CHAPTER ONE

INTRODUCTION

Background to the Study

The Human Immunodeficiency Virus (HIV) remains a major health problem in Nigeria. According to Initiative For Health in Nigeria (2008), the disease destroys the body's immune system making it difficult for the body to fight diseases. In just over two decades according to United Nation Agency for International Development (UNAIDS) 2014 19 million of 35 million people living with HIV today do not know that they have the virus. It is estimated that about 3,229,757 people live with HIV in Nigeria and about 220,393 new HIV infection occurred in 2013 and 210,031 died from AIDS related cases (UNAIDS, 2014). Human Immuno-Virus is one of several complex retroviruses in the genus Lent virus and contains three genes required for replicating retroviruses, and about three additional genes regulate viral expression that are important in disease pathogenesis and its prevalence. Acquired Immuno-Deficiency Syndrome (AIDS) results when the immune system is highly depressed by either HIV-1 which is found around the world or HIV-2 which is primarily in West Africa and there is manifestation of opportunistic infections. The progression of HIV 2 infection to AIDS is generally slower and less extreme than that of HIV-1 (Farlex, 2016).

Prevalence is the proportion of individuals in a population having a disease or characteristics and it is a statistical concept referring to the number of cases of a disease that are present in a particular population in a given time (Dictionary.com, 2015). Brinks (2011) explained three different types of prevalence namely: lifetime prevalence, which is the number of individuals in a statistical population that at some point in their life have experienced a case, compared to the total number of individuals. Another is period prevalence which is the proportion of the population with a given disease over a specific

period and the third is point prevalence which is a measure of proportion of people in a population who have a disease at a particular time, such as a particular date. Prevalence is a useful parameter when talking about long lasting disease, such as HIV and AIDS. Epidemiologists, health care providers, government agencies and insurers, use prevalence estimates. For this study, period prevalence is preferred.

The period prevalence rate of HIV infection refers to the number of old and new existing cases of persons infected with HIV compared with the entire population at a particular point either in time or over a given period. As at 2010, the prevalence was 4.1% and 3.4 % in 2013 (FMOH, 2013; NACA, 2012). The WHO (2014) observed that, people with HIV face discrimination and rejection in almost all cultures and religions, explaining that many such people, particularly women have denied their diagnosis and delayed seeking treatment until the disease has progressed, which increases their risk of death, as well as transmission of the disease to others. In Nigeria, it has been reported that, women who are infected with HIV and AIDS are more likely to be divorced or separated, or to be married to a man who takes a second wife, than women who do not have HIV (Egbulem , 2010).

As at 2012 in Nigeria, the HIV and AIDS prevalence rate among adults, ages 15–49, was 3.1 percent showing Nigeria as having the second-largest number of people globally living with HIV and AIDS. The HIV and AIDS pandemic is complex and varies widely by region in Nigeria (CIA World Fact Sheet, 2012). Centre for Development and Civic Education (2005) explained that, in some States, the epidemic is more concentrated and driven by high-risk behaviours, while other states have more generalized infection that are sustained primarily by multiple sexual partnerships in the general population. Centre for Development and Civic Education further stated that youth and young adults in Nigeria are particularly vulnerable to HIV and AIDS, with young women at higher risk than men. Prostitution, high-risk practices among itinerant workers, high prevalence of sexually

transmitted infections (STIs), clandestine high-risk heterosexual and homosexual practices, international trafficking of women, and irregular blood screening contribute to the spread of HIV and AIDS infections (NACA, 2015).

Transmission of HIV and AIDS through transfusions with an infected blood accounts for the second largest source of HIV and AIDS infection in Nigeria, because not all Nigerian hospitals have the technology to screen blood effectively. According to Modo and Enang (2011) the high prevalence of HIV and AIDS among women in Akwa Ibom State is attributed to risky behaviour such as ear piercing, intravenous drug administration, needle stick injuries, muco-cutaneous exposures, organ transplants and sexual intercourse (both homosexual and heterosexual exposures). National Agency For the Control of AIDS (2014) reported that 80 percent of HIV and AIDS in African adults result from heterosexual transmission and 25 -29 percent of HIV and AIDS incidence in African women assume 10 percent pandemic. Federal Ministry of Health (2013) reported the causes of higher prevalence of HIV and AIDS among Women of reproductive age attending antenatal clinics are high fertility rate, poverty, lack of awareness, dense commercial sex networks, early age of sexual debut, poor gender empowerment, religion, cultural inequality, as common causes of heterosexual transmission that leads to Mother to Child Transmission.

This high prevalence of HIV and AIDS among antenatal attendees contribute to transmission of infection to babies born of infected mothers while in the uterus, during birth and after birth through breast feeding contributed to the infection of 69,400 children in 2011(Federal Republic of Nigeria, 2012).The prevalence of HIV scourge has caused millions of deaths in Nigeria which is the most populous nation in Africa and over 300,000 people dying yearly with over 1.5 million children rendered orphans annually (UNAIDS, 2010). Worldwide, Nigeria has the second highest number of new infections reported each year and an estimated 3.7 percent of the population are living with HIV and AIDS (NACA,2014).

United Nation Development Programme (2013) reported that, as at the end of 2011, an estimated number of people living with HIV were 3.4 million.

United State Agency International Development (UNAIDS) stated that, the high prevalence of HIV and AIDS have caused deaths of approximately 210,000 in 2011 with gynaecological problems which include chronic vaginal candidiasis, vaginitis, colpitisgenital folliculitis and dermatitis; herpes genitalis, cervical atypia, chronic pelvic infection and menstrual abnormalities (UNAIDS, 2012). According to Quinn (2013), AIDS is not curable but it is preventable. Human Immunodeficiency Virus (HIV) is a global health problem, with serious medical, economic and social implications in women due to added responsibilities of caring for sick family members, loss of property if they become widowed, violent abuse when people find out their HIV and AIDS status. HIV infection affect among others different categories of women, pregnant, married, and single, divorced, young, old, educated and uneducated. With reference to India, Thailand, Cambodia and Nigeria married women are in the group of greatest risk of contracting HIV and AIDS globally. According to Uganda AIDS Commission, 42 percent of 130,000 HIV and AIDS new infections occurred within wedlock, this may be due to unawareness of their HIV and AIDS status, multiple sex partners and reluctance to use condom (Tavarez, 2014). When the married women become pregnant, they are likely to transfer the infection to the foetus. That contributes to high prevalence of HIV and AIDS in pregnancy associating with adverse maternal and foetal outcome resulting from, vertical transmission, and severe anaemia, risk to the family, offspring and health workers during delivery. Before the year 2006, the role of HIV and AIDS in maternal mortality in Sub-Saharan Africa was difficult to evaluate due to unknown HIV and AIDS status of pregnant women in the region resulting from non-utilization of antenatal services (UNAIDS, 2014)

Another factor seen to influence HIV and AIDS prevalence is age, HIV and AIDS infection is no respecter of age, this implies that, it can affect or infect any age group. Young people are at risk of HIV infection. In the year 2010, 9,800 people aged 13-24 were diagnosed which might be influenced by peer group exposed to HIV and AIDS infection because of risky behaviour such as sexual experimentation and drug abuse. According to UNAIDS (2014) more than 700,000 youths aged 15 to 32 years were living with HIV and AIDS in Nigeria. Older people are also at risk of HIV infection. A report from United States of America stated that, individuals aged 50 years were exposed to HIV and AIDS infection in year 2010, which resulted from ignorance of being at risk, and engagement in unsafe sexual practices (Cahill, Schaefer, & Guidry, 2013).

Occupation can also expose one to HIV and AIDS, for instance most health workers can be exposed to risk of infectious diseases such as HIV and AIDS because of their regular contact with infected persons. According to USAID (2015) World Health Organization estimates that three million health workers are exposed to blood-borne viruses each year: two million to hepatitis B; 900,000 to hepatitis C; and 300,000 to HIV. Over 50% of HIV and AIDS infection cases among health workers in an East Asian study were nurses, followed by laboratory staff and blood collectors. In Ethiopia, nurses have a 29% and 31% lifetime risk of unsafe exposure to bodily fluids and needlesticks, respectively (Reda et al. 2010).

Nowadays technological advancement in medicine, using invasive procedures like injections has been so much extended. Aggarwal et al.,(2012) conducted a study with the aim of determining the population at risk, risk factors, and outcome of occupational exposure to blood and body fluids in health care providers using a retrospective review of two and half year data of ongoing surveillance of occupational exposure to blood and body fluids in a tertiary care hospital. The result of the study showed that health care staffs are exposed to the risk of occupational confrontation with many blood-borne pathogens. According UNAIDS

(2014) Sub-Saharan Africa remains by far the most affected region, with 24.5 million people living with HIV and AIDS. The pandemic affects females severely in the sub-region and women of reproductive age make up 57 percent of adults living with HIV and AIDS, moreover Place of residence is also known to influence prevalence of HIV and AIDS. Magadi (2013) explain that poverty increases vulnerability to the HIV and AIDS. Existing empirical evidence from sub-Saharan Africa largely support the view that wealthier men and women, especially rural residents, have higher prevalence of HIV and AIDS, and the urban poor in Kenya have significantly higher odds of HIV and AIDS infection than their urban non-poor counterparts, though poverty is associated with a significantly lower risk among rural residents. The higher prevalence is associated with key demographic and socio-cultural characteristics, such as gender disparities and ethnicity. For example, the rich-poor gap among urban residents is wider for women, with poor urban women being particularly vulnerable. According to Madise, et al (2012) more than two-thirds of people living with HIV and AIDS in Africa were rural dwellers.

Occupation also has a significant influence on women exposure to HIV and AIDS infection. Partner occupation is observed to expose a woman to HIV and AIDS infection. A study carried out in Haiti showed that women married to mechanics and market vendors had high incidence of HIV and AIDS. Lack of good occupation exposes women to HIV and AIDS, when they go prostituting to earn a living. Women who are sex workers are at risk of HIV and AIDS as their occupation exposes them to unprotected sex and drug abuse, which have association with high risk of HIV infection (WHO, 2011). In Sub Sahara Africa, an estimated 15 percent of HIV infection in female population was attributed to female sex work. According to Cajla (2013) 106,000 deaths from HIV and AIDS are as a result of female sex work globally with 98,000 in Sub- Sahara Africa.

A study by Laah and Ayiwulu (2010) on socio- demographic characteristics of patients diagnosed with HIV and AIDS, looking at the occupational distribution by sex revealed that farmers had the highest proportion of 16.8% for males followed by civil servants with 12.0%. Interestingly, drivers and the clergy had the least proportions of those infected with 0.3% each.

Educational attainment also influences prevalence of HIV and AIDS. Women in particular, benefits, especially for those who have completed secondary school. A data from Uganda showed the strongest decline in HIV prevalence among educated women, whereas the risk for illiterate women remained high. Secondary school students in one of the districts in Uganda reported higher levels of knowledge on HIV prevention and more positive attitudes towards AIDS patients. It therefore means that there is a significant impact of education on HIV and AID prevalence rates (statistics cited in Herz and Sperling,(2004) and World Bank,(2002): In 1998, a 72 country analysis finds that where the literacy gap between boys and girls exceeds 25 percent, HIV and AIDS prevalence exceeds 5 percent.

Conversely, where the literacy gap is below 5 percent, HIV prevalence falls below 3 percent; A Zambian study found that HIV and AIDS spread twice as fast among uneducated girls (Aguero & Bharadwaj, 2014) According to Aguero and Bharadwaj, there is a marked decline in HIV prevalence rates in 15–19 year-old boys and girls with a medium to higher educational level, but an increase among those with lower education levels. The socio cultural and political environment which women live can enable or inhibit women ability to protect themselves from acquiring HIV (Hardee, Gay, Croce-Galis & Peltz, 2014). Hiv diagnosed among heterosexual individuals with low educational attainments increases lifestyle related mortality (Omlan et al, 2014). In South Africa, secondary education had a protective effect against HIV infection for women that lasted into early adulthood. Girls aged 15-18 who had dropped out of school were six times more likely to be HIV positive than

those who were still enrolled (Orkan, Boyes, Chiver & Zheng, 2014) Young people with little or no education may be 2.2 times more likely to contract HIV and AIDS as those who have completed primary education (Kim & Arbor, 2006)

HIV infection and AIDS is the most common cause of increase in maternal and infant morbidity and mortality rate in Nigeria and Akwa Ibom State in particular as observed by Akwa Ibom State Ministry of Health (2013). According to Akpan (2012), the case of Akwa Ibom more worrisome and disturbing, since the state is ranking second in HIV and AIDS burden. Researchers and those in public health works have not actually identified those factors responsible for prevalence of HIV and AIDS in the State. It is based on these that this study has been designed to determine the prevalence and the socio-demographic variables associated with HIV and AIDS among women of reproductive age in Akwa Ibom State.

Statement of the Problem

A lot of efforts have been made by governments, Non-Governmental Organisations (NGOs), and health partners to make people aware and knowledgeable about HIV and AIDS prevention through Community sensitization, training of village health volunteers on HIV and AIDS counselling and testing at community level, opening and upgrading of HIV and AIDS counselling centres in all the 31 Local Government Areas in Akwa Ibom State, provision of condom and encouragement for condom use among youth and the infected, provision of drugs, educating the public against stigmatization and passing of anti stigmatization bill into law (President Emergency Plan For AIDS Relief, United State Agency for International Development & Management Sciences for Health, 2012). Reproductive health survey among women in Nigeria still show women as the most infected group (FMOH, 2013). For instance, Dr. Idoko, the Director- General of the National Agency for the Control of AIDS (NACA) made a public statement in Abuja, that, Nigerian women

were the most infected with HIV virus (USAID, 2005). Again, the sentinel studies on antenatal women showed that HIV and AIDS affected many women. Government, Non-Governmental Organisations and associations, such as Nigeria School Health Association, has put in much efforts through programmes and training to reduce the rate of HIV and AIDS infection in Nigeria and Akwa Ibom State in particular but much success has not been achieved, as the prevalence still remain high such as the case in Akwa Ibom State, which stands as the second highly infected State in Nigeria with 10.8 % in 2014 (FMOH, 2016). Of all the studies stated above as carried out by United State Agency for International Development, Federal Ministry of Health and President Emergency Plan For AIDS Relief, none was carried out on women of reproductive age in Akwa Ibom State. It is against this background that this study has been designed to determine the prevalence of HIV and AIDS among women of reproductive age attending clinics with associated socio demographic variables of those counselled and tested in health facilities in Akwa Ibom State from 2010 to 2014.

Purpose of the Study

The main purpose of this study was to determine the prevalence of HIV and AIDS and socio-demographic variables of women of reproductive age attending health facilities in Akwa Ibom State, from 2010 to 2014. The following specific purposes guided the study, namely:

1. To determine the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom state.

2. To determine the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom state based on the ages of women.

3. To determine the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom state based on their level of education.

4. To determine the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom state based on their places of settlement.

5. To determine the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom state based on their occupation.

6. To determine the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom state based on their marital status.

Significance of the Study

Groups that will specifically benefit from the result of the study are; the State and Local Governments, Public Health Care managers, Non- Governmental Organisations, women, and finally other researchers.

Despite the fact that, HIV and AIDS is one of the major causes of maternal mortality in Nigeria, and majority of the people living with HIV in Nigeria are women (UNAIDS, 2008). So many Nigerians, especially, leaders, fail to show much commitment to the fight against HIV pandemic. This may be due to lack of political will and poor understanding of the magnitude of the problem or burden of HIV and AIDS. With the publication of the results of this study, there will be clear fact and figures to convince the State and Local government of the true situation on ground, and they may begin to show more commitment in their efforts towards reducing the incidence of the disease, thereby reducing the maternal mortality rate and increasing life expectancy.

The results of this study will help Health Educators and other public health managers to select and plan strategies and programmes towards prevention of HIV and AIDS. For example, if results show that, the prevalence of HIV and AIDS is significantly higher among widows, then a programme on the prevention and treatment of HIV and AIDS will be organised for the widows.

Through the results, implementing partners and Non- Governmental Organisations will be informed on areas of support in HIV and AIDS prevention thereby complementing the effort of government in health services provision as well as in human resource management. The results of this study will also enable the public to adequately understand the demographic factors involved in the spread of the disease and this could help them make informed choices on appropriate lifestyles.

Finally, the result of this work will provide a "springboard" for the take-off of other related or similar research work or the replication of this work in other parts of the country or continent by other research scholars. Such attempts will help in providing a framework for more understanding of the scope and the extent of the problem of HIV and AIDS pandemic in various parts of the world.

Scope of the Study

This study covered the period from 2010 to 2014 only. The socio-demographic parameters which are the independent variables that were considered in this study included; age, marital status, place of settlement, educational level, and occupation. The study will also be limited to women aged 15 to 49 years who had been counselled and tested in health facilities in Akwa Ibom State from 2010 to 2014. The study was delimited only to hospital records in selected health institutions in Akwa Ibom State.

Research Questions

The following research questions guided the study

1. What is the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State?

2. What is the influence of age on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State?

3. What is the influence of educational status on prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State?

4. What is the influence of place of residence on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State?

5. What is the influence of occupation on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State?

6. What is the influence of marital status on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State?

Hypotheses

To further guide the study, six hypotheses were formulated and tested at0 .05 level of significance. The null hypotheses are:

1. There is no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014.

2. There is no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their ages.

3. There is no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their levels of education.

4. There is no significant difference in prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their place of residence.

5. There is no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their occupation.

6. There is no significant difference in the prevalence of HIV and AIDS among women of reproductive health in Akwa Ibom State in relation to their relation to marital status.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This study aims at determining the prevalence of HIV and AIDS infection among women in Akwa Ibom State, (2010 - 2014). The chapter presents the review of related literature under the following headings, and sub headings:

Conceptual Framework

Prevalence

HIV and AIDS

Infections

Socio-demographic Variables

Theoretical Studies

Prevalence of HIV and AIDS

HIV and Women

Religion and HIV and AIDS

Factors influencing progression of HIV

HIV and AIDS Prevention strategies

Empirical Studies

Research reports on prevalence of HIV and AIDS infections among women.

HIV and AIDS prevalence in Akwa Ibom State

Influence of age on HIV and AIDS

Influence of level of education

Influence of place of residence on HIV and AIDS

Association between occupation and HIV and AIDS prevalence

Influence of marital status on prevalence of HIV and AIDS

Summary of Review of Related Literature

Conceptual Framework

Prevalence

Prevalence is the proportion of individuals in a population having a disease or characteristics and it is a statistical concept referring to the number of cases of a disease that are present in a particular population in a given time (Dictionary.com, 2015). According to Kasule (2006) it is the number of cases of disease existing at the particular point in time, measured in cross-sectional studies and only one observation at one point in time is needed in the determination of prevalence, with proportion expressed as number of cases of illness at a particular time divided by number of individuals in the population at the same time. There are two types, point prevalence and period prevalence. Period prevalence is a theoretical concept that assumes the ability to count cases of illness at an infinitesimal short period, while point prevalence refers to counting the number of illnesses over a practically reasonable length of time (Dictionary.com, 2015). Period prevalence will be used in this study to include people who already have the condition at the start of the study period as well as those who acquire it during that period as it is more useful and stable than point prevalence. There is lifetime prevalence, which is the proportion of a population that at some point in their life (up to the point of assessment) have experienced the condition (Rothman, 2012).

Prevalence rate has been described as the most appropriate unit of measurement of morbidity and mortality rate when the focus is on the study of outbreak of chronic diseases (Frank, 2012). Morbidity data give information and complete description of a disease burden

within a community than mortality data. This is because morbidity statistic records the amount of illness in the community, while mortality records the number of deaths in a given time and place (Ogbalu (2008) in Frank, 2012). In this present study, HIV and AIDS will be studied over a period of four years and will therefore utilize period prevalence rate to determine the burden of HIV and AIDS on women of reproductive age in Akwa Ibom State within the period under consideration. Frank (2012) noted that unlike the incidence rate, the denominator for prevalence rate includes the entire population and not just the population at risk, and this is concerned and mainly deals with existing cases of disease, as such number of survivors of such illness is not usually included in the study.

HIV and AIDS

The Human Immunodeficiency Virus (HIV) is a retrovirus that causes AIDS (acquired immune deficiency syndrome). The retrovirus primarily attacks the immune defence system, making the body extremely vulnerable to opportunistic infections. Opportunistic infections occur in individuals who are immuno compromised (have weakened immune systems). According to National Institute of Allergy and Infectious Disease (NIAIDS, 2015), the infection was discovered in 1983 when Barre-sinousi Montagnier and colleagues at the Institute Pasteur, Paris, France, isolated the virus from the T cells of a patient with generalized lymphadenopathy and gave it the name Lymphadenopathy Associated Virus (LAV), now HIV1. In the same year, Robert Gallo and colleagues, working at the National Cancer Institute (NCI), USA made a similar discovery while in their quest to find cancer-causing viruses. The major route of transmission of this virus is It is worth noting that Nigeria's first case of HIV was reported in 1986, with the diagnosis of a 13-year-old girl. Since then the prevalence of HIV has increased from 1.8 percent in 1990 to 5 percent

in 2003. Federal Ministry of Health (FMOH), 2012 observed that, there was a second closely related virus, termed HIV 2 which was isolated from a patient in West Africa who was suffering from Acquired Immunodeficiency Syndrome (AIDS).The report of Federal Survey in 2001 showed that 5.8 percent of the Nigerian population tested positive to HIV and AIDS (FMOH, 2010).

Federal Ministry of Health (2010) reported that HIV and AIDS is transmitted from person to person via bodily fluids, including blood, semen, vaginal discharge, and breast milk. FMOH further reported that it can be spread by sexual contact with an infected person, by sharing needles/syringes with someone who is infected, through breastfeeding, during vaginal birth or, less commonly (and rare in countries where blood is screened for HIV antibodies), through transfusions with infected blood. The report of FMOH also stated that HIV has been found in saliva and tears in very low quantities and concentrations in some AIDS patients. However, contact with saliva, tears, or sweat has never been shown to result in HIV and AIDS transmission.

According to Federal Ministry of Health (2005) there is no cure for HIV and AIDS and these drugs do not reduce the risk of transmitting the disease to someone else and HIV can infect and kill many different types of cells in the body, but the primary targets are immune cells called CD4 T-cells. The CD4 T-cells are white blood cells that help coordinate the immune system's response to infection and disease. These cells express a molecule called CD4 on their surfaces, which allows them to detect foreign substances, including viruses that enter the body. HIV binds to the receptors on CD4 cells and enters the white blood cell. Once inside the cell, HIV begins replicating. Federal Ministry of Health (2005) further describes the first stage of HIV and AIDS, known as the primary or acute infection which is the most infectious stage of the disease, and it typically lasts several weeks. During this phase, the virus replicates rapidly, which leads to an abundance of the virus in the bloodstream, and a

drastic decline in the number of CD4 T-cells. The CD8 T-cells (cells that kill abnormal or infected body cells) FMOH observes, are then activated to destroy HIV-infected body cells and antibodies are produced. An estimated 80-90 percent of HIV and AIDS patients experience flu-like symptoms during this stage.

The next stage, called clinical latency according to Achalu (2004) may last anywhere from two weeks to 20 years. During this phase, HIV is active in the lymph nodes, where large amounts of the virus become trapped. The surrounding tissues, which contain high levels of CD4 T-cells, may also become infected. Achalu further explained that the virus accumulates in the infected cells and in the blood as free virus. According to Body (2007), patients progress to AIDS when their CD4 cell counts drop below 200 cells per microliter of blood. Healthy individuals have a CD4 cell count between 600 and 1,200 cells per microliter of blood. Individuals with a CD4 cell lower than 200 cells per microliter of blood have the greatest risk of developing opportunistic infections.

President's Emergency Plan for AIDS Relief and Global AIDS (2012) Reported that Human Immunodeficiency Virus (HIV) has some explanations and meaning. (Human) Stands for human, which mean that this particular virus can only affect human beings. (Immunodeficiency) Stands for weakening of the immune system by destroying important cells that fight disease and infection. Virus stands for the fact that a virus can only produce itself by taking over a cell in the body of its host. It is contacted through sexual contact via anal oral, or vaginal intercourse, blood exchange, shared intravenous syringes, mother to child during pregnancy, labour and delivery, or breastfeeding. It is said to have originated from primates but ultimately transmitted by humans. The first case in Africa was discovered in 1950s and 1960s, and the disease spread rapidly throughout the globe, affecting more than 36 million people in 2001(PEPFAR & Global AIDS, 2012). The body is affected differently in four stages, from acute infection to the development of AIDS. HIV compromises the

immune system, causing the body to be susceptible to developing among others symptoms such as skin lesions, mouth sores, herpes and psoriasis. Over time, HIV can destroy so many of the CD4 cells and the body cannot fight infections and diseases anymore, when this happens, HIV can lead to AIDS. Acquired- means, AIDS is not something one inherits from parents.

Infection

According to Rao (2012), organisms that harm the host are called pathogens and they are classified among others into, viruses, parasites, fungi, bacteria and protozoa. Viruses are tiny organisms, much smaller than bacteria and fungi and when the infectious agent enters the host, it begins to proliferate and fights/destroys the defence mechanism of the body producing symptoms and signs. The invasion and multiplication of micro organisms such as bacteria, viruses, and parasites that are normally present within the body, is describe as infection. An infection may cause no symptoms and be subclinical, or it may cause symptoms to be clinically apparent. Infection may remain localized, or it may spread through the blood of the lymphatic vessels to become systemic. Micro-organisms that live naturally in the body are not considered infectious. For example bacteria that normally live within the mouth and intestine. According to Rao (2012) the human is the host while the germ is the parasite. According to Achalu (2004), the virus invades its host and attaches to a cell, entering it and releasing genetic material (DNA or RNA). Achalu further explained that, this genetic material helps the virus to multiply, takes over the control of the cell, making it replicate the virus which target specific cells in the body, for example, HIV virus targets the CD4 cells.

Socio-demographic Variables

Socio-demographic relates or involve a combination of social and demographic factors. These factors can also be described as socio-demographic variables or Socioeconomic characteristics of a population expressed statistically, such as age, sex, education, marital status. (http://www.businessdictionary.com/definition/demographic-vaiables.html)

Theoretical Studies

Prevalence of HIV and AIDS

There are three main HIV transmission routes in Nigeria. United Nation Agency for International Development (UNAIDS) (2012) reported that approximately 80 percent of HIV and AIDS infections in Nigeria are a result of heterosexual sex. World Health Organisation, United Nations International Children's Fund and United Nation Agency for International Development (2011) reported that an estimated 1.7 million women were living with HIV and AIDS and prevalence was 3 percent among young women aged 15-24. Factors contributing to this according to WHO et al. (2011) include lack of information about sexual health and HIV, low levels of condom use, and high levels of sexually transmitted diseases. Also, gender inequality among women has been identified as a key driver of the HIV and AIDS pandemic among women (Mugo, et al. 2011). According to Egesie and Egesie (2011) HIV transmission through unsafe blood accounts for the second largest source of HIV and AIDS infection in Nigeria. Egesie and Egesie further explained that not all Nigerian hospitals have the technology to effectively screen blood; therefore there is a risk of using contaminated blood. Following this, the Nigerian Federal Ministry of Health have responded by backing legislation that requires hospitals to only use blood from the National Blood Transfusion Service, which has far more advanced blood-screening technology. Most children infected

with HIV and AIDS in Nigeria acquire it from their mothers. An estimated 69,400 children were newly infected with HIV and AIDS in 2011 (UNAIDS, 2012). According to PEPFAR and Global AIDS (2012) the number of cases globally shows that 30.6 million people are living with the virus, and 11.7 million have died from HIV and AIDS.

According to the report by PEPFAR and Global AIDS, as at 2009 there were 33.3 million people world wide infected with HIV, 60 % reside within Sub- Saharan Africa, adult prevalence exceed 20% in Swaziland and Lesotho, South Africa had 6.3 million people living with the virus, Nigeria had 3,2 million, India had 2.1 million by the end of 2013 In terms of current data, UNAIDS (2012) reports that, in the UK there are 16,000 people living with a diagnosed HIV and AIDS infection. Global summary of AIDS epidemic in 2015 showed a total of 36.7 million people living with HIV, comprising of 34.9 million adults, 17.8 million women of 15 years and above and 1.8 million children less than 15 years, 2.1 million newly infected of 1.9 million adults and 150,000 children and a total deaths of1.1million, comprising of 1.0 million adult and110,000 children (WHO, 2016). According to Health Services Statistic (2010), the current National prevalence in Nigeria is 4.1 percent, and 34 million Nigerians, comprising adults aged 15 to 19 years, including women aged 15 years and above.

According to Odunsi (2015), The National Bureau of Statistics reported that HIV and AIDS, accounted for the highest proportion of infected females (63.5 percent) as against 36.5 percent reported for males in the period 2010- 2015. Dr, said HIV prevalence had declined from 5.8 percent in 2001 to 4.1 percent in 2010 and the new infections declined by about 50 percent from 338.423 in 2005 to 176.701 in 2015, He maintained that the HIV and AIDs had been in decline in Nigeria in the past five years, due to improved funding by the Federal Government and the sustained efforts of International Partners. National Agency for the Control of AIDS (2012) stated that, in Nigeria, the prevalence of HIV and AIDS among

young women aged 15- 24 years is estimated to be three times higher than that of their male counterpart. Females constitute 58 percent (about 1.72 million) of persons living with HIV and AIDS in Nigeria. Each year, 55 percent of AIDS deaths in Nigeria occur among women and girls (Naijaurban, 2012). Among young people aged 15-24 years, HIV prevalence was two times higher among young women having 2.9 percent than young men who had 1.2 percent in 2009 (UN, 2012). According to NACA (2012), the population with a comprehensive and correct knowledge of HIV as of 2008 was 33 percent for men and 22 percent for women. NACA further explained that, class of women above age 15 years had HIV and AIDS prevalence of 52 percent, men above ages 15 to 24 years had 37 percent prevalence and children below ages 15 had 11 percent prevalence. Avert (2014) identified key drivers of the HIV pandemic in Nigeria to include, people's low personal risk perception, multiple concurrent sexual partnerships, young people having sex with older people, ineffective and inefficient services to prevent sexually transmitted infections (STIs), inadequate access to quality healthcare services, and activities of brothel and non-brothel based female sex workers (FSW). Avert 2014 further states the HIV and AIDS prevalence among different groups as follows: Men who have sex with men (MSM) 24.5 percent, injecting drug users (IDUs) 17.2 percent, transport workers, members of the Armed Forces and Police 4.2 percent.

According to UNAIDS (2012) entrenched gender inequalities and inequities, chronic and debilitating poverty, and stubborn persistence of HIV and AIDS-related stigma and discrimination also significantly contribute to the continuing spread of the infection. HIV Fact Sheet (2012) stated that, the states in Nigeria with the highest prevalence are concentrated in the North-Central, South-East, and South-South parts of Nigeria. In 1989, Akwa Ibom state reported the first case of HIV infection in a commercial blood donor in one of the general hospitals in the state (FMOH, 2010). Between then and 2010, the Akwa Ibom

State HIV prevalence rates, using antenatal sentinel surveys as proxy for the general population had been 12.7 percent in 1999, declining to 7.2 percent in 2003, only to remain on increase from then to 10.9 percent in 2010 (Markson, 2013).

For the twenty-six year period dated 1986 when AIDS was first reported in Nigeria till December 2011, 3,459,363 people then lived with HIV and AIDS and an estimated 1,449,166 require ARV (FMOH, 2013).Three hundred and eighty eight thousand, eight hundred and sixty four new infections occurred in 2011, as further reported by FMOH, and records show 217,148 AIDS related deaths. Between 1991 and 2001, Nigeria witnessed an increase in the prevalence of HIV in the country. The first case of AIDS in Nigeria in 1986 showed presence of the epidemic in the country. Consequently, and in line with guidelines from the World Health Organization (WHO), the government adopted Antenatal Care ANC) sentinel surveillance as the system for assessing the epidemic (FMOH, 2013). Markson (2013) remarked that, the national HIV Sero-prevalence level, obtained from sentinel surveys of antenatal care attendees, increased from 1.8 percent in 1991 to 5.8 percent in 2001 and then declined to 5.0 percent in 2003 and further to 4.4 percent in 2005. This was followed by a record of PMTCT Statistics (2010) which showed a rise to 4.6 percent in 2008. The prevalence rose to 4.6 percent and then a recent decline of 4.1 percent in 2010, with the estimated number of pregnant women (15 years and above) living with HIV and AIDS. This is a major factor contributing to the declining life expectancy rate from 54 years in 1991 to 48 years in 2010 (FMOH, 2011).

Tigawalana (2010) noted that 10 percent of the world population are Africans, and out of the 33 million people living with AIDS in 2008, 22 million were in Africa, with the largest number in Sub- Saharan Africa. According to Berge (2005), more than 95 percent of people living in the developing countries contribute 14,000 new HIV infections recorded on daily basis in the world. UNAIDS and WHO (2012) reported that 2000 of daily infections are in

children under 15 years of age, while the remaining 12,000 are in adults, of whom 50 percent are females between the ages of 15 to 24 years old. UNAIDS and WHO further opined that, Swaziland had the highest value of 26 percent while Malta had the lowest value of 0.10 percent. With an estimated population of 162,265,000, Nigeria is the most populated country in Sub-Saharan Africa with recent HIV sero prevalence figure that represents about 3.5 million people infected with HIV. This ranks Nigeria third among the countries with the highest HIV and AIDS burden in the world, next only to India and South Africa (UNAIDS, 2010).

Although the national median prevalence of HIV has taken a downward turn in recent years, FMOH (2007) noted that, the absolute number of people living with HIV has Increased by almost half a million people in three years and AIDS related mortality has also slightly increased in the same period to about 217,148 annual deaths. According to Federal Republic of Nigeria (FRN) (2012), worldwide, Nigeria had the second highest number of new infections reported each year, and an estimated 3.2 percent of the population are living with HIV and AIDS. Federal Republic of Nigeria further noted that, although HIV prevalence is much lower in Nigeria than in other African countries, such as South Africa and Zambia, the size of Nigeria's population (around 166.6 million) means that by the end of 2011, there were an estimated 3.4 million people living with HIV and AIDS (FRN, 2012).

World Fact Sheet (2013) reported that, with the introduction of antiretroviral therapy in the year 2000, there is hope for an increase in the 52 years life expectancy rate recorded in 2011 and 2012, which contributed to deaths of 210,000 people infected with AIDS in Nigeria. From epidemiological point of view, it is known that people practicing low risk sex are the driving force of HIV epidemic in Nigeria while population subgroups, such as men who have sex with men, injection drug users, and female commercial sex workers, contributes to new infection Awofala & Ogundele, 2016 2013). According to UNAIDS and

WHO (2012), sexually transmitted diseases act as co- factors to promote disease transmission, and sexual practices such as multiple sex partners and irregular condom use are important determinant. From mathematical model point of view, as noted by Pascom, Szwarcwald and Junior (2010), sexual elation patterns among the population subgroups constitute other important factor in the dissemination of HIV and AIDS, as small alterations in the rate of contacts between the low risk segment and the high-risk one, can significantly change the dissemination of the infection.

Collins and Rau (2010) reported that, South African Migration Project, stated the reasons of higher prevalence rate of HIV and AIDS in Africa to include poverty which has a complex relationship with HIV and AIDS. This explains the impact of the epidemic on rural livelihoods. The relationship is bi-directional, in that poverty is a key factor to transmission, and HIV and AIDS can impoverish people in such a way as to intensify the epidemic. It should be emphasised that poor people infected are more likely to become sick and die, than the non-poor, since they are likely to be malnourished, in poor health, and lacking in health attention and medications. According to Balyamujura, et al. (2008), all factors which predispose people to HIV are aggravated by poverty which creates an environment of risk.

According to Walker (2002), poverty-stricken people who are infected are prone to death. Shattock and Moore (2003) opined that, the practice of intergenerational sexual coupling between young women and older men, has been shown to increase the risk of HIV and AIDS infection among women almost seven fold when the age difference is 5-7 years. The reason for this is that older male partners are most likely to be HIV infected or may engage in concurrent or multiple sexual partnership patterns. Such sexual collaboration contributes to 24.5 percent prevalence of HIV among young adult women (Pettifor, et al. 2005). Young men report concurrent relationships three times more frequently than do young

women. However the prevalence of HIV and AIDS among young men remains lower than that among young women (Muanya, 2016).

Population Action International (2007) suggest that four out of five new HIV and AIDS infections in women resulted from sex with a primary partner, and the majority of the new infections occur among women of child bearing age. Violence against women is said to be one of the contributory factor to HIV and AIDS infection in women. It has been reported that young adolescent girls who are raped sustained abrasions that act as entry point for the virus (UNAID, 2004). Current research by WHO (2002) indicates that in some countries one in four women may experience sexual violence by an intimate partner in her life time, added to this is violence (2010) reports that women who are beaten or dominated by their partners are more likely to become infected by HIV than women who live in non violent household.

Studies like that of Okunna and Dunu have blamed religion for its role in stalling the fight against HIV and AIDS infection in Nigeria Aguwa (2010) reported that religion undermines the effectiveness of combating the pandemic by stakeholders, including the media. However, in a study carried out by Seeman, et al. (2003) some religious people exhibit positive health behaviours, such as abstinence from premarital sex. These varying results have shown that the role of religion in HIV and AIDS prevention can be positive or negative (Aguwa, 2010; Essiet-Gibson, 2008 and Seeman, et al. 2003).

HIV and Women

Awofala and Ogundele (2016) reports that Sub-Saharan Africa remains the hardest-hit region in the world. According to Awofala and Ogundele, an estimated 1.8 million people became infected with HIV, contributing to 22.5 million people living with HIV and AIDS in sub-Saharan Africa. Globally, 68 percent of all people who have HIV and AIDS live in Sub-Saharan Africa, with women constituting 76 percent. The rate of prevalence of HIV and

AIDS differ in different sexes with unique concern about women as the vulnerable group who are recognized to be infected by their sexual partners (FMOH, 2010).The number of women with HIV infection and AIDS has been increasing steadily worldwide. As at the end of 2003, according to the World Health Organization WHO (2012), 19.2 million women were living with HIV and AIDS worldwide, accounting for approximately 50 percent of the 40 million adults living with HIV and AIDS. Ogundipe (2013) opined that women of child bearing age (15-49) acquiring HIV and AIDS infection has not changed substantially since 2009. The number dropped marginally in four years from 120,000 - 110,000. Cichoki (2013) reports that, with the increased rate of women aged 15 to 24 years infected with HIV and AIDS in Sub- Saharan Africa, there is a high level of stigma and discrimination, which predispose these women to refuse disclosure and treatment.

In Nigeria approximately, 51.5 percent of women are living with HIV and AIDS and. South-South region has the highest burden of mother to child transmission (Onovo, Gado & Atobatele, 2013). It has been reported that Akwa Ibom and other neighbouring states like, Rivers and Abia record a higher prevalence of HIV and AIDS among women, because of the riverine nature of the communities as well as the oil companies, exposing women and young girls to casual sexual habit to make money (Ugwuede, 2017). Agbajor (2009) reports that Akwa Ibom girls have the highest HIV andAIDS in Nigeria beating the TIV girls. The HIV and AIDS prevalence and incidence of AIDS diagnoses annually among women over the age of 50 is also of concern. Adults over 50 years of age have long comprised 10 percent of all AIDS cases. UNAIDS (2004) reports that, as at 1997 new cases rose to 11.6 percent and in 1998 the rate was 12.7 percent, then increased in 1999 to the rate of 13.4 percent. However, the increasing rates can be partly explained by the AIDS-delaying benefits of combination of antiretroviral therapy.

Women are seen as vulnerable group in disease cases, and this might be caused by several factors. Researches by Modo (2011); Muulu (2008); Ramjee (2013) on HIV and AIDS have identified various factors responsible for high prevalence of HIV in women, especially in the Sub Saharan African region. Nyindo (2005) stated the main risk factors in HIV-1 in sub Sahara Africa to include poverty, famine, low status of women in society, corruption, naive risk taking perception, resistance to sexual behaviour change, high prevalence of sexually transmitted infection., internal conflicts and refugee status, antiquated beliefs, lack of recreational activities, child and adult prostitution, uncertainty of safety blood intended for transfusion, widow inheritance, circumcision, illiteracy, female genital mutilation and polygamy.

According to Canadian AIDS Society (2012), women vulnerability to HIV and AIDS is greater than men because, women are more exposed to HIV and AIDS on each sexual encounter because of the biological nature of reproductive tract. Tigawalana (2010) reports that, cultural, social and economic pressure contributes to HIV and AIDS infection, as women are often less able to negotiate for safer sex due to factors such as lower status, economic dependence and fear of violence. Tigawalana further explained that, due to the attitude of the public towards men's and women's sexuality, promiscuity in men is often condoned, and men exposes themselves to increased risk of infection by having multiple sexual partners, and in turn become a vector of transmission of HIV and AIDS to their partners. Young women and girls are targeted by infected men who believe that having sex with a virgin can cure HIV and AIDS (ANOVA Health Institute, 2014).

Modo (2011) discovered in his study on socio cultural factors in HIV and AIDS, that young women in Akwa Ibom State prefer using fingers to make love with their female counterpart and this create avenue for HIV and AIDS infection, if they had wound on the finger and the vagina. Modo further explained that, some poverty stricken families share

tooth brushes. Women do not have authority to force the husband to use condom even when she knows that, he is keeping extra marital relationship. Young women are so much interested on the faces of other girls, and most of the times are tempted to cut pimples, in case there is contact with an exposed blood, then there is a high risk of being infected. The research conducted by Modo (2011) further revealed that, the domestic responsibility of Akwa Ibom women exposes them to frequent use of knives in cutting leaves for different delicacies, which exposes them to cuts, and if not well protected, creates avenue for infection. Conjoh, Zhou and Xiong (2011) reported that adolescent social practices such as alcohol usage, video shows of pornographic content, cultic practices, risky cosmetic factors, vulnerable sexual practices and blood swearing covenants, some cultural practices such as rite of passage, uncircumcised boys, contraceptive strings and early marriage are associated with the prevalence of HIV and AIDS.

UNAIDS (2009) reports vulnerability of women and girls to HIV and AIDS infection cannot be explained by biological factors alone but gender inequalities that exist in African society. UNAIDS further stated that two major routes of HIV transmission which are, sexual intercourse and mother to child transmission have a strong relationship with women, and moreover, Sexual intercourse accounts for 80 percent of the cases and Mother to child accounts for 20 percent of the cases. Markson and Umoh (2013) carried out a study to evaluate PMTCT programme implementation in general hospital, Iquita, Oron , Akwa Ibom State. The objective of the study was to evaluate the prevention of mother to child transmission of HIV and AIDS programme in the area. The result revealed that 88.9 percent of the pregnant women were married, 46 percent attained secondary level of education, while 17.9 percent were educated to tertiary level and only one respondent had no formal education. A total of 15.3 percent of ante-natal clinic attendees were positive to HIV, while only 4 percent of the exposed infants were infected with HIV and AIDS at age of 18 months.

During vaginal intercourse, which is commonly practised in Africa, the chance of HIV transmission from man to woman is two to three times greater than transmission from a woman to man. Due to the biological make up of the female genital tract, since the tract is made up of a larger exposed area and semen has a higher viral load than the vaginal fluids and stays longer in the vaginal tract after acts of sex (Canadian AIDS Society, 2012). UNAIDS (2010) reports that, genital tract of young girls is immature and more prone to invasion by HIV and cases of forced or coerced sex are also common but rarely reported by women and increases the chances of HIV transmission.

According to United Nation Programme on HIV/AIDS (UNAIDS) (2012), women are known to use herbs in tightening the genital tract and this cause tears. This is supported by UNFPA (2005), which states that, multitude of socio cultural factors that increase vulnerability to women are, economic dependency, lack of asset, lack of protection against abuse and exploitation. Economic pressures lead women to engage in vices like sex work. In urban setting, cohabitation and temporary sexual relationships are common because women need support for items like house rent and feeding. These expose female sex workers to increased risk of contracting the virus, due, in part, to the number of sexual partners they have. This has reflected in very high prevalence rate among this group in Kenya. Women are rendered powerless to demand for their rights, including not questioning infidelity of their husbands. This is supported by report from Centre For Disease Control (CDC) (2007), which states that in African culture there is tolerance for multiple sexual partnership, including extra marital sex by men, marriage and monogamous relationships do not protect women.

According to UNICEF, UNAIDS and WHO (2002), young girls keep older men for money and gifts, and women are found to marry aged men who cannot satisfy them, and while seeking for sexual satisfaction outside, expose themselves to HIV and AIDS. Fear of violence leads to acceptance of sex and lack of protection as is related to some Orphans and

domestic workers who are sexually abused (Tigawalana, 2010). Women inheritance and property right denial, also exposes women to frustration and poverty, which in turn exposes them to risk of HIV and AIDS infection (UNDP, 2009). Lack of economic advancement of women in Africa, is a restriction to education for young women and girls. Reasons for this lack of education range from the cultural and religious subordination of women to the need for some families to exploit their daughters as wage earners (American Foundation for AIDS Research, 2008). Some families withdraw their children from school because of hardship, and this lack of education is a contributory reason for economic disparity for women due to decreased employability. Han and Bennish (2009) state that, it is only in school that young girls have access to information on HIV and AIDS prevention education. For example, South Africa support the distribution of complimentary safe sex product, such as female and male condoms. American Foundation for AIDS Research (2008) further explained that, since women are seen as care givers with the role of child bearing, tradition forbids the use of condom by married women.

Religion and HIV and AIDS

According to Ucheaga (2010) Christianity and Islam have always pushed for abstinence among the unmarried, even before the advent of HIV and AIDS as evident in the scriptural verses: "let there be no sexual immorality, impurity, or greed among you. Such sins have no place among God's people" "and let those who cannot marry keep chaste, until Allah makes them free from want out of His grace". Ucheaga further explained that, with the advent of HIV and AIDS, both religions have advocated for abstinence even more. For example, the

Catholic Church believes that the most devastating cause of HIV and/AIDS infection in Nigeria is a crisis of moral values and error in the understanding of human sexuality.

Plus News (2008) reports that, to ensure that those who have abstained from premarital sex do not marry an HIV and AIDS positive partner, most churches in Nigeria now require HIV and AIDS tests before a marriage ceremony can be conducted . Plus News further explained that while the Baptist church has been on the forefront of the "no test, no marriage" rule, the Catholics and the Pentecostals are also towing the line. According to Plus News (2008) The National Coordinator of the Baptist Awareness against AIDS Programme, " ask couples to do an HIV test about nine months or one year before the wedding to know the status of the person they want to marry." However, it is not as common for mosques to require HIV and AIDS test before marriage.

According to Abubakar (2009), Bauchi, a state in the North-East region of the country has however put up a law requiring anyone who wants to get married in the state to undergo a mandatory HIV and AIDS test. Bauchi State is one of the hardest hits in the north, with HIV and AIDS prevalence rate between 4. 1 percent - 6.0 percent range, and according to the Commissioner of Health in the State, it is part of the government's efforts to control the spread of the disease in the state. According to Mwai (2014) , the "no test, no marriage" rule is being embraced more and more, however, it still remains controversial, as people fear the lack of confidentiality that would emanate from the process. Pastor Pat Matermilola of the Network of People Living with HIV and AIDS in Nigeria warns that any form of testing , which is not voluntary and confidential is unacceptable. Plus News (2008) reports that, the Nigerian government also condemns this process citing its stance against the stigmatization of the disease, though most churches in Nigeria are however unyielding on this marriage ceremony requirement, as it is a significant part of their HIV and AIDS prevention campaign.

Both Christianity and Islam believe that promiscuity is still largely responsible for the spread of HIV and AIDS (Ucheaga, 2010). It is not surprising that Christians and Muslims in Nigeria share similar view on this issue. Promiscuity is not only frowned upon by both religions, the underlying cultural traditions within Nigerian society also frown against "promiscuity". Okunna and Dunu (2006) opined that before the introduction of Christianity and Islam, Nigerian cultural tradition has emphasized the importance of abstinence from sexual activities before marriage. Okunna and Dunu further explained that, what these religious organizations fail to understand is that Nigerian youths continue to engage in pre-marital sex, although the Christian youths do so more than the Muslim youths. More reports by Okunna and Dunu show that, more states in the South-East and South-South are predominantly Christian region with more than 6 percent HIV and AIDS infection rate than those in the North, who are predominantly Muslims. None of the states in the predominantly Muslim region, with the exception of the middle belt states in the north central region which have very mixed religious beliefs, have a rate of more than 6 percent.

According to Institute for Global Engagement (2006), while Christians and Muslims are aware that there are repercussions for adultery and fornication, Christians believe that they serve a merciful God who is quick to forgive their sins if they confess. Okunna and Dunu (2006) report that, with the advent of Sharia law, offenders caught in the act of fornication or adultery are punished. The harshest punishment for a Christian who is caught in the act of adultery and fornication would be the stigma, as God rather than the community is the punisher. However in recent times, there has been a significant shift in religion's negative stance in the area of preventive measures that do not involve abstinence. Notable religious leaders have begun to speak out about HIV and AIDS (Okunna & Dunu, 2006). It is evident that in spite of religious inclinations, Nigerians, especially the youths are still going

to remain sexually active. Therefore, a prevention campaign rooted only in abstinence is not sufficient and not very effective to combat the spread of HIV and AIDS.

Ucheaga (2010), says, both Christianity and Islam believe that promiscuity is still largely responsible for the spread of HIV and AIDS. In a study conducted by Essien and Okpo (2012) on attitudes of youth on HIV in Uyo, it was discovered that unsafe sexual involvement by the youths contributed to contracting or spreading of HIV and AIDS by youths in Uyo metropolis of Akwa Ibom State. Essien and Okpo further explained that religious bodies' beliefs do play a significant role in combating HIV and AIDS among youths. This may be based on the belief that Church as religious organization has the moral authority to promote healthy behaviour among members. These beliefs may help reduce HIV infection. There are three levels of this HIV infection, namely: Low-level Principle, which states that, although HIV infection may have existed for many years, it has never spread to significant levels in any sub-population. Recorded infections are largely confined to individuals with higher risk behaviour: e.g. sex workers, drug injectors, and men having sex with other men. This infectious state suggests that networks of risk diffuse (with low levels of partner exchange or sharing of drug injecting equipment), or that the virus has been introduced only very recently.

Factors Influencing HIV Progression

According to Langford, Ananworannich and Cooper, (2007) age and location, infection route (how the disease was transmitted), recreational drugs, repeated exposure to HIV, smoking and stress among others can affect the rate of HIV progression to AIDS.

Age

Osmond (2014) identified age as a factor in HIV and AIDS progression, stating that, the older the HIV patient, the faster he/she is likely to progress to AIDS. The effect is most apparent in patients older than 40 years. Chakroborty, Waring and Salit (2005) estimate that the risk of developing AIDS increases at the rate of 27-55 percent every ten years. According to a meta-analysis of 38 studies that involved more than 13,000 HIV and AIDS patients, CDC (2010) reports that age and time since diagnosis were significant factors in determining the rate of HIV progression. CDC (2007) reports that, patients who developed HIV antibodies between the ages of 15 and 24 lived an average of 12.5 additional years. These patients progressed to AIDS after an average of 11 years. Patients who developed HIV antibodies between the ages of 45 and 54 lived an average of 7.9 additional years. These patients according to CDC progressed to AIDS after an average of 7.7 years. While the exact reason for this is unknown, Mascolini (2006) suggests that older patients have a decreased ability to replace the CD4 T-cells that HIV infects and destroys. It is also unclear whether this is as a result of the thymus gland's inability to produce new CD4 T-cells. Schmid et al.(2009) suggest that older patients may have lower levels of white blood cells that help fight off HIV.

In younger patients, HIV progression is also faster among patients who are younger than 13 years old, especially newborn babies who are born with the virus (Osmond, 2014). This is likely because the newborn's immune system is not yet fully developed. Newborn babies Chacroboty (2010) informed do not begin to make their own antibodies (proteins that detect and bind to foreign substances like viruses) until they are about six months old. Many girls are married at young age to older men, and the power inequalities inherent in the relationship can lead to violence thereby exposing them to HIV and AIDS infection through injuries sustained during the forceful sexual intercourse (United Nations Development Fund for Women, UNAIDS, UNFPA, 2004). Nguyen further explained that Patients who are infected at an older age are more likely to experience a faster disease progression.

Marital status

It has been discovered that once a young woman enter into a stable relationship, it becomes difficult for them to insist on condom use. This is why the rate of HIV and AIDS among married women is significantly higher than that of the single women. In Zimbabwe females aged 15-24 years had prevalence of 6.2 percent among single women and 14.2 percent among currently married and 26 percent among divorced or widowed (Durban, 2012). Clark (2004) reports that among girls aged 15-19 years, being married was associated with an increase of greater than 75 percent in the odds of being HIV positive compared with the odds of sexually active unmarried girls, that married women in long term monogamous relationships ran a greater risk of contracting HIV and AIDS than non-married women (Albertyn, 2003).

Ethnicity and location

Centre for Disease Control (2014) states that, Africans living in the United Kingdom develop AIDS and die more quickly than non- Africans. According to a review of more than 1,050 HIV-infected Africans and 992 HIV-infected non-Africans diagnosed with the disease between 1982 and 1995, there was not a significant difference in survival rates between the two groups. The Africans lived an average of 82 months, while the non-Africans lived an average of 78 months. Centre for Disease Control (2010) reported no significant difference in the CD4 cell counts or rates of progression. Murdoch (2012) suggested that it was highly likely that the African patients studied were infected with a different strain of HIV (called HIV-2) than the one that normally infects homosexual men and injection-drug users in Europe and North America (called HIV-1). If HIV-2 does not cause HIV progression quicker outside Africa, this suggests that environmental factors, such as lack of access to antiretroviral therapy (ART) and treatment for opportunistic infections, lead to the faster

progression rates in Africa (The Body, 2014). Morgan, et al. (2002) suggests that HIV progression rates among individuals living in Uganda are similar to those in developed countries. The researchers estimated that the average time from HIV exposure to an AIDS diagnosis was 9.4 years. Morgan, et al. further, suggest that a common genetic mutation among Africans may increase the patient's risk of developing HIV and AIDS, and increase the rate of disease progression.

United States Department of Health and Human Services (2011) found no significant difference in viral load levels (number of HIV viral particles in the blood) among different racial groups, after controlling for access to medical care, socio-economic status, and CD4 cell counts. Liu, Peters, Weedon, Thomas and Dominguez (2004) reported that in both adults and children, it appears that gender does not affect the risk of HIV disease progression. In general, women have a lower viral set-point than men. The viral set-point is the point at which HIV replication slows and is suppressed by the body's white blood cells. However, this lower set-point does not appear to influence the rate of HIV disease progression (Sterling, Vlahov & Astemborski, 2010). Patients who have certain genetic mutations or variations may have CD4 cells that are either more or less susceptible to HIV infection. This may occur in patients who either lack the co-receptors CCR5 or CXCR4, or they express them in a different way. For instance, one meta-analysis found that a variation of the CCR5 co-receptor, called CCR5-Î"32, reduced the risk of HIV patients developing AIDS by 31percent, and lowered the risk of death by 39 percent (Gulic, Su, Flexne,r et al., 2007). Faseb (2014) reports that patients who had mutations on their CCR5 receptors called 356T were more susceptible to HIV infection. This mutation, according to researchers, may also increase the rate of disease progression.

According to Schmid (2009), genetic variation in chemical messengers called cytokines and chemokines may also influence the rate of HIV progression. These chemical

according to United States Department of Health and Human services (2011) reports that evaluated 337 slow and fast progressors, genetic variations of two types of cytokines called interleukin-4 and interleukin-10 led to an increased in disease progression. In addition, a low copy number of the gene for a chemokine called CCL3L1 has been associated with a significantly increased risk of HIV progression (LIU, Yoa, Ding, & Zhu 2010). Coffin (2010) reported a relationship between the genetic makeup of human leukocyte antigens (HLA) and HIV progression. HLA are proteins found in the membranes (outside surface) of nearly every cell in the body. These antigens are found in especially high concentrations on the surface of white blood cells. In healthy individuals according to Altfeld, et al. (2008) HLA help the body's immune system distinguish between self and non-self (foreign or invading) substances. Chatterjee (2010) suggest that a diverse range of HLA variations decreases the rate of HIV disease progression. Borghans (2007) discovered that HIV adapts to the most frequent HLA genes in the body. Therefore, individuals who have rare gene types usually have a slower disease progression. Specific genes that are associated with slow or rapid HIV progression have been identified. According to Chatterjee (2010), patients who have HLA class I genes A1, B14, B44, B27, B5701, and C8 are more likely to experience slow or non-progressive HIV, while patients who have HLA class I genes A29, B22, B54, B55, and B56 are more likely to experience rapid progression.

American Association of Immunologists (2010) report have not yet discovered exactly how HLA affects HIV progression. American Association of Immunologist however suggests that HLA molecules directly limit HIV's ability to replicate. Borghans (2007) suggest that the HLA molecules that are associated with slow progression may help the immune cells identify HIV quicker and help stimulate a more rapid immune response. WHO (2014) opined that, the multi-drug resistance transporter 1 (MDR1) gene has been associated with an increased risk of rapid HIV progression. However, the scientific evidence of this

association is controversial. The MDR1 gene produces P-glycoprotein (P-gp), which is a drug transport molecule that protects the body's cells from toxic chemicals like HIV anti retrovirals by removing them from the cells. While Easterbrook, et al. (2010) suggest that P-gp may influence how susceptible a patient's immune cells are to HIV infection, the results of a new study by Mukonzo (2013) do not support this claim.

Truckee, Meadow and Herbs (2011) evaluated the type and amount of MDR1 in the T-cells of HIV-negative subjects. The cells were exposed to HIV in the laboratory. MDR1 and P-gp did not influence the cells' vulnerability to HIV infection. Tastan (2009) reports that, human protein called APOBEC3G is an antiviral protein that prevents HIV from replicating inside the body. The protein changes HIV's DNA molecules, which inhibits viral replication. However, HIV produces viral infectivity factor (Vif), which inhibits APOBEC3G's activity. Harris and Liddament (2004) evaluated more than 3,070 HIV patients, and discovered that, variations in the APOBEC3G gene may influence the rate of HIV disease progression. Tastan further found that, one variant called H186R, common among African Americans, was associated with a rapid drop in CD4 cell counts.

Lurie (2007) reports that migration from urban to rural played a role in the spread of HIV and AIDS in South Africa. Lurie further explained that, AIDS is becoming greater threat in rural areas than in the urban communities; because it has been established empirically, that majority of the people living with HIV and AIDS often resign from the urban centres to live in the rural areas to lessen the shame associated with the disease. According to report by Magaramombe (2005) in Zimbabwe, HIV prevalence among women who had moved at age 25 years was 38 percent compared with 29 percent for those who had lived in the same community until age 25 years. Magaramombe further explained that, prevalence of HIV among women increased in rural subsistence farming area and in commercial centres. Udoh (2009) reports that researches by Hill, 2005; Posel, 2004; Zwi & Cabral, 1991, suggests a

close correlation between labour and the spread of HIV and AIDS in Sub Saharan Africa. Adeokun (2006) reiterates that the Niger Delta's historical association with commerce, oil mineral extraction, and influx of foreigners has made the region vulnerable to STIs susceptibility among the local population. According to Food and Agriculture Organisation (2000) This is contributing to the increasing spread of the disease in the remotest villages, thereby cutting food production and threatening the very life of the rural communities.

Infection route

It has been suggested that infection route (how the disease is transmitted) may impact the rate of HIV progression in patients. For instance, HIV and AIDS can be spread by sexual contact with an infected person, by sharing needles/syringes with someone who is infected, through breastfeeding, during vaginal birth or, less commonly (and rare in countries where blood is screened for HIV antibodies), through transfusions with infected blood (CDC, 2011). Nguyen (2008) found faster rates of disease progression among HIV-infected patients who were infected via blood transfusion. However this study may not have considered the age of the blood transfusion recipients. Heimer and Abdala (2012) suggested that patients who acquire the disease via injection-drug use are more likely to experience a faster disease progression. However, there is conflicting scientific evidence; therefore more studies are necessary before any firm conclusions can be made.

Many types of herpes viruses, including cytomegalovirus (CMV), may increase the risk of developing AIDS. Herpes viruses produce proteins that may increase the speed at which HIV replicates. Fessenden (2013) suggests that patients who have both HIV and CMV are likely to develop AIDS quicker than those who only have HIV. However, recent research by Britt (2013) has produced conflicting results, and the role of CMV as a possible co-factor remains unknown. For instance, Britt (2013) found that CMV only affected disease

progression in individuals who were already diagnosed with AIDS and other herpes viruses may increase HIV replication, as researchers have evaluated the effect of anti-herpes treatment in HIV and AIDS patients. Based on the results of study by Highleyman (2011), it has been suggested that high doses of the anti-herpes drug may increase survival time in HIV and AIDS patients, particularly in those who have advanced HIV to AIDS. However, other studies have found no effect of acyclovir treatment on survival time in HIV patients.

Pineda (2007) reports that Hepatitis C virus (HCV) cause a rapid progression of both HIV and HCV-related diseases. Despite modern-day antiretroviral therapy (ART), patients infected with both HIV and HCV still have a greater risk of death than those only infected with HIV. According to Hepatitis Centre for Studies (2012) HCV's impact on HIV progression varies, depending on the genetic makeup of HCV. Also, patients who are infected with several different genetic types of HCV are likely to experience even faster HIV progression. Hepatitis Centre for Studies (2012) further suggests that ART may decrease the impact HCV has on HIV progression. National Product Association (2014) reports that, patients who have deficient levels of vitamin A, vitamin B12, or zinc are more likely to experience a rapid decline of CD4 cell counts. National Product Association further explained that, this is because the body's white blood cells need sufficient levels of these vitamins in order to grow and maintain health. Kitahata, VanRompaey, Dillingham. (2010) believe that poor absorption of nutrients, diarrhoea, and inadequate calorie and protein consumption contribute to HIV progression. For instance, USAID (2008) reported that poor nutrition in Zambia was the best predictor of death in both HIV-negative and HIV-positive children.

WHO (2010) reported that multivitamin supplementation can slow the rate of HIV disease progression and death. WHO further explained that, HIV and AIDS patients who have gastrointestinal problems may have a difficult time absorbing these essential vitamins

into the bloodstream. Some HIV and AIDS patients may need to take vitamins that are inject able or in a form that will dissolve in the mouth and be absorbed across the mucus membranes. AIDSinfo (2012) suggest that pregnancy does not increase the rate of HIV disease progression. However, there is scientific evidence, according to US Department of Health and Human Services (2011) that the patient's viral load (number of HIV viral particles in the blood) increases gradually from delivery until 12 weeks after delivery, even in women receiving consistent antiretroviral therapy. Highleyman (2011) reports that Herpes virus type 6 (HHV-6) has also been suggested as a possible factor in HIV progression. The virus infects CD4 T-cells and produces a protein that may make increase in the rate at which HIV replicates inside the white blood cells. Accordingly, Chakroboty (2010) evaluated long-term non-progressed HIV patients who had herpes viruses and based on their results, Turci (2011) suggested that HHV-6, HHV-7, and HHV-8 are not co-factors in HIV progression. According to HulsKotte, et al. (2012) co-infection with the retrovirus human T-lymphocyte virus type 1 (HTLV-1) may increase the risk of an HIV-infected patient developing AIDS.

Recreational drug use

AIDSMAP (2010) suggest that recreational drug use play a role in HIV disease progression. According to one study by Patterson (2008) there is an association between HIV-positive women who used cocaine, heroin, methadone, or injected-drugs and CD4 cell percentage, viral loads, or death (of any cause). However, HIV and AIDS patients who used drugs were more likely to develop other infections, especially herpes, tuberculosis, and recurrent pneumonia. Patients who develop these infections as pointed out by Fact Sheet (2012) may then have an increased risk of progressing to AIDS.

Alcohol abuse appears to be prevalent among HIV patients. AIDSMAP (2011) reported that 41 percent of HIV-infected patients met the criteria for alcoholism, as defined

by a score of five or higher on the Michigan Alcoholism Screening Test (MAST) survey. Buddy (2014) has shown that HIV-infected patients with a history of alcoholism, and who are receiving highly active antiretroviral therapy (HAART) and are currently drinking, have greater HIV progression than those who do not drink. In vitro studies by Fisher, Bang and Kpiga (2008) suggest that Alcohol may block a chemical messenger in the immune system and stimulate the expression of CCR5 co-receptor, which HIV uses to infect cells. This in turn may lead to increased rates of HIV replication.

Centre For Disease Control (2011) points out that Cocaine use may affect HIV disease progression either directly or indirectly. CDC (2011) further explained that cocaine may increase the rate of HIV replication and suppress cytokines (chemical messenger that stimulate the immune response). These factors may enable HIV to infect more immune system cells. Kapadia (2005) opined that inhaled nitrates (poppers) such as nitroglycerine and amyl nitrite might suppress the immune system. However, human and animal studies that have evaluated this association have produced inconclusive results (Williamson, 2011). Further research is necessary to fully understand the relationship between inhaled nitrates and HIV and AIDS. Liu, Peter and Weedon (2004) believe that DNA damage caused by injection-drug use may result in faster HIV replication and greater potential for viral mutations. Liu et al.(2004) further explained that, this may ultimately lead to an increased risk of developing neurological diseases and resistance to antiretroviral drugs.

According to Centre For Disease Control (2011), HIV and AIDS patients sharing needles may re-expose themselves to HIV, which may increase the rate of HIV disease progression. These patients also have an increased risk of developing other infections. From 2008-2011, injection drug use was responsible for approximately 10 percent of HIV and AIDS cases. WHO (2013) reports that, globally, around 16 million people inject drugs and 3 million of them are living with HIV and AIDS. WHO further reports that Marijuana may

aggravate symptoms of HIV-induced mental impairment, especially memory loss, in patients who have advanced HIV and AIDS.

AIDSMEDS (2014) reports that methamphetamine increases the risk of HIV disease progression. According to the study by Yeon and Albreast (2007), showed that methamphetamine users who were receiving antiretroviral therapy (ART) were more likely to have higher viral loads than non-users. However, there appeared to be no significant difference in methamphetamine users who did not receive antiretroviral therapy. Mutugi (2010) concluded that the impact on viral load may be the result of poor treatment adherence rather than a direct effect of the drug. CDC (2011) reported that both methamphetamine abuse and HIV infection may cause impaired cognitive (mental) functions. Patients may experience difficulties learning new information, solving problems, concentrating and quickly processing information. Letendre (2005) suggest that methamphetamine abuse and HIV infection significantly reduce the size of certain brain structures, which may be associated with impaired cognitive functions. Co-occurring methamphetamine abuse and HIV and AIDS infection has been shown to cause a greater impairment than each condition alone.

Repeated exposure to HIV

Report from Marmor (2006) suggests that repeated exposure to HIV increases the rate of HIV disease progression. AIDSMAP (2014) reports that in a five year study involving 937 HIV-infected men who received little or no antiretroviral therapy, found that the patients who had unprotected receptive anal intercourse experienced more rapid declines in their CD4 cell counts than men who did not engage in unprotected sex. The men who reported having unprotected sex in the last one year were twice as likely to experience a CD4 cell drop as those who did not. AIDSMAP (2010) reports that, the more the patient had unprotected sex, the greater the risk of CD4 cell count decline. However, the report could not state clearly

whether the CD4 cell count decrease was the result of re-infection with HIV or exposure to other sexually transmitted infections.

Smoking

Brunet (2013) observed that smoking does not influence the rate of HIV disease progression. However, there is good scientific evidence that HIV and AIDS patients who smoke tobacco are more likely to develop certain opportunistic infections. Opportunistic infections occur in individuals who have weakened immune systems. Brunet further explained that, smokers are more likely to develop a yeast infection of the mouth called oral candidiasis (thrush) than non-smokers. More research is necessary to determine whether the same is true for HIV-positive patients. Chan (2013) found that even though smoking increased the amount of Candida albicans (yeast that causes the disease) in the mouths of HIV patients, it did not appear to increase the risk of developing thrush.

Marshall, McCormack and Kirk (2009) observed that smoking increased the risk of developing thrush, bacterial pneumonia, and another mouth infection called oral hairy leukoplakia in HIV-positive men. In addition, smokers who have HIV are more likely to develop emphysema than non-smokers. Emphysema is a chronic lung disease characterized by shortness of breath. Morris (2011) reports a study involving HIV-positive and HIV-negative people who smoked for 12 years or more. The researchers found that 37 percent of the HIV-positive patients showed evidence of emphysema, while none of the HIV-negative patients had signs or symptoms of the disease. HIV-positive patients also had higher levels of cytotoxic CD8 T-cells in their lungs tissues, indicating that these immune cells may have caused some of the lung's damage.

Science Daily (2013) opined that, smokers who tested HIV positive are exposed to, kidney disease, lungs cancer and other lung infections. It has been reported that HIV and

AIDS patients who smoke tobacco are more likely to develop lung cancer than HIV patients who do not. This is because the smoke contains more than 4,000 different chemicals and many of these chemicals have been shown to be cancer-causing substances (Science Daily, 2013). Smokers typically have slightly higher CD4 cell counts than non-smokers. However, analyses of immune cells in the lung fluid showed that the CD4 and CD8 percentages and cytokine activity are significantly lower in smokers than non-smokers. Therefore, smokers have an increased risk of developing lung infections. For instance, Kabali, et al. (2011) did a review of 598 HIV patients and found that smokers were three times more likely to develop Pneumocystis jiroveci pneumonia (formerly called Pneumocystis carinii pneumonia or PCP) than non-smokers. Patients who smoked most were at the greatest risk of developing lung infections. HIV-infected pregnant women who smoke may have a greater chance of transmitting the disease to their babies during vaginal delivery. Currently, antiretroviral therapy is given to pregnant women to reduce the risk of passing the disease to their children. In a study one-third of the patients who smoked transmitted HIV to their babies, compared to less than one-fourth of women who did not smoke (AIDSMap, 2014). Open Learn (2014), suggested that nicotine may cause the membranes surrounding the fetus to rupture prematurely, which increases the time the infant may be exposed to HIV-infected blood during delivery.

Stress

Reilly, Clark, Schimidt, Benight and Kissinger (2009) reports that, severe stress can increase the rate of HIV and AIDS disease progression and that patients who had severe and frequent stress over a two-year period were four times more likely to experience HIV and AIDS disease progression.

In addition, psychological distress has also shown to increase the rate of HIV and AIDS disease progression, but did not lead to a shorter survival time (Tesfaye, 2014). According to Parsons (2013) patients who experienced psychological distress were more likely to develop an AIDS-defining illness within two years. Parsons explained that when HIV patients develop an AIDS-defining illness, this means their condition has progressed to AIDS.

HIV Prevention Strategies

Preventing HIV transmission is an essential part of addressing the global HIV and AIDS pandemic. As HIV pandemic change, so do the prevention methods used to prevent new infections. Around the world, there are many different types of HIV infection, each with its individual prevention needs (Merson, 2008). At the beginning of the AIDS scourge, HIV and AIDS prevention methods focused primarily on preventing HIV transmission through sex. However, overtime, the complex nature of HIV infection has been recognised, and global HIV prevention strategies have changed (Population Action International, 2008). According to UNAIDS (2010) replacing the once leading HIV prevention strategy, 'Abstinence, Be Faithful, Condomise' (ABC), the 'combination prevention' approach has come to introduce HIV and AIDS prevention strategies around the world.

Combination prevention according to UNAIDS advocates for a holistic prevention approach, where HIV prevention is not a single intervention – such as distributing condoms - but the implementation of many different HIV prevention interventions at once; each intervention is designed with its target population in mind – considering: location, available resources, and most affected populations.

The ABC approach to preventing sexual transmission of HIV has been defined and adopted by a variety of organisations, governments and Non-Governmental Organisations over the course of the pandemic's history. Before the term 'ABC' was first coined in 1992,

programmes and materials contained information on how abstinence, being faithful and condom use could prevent the sexual transmission of HIV (Population Action International, 2008). However. it was not until 1992 that the Filipino Secretary of Health, Dr. Juan Flavier, brought together abstinence, fidelity and condom use to create the ABC slogan: Abstain from sex, be faithful if you do not abstain, Use a condom if you are not faithful. At the time, Dr. Flavier's ABC approach angered members of the Catholic Church, prominent in the Philippines, who believed the promotion of condoms would encourage promiscuity. Careful to avoid arguments centred on morality, he cited scientific evidence, and began promoting it widely within the Philippines and abroad at international conferences (Apeyo, 2012).

America President's Emergency Plan for AIDS Relief (PEPFAR) and ABC

Su (2010) reported that, in 2003, President's Emergency for AIDS Relief (PEPFAR), the United States of America's initiative to combat the global HIV and AIDS pandemic, adopted the ABC method as its primary prevention strategy against the sexual transmission of HIV, emphasising: Abstinence for youth, including the delay of sexual debut and abstinence until marriage, being tested for HIV, being faithful in marriage and monogamous relationships and Correct and consistent use of condoms, for those who practice high-risk behaviours.

President's Emergency Plan for AIDS Relief (PEPFAR) use of the ABC method has garnered much criticism and controversy (PEPFAR, 2009). Under the original 2003 directive, one-third of PEPFAR funds were required to be spent on abstinence and fidelity programmes. According to Voice Of America (2009) funds may be used to support programmes that deliver age-appropriate "ABC information" for certain high-risk young people, provided they are informed about failure rates of condoms. Voice Of America (2009) further reported that,

HIV and AIDS organisations and experts voiced concerns that PEPFAR put too much emphasis on abstinence until marriage, and was not doing enough to make young people aware of the benefits of condoms.

Population Action International (2010) reports that, PEPFAR is also obliged to notify Congress if less than 50 percent of funds towards preventing sexual transmission of HIV are spent on abstinence and fidelity programmes. The year 2008, welcomed a new PEPFAR law which removed the abstinence directive, and embraced a more comprehensive and evidence-informed HIV prevention strategy (Washington Times, 2013). According to UNAIDS (2011), in June 2013, the United State Supreme Court rejected PEPFAR's refusal of funding for organisations that do not actively denounce sex work. This was on the grounds that the pledge was violating free speech and creating barriers between sex workers and HIV prevention workers. President's Emergency Plan for AIDS Relief claims that its ABC approach was validated by 'what worked in Uganda', on closer examination marked differences can be seen between PEPFAR's approach to ABC prevention and that of Uganda's in the 1990s. Most notable, is that whilst PEPFAR focused primarily on abstinence, Uganda adopted a more comprehensive approach, giving equal weight to A, B and C (Hankins & de Zalduondo, 2010).

Uganda and ABC

In the late 1980s, the Ugandan government took swift action on an escalating pandemic. Through an aggressive media campaign, it began educating the public about sexual transmission, but focused on abstinence for youth and 'zero grazing', or partner fidelity. Then in the early 1990s, condom promotion in Uganda became more acceptable by the government and condom use increased. According to Green (2012) the most important element of the Ugandan response was the mobilisation of community leaders, churches and

indeed the public in general; meaning the response was led from the bottom, as well as the top.

According to Singh, Darroch and Bankole (2013) what appeared to have worked in Uganda was a combination of strategies focusing on abstinence and delaying sex, in addition to the widespread promotion and distribution of condom which was supported by USAIDS and other donors. The combination approach resulted in a fall in the annual number of new infections between the late 1980s and mid 1990s, which in turn led to a reduction in HIV prevalence (WHO, 2006). In recent years, Uganda's HIV prevention response has lost momentum. Some experts have attributed this to when PEPFAR, under the directive of the administration of former US President, George W. Bush, started working with the Ugandan government. UNAIDS (2011) reports that, under PEPFAR, Uganda adopted a narrower approach to ABC, which emphasised abstinence and limited the promotion of condoms. It was reported that in the first two years of youth abstinence focus, rates of new HIV infections nearly doubled.

Daily Monitor (2011) reports that a senior official at the Ugandan Ministry of Health commented that they had concentrated so much on treatment and care and yet more Ugandans were getting infected each year and the number of those who need ARVs was increasing. The officer suggested a review of the old-fashioned prevention method because it has flopped. Washington (2006) reports that, although Uganda and PEPFAR supported the ABC approach, some countries that have also promoted it as a core part of their national strategy on HIV and AIDS prevention have expressed doubt about its effectiveness. In the mid-2000s, many African countries reported 'mix experiences' with the ABC prevention method. In those countries where the majority of new infections are heterosexually transmitted, the ABC approach has been sidelined in national strategies by more comprehensive prevention approaches. For example, Plus News (2010) reported that

"Swaziland announced in 2010 that it was going to scrap its ABC prevention strategy because it had not been effective in reducing HIV infection rates.

The Body (2006) reports that, in Namibia, women's groups have criticized the ABC approach, claiming that it did not take into consideration cultural context, where women's inequality often means that they cannot remain abstinent, practice marital fidelity or demand the use of condoms. According to Centre for Disease Control (2012) by the mid-2000s, it was evident that to prevent HIV, more was needed than simply 'ABC'. Whilst ABC can be a viable prevention strategy, critics of PEPFAR's use of ABC said that it was driven too strongly by religious and conservative ideology in the U.S., and failed to take into account the diverse contexts within which programmes were implemented. Ultimately, it became clear that HIV and AIDS prevention programmes need to take social and economic factors into account.

Emergence of combination prevention

In the mid-2000's, it became clear that despite vast improvements in the efficacy and access to HIV and AIDS treatment, the impact of existing HIV and AIDS prevention efforts were comparatively lagging. At one point, Population Action International (2008) suggested that 'DEF' should be added to 'ABC' to represent 'Defending against gender-based violence', 'Education: improving girls education' and 'Fix property and inheritance laws'. Yet increasingly, the need to abandon one-size-fit-all approaches, like ABC, became apparent. Instead, the need to tailor prevention approaches to the local context gained support, and a consensus emerged that HIV and AIDS prevention approaches should be based on the key drivers of the local epidemic (Avert, 2009). Barrish (2006) reports that, the concept of combination prevention was first conceived in 2003 by the Global HIV Prevention Working Group.

According to Barrish, Global HIV Prevention working Group investigated shortfalls of existing HIV and AIDS prevention programmes, and identified two key issues namely: inadequate funding and limited access to HIV prevention services. As part of their investigations, it became clear that all of the countries that had selected specific interventions based on the characteristics of their infections, were considered as HIV and AIDS prevention success stories, for instance Thailand, Brazil and Uganda (Burris, et al. 2004). Throughout the mid-2000, UNAIDS worked towards 'intensifying' HIV and AIDS prevention so that it became comprehensive, evidence informed and human rights focused (Beletsky, et al., 2011). The shift towards re-focusing the HIV and AIDS response on prevention was further emphasised at the 2008 International AIDS Society Conference in Mexico; with 'Combination Prevention' becoming the buzzword of the conference (Beletsky, Grau, White, Bowman & Heimer, 2012).

HIV and AIDS prevention refers to practices done to prevent the spread of HIV and AIDS. HIV and AIDS prevention practices may be done by individuals to protect their own health and the health of those in their community, or may be instituted by governments or other organizations as public health policies (Population Action International, 2008). According to CDC (2011) some commonly considered pharmaceutical interventions for the prevention of HIV include the use of the following: microbicides for sexually transmitted diseases, pre-exposure prophylaxis, post-exposure prophylaxis, circumcision, antiretroviral drugs to reduce viral load in the infected, and condoms use. CDC further explained that, of these, the only universally medically proven method for preventing the spread of HIV during sexual intercourse is the correct use of condoms, and condoms are also the only method promoted by health authorities worldwide. For HIV positive mothers wishing to prevent the spread of HIV to their child during birth, WHO (2006) report that antiretroviral drugs have been medically proven to reduce the likelihood of the spread of the infection. Scientists

worldwide are currently researching other prevention systems, such as behavioural interventions.

Kennedy, Medley, Sweat and O'Reilly (2010) explained that behavioural interventions seek to reduce the risk of HIV and AIDS infection by addressing risky behaviours or activities. Kennedy, et al. (2010) further stated that behavioural intervention such as sex education, peer education, mass communication messages through social media, press, advertising, campaigns, and radio, Voluntary Counselling and Testing (VCT), stigma and discrimination reduction programmes, cash transfer programmes, LGBT sex education needle-exchange programmes safe injection sites, safe sex serosorting, sexual abstinence, immigration regulation, may aim to do this by reducing the number of sexual partners people have, by improving adherence among people taking antiretroviral treatment, by increasing the use of clean needles when injecting drugs, or increasing the consistent and correct use of condoms during sex. To date, these types of interventions have been the most successful. Social strategies do not require any drug or object to be effective, but rather require persons to change their behaviour in order to gain protection from HIV and AIDS. These strategies have widely differing levels of efficacy, social acceptance, and acceptance in the medical and scientific communities. An example of an intervention employing these social strategies is the Women's Health Co-Op (WHC), which is on the CDC's best evidence based practice list for HIV and AIDS prevention (Sepkowitz, 2001).

According to WHO (2003) consistent condom use reduces the risk of heterosexual HIV transmission by approximately 80 percent over the long-term. Where one partner of a couple is infected, consistent condom use results in rates of HIV and AIDS infection for the uninfected person of below 1 percent per year. The use of the spermicide nonoxynol-9 may increase the risk of transmission due to the fact that it causes vaginal and rectal irritation. A vaginal gel containing tenofovir, a reverse transcriptase inhibitor, when used immediately

before sex, reduces infections rates by approximately 40 percents among African women (Celum & Baeten, 2012). Circumcision in sub-Saharan Africa reduces the risk of HIV infection in heterosexual men by between 38 percent and 66 percent over two years. Based on studies by (Siegfried, Muller, Deeks and Volmink (2009) the World Health Organization and UNAIDS both recommended male circumcision as a method of preventing female-to-male HIV transmission in 2007, whether it protects against male-to-female transmission is disputed and whether it is of benefit in developed countries and among men who have sex with men is undetermined (Wiysonge, et al., 2011). Some experts fear that a lower perception of vulnerability among circumcised men may result in more sexual risk-taking behaviour, thus negating its preventive effects.

Comprehensive sexual education provided at school may decrease high risk behaviour. According to Kurth, et al. (2011) a substantial minority of young people continue to engage in high-risk practices despite HIV and AIDS knowledge, underestimating their own risk of becoming infected with HIV.

Theoretical Framework

The theoretical framework highlighted, Learned Helplessness and Health Belief Model, and their relevance to the prevalence and prevention of HIV and AIDS.

Theory of Learned Helplessness

In 1965, Martin Seligman and his colleagues conducted research on classical conditioning. In this case a bell was rang and a light shock given to a dog. After a number of times, the dog reacted to the shock even before it happened, as soon as the dog heard the bell, he reacted as though he had already been shocked. Later in the second part of the experiment an unexpected happened, Seligman put each dog into a large crate that was divided down the middle with a low fence that the dog could see and jump over the fence if necessary. The floor of one side was electrified but not on the side the fence, the dog was put in the

electrified side and light shock was administered. He expected the dog to jump to the non shocking side of the fence, instead the dog lay down and it was as if they learned from the first experiment that there was nothing they could do to avoid the shocks. This condition was therefore described as learned helplessness. The animal was repeatedly exposed to an aversive stimulus which he could not escape. Eventually the animal stops trying to avoid the stimulus and behaves as if it is helpless to change the situation when the opportunity to escape came. The implication of this theory to health issues is that, regardless of origin, people who see uncontrollable events reliably suffer disruption of emotions, aggressions, and have difficulty with problem solving. These helpless experiences can associate with passivity, uncontrollability and poor cognition in people, ultimately threatening their physical and mental well-being.

Some people believe that the traditional male or female role have sometime resulted in learned helplessness. For example some cultural beliefs in Nigeria, expect a woman to submit to her husband in all things, just for the fact that she is a woman. This theory is applicable to this study, for instance in society where wife inheritance rite is practiced, and when women do not have the right to bargain for safer sex. A wife who knows that the husband is not faithful, but cannot compel the husband to use condom and have sexual intercourse with her, because she believes that, she does not have the right to refuse the husband sex as a wife. This situation may contribute to the prevalence of HIV and AIDS in Akwa Ibom State where women are subject to socio-cultural belief of women not negotiating sex.

Health Belief Model (HBM)

It is a psychological model that attempts to explain and predict health behaviours focusing on the attitudes and beliefs of individuals. A cognitive model which identifies factors that indicate the possibility of an individual adopting a health behaviour. This model

was developed by Rosenstock in 1966 followed by Becker and colleagues throughout the 1970s focusing on the attitudes and beliefs of individuals. The model proposes that an individual facing health related decisions weighs the likelihood that she may be at risk of a disease, the gravity of the disease, the value of making choices that will prevent the illness, the cost of the challenge of making choices However in recent years, the health belief model is used to predict a wide variety of health related behaviours. The HBM predicts that behaviour is a result of a set of core beliefs, which have been redefined over the years. The components of the model include the following:

Susceptibility to Illness: A person perceives the risk of contacting a particular disease in this situation. There are different levels by which individuals perceive susceptibility to infection, namely: person at the low end of the health continuum deny the possibility of contacting any disease condition , those in the middle admit to a reasonable extent the possibility of disease susceptibility, and those in the high extreme of the continuum feel strongly that there is real danger, and that with wrong decision they will contact a given adverse disease condition. For example my chances of getting HIV and AIDS are high. In Akwa Ibom state, women should be encouraged to believe that they are highly susceptible to HIV and AIDS so as to reduce the prevalence of the disease conditions.

Perceived Severity: It is the individual's feeling concerning the seriousness of contracting an illness or leaving it untreated. This includes the difficulty the illness will create, which may be in both clinical and social consequences. The combination of perceived susceptibility and perceived severity constitute a health threat, and forms the first phase of HBM model. The severity of illness, for example HIV and AIDS is a serious illness. In order to reduce the prevalence of HIV and AIDS among women in Akwa Ibom State, the women should be made to perceive the seriousness of the health problem. This will make them take all available measures to avoid the disease

Perceived Benefits: This concept can also be regarded as perceived effectiveness of the various available health strategies one has designed for reducing the threat of illness. After the perception by the individual and recognition of the next step to follow, the individual must believe that the action to be taken is right. However, the action decided may be easy and convenience, but on the other hand, it may create inconvenience or undesirable effect. For example a person who tests positive to HIV can perceive that taking anti retroviral drug will save his life, but at the same time will be afraid of disclosing his status, when going to the clinic to access treatment, because of fear of stigmatization. Also the benefit of carrying out the behaviour for example, stopping casual sex or using condom will save life from HIV and AIDS, yet he / she feel ashamed to go and get the condom. Connected with perceived benefit is an individual's sense of urgency as distinct from a sense of importance. The sense of importance means simply that a person believes a particular behaviour to prevent or avoid HIV and AIDS to be important for him, while the sense of urgency means that he also believes the action to be taken immediately. Akwa Ibom State women should be health educated so that they can regard any threat to their health as urgent and one that requires immediate and adequate attention.

Perceived Barrier: In this instance, the individual perceives the negative aspect of the recommended action, which may act as impediments to full appreciation of the indicated health behaviour. Even when the individual believes in the effectiveness of the action, some factors can cause discouragement to action. For example an HIV positive person can refuse accessing drugs because of disrupting social status. Another example might be that, stopping casual sex will make one poor. A woman has become aware that her husband has other girlfriends (perceived susceptibility). She knows that her friends became HIV positive because their partners also have multiple sexual relationships (perceived severity). Her nurse tells her that abstaining from sexual intercourse or using a condom will decrease the risk

(perceived benefit). She is given condoms. Abstaining is difficult because they are married and she is worried about using condoms (perceived barriers). She hears a lady talk about her positive experiences with condoms. She begins using condoms and finds success with this routine (self -efficacy).

Empirical Studies

HIV prevalence in Akwa Ibom State

Akinjogunla and Adegoke (2009) conducted a study of sero-prevalence of HIV 1 and 2 infections, designed to cover individuals in Uyo metropolis.Using a cross sectional consecutive facility based survey design, the study aimed at investigating the prevalence of HIV and AIDS in Uyo Local Government Area. The study was carried out by collecting peripheral blood samples through venous puncture from 316 patients who constituted the sample used for the study and transferred to sterile universal bottles and then used WHO approved kit called "Determine" an ELIZA based kit to detect the presence of HIV-1 and HIV-2 antibodies. Descriptive statistics was used to analyze the data (simple percentage) andthe result showed that, sero-prevalence from January 2008 to June 2008 was 34.17 percent, and this was an indicative of a higher prevalence in the population. In this study, the prevalence was higher in males than in females, and the incidence was higher in the older sexually active group, as well as people involved in risky nonsexual practices, such as ear piercing, tattooing and intravenous drug usage.

Abasiatai (2009) conducted a study on the prevalence of HIV among antenatal attendees, at the maternity unit of the University of Uyo Teaching Hospital, using descriptive survey design to determine the prevalence of HIV infection among pregnant women receiving antenatal care in the centre. The voluntary counselling and testing register, the partner notification and antenatal clinic registers of all patients that booked for antenatal care

between 1st July 2005 and 31st December 2007 were reviewed. Using descriptive statistics there were 5,635 new antenatal clients during the study period out of which 464 were confirmed HIV positive resulting in a prevalence of 8.2 percent. Most of the patients were between 21-30 years (70.0%). About 59.4 percent of the patients were multiparous while 49.4% booked for antenatal care in the third trimester of pregnancy. HIV was diagnosed in the antenatal clinic in 408 (87.9%) of the patients and 182 (39.2%) received antiretroviral drugs during pregnancy. Only 38.8 percent of the patients accepted to notify their partners. The prevalence of HIV infection among pregnant women who had antenatal care in the hospital was highlighted. Strategies aimed at primary prevention of HIV infection in the community were intensified, encouraging all pregnant women to avail themselves of orthodox antenatal care, and the need to emphasize the advantages of self disclosure of serostatus to partners during counselling.

Influence of age on prevalence of HIV and AIDS

Gisselquist and Potterat (2003) carried out a study on hetero transmission of HIV and AIDS in Africa using a cross sectional survey design. Pregnant women clinic attendees were interviewed. The interview included questions on demographics. Using simple percentage and Chi Square statistic to analyze the data, result revealed that, there was a total of 541 women attending antenatal clinic for the first time, 37 tested HIV positive and the risk factors associated with positive HIV status were early age of sexual intercourse and history of sexually transmitted diseases. The use of regression analysis established a history of sexually transmitted disease as the only independent predictor of HIV infection. This report indicated that more than 90 percent of HIV and AIDS in African adults result from heterosexual transmission, and 25 - 29 percent of HIV incidence in African women and 30-35 percent in men is attributable to sexual transmission. These estimates assume 10 percent annual pandemic growth.

Sagay, Kapiga and Kank1 (2005) conducted a study on HIV and AIDS prevalence among 2657 pregnant women in Nigeria to determine risk factors for HIV among pregnant women receiving antenatal services in Jos, Plateau State, Nigeria using cross sectional survey design with interview to obtain information from subjects and biological samples were collected for detection of HIV. Using univariate and multivariate logistic regression models to analyze the data, the result of the study revealed HIV and AIDS prevalence of 8.2 percent. Women aged 20-29 years had more than four folds increased HIV and AIDS while Christian denominations had HIV and AIDS compared to their Muslim women, and the risk of HIV was also increased among women with multiple marriages as well as in women married to Bankers.

Wand and Ramjee (2011) studied the relationship between age of coital debut and HIV, investigating the impact of early sexual debut on HIV seroprevalence and incidence rates among a cohort of women using prospective design. The subjects of the study were 3492 sexually active women who consented to be screened for HIV prevention trial between September 2002 and. September 2005. A total of 1485 of them were followed up for approximately 24 months .and AIDS

Primary and secondary outcome measures HIV seroprevalence among those who were screened for the trial and HIV seroconversion among those who seroconverted during the study. Using cox proportional hazard regression analysis to calculate unadjusted and adjusted HIV incidence rates, the results showed age at sexual debut, level of education, a higher number of lifetime sexual relationship, sexually transmitted infections were all significantly associated with prevalence of HIV infection. During follow-up, 148 (6.8 per 100 person-years, 95% CI 5.8 to 8.0) women seroconverted. Highest seroconversion rate was observed among women who had reported to have had sex 15 years or younger. Overall, impact of risk factors considered in the study was associated with considerable potential

reductions in HIV and AIDS prevalence and incidence rates (population attributable risk: 85%, 95% CI 84% to 87% and population attributable risk: 77%, 95% CI 72% to 82%, respectively).

Okonko, Okerentugba and Akinpelu (2012) conducted a study in Ibadan on the prevalence of HIV among attendees of Association for Reproductive and Family Health (ARFH) centre using cross sectional survey design. Two hundred (200) patients attending the centre were screened randomly to determine the prevalence of HIV and AIDS, using conventional methods. Of the 200 subjects, 18(9.0%) were positive for HIV. Risk factors associated with HIV and AIDS were young age, sex and marital status (P<0.05). Samples of blood, were collected from males and females, respectively and subjected to screening of HIV. About three millilitres of venous blood (without anticoagulant) was collected aseptically from all patients. Sera were separated and stored at -20°C in screw-capped glass tubes. Sera were tested for antibodies to HIV by ELISA/rapid tests, using WHO-approved kits, following NACO guidelines, after pre-test counselling and written informed consent, followed by post-test counselling. The proportions were calculated for HIV and AIDS prevalence using descriptive statistics, and the result showed thus;

Of the two hundred (200) patients, 151 females and 49 males tested, 18(9.0%) were positive for HIV. The seroprevalence of HIV was 9.0%. In relation to sex the seroprevalence of HIV was higher in males [5(10.2%)] than in their female counterparts [13(8.6%)]. There was a significant association (P<0.05) between sex and HIV infection acquisition in relation to the ages of the AFRH attendees in Ibadan, South Western Nigeria. The age specific distribution of HIV among subjects of the study shows that those in the age group of 30 years and above had a higher prevalence rate of HIV and AIDS 11(10.8%) compared to those in age group 16-29 years which had a lower prevalence rate of HIV 7(7.1%) . There was a significant association (P<0.05) between age groups and HIV and AIDS infection acquisition.

The prevalence of HIV and AIDS infection in relation to the marital status of the AFRH clinic attendees was higher among the singles 11(18.6%) than among the married 7(4.9%). Statistically, marital status was significantly associated with HIV infection.

Adair (2007) did a study on HIV and AIDS status and age at first marriage among women in Cameroon, with the aim of determining the relationship between HIV and AIDS status and age at first marriage. Multivariate analysis with nationally representative sample from 2004 Cameroon Demographic and Health Survey was used. Ten thousand six hundred and fifty six women were interviewed and test was done on respondents who voluntarily provided blood samples after being informed of the procedure confidentially. The dried blood samples were tested in the laboratory. The result of the study revealed that married teenage women had a higher but no significant level of HIV and AIDS prevalence than the never married women. Also the association of HIV and AIDS with age at first marriage and the length of the period of pre-marital sexual intercourse was stronger in the rural than in the urban areas.

Tolan (2005) conducted a cross sectional study of women of reproductive age groups 15-49 years in Eastern and Southern Africa using three Demographic Health Survey (DHS) data sets for the three countries of study: Zimbabwe (DHS) 2010-2011, Swaziland (DHS) 2006-2007 and Lesotho (DHS) 2009. The national survey data set was representative of all women. The number of women that were eligibly interviewed was: Zimbabwe (9,171) Swaziland (4,987) and Lesotho (7,624). The population of the study were mothers (married and single) of Zimbabwe, Swaziland and Lesotho who have had at least one dependent child prior to the survey. The inclusion criterion for the study includes women, who were married, never married or formally married and later became single. Country responds information system was used to analyzed the data and the result of the study showed that 2.7 million people aged 15- 24 years lived with HIV. The risk of the infection was higher for girls and

young women with the regional prevalence of 4.8 percent for young women aged 15 - 24 years, higher than that of men of the same age.

Hutchinson (2006) carried out a survey on prevalence and risk factors for HIV infection in pregnant women in North Trinidad using a cross sectional survey design. Each new pregnant attendee to the antenatal clinics in the county of St George West was interviewed over a six-month period after informed consent was obtained. These women were offered routine HIV testing in their antenatal assessment. Their HIV results were confirmed through the island's HIV monitoring facility. The interviews included questions on demographics, known risk factors for HIV infection, mental health history and related information on their partners. Women who had refused testing were also asked to give reasons for this. There were 541 women attending the clinic for the first time during the six-month period, seven of them refused to be tested. Of the remaining 534 women, 37 were HIV positive (6.8%). Fourteen of the HIV positive women (37.8%) admitted to knowing of their status prior to becoming pregnant. Risk factors significantly associated with positive HIV status were early age of first sexual intercourse, a history of sexually transmitted disease, mental health problems and homelessness. Regression analysis established a history of sexually transmitted disease as the only independent predictor of HIV infection in this sample. The findings also revealed a high rate of HIV infection among pregnant women in northwest Trinidad and suggest that having a history of sexually transmitted disease is a key determinant of this.

Influence of level of education on HIV and AIDS prevalence

Steenkamp, Venter, Walsh and Dana (2014) conducted a study on socio- economic and demographic factors related to HIV status in urban informal settlements in the Eastern Cape, South Africa. The aim of study was to determine which socio-economic and

demographic factors were related to HIV status among people aged group 18 to 49 years in the informal settlements. The study was cross sectional conducted in three informal settlement of population of 752, using a proportional cluster and stratified sampling technique. The result revealed that, the prevalence was higher, at 17.3% percent than the 2011 estimated national prevalence among the general population in South Africa. Levels of education, geographical site, gender, household food security were significantly associated with HIV status.

A study conducted by Ibrahim, Owoeye and Obilahi (2013) in Niger Delta University, Bayelsa State was to determine the HIV seroprevalence rate and factors responsible for this rate among pregnant women. The study took three years, using cross sectional evaluation of cases of HIV in pregnancy. Data were collected using a closed structured self administered questionnaire for all the positive women and randomly selected negative cases. Chi-Square statistic was use to determine the influence of factors responsible for the prevalence. The result showed a seroprevalence rate of 4.9 percent. Parity, age at first coitus, educational status, marital status and occupation did not seem to increase the risk. Rather partner being employed, hospital delivery, route of last delivery, previous induced abortion and number of lifetime partners were identified as risk for seropositivity.

A similar study was done by Oladeinde, Omeregie and Oladeinde (2013) in Edo State to determine the prevalence and associated risk factors of HIV, Hepatitis B Virus, and Hepatitis C Virus infections among pregnant women receiving antenatal care in a traditional birth home in Nigeria. A cross sectional design was used for the study. Blood and sera samples were obtained from 360 pregnant women tested for the presence of HIV, Hepatitis B Virus, and Hepatitis C Virus antibodies and haemoglobin concentration using standard technique and questionnaires to obtain demographic information. Using Instrument Authorized (INSTA) statistical software, the result showed that the prevalence of HIV was

significantly higher among pregnant women with no formal education and among those with multiple marriages and was also associated with anaemia. The result also showed that age, gravidity, parity, marital status, history of blood transfusion, and educational status did not significantly affect the prevalence of transfusion of HBV and HCV infections.

Influence of location/residence on HIV and AIDS prevalence

Udeminue and Adindu (2012) carried out a study to determine the potential factors contributing to the spread of HIV and AIDS in a rural community of Akwa Ibom State, Nigeria. The sample size of the study was 15,000 people aged 15-70 years, selected from 350 households and 50 people receiving treatment at the Iquita hospital Oron. The aim of the study was to determine potential factors contributing to the spread of HIV and AIDS in the rural community. The main instrument for data collection was questionnaire and Microsoft excel 2007 was used in analysing the data. The result showed that numerous factors were responsible for the spread of HIV and AIDS in Iquita though knowledge of transmission was very high among the respondents. In conclusion, place of residence was identified as one of the factors influencing prevalence of HIV in the rural community. Ninety eight percent of the rural dwellers heard about the virus, but 64.6 percent believed HIV was a punishment from God. Majority of the people according to Udeminue and Adindu had multiple sex partners, concubines, and majority were commercial sex workers, yet many did not like using condom.

Hajizadeh, et al. (2014) conducted a study on socioeconomic inequalities in HIV and AIDS prevalence in Sub Saharan African Countries. The total population of the study consisted of men and women aged 15 - 49 years residing in urban and rural areas. The result showed that HIV and AIDS was concentrated among higher socio economic status individuals in majority of Sub Saharan African countries. Stratified analysis by gender showed HIV was generally concentrated among wealthier men and women. In some

countries, HIV and AIDS was concentrated among the poor in the urban areas, but among wealthier adults in the rural areas. Urban residence was the most important factor contributing to the concentration of HIV and AIDS among wealthier participants in Sub Saharan Africa.

Abah (2014) examined the demographic implications of the HIV prevalence trend in Nigeria. A total of 36,427 samples from pregnant women aged 15-49 years were collected and analyzed using spectrum model and descriptive statistics to present the trend of HIV epidemic in Nigeria. Data from the 2010 National Antenatal Sentinel Survey was used to produce various graphs to determine the trend of HIV at the national level, state levels, urban and rural areas, and various age groups. The study found that though a decline existed in the national HIV prevalence and the HIV prevalence among women aged 15-24 years, there was a potential for an increased trend if adequate HIV services were not provided in rural areas. This is because the HIV prevalence in many states has risen in rural areas and in especially among women aged 15-39 years.

Association between occupation and HIV and AIDS prevalence

The National HIV and AIDS and Reproductive Health Survey (NARHS) by UNAIDS, (2005) carried out a national HIV and AIDS reproductive health survey among 4,688 women aged 15-19 years and 5,393 men aged 15-64 years. The objective of the study was to provide information on key HIV and AIDS and reproductive health Knowledge and behaviour related issues as well as other health issues such as maternal health, family planning and gender based violence. The sample for the study was drawn from a sampling frame of all rural and urban localities in Nigeria developed and maintained by the National Population Commission, through a probability sampling technique. Data for the survey were analyzed centrally using descriptive statistics and chi-square and presented on zone basis and

other selected background variables. The result of the survey showed gender inequality was an important driver for the pandemic with Prevalence rates higher among female (4.0 %) than males (3.2 %). Findings also showed higher early vulnerability and infections for girls and women relative to boys and men. The prevalence of HIV among female injecting drug users was almost seven times that of male Injecting Drug Users (21.0 percent vs. 3 percent). Among the police, the prevalence was higher amongst female's police who had 4.5 percent than their male colleagues who had 2.0 percent.

Dunkle, et al. (2004) carried out a study in Soweto among 1336 South African women who attended their health centres. The following questions were used for the study: Is past experience of intimate partner violence, child sexual assault, forced first intercourse, adult sexual assault by on-partners, or current involvement with a controlling partner associated with newly diagnosed HIV infection? Are experiences of violence and control associated with increases in self-reported HIV risk behaviour— specifically, number of male partners, non-primary male partners, non-use of condoms, and substance use? Most importantly, are observed associations between violence and control and HIV serostatus sustained after adjustment for the effects of violence-associated risk behaviour? Women seeking antenatal care at four clinics in Soweto, South Africa, were interviewed between November, 2001, and April, 2002. All women were offered routine antenatal voluntary counselling and testing for HIV; women aged 16 years or more who had HIV test were eligible for the study. A team of six South African female fieldworkers trained in gender-based violence and HIV/AIDS issues visited the clinics in a systematic rotation and screened women who had received HIV pre-test counselling for possible participation in the study. Diagnostic HIV testing on site using the Determine rapid test (with confirmation of positive results using Capillus was carried out. Lifetime experience of physical and sexual violence

from any male partner using the WHO violence against women instrument, which was developed for international use, was used.

The result of the study showed that, all risk behaviours were associated with HIV sero-positivity, except the crude measure of never having used a condom. Having five or more male partners and having casual partners were associated with all measures of violence. Transactional sex was associated with broad intimate partner violence, forced first intercourse, while substance use problems were associated with intimate partner violence and child sexual assault. Women with controlling partners, as measured by the Sexual Relationship Power Scale (SRPS), were more likely to say that they had never used a condom, while survivors of child sexual assault and adult sexual assault by non partners were more likely to report having used condoms at least once. Multivariate models showed that after adjustment for age, current relationship status, and women's risk behaviour, the association between broad intimate partner violence and HIV sero-positivity remained significant.

Influence of marital status on prevalence of HIV and AIDS

Kposowa (2013) conducted a study on marital status and HIV/AIDS mortality: evidence from the National Longitudinal mortality study with the aim of examining the associations between marital status groups and death from HIV and AIDS. In his method of study, data was derived from the third release of the US National Longitudinal Mortality Study and Cox proportional regression models fitted to the data. Marital status was measured by, single, widow and separated or divorced with HIV and AIDS mortality. The result revealed that, marital status was associated with mortality from HIV. Divorced and separated individuals were 5.8 times more likely to die of HIV and AIDS than married individuals

were. Single and never married individuals were 13 times as likely to die of HIV and AIDS as their married counterparts. Widowhood was not significantly associated

Shisana, et al. (2004) conducted a study on marital status and risk of HIV infection in South Africa with the objective of determining prevalence of HIV and AIDS among married people and to identify factors for HIV infection relating to marital status in South Africa. Multistage probability sampling involving 6090 males and female respondents aged 15 years or older were selected. A detailed questionnaire was use to elicit information on socio-demographic variables. Using logistical regression model the result revealed that HIV prevalence among married people was 10.5% compared with 15.7% among unmarried people. The risk of HIV AIDS was significantly different between married and unmarried people. However risk of HIV infection remained significantly high among unmarried compared to married people. The study concluded that the risk depended on various demographic factors and sex behaviour practices.

Kimani, Ettarh, Ziraba and Yatich (2013) conducted a study in Kenya with the aim of examining the association between marital status and risk of HIV infection in urban slums of Nairobi. Data were derived from a cross-sectional population-based survey nested in an ongoing Demographic Surveillance System in two urban slums in Nairobi. Descriptive statistics and multivariate logistic regression analysis were used to describe the characteristics of the sample and to assess the association between marital status and risk of HIV infection. HIV prevalence among married men and women was 10.4% and 11.1% and among divorced/separated/widowed men and women was 14.9% and 27.9%. Multivariate results showed the risk of acquiring HIV was significantly associated with being married, divorced/separated/widowed, being in the older age groups and the Luo ethnic group.

Adebayo, Olukolade and Idogho, et al. (2013) conducted a study to examine the correlate of marital status and HIV prevalence among women in Nigeria. Data for this study were based on the first Nigerian population household-based HIV biomarker survey of 2007. Respondents were selected through probability sampling (male age 15 - 64 years and female 15 - 49 years). A descriptive analysis of the data showed that HIV prevalence of women that were formerly married: divorced separated or widowed were more than double that of those who were currently married/cohabiting with a sexual partner; and more than three times those that were never married. Bivariate and multivariate levels of analysis showed that on bivariate level, a significant difference in HIV prevalence among women according to their marital status (p < 0.0001), educational attainment (p = 0.004) and geo-political zones (p = 0.003). Respondents that were formerly married were 5.6 times as likely to be infected with HIV compared with those who had never married (OR = 5.6, p < 0.0001) while HIV prevalence increased with higher educational attainment.

Summary of Review of Related Literature

Many factors have been identified to contribute the prevalence and vulnerability among women. WHO (2003); Mugo, et al ; Egesie (2011), Collins and Rau (2010) mention factors such as gender inequalities, lack of information, low condom usage, and poverty as some of the key drivers of the infection. Data on prevalence in different continents were reviewed and it has been observed that there is a slow rate of decline in African Countries and Nigeria in particular, as reported by the Federal Republic of Nigeria 2012. From the review, NACA (2012) and United Nations (2012) reported that HIV prevalence was common among women of child bearing age, adolescent girls, and pregnant women, rural and urban women.

With particular reference to this study, Akwa Ibom State has been identified as one of the states with high level of HIV prevalence. Markson (2013) reported on the fluctuating rate of HIV incidence in Akwa Ibom State with particular reference to Antenatal sentinel survey conducted for antenatal care attendees. This shows a positive correlation with the reduction in life expectancy rate of women. The review of literature in this area exposed the fact that the vulnerability of human to HIV and AIDS is higher in women than in men (CDC, 2010). This according to literature is due to the biological make up of women as well as cultural practices that affect women negatively, such as widow inheritance, as reported by Nyindo (2005) and Canadian AIDS Society (2012). Modo (2011), Tigawalana (2010) and Muulu (2008). The progression of HIV and AIDS infection have been known to be influenced by several factors, such as age, drugs, hereditary, environmental factors and psychological factors such as stress (Langford, 2007). Prevention strategies adopted in the combat of HIV and AIDS infection is not left out in this review.

In this review, Theory of Learned Helplessness (Seligman, 1967) and Health Belief Model (Rosenstock, 1966) have been used to guide the study. From the review, it is apparent that studies such as FMOH (2010), Markson and Umoh (2013), Akinjogunla and Adegoke (2009) and Abasiatai (2009), Udeminue and Adindu (2012) had been carried out on prevalence of HIV and AIDS and factors contributing to HIV prevalence as well as uptake of PMTCT. Much research had been carried out among pregnant women, such as study by Sagay, Kapiga and Kanki (2005), but none has been carried out among women of reproductive health in Akwa Ibom State.. Therefore, the study of prevalence and socio-demographic variables associated with HIV and AIDS among women in Akwa Ibom State is timely and would be used to bridge this gap.

CHAPTER THREE

METHOD

This chapter presents method that was used for the study. It is arranged under the following sub-headings: Research design, area of the study, population of the study, instrument for data collection, validity of the instrument, reliability of the instrument, method of data collection, method of data analysis.

Research Design

A descriptive, retrospective epidemiological survey design was adopted for the study. Falex (nd) defined epidemiological survey as a method of data collection from target population samples to establish factors causing or contributing to disease and to develop potential methods for prevention. In this study, clinical records of clients was studied retrospectively from 2010 to 2014 in order to determine the prevalence and socio-demographic variables associated with HIV and AIDS among women in Akwa Ibom State, Nigeria. The adoption of this design was based on the success of similar study using this design as used by Frank (2012) to determine the prevalence of tuberculosis and HIV and AIDS co - infection among patients attending directly observed treatment short course centres in Rivers State, between 2004 and 2008.

Area of the Study

The study area of this research is Akwa Ibom State, in the South-South geopolitical zone of Nigeria. Akwa Ibom State it is bordered on the east by Cross River State, on the west by Rivers and Abia State, and on the South by the Atlantic Ocean. The state is between latitudes 4°321 and 5°331 North, and longitudes 7°251 and 8°251 East (Government of Akwa Ibom State, 2013). It was created in 1987 from the old Cross River State. Distributed in the

31 local government Areas of Akwa Ibom State are major towns which include Uyo, Eket, Ikot Abasi, Oron Etinan, Abak and Ikot Ekpene. The state has a total of 411 public health facilities and 183 private facilities (Akwa Ibom State Government, 2013). The people are predominantly of the Christian faith and the main ethnic groups are Ibibio, Annang, Oron and Obolo. Eighty-five percent of the population of the state live in the rural areas with fishing, farming and petty trading as their major occupations. About 50 percent of the local government areas have riverine communities and many hard to reach areas are within these communities. Most of the people living in the riverine communities of Akwa Ibom State are Fishermen who spend most of their times at the fishing settlements. During this period they can be exposed to having sex with women from the neighbouring communities who trade on the shores of the border towns and villages. This again may contribute to the prevalence of HIV in the State. With the development of the Ibaka Sea Port, the state is a major international gateway to most parts of Nigeria. Dr Martins Akpan, former Chairman, of Akwa Ibom State Agency for the Control of HIV and AIDS, during an interview with news men in Uyo, gave a reason for the incidence of HIV and AIDS as, Akwa Ibom being a very compact state with a very mobile population, as well as unprotected shoreline (Agbarjor, 2014).It therefore becomes necessay to carry out this study in Akwa Ibom State to determine the prevalence of HIV and AIDS and the socio-demographic factors associated with it.

Population of the Study

Population of this study comprised of the case files or folders of 236,996 female patients aged 15 to 49 years who attended HIV counselling and testing centres in all the 335 health facilities conducting HIV counselling and testing in Akwa Ibom State between 2010 and 2014. Patients' case files represented the actual patients of the study since the study was mainly concerned about the patients' past records.

Sample and Sampling Technique

The sample comprising of 147,726 women of the reproductive age who tested positive to HIV in the selected health facilities. The entire sample comprising 147,726 was studied. Purposive sampling technique was used to select the seven hospitals/ health facilities that was used for the study. According to Crossman (2016) purposive sampling, is a non-probability sample that is selected based on characteristic of a population and the objective of the study. It is also known as judgmental, selective, or subjective sampling. The judgment in relation to what the researcher thinks constituted a representative sample with respect to the research purpose. This type of sampling is similar to quota sampling except that in judgment sampling, extra care is taken to select those elements that satisfy the requirements of the research purpose. This sampling method is not a random one. The choice of the above age group for the study was also based on the Population Reference Bureau (2015) and USAID (2008) definition of reproductive age of 15 -49 years, especially in the developing countries. It becomes imperative to study the entire sample population. From the case files of the patients, the various epidemiological variables of interest enlisted for the study was determined.

Instrument for Data Collection

The instrument for data collection for this study was the patient's folders (App C).Based on the content of folder a uniform data format was developed and adopted to help in data collection (App D). The format has columns for entering information like, the name of health facility and age, gender, marital status, occupation location under which the HIV and AIDS frequencies was entered. The format captured all the socio-demographic variables of interest to be used for study.

Validation of the Instrument

The patient folder (App C) is a standardized one that has been used for years. The data collection format (App D) designed for collection of data is based on the independent variables of the study. The face and content validity of the format, visa-vis- the issues raised in the research questions of the study were separately assessed and confirmed by three experts in the area of Public Health and Health Education at the University of Uyo. They were asked to look at the uniform data format (APP D) designed for collection of data in line with the independent variables of the study. The two other experts were the chief Medical Record Officers of two of the seven selected health facilities who confirmed that the format given out for validation was adequate for data collection of the required information on HIV and AIDS prevalence and its associated factors in the State. The experts were also asked to examine the uniform data form (App D) designed for collection of data in line with age, level of education, occupation, place of residence and marital status (independent variables of the study).

Reliability of the Instrument

The instrument (patient folder) (App C) is a known standardized tool. The Akwa Ibom State Coordinator for HIV and AIDS programme in the State Ministry of Health described the instrument as a standard tool for collecting HIV information, and accepted by WHO, UNICEF, NACA, SACA, PEPFAR and AKSMOH. The instrument has survived the passage of time as a data collection tool and has the ability to provide correct and consistent information at all times. The reliability of the instrument was not compromised with, because no modification was made on it.

Method of Data Collection

The data collection process was carried out through the following stages:

A. Visits to HIV counselling and testing centres.

      The HIV Counselling and Testing Centres were visited and Record Officers sensitized about the intended study, and the data collection process to be carried out. The Medical Officers in charge of health facilities were consulted, and they in turn directed the Record Officers to help in identifying the case files/folders. The collection of information in each facility took one week.

B. Training of research assistants.

      The researcher trained the record officers in each selected health facility in data collection. The training was on how to retrieve and fill the required information into the data format prepared by the researcher. The training was conducted in one of the HCT centres in Akwa Ibom State. This helped the record officers to get used to the instrument. The training incentives, included, breakfast, lunch and allowance of Four Thousand Naira (₦4,000) for the two days the training lasted.

C. Data collection proper.

      The data collection team comprised the researcher and the record officers. Each of the record officer collected data of the women for each particular year from 236,996 case files, while the researcher supervised the exercise.

Method of Data Analysis

      The data collected was analysed and presented using descriptive and inferential statistics. Percentages based on yearly prevalence were used to answer the research

questions, while Chi-square statistics was used to test the hypotheses at 0.05 level of significance. Tables, graphic illustrations and figures were constructed using the Microsoft Office excel Software Version 2007 to give more explanations of the results of the research questions.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

The findings of the study are presented in the tables that follow according to the research questions and hypotheses which guided the study.

Research Question 1: What is the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014?

Hypothesis 1: There is no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014

Data answering the above research question and hypothesis are presented in Table 1

Table 1: Prevalence of HIV and AIDS Among Women of Reproductive Age in Akwa Ibom State from 2010 to 2014. N = 147726

Year	Total Attendees	No. Infected
2010	46701	38217 (25.9%)
2011	46312	36719 (24.9%)
2012	50778	30789 (20.3%)
2013	48447	24076 (16.3%)
2014	44749	17925 (12.1%)
Total	236996	147726 (100%)

Note: $\chi2 = 9,922$ critical value $= 9.49$, df $= 4$, $p < 0.05$

Table 1 shows that the highest prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State was 25.9 percent in 2010;24.9 percent in 2011 then reduced in 2012 to 20.8 percent, 16.3percent in 2013, and lowest in 2014 with 12.1 percent.
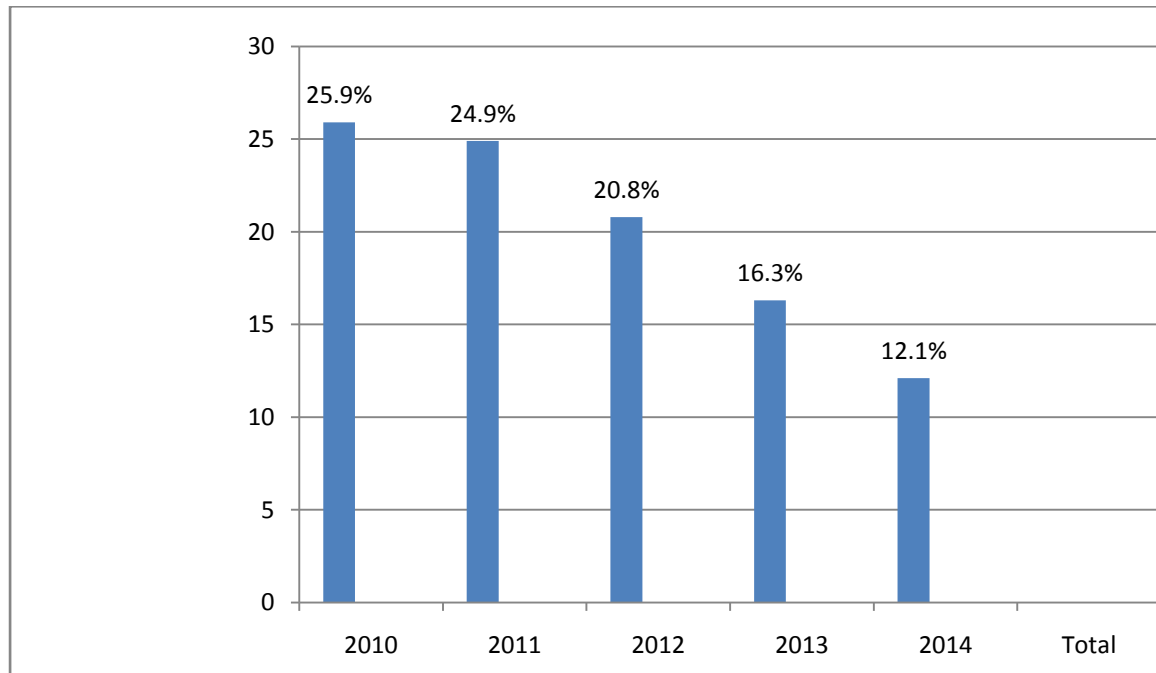

Fig. 1: A graph showing percentage of women of reproductive age in Akwa Ibom State that tested positive to HIV and AIDS in 2010 to 2014. N =147726

Fig 1 shows prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in percentages. Chi- square statistics was used to test the null hypothesis that there was no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010- 2014. The test revealed a significant difference in the prevalence of HIV and AIDS among women of reproductive age with calculated value of 9,922 critical value of 9.49 at df 4, and the null hypothesis was rejected at 0.05 level of significance.
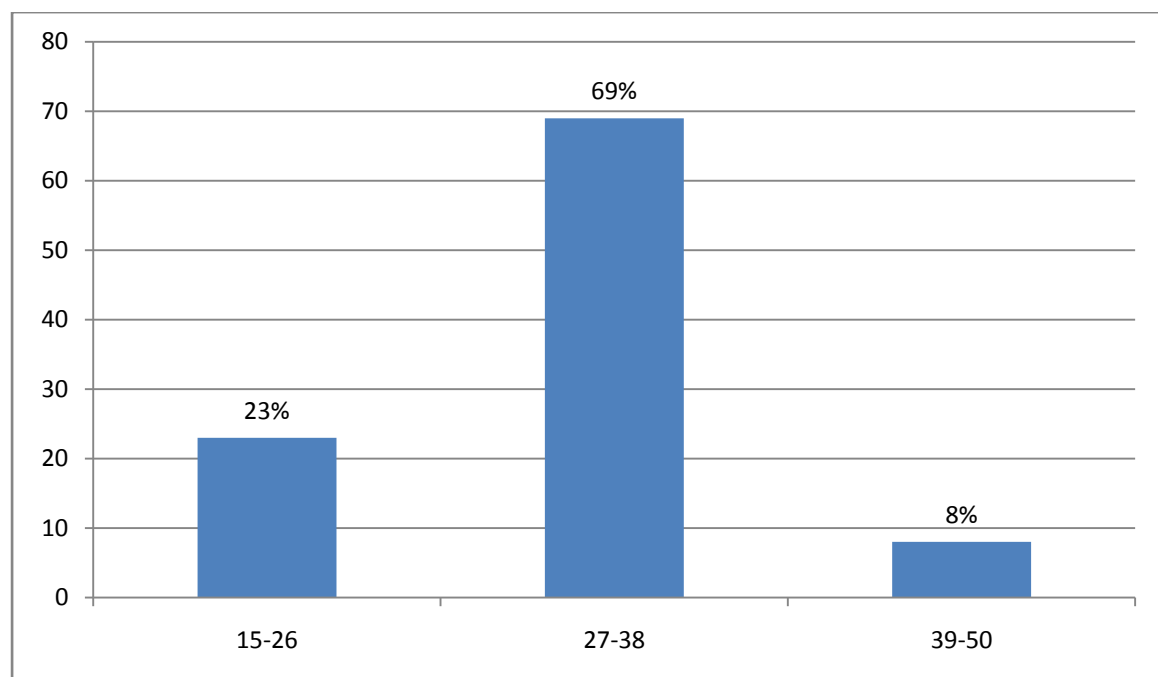
Research Question 2: What is the influence of age the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State?

Hypothesis 2: There is no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their ages.

Data answering question two and hypothesis two are presented in Table 2.

Table 2: Influence of Age on the Prevalence of HIV and AIDS Among Women of Reproductive Age in Akwa Ibom State. N = 30056

		Age		
Year	15-26	27-38	39-50	Total
	f	f	f	
2010	1736 (5.8%)	4225 (14.1%)	1438 (4.8%)	7399(24.6%)
2011	2102 (6.9%)	4714 (15.7%)	268 (0.9%)	7084(23.6%
2012	1390 (4.6%)	4791 (15.9%)	229 (0.1%)	6410 (21.3%)
2013	988 (3.3%)	3596 (11.9%)	276 (0.9%)	4860 (16.2%)
2014	575 (1.91%)	3415 (11.4%)	313 (1.04%)	4303(14.3%)
Total	6791 (23%)	20741 (69%)	2524(8%)	30056 (100%)

Note: $X2 =5831.3$, critical value $=15.51$, df $=8$, $p<0.05$

 Table 2 shows that highest number of HIV and AIDS cases (20741;69%) occurred among women of reproductive age 27-38 years. This was followed by women of age group 15-26 years (23%) and 39-50 years (8%).

During the years there was HIV and AIDS prevalence of 24.6 percent in 2010, 23.6% in 2011, 21.3 percent in 2012, 16.2 percent in 2013 and 14.3 percent in 2014 in their

descending order of magnitude. Chi-square statistics was used to test the null hypothesis that there was no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their ages from 2010 -2014. The test revealed a significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their ages with, a calculated value of 5831.3, critical value of 15.51 at df 8, and the null hypothesis was rejected at 0.05 level of significance.

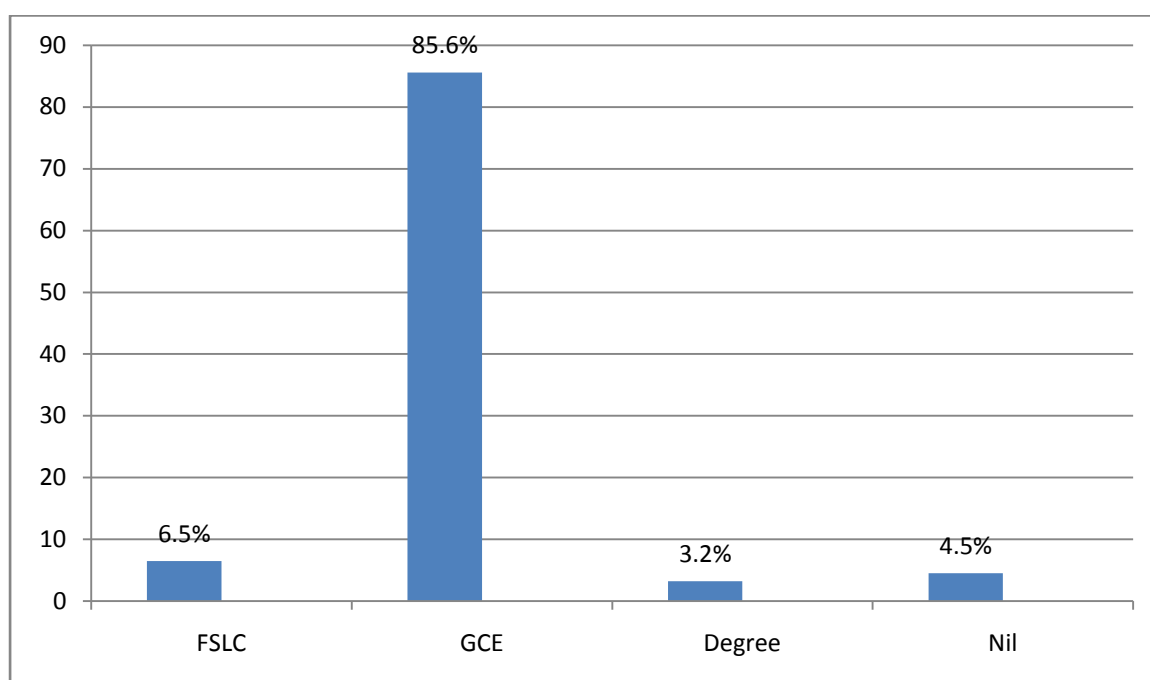**Fig. 2 : A bar chart showing percentage of women infected with HIV and AID in Akwa Ibom State in 2010 to 2014 based on age N =30056**

Fig 2 shows the highest number of HIV and AIDS cases among women of reproductive age based on age in percentages. Women age 27 to 38 years had the highest percentage of (69%), women age15-26 years had (23%) and women age 39 -50 years had (8%).

Research Question 3: What is the influence of educational status on prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014?

Hypothesis 3: There is no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014 in relation to their levels of education.

Data in table 3 were used to answer research question 3 and hypothesis 3.

Table 3: Influence of Level of Education on Prevalence of HIV and AIDS Among Women of Reproductive Age in Akwa Ibom State. N = 28148

Level of Education

Year	FSLC	GCE	Degree	Nil	Total
	f	f	f	f	
2010	756 (2.7%)	6336 (22.5%)	431 (1.5%)	234 (0.8%)	7757 (27.6%)
2011	413 (1.5%)	7025 (24.9%)	154 (0.53%)	447 (1.6%)	8039 (28.6%)
2012	485 (1.7%)	4117 (14.6%)	204 (0.7%)	183 (0.4%)	4989 (17.7%)
2013	104 (0.4%)	4338 (15.4%)	108 (0.4%)	310 (14.4%)	4460 (15.8%)
2014	82 (0.3%)	2282 (8.1%)	40 (0.1%)	99 (0.4%)	2503 (8.9%)
Total	1840(6.5%)	24098 (85.6%)	937(3.2%)	1273 (4.5%)	28148(100%)

Note: $\chi 2$ =771.86, critical value =21.03, df =12, $p<0.05$

Table 3 shows a highest number of HIV and AIDS cases (24098; 85%) occurred among women of reproductive age with GCE. This was followed by women with FSLC (6.5%), women with no education (4.5%) and women with degree (3.2%). During the years the HIV and AIDS prevalence was 28.6 percent in 2011, 27.6 percent in 2010, 17.7 percent in

2012, 15.8 percent in 2013 and 8.9 percent in 2014. Chi –square statistics was used to test the null hypothesis that there was no significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their levels of education. The test revealed a significant difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their level of education with, calculated value of 771.9, critical value of 21.03 at df 12, and the null hypothesis was rejected at 0.05 level of significance.

Fig.3 : A bar chart showing percentage of women of reproductive age infected with HIV and AID in Akwa Ibom State in 2010 to 2014 based on level of education N =28148

 Fig 3 showed percentage of prevalence based on level of education. Women with GCE had the highest percentage of (85.6%), FSLC (6.5%), Nil (4.5%), and degree (3.2%).

Research Question 4: What is the influence of residence on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State?

Hypothesis 4: There is no significant difference in prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their place of residence.

Data in table 4 was used to answer research question 4 and hypothesis 4.

Table 4: Influence of Place of Residence on Prevalence of HIV and AIDS Among Women of Reproductive Age in Akwa Ibom State.

	Location		
Year	Urban	Rural	Total
	f	f	f
2010	2418 (8.1%)	5261 (17.7%)	7679 (25.9%)
2011	3174 (10.7%)	4791 (16.1%)	7965 (26.8%)
2012	1014(3.4%)	5776 (19.4%)	6790 (22.8%)
2013	1352 (4.5%)	3418 (11.5%)	4770 (16.1%)
2014	893 (3.1%)	1620 (5.5%)	2513 (8.5%)
Total	8851 (29.8%)	20866 (70.2%)	29717 (100%)

Note: $\chi^2 = 3118$, critical value = 9.49, df = 4, p<0.0

Table 4 shows that a higher number of HIV and AIDS cases (20866; 70.2%) occured among women of reproductive health living in the rural areas and a lower number of 8851 (29.8%) of women living in the urban area were infected. During the years, there was HIV and AIDS prevalence in 2010 of 8.1percent in the urban; 17.7percent in the rural, 2011 of 10.7%

percent in the urban;16.1% percent in the rural, 2012 had 3.4 percent in the urban; 19.4 percent in the rural, 2013 had 4.5 percent urban;11.5% percent in the rural, 2014 had 3.1percent rural; 5.5 percent in the rural. Chi-Square statistics was used to test the hypothesis that there was no significant difference in prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to their place of residence. The test revealed a significant difference in the prevalence of HIV and AIDS among women of reproductive age in AKwa Ibom State in relation to place of residence, with calculated value of 3118 and critical value of 9.49 at df 4. The null hypothesis rejected at 0.05 level of significance.
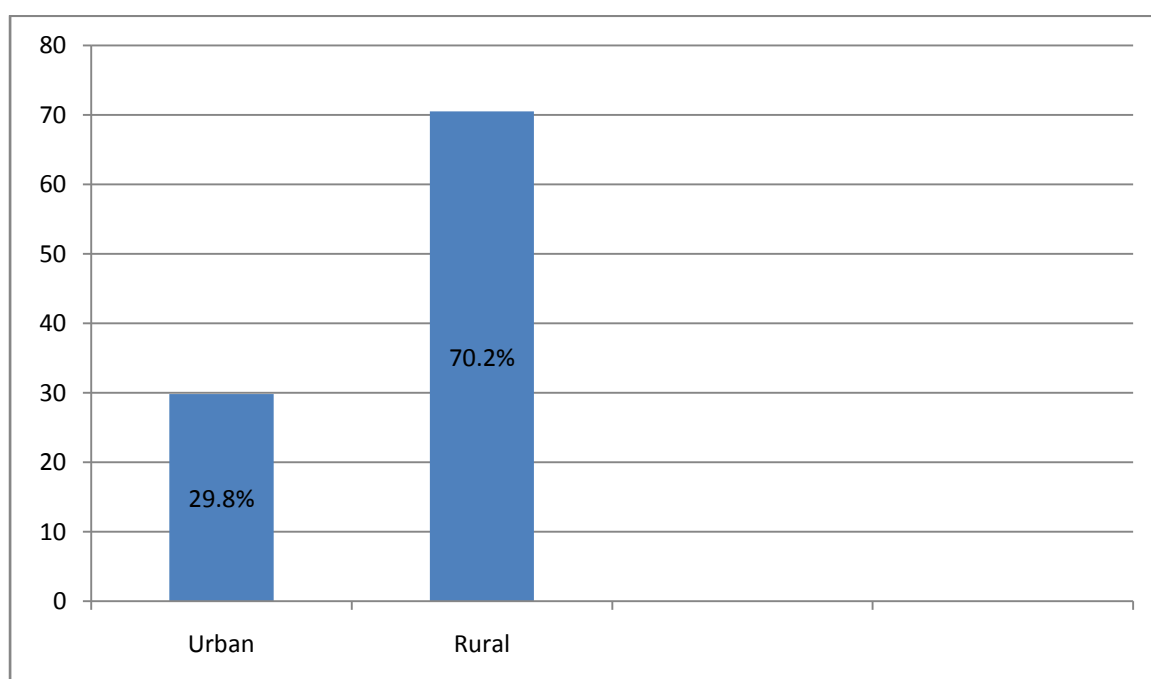

Fig. 4: A bar chart showing percentage of women of reproductive age infected with HIV and AID in Akwa Ibom State in 2010 to 2014 based on place of residence N =22805

Fig 4 shows prevalence based on location in percentage. Urban (29.8%) and rural (70.2%). During the period the HIV prevalence was high among the rural women and less among urban women.

Question 5: What is the influence of occupation on the prevalence of HIV and AIDS

among women of reproductive age in Akwa Ibom State from 2010 to 2014?

Hypothesis 5:   There is no significant difference in the prevalence of HIV and AIDS

among women of reproductive age in Akwa Ibom State in relation to their occupation.

Data in table 5 answer research question 5 and hypothesis 5.

Table 5: Influence of Occupation on Prevalence of HIV and AIDS Among Women of Reproductive Health in Akwa Ibom State.

Occupation

Year	P/S	BIS	H/w	Pol	Total
	f	f	f	f	
2010	3808 (13.1%)	1252 (4.3%)	2121(0.7%)	498 (1.7%)	7679 (26.4%)
2011	1902 (6.5%)	635 (2.2%)	3389 (11.7%)	628 (2.2%)	6554 (22.6%)
2012	2931 (10.1%)	991 (3.4%)	1662 (5.7%)	206 (0.7%)	5790 (19.9%)
2013	2890 (9.9%)	1207 (4.2%)	510 (1.76%)	126 (0.43%)	4733 (16.3%)
2014	2695 (9.3%)	590 (2.0%)	663 (2.3%)	355 (1.2%)	4303 (14.8%)
Total	14226 (49.0%)	4675 (16.0%)	8345 (28.7%)	1813 (6.2%)	29059 (100%)

Note: $\chi^2 = 4634.09$, critical value = 21.03, df = 12, p<0.0

Table 5 shows that the number of Public servants tested HIV positive were (49%), followed

by House Wives (28.7%), then business women (16. 0%) and the lowest was among

politicians with (6%). Chi-square statistics was used to test the null hypothesis that there was

no significant difference in the prevalence of HIV and AIDS among women of reproductive

age in Akwa Ibom State in relation to their occupation. The test revealed a significant

difference in the prevalence of HIV and AIDS among women of reproductive age in relation to occupation with calculated value of 4634.1and a critical value of 21.03 at df 12.The null hypothesis was rejected at 0.05 level of significance. During the years there was HIV and AIDS prevalence of 26.4 percent in 2010; 22.6percent in2011; 19.9percent in 2012; 16.3percent in 2013 and 14.8 percent in 2014 in this descending order of magnitude
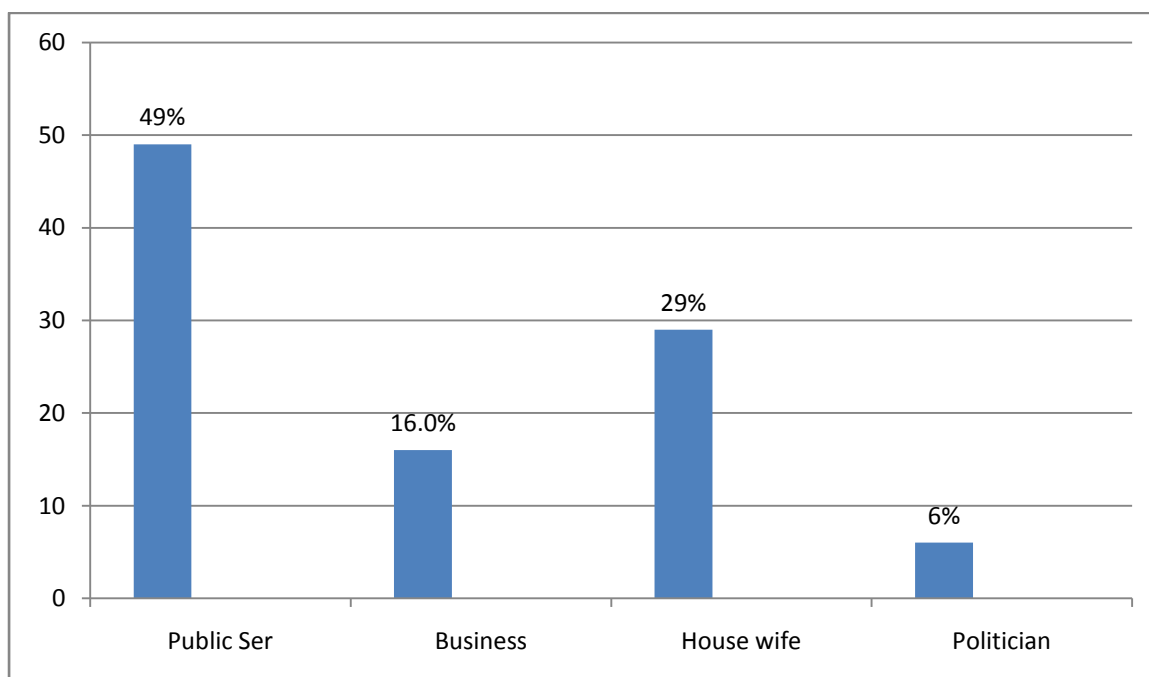

Fig. 5: A bar chart showing percentage of women of reproductive age infected with HIV and AID in Akwa Ibom State in 2010 to 2014 based on place of occupation N =29059

Fig 5 shows percentage of prevalence of HIV and AIDs among women of reproductive age based on occupation and Public servant had the highest of (49%), House Wife (28.7 %), Business (16.0 %), and Politicians (6 %).

Research Question 6: What is the influence of marital status on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014?

Hypothesis 6: There is no significant difference in the prevalence of HIV and AIDS among women of reproductive health in Akwa Ibom State in relation to their relation to marital status.

Data on table 6 answer research question 6 and hypothesis 6.

Table 6: Influence of Marital Status on Prevalence of HIV and AIDS Among Women of Reproductive Health in Akwa Ibom State.

Marital Status

Year	Single	Married	Widow	Total
	f	f	f	
2010	650(2.1%)	6943 (22.6%)	110 (0.4%)	7703 (25.1%)
2011	2275(7.4%)	4622 (15.0%)	180 (0.6%)	7077 (23.0%)
2012	2093 (6.8%)	4472 (14.5%)	245 (0.8)	6810 (22.1%)
2013	603 (1.9%)	3997 (13.0%)	253 (0.8%)	4853 (15.8%)
2014	317 (1.0%)	3762 (12.2%)	224 (0.7%)	4303 (13.9%)
Total	5938 (19.3%)	2379 (77.4%)	1012 (3.3%)	30746 (100%)

Note: χ^2 = 6700.92, critical value = 15.51, df = 8, p<0.0

As shown in Table 6, married women had the highest cases(2379 ,77.4%) of HIV and AIDS among women of reproductive age in Akwa Ibom State in relation to marital status, this was followed by singles 5938 (19.3%), while widows had the lowest 1012 (3.3%). The total number of HIV positive cases under marital status was 30746. During the years there was HIV and AIDS prevalence of 25.1 percent in 2010; 23.0 percent in 2011; 22.1 percent in 2012; 15.8 percent in 2013 and 13.9 percent in2014 in their descending order of magnitude. Chi-Square statistics was used to test the null hypothesis that there was no significant difference in the prevalence of HIV and AIDS among women of reproductive health in Akwa Ibom State in relation to their relation to marital status. This was rejected at 0.05 level of significance with calculated chi of 6700.92 and critical value of 15.51 at df 8.
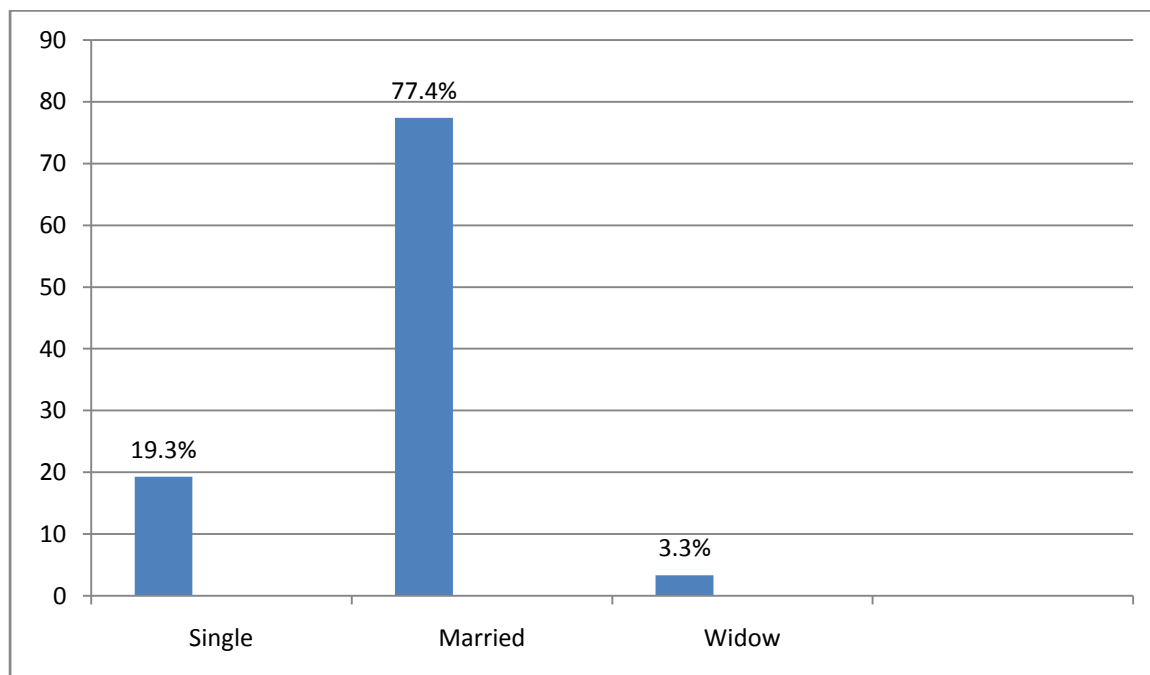
Fig. 6: A bar chart showing percentage of women of reproductive age infected with HIV and AID in Akwa Ibom State in 2010 to 2014 based on marital status N =30746

Fig 6 shows percentages based on marital status. Married (77.4%), Single (19.3%), Widow (3.3%).

Summary of Result

1. A total of 147726 women of reproductive age were infected with HIV and AIDS in 2010 to 2014, with the highest percentage of (25.9%) in 2010 and the lowest in 2014 with (12.1%) (Table 1).

2. Women of reproductive age within the age group of 15 to 26 years had the highest percentage of (22.6 %) and lowest percentage (6.9%) was among age group 27 to 38 (Table 2).

3. Women of reproductive age with GCE had the highest prevalence (85.6%) and lowest prevalence was among degree holders with 3.2 percent (Table 3).

4. A higher prevalence of HIV and AIDS (70.2%) was observed among women of reproductive age residing in the rural communities of Akwa Ibom State, while among the urban dwellers it was (29.8%) (Table 4).

5. The highest prevalence (38.6%) of HIV and AIDS was among women of reproductive age who were public servants and lowest among Politicians with 6.2 percent. The next group with a high prevalence of 28. 7 percent were Housewives.

6. The highest prevalence (57.0%) of HIV and AIDS was among married women, and lowest of 3.3 percent was among widows (Table 6).

7. There was a significance difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014 (Table 1).

8. There was a significance difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014 based on ages from 2010 to 2014 (Table2).

9. There was a significance difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014 based on level of education (Table 3).

10. There was a significance difference on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014 based on their place of residence (Table 4).

11. There was a significance difference on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014 based on their occupation (Table5).

12. There was a significance difference on the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014 based on marital status (Table 6).

CHAPTER FIVE

DISCUSSION OF RESUITS, CONCLUSION AND RECOMMENDATIONS

This chapter presents the discussion of results, conclusions, implications of the study, and recommendations for further research.

The main purpose of this study was to determine the prevalence of HIV and AIDS, and socio-demographic variables associated with women of reproductive age attending health facilities in Akwa Ibom State, from 2010 to 2014. Research questions and hypotheses were formulated based on the specific objectives of the study, which served as direction to the study. The findings from the study have provided facts which are discussed below:

(i)   Prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014.

(ii)   Age and prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State.

(iii)   Level of education and prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State.

(iv)   Place of residence and prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State

(v)   Occupation, marital status and prevalence of HIV and AIDS among women of reproductive health in Akwa Ibom.

Prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014.

The result showed that 147,726 women of reproductive age suffered from HIV and AIDS from year 2010 to 2014 with the highest prevalence of 25.9 percent in 2010 and the

lowest of 12.1 percent in 2014. The sentinel survey of 2010 in Akwa Ibom State among pregnant women revealed a prevalence of 10.9 percent prevalence; the present finding has shown that women of reproductive age including the non pregnant ones contributed to the 25.9 percent prevalence in 2010. This showed that the sentinel survey only captured the pregnant women, while the remaining 15 percent were non pregnant women of this age group. The study revealed a high prevalence among women of reproductive age, which is contrary to the report of the study by Akinjogunla and Adegoke (2009) conducted in Uyo metropolis that showed a higher prevalence in males, though the study was conducted among general population and not specific to reproductive age group. The reduction in the prevalence in 2014 could be attributed to the following reasons; implementation of the recommendation made by Abasiatai (2009) to intensify strategies aimed at primary prevention of HIV infection in the community, encouraging all pregnant women to avail themselves of orthodox antenatal care, and emphasizing the advantages of self disclosure of serostatus to partners during counselling. The effort of Implementing Partners in HIV and AIDS prevention and control programmes in collaboration with Akwa Ibom State government, through supply of antiretroviral drugs, condom and sensitization of community members on HIV prevention messages might also have contributed to the reduction. Some practices such as male circumcision, use of condom, microbicides, antiretroviral drugs, post exposure prophylaxis, could have helped in the reduction in HIV and AIDS prevalence in the population (CDC,2011).

Age and Prevalence of HIV and AIDS Among Women of Reproductive Age in Akwa Ibom State.

The highest number of HIV and AIDS cases among Women of reproductive age based on age was among age 27 to 38 years, followed by age 15 to 26 years while age 39 to 50 years had the lowest number (Table 2). The highest prevalence among age group 27 -38

years was at the same range in the year 2011 and 2012 and also similar range in 2013 and 2014, unlike the prevalence in 2010 that was different. This might be caused by the reason that adolescence which has psychological influences that drive sexual behaviour belong to this age group. The implication is that, a girl child in adolescent age might imbibe dressing code of her peers thereby exposing herself to sexual assault. More over people of this age group are in schools and they are living independently of parental control, and as such indulge in negative sexual behaviour, thereby exposing themselves to HIV and AIDS infection. Whereas, age group 39 to 50 years were in adult stage and had grown to overcome and control sexual influences, and take precaution to prevent HIV and AIDS infection, this could be the reason for the lowest prevalence amongst this age group. They could as well lack knowledge of condom use. Chi-square statistics revealed a significant difference on the prevalence based on age. The higher prevalence in age group 15 to 26 might be due to injury sustained during sexual intercourse as shown in the literature review that girls married at younger age to older men, sustain injuries during sexual intercourse and are exposed to HIV infection ((United Nations Development Fund for Women, UNAIDS, UNFPA, 2004). CDC (2010) showed age as a significant factor in HIV infection. Previous study in Akwa Ibom State by Abasiatai (2009) on antenatal women which showed a higher prevalence among antenatal women aged 21 to 30 years, supports the result of this study. The report of Osmond (2014) of slow degree progression within age group 15 to 26 and rapid progression among the older age group does relate to the finding of this present study. This shows the lowest prevalence among the older age group while women aged 27 to 38 years had the highest percentage of HIV infection. Other reports that supported the significance of age in HIV prevalence among women were: Sagay, et al. (2005) reported that women aged 20 to 29 years had higher prevalence; Tolan (2005) result of a study on women of reproductive age, revealed that 2.7 million women aged 15 to 24 years lived with HIV in Eastern and Southern

Africa. In consistent with the present study, studies by Okonko, et al. (2012); Adair (2007; Wand and Ramjee (2011); Ibrahim, et al. (2013); Mascolini (2006); Schmid, et al. (2009) and UNFPA, et al. (2004) reported significant association between age and HIV prevalence due to early marriage, having sexual relationship in younger age, increase and faster progression of HIV infection, and slow rate of production of white blood cells in older women.

Level of Education and Prevalence of HIV and AIDS Among Women of Reproductive Age in Akwa Ibom State.

Women of reproductive age with GCE certificate had the highest cases of HIV and AIDS and there was a significance difference on HIV prevalence among the women of this present study based on level of education. Report by Steenkamp, Venter, Walsh and Dana (2014) in support to the present study revealed a significant influence of education on the prevalence of HIV and AIDS among women in Cape Town. The highest prevalence among women with GCE certificate, most especially in the year 2010 and 2011 could be related to the inadequate sensitization and peer education among in school youth in those years. Other previous study supporting the result of the present study included; study conducted by Steenkamp, et al.(2014); Ibrahim et al (2013) in Niger delta University, Bayelsa, also revealed educational status as a significant factor in the prevalence of HIV and AIDS among pregnant women. Contrary to the present study, Oladeinde, et al. (2013) reported in Edo state that HIV prevalence was significantly higher among pregnant women with no formal education. Study by Adebayo et al. (2013) also gave a contrary result of increase HIV prevalence among people with higher educational attainment. This could be as a result of the fact that most University students in Nigeria live off campus because of lack of accommodation and are exposed to negative influences in the environment where they live. In addition to this, increase rate of cultism in tertiary institutions influence students sexual behaviour. The lowest prevalence among women that are highly educated revealed in this

study might be as a result of high knowledge of HIV and AIDS prevention strategies. With their level of education, they have a better understanding of basic facts of HIV and AIDS, and they also have ability to overcome myths surrounding HIV and AIDS infection.

Place of Residence and Prevalence of HIV and AIDS Among Women of Reproductive Age in Akwa Ibom State.

The result of the study showed a higher prevalence of HIV and AIDS among women of reproductive age living in the rural areas and lower in those living in urban areas (Table 4). This might be caused by cultural beliefs and myths surrounding HIV and AIDS in the rural communities, home deliveries by traditional birth attendants, non-utilization of health care services and poverty. Moreover, most rural communities in Akwa Ibom are sharing boundaries with other states with high prevalence of HIV and AIDS, There could be infiltration of infected persons from the border states. Within the years the highest prevalence was in 2011, higher in 2010 and began to drop in 2013, the dropped in 2013 among rural dwellers. This could have been influenced by intensive communality sensitization on HIV prevention among rural dwellers as well as activation of HIV and AIDS units in Primary Health Care facilities in Akwa Ibom State. Udemininue and Adindu (2012); National antenatal survey (2010); Collins and Rau (2010) reported a higher prevalence of HIV and AIDS among rural dwellers. In the contrary, a study by Hajizadeh, et al. (2014) revealed that HIV prevalence was higher in urban areas in South Africa, and the urban dwellers that had high prevalence were from the poor group, while the high incidence in the rural area was among the wealthier population. The Urban dwellers who were poor that had higher prevalence of HIV and AIDS might have migrated from the rural area to the urban city in search of labour to improve their economic status and they might as well got involved in negative sexual behaviour. The wealthier population in the rural community who were infected could be migrant investors, who leave their families for investment in the rural

communities. The present study did not consider socio economic influence on the prevalence, so as to know whether the rural women who were infected were of poor or wealthier group. Adeokun (2006) observed that oil wealth in the Niger Delta attracts foreigners, causing vulnerability of the rural dwellers in the region to HIV and AIDS infection, and this was followed by Udoh, et al. (2009) which suggested a close correlation between labour and HIV and AIDS spread in Sub-Saharan Africa. The infiltration of foreigners into rural communities in Akwa Ibom State for oil exploration might be a contributory factor to the high prevalence of HIV and AIDS among rural dwellers in Awa Ibom State.

Occupation, Marital Status and Prevalence of HIV and AIDS Among Women of Reproductive Age in Akwa Ibom State.

There was a significance difference on HIV prevalence among women of reproductive age of this study based on occupation, and the prevalence was highest among female public servants. The prevalence was highest in 2010, but reduced gradually to the lowest in 2014. The reduction can be attributed to Government effort on prevention strategies and introduction of post exposure prophylaxis. The highest prevalence among public servants can also be caused by the nature of work of the public servant, being transferred from one place to the other, thereby separating married couples for a long while. This most often happens to persons serving in the police force. Report from National Reproductive Health Survey (2012) showed a higher prevalence among female police and female drug users. Medical and paramedical personnel in public service are exposed to infectious fluid such as blood in the absence of universal safety precaution during procedures. WHO (2011) stated that women who indulge in prostitution as a career are exposed to HIV and AIDS.

The prevalence of HIV and AIDS was highest (77.4%) among married women of this study, followed by single women (19.3%) and lowest (0.7%) among widows (Table 6). This

is supported by previous study by Kposowa (2013) which shows that marital status, such as divorced, separated, single and never married subjects were associated with mortality due to HIV and AIDS, while widowhood was not significantly associated with HIV and AIDS. The lowest prevalence among the widows in this study could be attributed to empowerment programme initiated to alleviate the suffering of the widows in Akwa Ibom State by the Wife of the Governor of Akwa Ibom State from the year 2007 till date. Clark (2004) also reported that being married had association with increase rate of HIV and AIDS, especially among younger girls aged 15 to 24 years. In contrast to the result of the present study, Shisana, et al. (2004); Kimani, et al. (2013); Adebayo, et al. (2013); Durban (2012) reported a higher prevalence among the unmarried, divorced and widows due to their sexual behaviour. The higher prevalence observed in the previous study among widows and divorced women might be caused by some traditional practices such as wife inheritance practised in some part of Africa and in some Nigerian communities in particular. The high prevalence among married women in the study might be due to the inability of married women making choice during sexual intercourse or negotiating safer sex, because of cultural influences, as supported by theory of Self helplessness. Also a report by American Foundation For Research (2008) state that tradition forbids the use of condom by married women. This is also supported by the theory of self helplessness. The prevalence reduced gradually through the years from 25.1 percent in 2010 to 13.9 percent in 2014. The reduction could be attributed to HIV and AIDS prevention education and couple counselling in public health facilities in Akwa Ibom state.

Conclusion

HIV and AIDS is a pandemic disease that affects millions of people worldwide every year. Due to the alarming prevalence of HIV and AIDS particularly in developing countries, the infection is higher among women, causing high maternal mortality. Government and health partners have put in place strategies for prevention and treatment of this disease. In

developing countries such as Nigeria, the rate of HIV and AIDS infection is alarming, mostly among women. Demographic factors such as age, level of education, place of residence, occupation and marital status have been found to significantly contribute to the high prevalence of this disease. International organisation such as WHO and USAID are assisting in funding and provision of HIV and AIDS counselling and testing centres in Nigeria. Despite the effort of Government and health partners to contain this disease, the prevalence is still high in most States of the Federation and Akwa Ibom State in particular.

The result of the study showed a significance difference in the prevalence of HIV and AIDS among women of reproductive age in Akwa Ibom State from 2010 to 2014 with the highest prevalence in 2010 and the lowest in 2014. All the demographic variables studied (age, level of education, location, occupation and marital status) had significance influence on the prevalence of HIV and AIDS among women of reproductive age of this study. Though the Government of Akwa Ibom State and other health partners have initiated preventive strategies and treatment, more effort and funding is still required from the policy makers, to address influence of demographic factor and other variables on the high prevalence in the State.

Educational Implications:

Based on the findings of the, the following educational implications could be drawn from the study: Since this study revealed highest prevalence of HIV and AIDS among women who had GCE, secondary school syllabus in health education will be expanded to include key messages on HIV and AIDS transmission, prevention and treatment. This will help young school levers, especially girls to understand their vulnerability to HIV infection and the need to abstain from sex before marriage use condom and know her status as well as the status of their prospective partners.

The findings of this study will promote more collaboration between the Ministry of Health and Education to supporting HIV prevention programmes, through organising regular workshops and seminars for teachers and school youths and train School counsellors on HIV counselling and testing.

Departments of Health education in universities and colleges will use the report of this study as a guide to carry out community sensitization programs on stigmatization, create awareness on prevalence of HIV and AIDS, prevention strategies and available treatment services.

Recommendations4

The following recommendations are made based on the findings of this study:

1. Government and Health partners should Plan, implement and intensify HIV and AIDS prevention programmes in the rural area of Akwa Ibom State. This will be achieved if there is prompt, timely and accurate data submission to stake holders to communicate the effect of the high prevalence.

2. Health workers should carry out intensive clients counselling on disclosure of status to partners and routine medical check up.

3. Government should conduct sensitization seminars on HIV and AIDS for public servants, and fund media messages on prevention strategies, and ensure HIV and AIDS prevention messages are given in secondary schools and more peer educators trained.

4. Policymakers should increase funding to health departments and community based organizations, to be used in training of community members, carry out research, and better surveillance on prevention of mother to child transmission of HIV and AIDS.

5. Government should establish informative AIDS control units to protect staff from exposure to HIV risks.

6. Government should organize periodic medical check up for public servants.

7. Sensitization seminars should be conducted for couples.

Suggestion for Further Studies

1. The present study should be expanded to cover all the states in the South- South zone of Nigeria.

2. A study should be conducted to find out the prevalence of HIV and AIDS among assaulted women.

3. Further study should be conducted to determine the influence of sexual behaviour on HIV and AIDS prevalence.

4. Further study should be conducted to determine the influence of socio-economic status on HIV and AIDS prevalence among a particular group of people in a named area.

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