statistics,
University of Ibadan, .
Ibadan Nigeria.

Date of Receipt of valid application: 01/10/2017

Notice of FULL Approval After Full Committee Review

This is to inform you that upon your request for ethical approval and the submission of your research protocol, the consent form(s) and other participant information materials, the Health Research Ethics Committee has considered your protocol and found it to be in compliance with international standards and best practices.

Therefore, I am pleased to convey to you that the proposal under its reviewed state has been granted expedited/full approval in line with the contents of the protocol. This approval dates from 25/10/2017 to 24/10/2018. If there is delay in starting the research, please inform the OSHREC so that the dates can be adjusted accordingly. Note that no participant accrual or activity related to this research may be conducted outside these dates. All informed consent forms used in this study must carry the OSHREC assigned number and duration of SHREC approval of the study. In multiyear research endeavor to submit your annual report to SHREC early in order to obtain renewal of your approval and avoid disruption of your research.

The National Code of Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations and with the tenets of the Code including ensuring that all adverse effects are reported promptly to the OSHREC. No changes are permitted in the research without prior approval by the OSHREC except in circumstances outside the Code.

The OSHREC reserves the right to conduct compliance visit to your site without prior notification and to recall its approval if the conduct of the research deviates from the stated objectives, procedures and best practices.

Best regards.

3/10/17

Dr E.T. Gbii

AFRICAN DIGITAL HEALTH REPOSITORY PROJECT

ONDO STATE GOVERNMENT
ONDO STATE HEALTH RESEARCH ETHICS COMMITTEE (OSHREC)
MINISTRY OF HEALTH

Email: oshrec@ondostatemoh.gov.ng Website: www.ondostatemoh.gov.ng

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Address of Investigator: Department of Epidemiology and Medical Statistics,
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Ibadan Nigeria.

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Best Regards.

Dr. E.T.Oni
Chairman, OSHREC

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Best Regards.

31/01/17

Dr. E.T.O.
Chairman, OSHREC

30/1/17

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Alagbaka, Akure, Ondo State, www.oshrec@ondostatemoh.gov.ng

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Ondo State.
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Our Ref: FMC/OW/380/VOL.IV/71

Your Ref: _____

Date: 3rd October, 2017

Miss F. K. Ilesanmi
Faculty of Public Health
Department of Epidemiology & Med.Statistics
University of Ibadan
Oyo State

RE: APPLICATION FOR ETHICAL CLEARANCE

I am directed to refer to your application dated 7th August, 2017 on the above subject matter.

I am to inform you that your research proposal titled **"Assessment of Quality of Life of People Living with HIV/AIDS in Ondo State"** has been considered and approved by the Health Research Ethics Committee.

In the light of above, you are hereby permitted by the Health Research Ethics Committee to carry out the research since it is ethically acceptable.

I am to add that you are to please submit a copy of your final research work to the Management after completion.

Thank you.

A. A. Salami
For: Ag. Medical Director

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AFRICAN DIGITAL HEALTH REPOSITORY PROJECT

Date: _____

Miss F. K. Ilesanmi
Faculty of Public Health
Department of Epidemiology & Med.Statistics
University of Ibadan
Oyo State

RE: APPLICATION FOR ETHICAL CLEARANCE

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Thank you.

A. A. Salami
For: Ag. Medical Director

Ag. Medical Director: DR. L. A. AHMED MBBS, FMCFM, FWACP
Ag. Head of Clinical Services: DR. A. O. ADESOKAN, MBBS, FWACP
Ag. Head of Administration Board Secretary: MR L. A. OMOAREGBA BA (French) MPA AHAN

AFRICAN DIGITAL HEALTH REPOSITORY PROJECT

ASSESSMENT OF THE QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS IN ONDO STATE.

INFORMED CONSENT FORM

My name is Ilesanmi Funmilola Kemi, an MPH Student of the Department of Epidemiology and Medical Statistics, University of Ibadan, Ibadan. I am conducting a research on ASSESSMENT OF THE QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS IN ONDO STATE. I will be asking some questions, some of which are personal but I implore you to be sincere with your responses to the questions. Please note that your responses will be kept very confidential. You will be given a number and your identity cannot be linked to the information obtained during this interview. Participation in this study is voluntary as you are free to decline participating. You also have a right to withdraw at any time you choose to during the study. I will greatly appreciate your help in responding truthfully to the survey questions as your responses will be of value for better assessment. Thank you.

Consent: Now that the study has been well explained to me and I fully understand the consent of the study process, I will be willing to take part in the study.

_____ _____

Signature/Thumbprint of participant Interview date

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AFRICAN DIGITAL HEALTH REPOSITORY PROJECT

ASSESSMENT OF THE QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS IN ONDO STATE.

INFORMED CONSENT FORM

My name is Ilesanmi Funmilola Kemi, an MPH Student of the Department of Epidemiology and Medical Statistics, University of Ibadan, Ibadan. I am conducting a research on ASSESSMENT OF THE QUALITY OF LIFE OF PEOPLE LIVING WITH HIV/AIDS IN ONDO STATE. I will be asking some questions, some of which are personal but I implore you to be sincere with your responses to the questions. Please note that your responses will be kept very confidential. You will be given a number and your identity cannot be linked to the information obtained during this interview. Participation in this study is voluntary as you are free to decline participating. You also have a right to withdraw at any time you choose to during the study. I will greatly appreciate your help in responding truthfully to the survey questions as your responses will be of value for better assessment. Thank you.

Consent: Now that the study has been well explained to me and I fully understand the consent of the study process, I will be willing to take part in the study.

_____ _____

Signature/Thumbprint of participant Interview date

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AYEWO IGBAYE GBADUN AYE AWON ENIYAN TO N GBE PELU HIV/AIDS NI IPINLE ONDO

Iwe ifi ero okan han oruko mi ni ilesanmi Funmilayo Kemi, mo je akeko gboye digiri keji ni eka to n koni ni eko nipa ajakale arun ati isonkan re. (Epidamioloji ati Medika Stastistiks) ni Fasiti Ibadan, Ibadan, mo n gbe ise iwadi jade lori ayewo igbayegbadun awon eniyan to n gbe pelu HIV/AIDS ni ipinle Ondo, maa ma beere awon ibeere ni awon abeere to je mon ti ara eni sugbon mo ro e lati so otito ninu awon idahun re, jowo mon pe gbogbo alaye re yii je monsinumonsikun. A o fun o ni onka idanimon re ti ko le tan mon alaye ti e ba se fun wa rara, lilomo si ise iwadi yii je afomoniyanse o si le pinnu lati maa lowosi, o si tun le pinun lati jawo ni igba kuugba, a o mon riri lilowo si ati siso ododo ninu ise iwadi yii, gbogbo idahun ati alaye ni o lo fun iwadi nikan.

E se.

Ifero okan han: Ni isinyi ti won ti salaye kikun fun mi, mo si mon to lati fi owo si tabi ki n maa fi owo maa lowo si

Mo maa lowo si iwadi yii.

_____ _____

Ibuwolu Deeti

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QUESTIONNAIRE

Assessment of the Quality of Life of People Living With HIV/AIDS in Ondo State.

I am a Postgraduate student of the Department of Epidemiology and medical Statistics, University of Ibadan conducting a research on Assessment of the Quality of Life of People Living With HIV/AIDS in Ondo State, the questionnaire includes some personal questions on your knowledge, attitudes, and practices including your sexual behavior. I will like to assure you that your answers are confidential your identity cannot be linked to the information obtained during this interview. Your sincere answers to all questions are critical and of value for better assessment. I will greatly appreciate your help by taking part in this interview and rendering truthful submission to the survey questions.

Thank you.

Name of Interviewer:_____

Start at:_____

Date:_____

SERIAL NUMBER: _____

SITE: 1. FMC OWO 2. HMB AKURE. 3. ONDO SPECIALIST HOSPITAL

NB: Please use a pen to complete this form.

A. SOCIO DEMOGRAPHIC CHARACTERISTICS/STATUS

Tick/fill gaps as appropriate;

1. What is your gender?..... (i) Male [ ] (ii) Female [ ]
2. What is your age range?

18 – 25	[ ]
26 – 32	[ ]
33 – 39	[ ]
40 – 46	[ ]
47 – 53	[ ]
54 – 60	[ ]
61 and above	

3. What is your current marital status?

(i) Single (never married) [ ](ii) Married [ ] (iii) Co-habiting living Together [ ] (iv) Separated [ ] (v) Divorced[ ] (vi) widowed

4. Who do you currently live with?

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(i)Alone [ ] (ii) Partner (lover) [ ] (iii)Spouse [ ] (iv) Family member (specify) _____

(v) Others (specify) _____

5. If married do you stay with your spouse? (i) Always [ ] (ii) Sometime

[ ] (iii) No [ ]

If No or Sometimes please explain why?_____

6. What is the highest level of education that you have completed?

(i) None [ ] (ii) Some Primary Education Level [ ] (iii) Completed primary education level

[ ] (iv) some secondary education level [ ] (v) completed secondary education level

Tertiary level: (i) Certificate [ ] (ii) diploma [ ] (iii) degree [ ] (iv) Others (specify)

_____

7. Religion: (i) Christianity [ ] (ii) Islam [ ] (iii) Traditional [ ]

(iv) Others (specify) _____

8. What is the nature of your work?

(i) House wife [ ] (ii) Civil servant [ ] (iii) personal business [ ] (iv)

students [ ] (v)Farmer [ ]

9. Are you currently employed? (i) Yes (ii) No

10. What is your average monthly income? _____ Naira

11. How many children have you ever born alive? _____

12. If you have no children, would you like to have children?

(i) Yes (ii) No

13. Do you reside in Ondo state? (i) Yes (ii) No

14. How far is your place of residence from the treatment clinic (time by transport)? (i) Less than 5 minutes. (ii) 5-30 minutes.

(iii) 30 minutes.- lhour (iv) more than an hour.

15. How often do you take alcohol? (i) Daily (ii) Weekly

(iii) Occasionally (iv) Never.

16. How often do you take cigarette?

(i) Daily (ii) Weekly(iii)occasionally(iv)Never.

B. HIV HISTORY AND CLINICAL STATUS.

Please read each question, assess your feelings and tick/fill in the number on the scale for each question that gives the best answer for you.

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17. In what year did you first test positive? (specify)_____

18. How do you believe you are infected with HIV?
(i) Sex with a man [ ] (ii) Sex with a woman [ ] (iii) Blood Transfusion or blood products
(v) sharps [ ] Others specify_____

19. WHO Stage at presentation? (i) stage i (ii) stage ii (iii) stage iii (iv) stage iv ?

20. CD4 count at presentation ? _____

21. Where there any complication /opportunistic infections? (i) Yes [ ] (ii) No [ ]
22. If yes to Q17 please state _____

Keys: Yes = 1, No = 2

		Yes	No
23.	Do you have TB co-infection?	1	2
24.	Do you have difficulty in assessing ART drugs?	1	2
B	Do you think ART has side effect?	1	
C	Do the side effects during the treatment discourage the continuation of the drug usage?	1	2

d. How long have you been on treatment? (Specify) _____
e. How consistent/adhered are you with the drug usage? (i) Strongly adhered [ ] (ii) Less adhered [ ] (iii) adhered [ ] (iv) Defaulted [ ] (v) never adhered

C. KNOWLEDGE ABOUT HIV/AIDS TRANSMISSION AND PREVENTION.

Instructions:

Please check the appropriate box to indicate if it is true, false or if you are not sure.
Please mark only one answer for each statement.

Keys: True = 1, False = 2, I'm not sure = 3

	Statement	True	False	I'm not sure
25.	A person can be infected with HIV by:			
A.	Sharing needles?			
B.	Receiving a blood transfusion that has not been screened for HIV?			
C.	Getting a mosquito bite?	1	2	3
D.	Sharing razor blade that have not been disinfected?	1	2	3

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26.	A person can reduce his/her risks of becoming infected with HIV if he/she:	1	2	3
A.	Abstains from sexual intercourse?	1	2	3
B.	Maintains a healthy diet?	1	2	3
C.	Uses a new, unused needles for each injection?	1	2	3
D.	Always uses a condom during sex?	1	2	3
27.	A woman can transmit HIV to her child:	1	2	3
A.	During pregnancy?	1	2	3
B.	During child birth?			
C.	Through breast feeding?	1	2	3

D. DISCLOSURE/STIGMA AND DISCRIMINATION

Please kindly tick the option that you find appropriate.

Keys: Yes = 1, No = 2

28.	Statement	Yes	No
A.	Have you ever informed anybody about your tests result?	1	2
B.	If yes to QA above, whom have you told you are HIV positive?	1	2
i.	Sexual Partner	1	2
ii.	Mother	1	2
iii.	Child	1	2
iv.	Relative	1	2
v.	Other family members	1	2
vi.	Friends	1	2
vii.	Religious Leaders	1	2
Viii	Neighbour	1	2
29.	Have you ever being rejected because of your HIV status?	1	2
B.	Are you excluded from the religious activities or place of worship because of your HIV status?	1	2
C.	Are you expel from work because of your HIV status?	1	2

E. SEXUAL BEHAVIOR / PARTNER'S HIV CHARACTERISTICS.

Please circle the number on the scale that best suit your state.

Keys: Yes = 1, No = 2

S/N	Statement	Yes	No
30.	Do you have any sexual partner?	1	2
B.	If yes, is your spouse aware of your HIV status?	1	2
C.	Does your spouse have HIV?	1	2
D.	Do you live together with your spouse before you contracted HIV?	1	2

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E.	Are you currently living together with your sexual partner?	1	2
F.	Have you ever discussed HIV/AIDS with your current sexual partner?	1	2
G.	When you tested for HIV, were you tested along with your sexual partner?	1	2
H.	If you disclosed to your sexual partner, how long after you were tested did you tell him/her?	1	2

31.	Have you have sex since you first tested positive for HIV?	1	2
A.	What type of partner do you had sex with since you tested positive?	1	2
i.	Spouse or person that you live with but not married too?	1	2
ii.	Boy friend/ Girl friend?	1	2
iii.	Sex workers (for men only)?	1	2
iv.	Casual partner?	1	2
32.	In the sexual act with your partner since you tested positive did you use condom all the time?	1	2
33.	Will you say that your sexual behavior has changed since you tested positive?	1	2
B.	If yes to Q32 above, in what way(s): (more than one response possible)	1	2
i.	Has not had sex with anyone?	1	2
ii.	Use condom more frequently?	1	2
iii.	Use condom less frequently?	1	2
iv.	Now have more sexual partners?	1	2
v.	Now have fewer sexual partners?	1	2

F . WHOQOL-HIV BREF QUALITY OF LIFE QUESTIONS

INSTRUCTION:

This assessment asks how you feel about quality of life, health, or other areas of

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Your life. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response. Please keep in mind your standards, hopes, pleasures and concerns. We ask that you think about your life in the last two weeks. For example ,thinking of the last two weeks, a question might ask:

		Not at all	A little	A moderate amount	Very much	Extremely
34.	How well are you able to concentrate?	1	2	3	4	5

You should circle the number that best fits how well are you able to concentrate.
So you would circle the number 4 if you were able to concentrate very much. You would circle the number 1 if you were not able to concentrate at all.
Please read each question, assess your feelings, and circle the number on the scale for each question that gives the best answer for you.

		Very poor	Poor	Neither poor nor good	Good	Very good
35.	How would you rate your quality of life?	1	2	3	4	5

		Very dissatisfied	Dissatisfied	A moderate amount	Very much	An extremely amount
36.	How satisfied are you with your health?	1	2	3	4	5

The following question ask about how much you have experienced certain things in the lasts two weeks.

		Not at all	A little	A moderate amount	Very much	Extremely
37.	To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
38.	How much are you bothered by any physical problems related to your HIV infection?	1	2	3	4	5
39.	How much do you need any medical treatment to function in your daily life?	1	2	3	4	5
40.	How much do you enjoy life?	1	2	3	4	5
41.	To what extent do you feel enjoy your life to be meaningful?	1	2	3	4	5
42.	To what extent are you bothered	1	2	3	4	5

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	by people blaming you for your HIV status?					
43.	How much do you fear the future?	1	2	3	4	5
44.	How much do you worry About death?	1	2	3	4	5

		Not at all	A little	A moderate amount	Very much	Extremely
45.	How well are you able to concentrate?	1	2	3	4	5
46.	How save do you feel in your daily life?	1	2	3	4	5
47.	How healthy is your physical environment?	1	2	3	4	5

The following questions ask about how completely you experience or you were able to do certain things in the last two weeks.

		Not at all	A little	moderate	mostly	completely
48.	Do you have enough energy for everyday life?	1	2	3	4	5
49.	Are you able to accept your bodily appearance?	1	2	3	4	5
50.	Have you enough money to meet your needs?	1	2	3	4	5
51.	To what extent do you feel accepted by the people you know?	1	2	3	4	5
52.	How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
53.	To what extent do you have the opportunity for leisure activities?	1	2	3	4	5
54.	How well are you able to get around?	1	2	3	4	5

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The following question ask you how good or satisfied you have felt about various aspects of your life.

		Very dissatisfied	Dissatisfied	Neither satisfied nor satisfied	Satisfied	Very satisfied
55.	How satisfied are you with your sleep?	1	2	3	4	5
56.	How satisfied are you with your ability to perform you daily living activities?	1	2	3	4	5
57.	How satisfied are you with your capacity for work?	1	2	3	4	5
58.	How satisfied are you with yourself?	1	2	3	4	5
59.	How satisfied are you with your personal relationships?	1	2	3	4	5
60.	How satisfied are you with your sex life?	1	2	3	4	5
61..	How satisfied are you with the support you get from your friends?	1	2	3	4	5
62.	How satisfied are you with the conditions of your living place?	1	2	3	4	5
63.	How satisfied are you with your access to health services?	1	2	3	4	5
64.	How satisfied are with your transport?	1	2	3	4	5

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The following question refers to how often you have or experience certain things in the last two weeks.

		Never	Seldom	Quite often	Very often	Always
65.	How often do you have negative feelings such as blue mood, despair, anxiety, depression?	1	2	3	4	5

Did someone help you to fill out this form?_____

How long did it take to fill form out?_____

Do you have any comments about the assessment?_____

THANK YOU FOR YOUR HELP.

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AYEWO IGBAYE GBADUN AWON TO N GBE PELU HIV/AIDS NI IPINLE ONDO

Mo je akeko gboye digiri keji ni eka to n koni ni eko lori ajakale arun ati bi a se n se onka re. 'Epidamiologi ati medika statistic" ni Fasiti Ibadan, mo n gbe ise iwadi jade lori aycwo igbayegbadun awon to n gbe pelu HIV/AIDS ni Ipinle Ondo.

Iwe iwadi yii je eyi ti o beere awon ibere ara eni lori imo n, iwuwasi ati ise lori ibalo lakolabo. Mo fe fi da o loju pe gbogbo alaye ni a o fi se mosinumosikun ti idanimon re ko ni jade ni ibi Kankan.

Idahun ododo re se Pataki fun aseyori ise iwadi yii, n o mon riri lilowo si ise iwadi yii ati idahun ododo re e se.

Oruko: _____

Ibeere: _____

Decti: _____

Siria Nomba: _____

Sait 1, FMC OWO 2. HMB Akure 3. ONDO SPESIALIS HOSBITA

NB: Jowo lo gege lati pari iwe ibeere yii

A .osio Demografik karaktaristik/STATOS.

Falasi eyi loyc

1. Okunrin tabi obinrin _____ (i) Okunrin ( ) (ii) Obinrin ( )
2. Kin ni ojo ori re. 18-26 ( ) 26-30 ( ) 33-39 ( ) 40-46 ( )
   47-53 ( ) 54-60 ( ) 61 jubeelo ( )
3. Nje oloko tabi laya (i) nko loko (ii) mo loko (iii) Mo n dagbe pelu oko ( )
   (iv) Mo ti pinya ( ) (v) Mo ti kooko ( ) (vi) oko tabi aya ti ku ( )
4. Taa ni o n gbe pelu bayi (i) mo n daa gbe( ) (ii) mo n gbe pelu ololufemi ( )
   (iii) Mo n gbe pelu iyawo tabi oko mi ( ) (iv) mo n gbe pelu ebi mi ( )
   (v) eni yowu so _____
5. Bi o ba loko, nje o n gbe pelu okore (i) nigbogbo igba ( ) (ii) leekookan ( )
   (iii) nko gbe pelu oko mi ( ) (iv) Bi o ba je beeko salaye idi ti o ko fi gbe pelu re
6. Bawo ni o se kawe to: (i) ako kawe rara ( ) (ii) oni pele kinni ( )
   (iii) mo pari onipele kinni ( ) (iv) oni pele keji ( ) (v) mo pari oni pele keji ( )
   (vi) Tasiari ( ) (vii) diploma ( ) (viii) digiri ( ) (ix) Bi o ba se kawe to so ni
   pato: _____
7. Iru esin wo (i) oni gbabo ( ) (ii) Musulumi ( ) (iii) esin ibile ( ) (iv) iru esin
   miran so _____
8. Iru ise wo ni o n se: (i) Iyawo ile ( ) (ii) onise ijoba ( ) (iii) oni sowo ( )
   (iv) akcko ( ) (v) agbe ( )
9. Nje o ni ise lowo bayi (i) Bcni ( ) (ii) Bcko ( )
10. Bawo ni o se n ri owo to ni osu: _____

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11. Omo melo ni o ti bi ye: _____

12. Bi o ko ba bimon nje o nife lati bimon (i) Beeni ( ) (ii) Beeko

13. Nje o n gbe ilu Ondo (i) Beeni ( ) (b) Beeko ( )

14. Bawo ni ile re se jinna si ile iwosan ni iye omo ti o fii wooko debe (i) Odin ni iseju marun ( ) (ii) Larin iseju marun si iseju ogbon ( ) (iii) Ogbon si wakati kan ( ) (iv) O ju wakati kan lo ( )

15. Bawo ni o se n mun oti lile si

(i) ojojumon ( ) (ii) ose ose ( ) (iii) leekookan ( ) (iv) nko mun oti lile ( )

16. Bawo ni o se n mun siga si

(i) Ojojumon ( ) (ii) Ose ose ( ) (iii) Leekookan ( ) (iv) rara ( )

IPIN B: HIV HISN ati CLINIKA STATOS

Jowo ka awon ibeere ki o si fala si eyi ti o se apejuwe idahun re

17. Ni odun won i won so fun o pe o ni HIV _____

18. Bawo ni o se ro pe o ko aisan HIV (i) Ibalopo pelu okunrin ( ) (ii) Ibalopo pelu obinrin ( ) (iii) gbigba eje ( ) (iv) Lilo awon abe bi abere ( )

(v) Ona miiran so _____

19. Iru aye wo ni o wa laarin aye WHO (i) Steg I ( )(ii) Steegi II ( ) (iii) steegi III ( ) (iv) Steegi VI ( )

20. Onka CD4 ni igbati omon pe o ni _____

21. Nje o ni anfaani ati ko aisan yi pelu idagunle aisan (i) Beeni ( ) (ii) Beeko ( )

22. Bi o ba je beeni ni Q. 17 jowo so _____

Kii: Beeni 1, Beeko 2

S/N	Ibeere	Beeni	Beeko
23	Nje o ni ikole pelu akoran		
24	Nje o ni isoro lati gba ogun ART		
b	Nje o ro pe ogun ART ni ise odii		
C	Nje ise odi n se aiya on fun o lati maa lo ogun ART		

d. o ti pee to igbawo ti o tin lo ogun _____

e. Bawo ni o se nse deede to lati maa loo ogun naa (i) Mo maa n lo dede dada ( )

(ii) Mo maa n lo deede die ( ) (iii) Mo ma n lo deede ( ) (v) Nko kii n lo dede ( ) (v) nko kii loo ( )

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IPIN C: Imon bi HIV/AIDS se n bo si ara eniyan ati ona ato deena re.

Alaye: Jowo ye inu oko okan ninu awon aye yi fun eyi to ye. Beeni, Beeko, Nko mon, Jowo mun okan ni ninu okookan

Kii Beeni 1, Beeko 2, Nko mon 3

S/N	Alaye	Beeni	Beeko	Nko mon
25	Eniyan le ko aisan HIV nibi A. Ajolo Aberc B. Gbigba eje ti won ko yewo fun HIV C. Kii efon je eniyan D. Jijoolo abeere ti won ko yewo			
26	Eniyan le din ewu kiko HIV ku bi eni bee baa A. Kikora ni ijanun fun ibalopo B. Bi o ba n jeun to saraloore C. Lilo abeere tuntun fun gbigba ibeere D. Lilo roba idabobo ni igba ibalo			
27	Obinrin le ko aisan ran omo re A. Ni inu oyun B. Ni igba ibimon C. Ni igba ifomon lomun			

IPIN D: Ifira eniyan/ideye si ati ibanise jowo fala si eyi ti o ye

Kii: Beeni 1, Beeko 2

28	A. Nje o ti so fun enikan ni ayewo re b. Bi o ba je beeni QA Taani o so fun c. Alabaalo lokolaya i. Iya mi ii. Omo mi iii. Alajo bi iv. Awon ebi miiran v. Ore mi vi. Alfa ijo mi vii. Alajo gbe			
29	Nje won ti koo e ni tori HIV B. Nje won le o ni ile ijosin nitori HIV C. Nje won le o ni ibi ise nitori HIV			

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IPIN E: Iwuwasi ibalo/iwuwa alabalo ti ni HIV jowo falasi nomba to ye
Kii: Beeni 1, Beeko 2

30	Nje o ni alabalo Kankan b. Bi o ba je beeni, nje o mon pe oni HIV c. Nje oko tabi aya re ni HIV d. Nje o n gbe pelu okore ki o to ni HIV e. Nje o gbe lowolowo pelu alaba lo re f. Nje o ti ba alabalo re so nipa HIV g. Ni igba ti o se ayewo nje ose ayewo pelu alabalo re h. Bi o ba soo fun alabalo re, o to igba wo leyin ti o se ayewo kii o to soo fun			
31	Nje o tin i ibalopo leyin ti akoko so fun o pe o ni HIV a. Iru alabalowo ni abalo leyin ti o mun i. Oko tabi eni ti o n gbe pelu ti o ko se igbeyawo pelu ii. Ore kunrin/ore binrin iii. Asewo (fun okuńrin) iv. Alajofe			
32	Ni igba ibalopo pelu ololufe nje o lo roba idabobo lati igba ti o ti se ayewo			
33	Nje o le soo pe ibalopo to yi pada lati igba ti o ti se ayewo B. Bi o ba je beeni ni Q. 32 i. Nko ti ni ibalo po pelu enikankan ii. Mo n lo roba idabobo ni gbogbo igba iii. Nko lo roba ni gbógbo igba iv. Ni isinyi nio ni alabalo pupo v. Ni isinyi alabalo ti dinku			

IPIN F: WHOQOL – HIV BREF, KWOLITI LAIF QUESON

Alaye: eka yi yio bi o bawo ni o se ri igbese aye re si lori ilera ati awon eka miran ni aye, jowo dahun gbogbo ibere, pe idahun ti o bamu julo ao beere ibere lori igbadun aye ni ose meji seyin.

S/N	Ibeere		Rara	Die	Ni iwontunwonsi	Opoju	Opoju gan
34	Bawo ni onse le fokan si o n ton se si						

O ni lati falasi eyi to se apejuwe bi o se n fokan si on ton sesi.

Jowo ka ibeere kookan ko, o so bi o se ri

S/N	Ibeere	Oburuju	Oburu	Ko burn, ko si dara	O dara	O dara gan
35	Bawo ni o se le se apejuwe igbaye gbadun					

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S/N	Ibeere	Ko	Ko temi lorun rara	O temi lorun die	Ko dara	Ko temi lorun rara
36	Nje ilera re te o lorun					

Awon ibeere yii n lo lati mon bi iriri re se n ri ni bi ose meji seyin

S/N	Ibeere	Rara	Die	Niwon tun wonsi	To po die	Opo gan
37	B awo n'ö se ro pe irora koni je ki o le se nkan ti o ni lati se					
38	Bawo ni o se damun lori igboke gbodo to romon HIV					
39	Bawo ni o se nilo gbigba iwosan si lati se nkan ti o ye ki o se ni ojumon					
40	Bawo ni o se n gbadun onje si					
42	Bawo ni o se n ba inu re je ti bi awon eniyan se da o lebi ni ori ipo HIV re					
43	Bawo ni o se n beru ojo iwaju si					
44	Bawo ni o se n beru iku si					
45	Bawo ni o se ni afokan si to					
46	Bawo ni o se ni idabobosi ninu igbokegbodo ojumon re					
47	Bawo ni ayika re se ni Alafia to					

Awon ibeere yi n se iwadi bi a se le se nkan yanju sin i bi ose meji seyin

S/N	Ibeere	Rara	Die	Niwon	Ose pari	Opari
48	Nje o ni okun to peye					
49	Nje o gba bi o tirii					
50	Nje o ni owo to to lati ra nkan ti o fee					
51	Bawo ni awon eniyan ti o mon fe n gbae mora si					
52	Bawo ni o se n ni alaye ohun ti o fe sin i ojumon					
53	Bawo ni o se n ni asiko lati gba afe si					
54	Bawo ni o se n lo ni ayika si					

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Awon ibeere yi n beere bi o se dara tabi te o lorun si awon igbokegbodo re ni aye

S/N	Ibeere	Ko te mi lorun	Ko temilorun rara	Nko mon	Nko mon	O te mi lorun daadaa
		1	2	3	4	5 .
55	Bawo ni o se ni itelorun si pelu orun re					
56	Bawo ni o se ni itelorun si lati mon se awon akitiyan oojo re					
57	Bawo ni o se ni itelorun si fun ise oojo re					
59	Bawo ni o se ni itelerun si fun ara re					
60	Bawo ni o se ni itelerun si fun ibalopo lokolaya re					
61	Bawo ni o se ni itelerun si fun iranlowo ore re					
62	Bawo ni o se ni itelerun si fun aye ibi ti on gbe					
63	Bawo ni o se ni itelerun si nipa igbatoju re					
64	Bawo ni o se ni itelorun si fun lilo, bibo					

Awon ibeere yii n bere iye igba ti o ni irule iriri ni ose meji seyin.

S/N	Ibeere	Rara	Die	Niwon	Osce pari	Opari
65	Ni bii igba melo ni o maa n se o bi pe ainireti, irewesi, tabi ki ayare ma bale					

Nje enikan ba o buwolu iwe iwadi yi _____

Bi igba won i o gba o lati pari bibuwolu re _____

Nje o ni akiyesi kan lori iwadi _____

Bi igba won i o gba o lati pari bibuwolu re _____

Nje o ni akiyesi kan lori iwadi yi _____

E se fun iranlowo yii

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