

*Full Length Research*

# The Pandemic Nature of HIV and AIDS: The Nigeria's Perspective in the 21<sup>st</sup> Century

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This paper examines what HIV/AIDS is all about, the origin, history of HIV/AIDS in Africa and Nigeria. The cause of AIDS, the pathogenesis of the infection, the role of cultural practices that may increase the risk of HIV infection, how it is being transmitted were discussed. The difference between HIV infection and AIDS, stages of the infection, sign and symptoms of AIDS and the common diseases associated with AIDS( opportunistic infections), the prevalence and burden of HIV/AIDS, including the factors contributing to high prevalence of the infection, the treatment for AIDS and the problems of Anti Retro Viral therapy were also discussed. It was concluded with few recommendations made as follows: The ABC of AIDS should be stress through public campaign where, "A" is for Abstinence, "B" is for being faithful and "C" for using condom so as to kick out the virus from the continent. Voluntary counseling and testing should be encouraged to make people know their HIV status. Government should layout a strategy that can make the people with the virus not to spread it and those without the virus protected and ensure anti retro viral drugs are made available to the people for free, so that they are able to live a longer life. Youths should be taught on how to stay safe and from indiscriminate sexual habits to protect themselves.

**Key Words:** HIV, AIDS, PADEMIC, NIGERIA'S PERSPECTIVE.

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## INTRODUCTION

HIV/AIDS disease is the most devastating personal and public health problem we have faced this century, and AIDS had secured its place as one of the significant and semester medical puzzles of this or many other generations. It could be termed "a global crisis" with victims all around the entire globe. It has also achieved prominence as providing some of the most compelling examples of interaction between biomedical and psychological variables (Cawley, 1998). At present, there is no cure for AIDS nor a vaccine to prevent it. In the

absence of a cure, the only option is to prevent it. HIV stands for 'Human Immune Deficiency Virus'. Viruses are the smallest of all the ineffective organisms. A quarter of a million of them can be picked up on pinhead. They can not be seen with ordinary eyes, and thus are not very easy to study or identify, (Gerd,& Stephen, 2011).

It is estimated that the people infected with HIV but unaware of their status are contributing to more than 50% of new infections. (Oramasionwu, Brown, & Ryan, 2009). This implies that people infected, but unaware, are

unknowingly passing on HIV to others. We know that when they find out they are infected with HIV, many people will change their behaviour to protect their partners from being infected. Additionally, awareness of HIV status affords the opportunity to begin HIV/AIDS treatment to lower viral load, the main biologic predictor of HIV transmission. At present, there is no cure for AIDS nor a vaccine to prevent it. In the absence of a cure, the only option is to be aware of the preventive measures to curb the infection.

### Concept of HIV/AIDS

AIDS stands for 'Acquired Immune Deficiency Syndrome', also called the 'Slim Disease' in some countries is a medical diagnosis for a combination of illness which results from a specific weakness or destruction of the body's immune system by strange viruses known as the HIV. HIV is a family of many similar viruses. HIV type 1 is found in most countries of the world and HIV type 2, is found mainly in West Africa. According to Robert (2001), AIDS was recognized in the early 1980s in the group of homosexual men in Los Angeles and New York. It was however at that time, present in at least four other continents. Since then, AIDS has proven to be the major pandemic of the 20<sup>th</sup> and 21<sup>st</sup> centuries having been contacted by 880,000 in the Caribbean, 1.5million in Latin America etc. Recently, the Federal Government disclosed that 86 per cent of Nigerians are ignorant of their HIV status. This was disclosed at an international symposium to brainstorm on new strategies to combat the scourge. According to the participants, this could spell doom for the country if the practice of ignorance on HIV testing and counseling continues. (Christy, 2010 December 22<sup>nd</sup>).

There has never been a medical cure for any viral infection. However the body's defense system usually deals with them, but in recent years there has been remarkable advances in anti-HIV treatment, the most important development being the use of combination of drugs that attack the virus in different ways. Anti-HIV drugs act by blocking the enzymes the virus needs for its replication. This has become much more successful since 1996 when a new class of drugs – the protease inhibitors, was introduced (Briggs 1999). He further states that, in spite of all the advances in treatment, AIDS is still a terrible disease and the consequences of acquiring HIV infection are devastating. This is one situation in which a cure really applies. Sexual promiscuity appears to be here to stay but people who know the facts about AIDS and who continue to behave in this way are taking chances with their lives, that many of them will regret, particularly the youths who are of high risk, and anti-natal mothers that are rendering themselves and that of the unborn baby at risk.

According to Harley, (2007); giving people information about HIV and the risk involved in unsafe sexual intercourse is important. According to him, even when people know the risk of unsafe sexual intercourse and want to practice safe sex, it is often very difficult. He therefore looked at some approaches and activities that can help people prevent HIV/AIDS. One of his approaches was building people's knowledge or awareness and skills, so that they feel more confident to discuss safer sexual intercourse, as one of the major routes of non transmission of HIV.

United Nation Agency for International Development (UNAID, 2006) reported that 7,000 young people worldwide contract HIV everyday (i.e. 5 infections per minute) among people aged between 18 – 29 years of the 30million HIV infected individuals in the world. According to them, at least one third ( $\frac{1}{3}$ ) are of child bearing age.

Sonny, (2000) noted that the first cases of AIDS were known in USA in 1981.

The virus was identified in 1983 at Institute Pasteur in Paris, initially named Lymphadenopathy Associated Virus (LAV), T-Lymphotropic virus type 3 (HTLV – III) and in 1986 named HIV.

### Historical Perspective of HIV/AIDS

Human beings have the tendency to blame people when a misfortune occurs which cannot be explained and this is especially true of HIV. HIV stands for Human Immune Deficiency Virus. It is a retrovirus originally isolated in Paris in May 1983 by Luc-Montagnier. The origin of HIV has become a matter of intense international debate (Adeyemi, 1993). HIV is a new disease and since it was identified in 1981, there has been several theories, guesses and hypothesis as to the origin. According to Osmond as cited in Cohem (2011), HIV was first recognized as a new clinical syndrome in the United State in 1981. The first case of Pneumocystic Carinii, Pneumonia and Kaposi Sarcoma (KS) was diagnosed among homosexual men. According to him, looking back at earlier reports, researchers have identified cases appearing to fit the AIDS surveillance definition, as early as the 1950s and 1960s. Frozen tissue and serum samples were available, for one of those possible early AIDS cases, a 15year old black male from St. Louis, who was hospitalized in 1968 and died of an aggressive disseminated Kaposi-Sarcoma (KS). He further stated that the tissue and serum specimens were HIV – antibody positive on western blot and antigen positive on ELISA. This appears to be the first confirmed case of HIV infection in the United State. The virus was identified in 1983 by Dr. Françoise Barre-Sinoussi (1950) working in the Pasteur Institute in Paris. Two years later, she proved that it was the cause of AIDS. She is now head of the

Retrovirus Biology Unit in the institute.

According to Keith (2004), the significance of the origin of AIDS gives a clear understanding of the mechanism by which the AIDS epidemic emerged is necessary, if the future preventive methods are to be directed towards useful goals. He opined that the cause of epidemic is generally related to changes in human behavior. Microbes fervently change their behavior as a result of change in the activities of their host. That AIDS did not come from nowhere, but arose as a consequence of social changes, which permitted the rapid dissemination of HIV. AIDS was first identified as a distinct syndrome in 1981, as the consequence of a cluster of cases amongst gay men in large US cities with highly visible and established gay communities. Subsequent review of the medical literature has revealed a plethora of inexplicable Aids like illness dating back to the late 1940s in the United States and Europe.

According to Adeyi, Khanki, Odutolu and Idoko (2006). The oldest AIDS case for which an HIV diagnosis has been confirmed is that of an American youth who died in 1969. The case of a Manchester sailor who was believed to have died of AIDS in 1959 has recently been called into doubt, following the discovery that the strain of HIV isolated from stored tissue samples was virtually identical to strains prevalent thirty years later. US researchers have argued that such a similarity is implausible unless the virus was a laboratory contaminant, because HIV would normally emulate considerably during a thirty year period. Other early HIV cases in which HIV has been isolated include a Nigerian family – father, mother and child, who all died in 1976. A Portuguese man who fell ill in 1978 has been retrospectively diagnosed as one of the earliest cases of AIDS caused by HIV – 2. The identified cases in which HIV was present are important because they challenge the belief that HIV is a virus, which was introduced into the West in the 70s. Although some of these cases indicated contact with Africa, the 1969 case of an American youth shows no evidence of an African connection. AIDS Treatment Update (2012), states that:

*“African doctors tend to agree that AIDs did not appear in Africa before the late 1970s, and that it became epidemic only in the early 1980s. In the early years of the epidemic, the Syndrome was known as ‘Slim disease’ in Uganda and other Central African countries. It first appeared in Uganda, and in Kinshara, which lies at the crossroad of trade routes linking East Africa, West Africa, Angola and Zaine.”*

It is of good reasoning that AIDS cases could have occurred at a low level in the population before 1940s without exciting many suspicions because of a greater frequency of infectious diseases. It was only when

infectious diseases became less common that immune deficiency syndrome became more remarkable and worthy of note. Prior to the introduction of antibiotics, tuberculosis and syphilis may have marked minor clusters of HIV disease in the view of medical historian (Mirko, 2011).

Lamprey, Johnson and Khan (2006), states that as a person progresses from being HIV positive into AIDS, the effects – physical, psychological and social are catastrophic. The predictability, inevitability and the nature of the outcome has fueled the debate, which has been gathering pace generally in recent years, about the degree of control people have towards the end of their life, and over the manner of ending it. Nurses are also faced with the challenge of confronting HIV = AIDS = DEATH, and helping patients to maintain control of their lives to experience love and happiness and to value the quality and quantity of life that remains.

### **History of HIV in AFRICA**

According to Daley (2011), the origin of HIV is unknown. Although some authors have postulated an African origin, there is still no conclusive evidence that HIV originated in Africa. Findings in favour of an African origin include reports that describe the earliest serological evidence of HIV in Africa and a structurally similar Simian Immune Deficiency Virus was identified in African wild green monkeys. Regardless of where HIV arose, clearly sub-Saharan Africa is the area with the largest estimated number of AIDS cases. Daley also stated that several factors may have contributed to the rapid spread of HIV infection in sub-Saharan Africa.

First the urbanization of Africa with subsequent disruption of the traditional family unit led to an increase in prostitution, a known mode of transmission of HIV in Africa. In his own opinion, deteriorating health care in certain areas, which is as a result of high cost of medical care, and high level of poverty that encourage majority of practitioners, who use non aseptic techniques in their care. Political changes and wars were probably all important in the development of the current HIV epidemic in Africa.

### **History of HIV/ AIDS in NIGERIA**

In Nigeria, the former Health Minister, Late Professor Olikoye Ransome Kuti, in a press conference in December 1990, on World AIDs Day disclosed that, 516 persons tested sero-positive. Of this number, 84 patients have developed AIDS with 26 patients said to have died. It is often assumed that HIV is a very new virus, which has crossed over from animal to humans and spread fairly rapidly. Infact there are several theories about the

sources of HIV and the length of time the virus has been present in the human population. Nigeria has the third – largest number of people living with HIV. The HIV epidemic in Nigeria is complex and varies widely by region. In some states the epidemic is more concentrated and driven by high-risk behaviours, while other states have more generalized epidemic that are sustained primarily by multiple sexual partnerships in the general population. Youth and young adults in Nigeria are particularly vulnerable to HIV, with young women at higher risk than young men. There are many risk factors that contribute to the spread of HIV, including prostitution, high-risk practices among itinerant workers, high – risk heterosexual and homosexual practices, international trafficking of women, and irregular blood screening (Patrick, 2007).

According to Buki, (2001). A technical report of the Federal Ministry of Health in the 2001 National HIV/Syphilis Sentinel Survey among pregnant women attending ante-natal clinic in Nigeria reveals that; HIV seroprevalence from 1991 to 2001 increased from 1.8% - 5.8%. Percentage distribution of HIV infection by types reveals that, the prevalence of HIV – 1 is 97.50 of total HIV incidence in Nigeria. While HIV – 2 is 0.4% and confection of HIV 1 and 2 for 0.10%. HIV – 1 is the major type of HIV infection observed in Nigeria's HIV prevalence. Age specific prevalence among pregnant women in Nigeria is 7% between 15 – 30years. The South-South Zone recorded the highest age specific prevalence of 10.5%, 7.9%, 8.2% and 5.5% for age groups 15 – 19, 20 – 24, 25 – 29 and 30 – 34 years.

The size of the population poses logistical and political challenges particularly due to the political determination of the Nigerian government to achieve health care equity across geopolitical zones. The necessity to co-ordinate programs simultaneously at the Federal, state and local levels introduces complexity into planning. The private sector is largely unregulated and more importantly had no formal connection to the public health system where most HIV intervention are delivered. Training and human resource development is severely limited in all sectors and will hamper program implementation at all levels. Care and support is limited because existing staff are overstretched and most have insufficient training in key technical area to provide complete HIV services (Wesleys, 2008 ).

### **Pathogenesis of HIV/AIDS**

According to Olaleye (2003), this retro-virus called, Human Immune Deficiency Virus (HIV) causes AIDs, although the International Congress on Virus Nomenclature recommended a new name, Primate Immune Deficiency Virus (PIV) due to the frequency isolation of related viruses from non-human primates

such as monkeys and baboons. He went further to explain that there are two types of HIV which have been fully characterized and associated with AIDS. These are: Human Immuno type 1, (HIV – 1), and Human Immuno type 2, (HIV – 2).HIV – 1 is prevalent worldwide, while HIV – 2 is presently found in West Africa among people of West African origin.

The HIV virus when contacted affects major cells of the immuno system called T. Lymphocytes. There are two types of T. Lymphocytes:T. Helper (CD4<sup>+</sup>bearing) and T. Suppressor (CD5<sup>+</sup>bearing).

T. Lymphocytes modulate production or secretion of antibodies by B – lymphocytes. As the infection progresses, it attacks or binds the CD4<sup>+</sup>receptors of T-Helper cells and penetrates, replicates and produces progeny virus. During the process of replication, such infected T-Helper cells are destroyed, the immune system thus becomes imparted and any invading organism multiplies unabated. Simply put, the human body has an inbuilt ability to defend itself against infections and diseases (immunity) which protects the body from germs or disease causing organisms, such as bacteria, viruses, fungi, protozoa and other parasitic organisms, that are capable of invading the human body. These immune systems function as a defense mechanism against certain malignant cells in the body. These are the white cells in the blood, the lymphocytes which consistently patrol the body from their normal place of abode, the lymphoid organs, where they are produced. These are the T-lymphocytes (T-cells) and B-lymphocytes (B-cells) which have different actions. These white blood cells are produced in the lymph-nodes, the spleen and bone marrow, and the thymus gland (in children) (Tumer & Unai, 2000). Most of the T-lymphocytes, the T4 lymphocytes act as coordinator of the defense operations and consequently play a very important role in regulating immune functions. Hence the AIDs virus targets mainly these T-cells or T-Helpers and destroys them eventually, resulting to AIDs due to reduction in the number of T4 lymphocytes and the T-Helper cells (Tumer & Unai, 2000).

### **The route of transmission of HIV**

The AIDs virus (HIV) has been mainly detected in the blood, semen and vaginal secretions but small amount of HIV has also been detected in other body fluids such as tears, saliva etc. the amount of threshold necessary to induce infection (Achal, 2008).

HIV virus is transmitted through the under listed routes:

1. Heterosexual or homosexual transmission is the major mode of spread of the virus in urban areas i.e. through sexual intercourse

from an infected person to his or her partner (that is penetrative penile – vaginal, penile – anal or oral genital contact)

2. Transmission of blood products: This usually happens in the hospital when a patient is transfused with the blood of an infected person, which was not properly screened.
3. Maternally: This is from an infected pregnant woman to her unborn baby (foetus) or new born infant before, during or shortly after birth (prenatal transmission).
4. Through breast milk during breast feeding.
5. Multiple injections: This is common among drug addicts who share needles used in injecting one another.
6. Use of unsterile needles/syringes that is used for an infected patient to another, even if it is re-sterilized.
7. Scarification: Such as tattoos, tribal marks and circumcision.

There is no evidence that HIV/AIDS is spread through casual contacts. The HIV is not transmitted through the following:

Touching, hugging, shaking hands with someone with HIV/AIDs.

Playing or walking with a person with HIV/AIDs. Living with a person with AIDs, eating with someone infected with HIV, sharing same toilet seat, coughing or sneezing, mosquitoes or insect bites (Achal, 2008).

### Role of Cultural Practices

The cultural practice that may increase the risk of HIV infection in Africa include:

Polygamy, wife sharing, wife inheritance, widowhood, early marriage, male promiscuity, lack of female empowerment, superstitious belief, ignorance of STDs and negative attitude to sex education, permissive societal attitude towards sex. Use of skin-piercing devices contaminated with infected blood/blood products during: tribal markings, ear piercing, nose piercing, tattooing, circumcision, bloodletting, barbing, nail cutting (manicure and pedicure), treatment by quack doctors, female genital mutilation. (Achal, 2008)

### How does HIV/AIDS kill?

According to Shah (2006), AIDS or Acquired Immuno Deficiency Syndrome is the result of HIV progression, and AIDS is fatal. AIDs will kill a person if they contact an

opportunistic infection. HIV kills by weakening the body's immune system until it can no longer fight infections. At this stage opportunistic infections appear. When a person is infected with the HIV, it attacks and kills the immune cells (body soldiers) and leaves the body defenseless and open to attack by almost any infection such as bacteria, fungus or viral disease because the immune system is not working well

Full blown AIDS is characterized by appearance of opportunistic infections which normally do not attack healthy people. These infections take advantage of the weakened body resistance and the AIDS victim suffers a long period of painful illnesses and diseases, which eventually kill the victim. Also the body is exposed to other vulnerable and malignant tumors that can kill. More importantly, these infections weaken the body to the point of causing collapse and death. This is because the AIDS victim lacks ability to resist these infections and dies after a long and painful struggle (Shah, 2006).

### Difference between HIV infection and AIDS

A person infected with HIV is only a HIV carrier who has no symptom. The person may feel and look healthy but can still spread the infection. Being infected with HIV does not automatically mean that the person has AIDS. A HIV carrier becomes sick when the infection progresses and the signs and symptoms of AIDS appear. AIDS is the last stage of HIV infection. HIV infection generally progresses over a decade before developing AIDS in some cases (Sharad, 2012). This implies that though the last stage of HIV infections is AIDS (Acquired Immuno Deficiency Syndrome) AIDS; having HIV does not mean you have AIDS. Even without treatment, it takes a long time for HIV to progress to AIDS – usually 10 to 12 years if HIV is diagnosed before it becomes AIDS

### Stages of HIV Infection

There are five (5) main stages of HIV infections which may vary from person to person. The stages are as follows:

1. Primary HIV infection (Acute Phase): A healthy person infected with HIV (Human Immune Deficiency Virus) presenting with history of a short illness similar to glandular fever 2 – 6 weeks after exposure.
2. Latency period (Asymptomatic stage): This is characterized by the absence of illness or symptoms and could last for several months or years. The AIDS virus continues to multiply and infect more and more lymphocytes with no obvious symptoms.
3. Persistent Generalized Lympho-adenopathy (PGL): This is the stage where an infected person may begin

to show signs of illness after 6 months or after many years. This stage is characterized by enlargement of lymph glands, involving two or more extra-inguinal sites, neck, armpit or groin, which may be associated with fever, weight loss, night sweats and fungal infection among others.

4. AIDS – Related Complex (ARC): This stage is characterized by considerable damage to the immune system. The symptoms at this stage are similar to that of AIDS but less severe. However, patients with ARC do not have opportunistic infections or malignancies as found in full-blown AIDS. Symptoms include weight loss, fatigue, night sweat, headache, itching, abdominal discomfort, diarrhea and splenomegaly.

5. Full-blown AIDS: AIDS is the last and most severe stage of HIV infection. This stage is characterized by symptoms seen in ARC but are more pronounced, complied with the appearance of life-threatening opportunistic infections and humours, neurological disorders and dementia. The immune system has deteriorated considerably to the point of total collapse and death (Achal, 2008).

#### WHO CLINICAL CASE DEFINITION OF AIDS

According to WHO/CDC case definition of AIDS in adults, AIDS can be diagnosed by a doctor when the person has two or more of the major signs together with at least one of the minor signs in the absence of known cases of immunodeficiency. However, majority of the patients infected with HIV are totally without symptoms (Arya, Osoba, & Benneth, 1988). There are basically major and minor signs of AIDS as follows:

**Major signs of AIDS include:** Weight loss greater than 10% of the body weight, persistent fever for more than one month, diarrhea longer than one month and persistent severe fatigue.

**Minor signs of AIDS include:** Constant cough for more than one month, swollen gland lasting for many months, itchy skin rashes (generalized pruritic dermatitis), cold sores all over the body, recurrent herpes zoster and oropharyngeal candidiasis.

#### Symptoms of AIDS include:

Loss of appetite with weight loss of 10 pounds or more in two months or less. Unexplained persistent diarrhea lasting more than one month, unexplained persistent or recurrent fever often with night sweats, unexplained or

severe fatigue, persistent or constant unexplained cough, swollen glands in the neck, armpits or groin that persist for 3 months or more, white spots or unusual blemishes on the tongue, inside the mouth or throat, appearance of persistent lumps or spots on the skin, red, brown, pink or purplish blotches on or under the skin, or inside the mouth, nose or eyelids, and impairment of nervous system of dementia, loss of memory or judgment or depression.

It is also worthy of note that these symptoms may be caused by diseases other than AIDS, hence it is always better to see a doctor than make self diagnosis.

Other clinical manifestations of AIDS include:

1. Kaposi Sarcoma characterized by fatigue, malaise, lymphadenopathy, skin lesions, and tumours on internal organs.
2. Pneumocystis Carinii Pneumonia (PCP), a typical pneumonia characterized by fever, chills, headache, dyspnea, pain on inspiration, fever, weight loss, anxiety etc.

The presence of Kaposi Sarcoma or Cryptococcal meningitis are sufficient by themselves for the diagnosis of AIDS (Arya et al., 1988)

#### Common Diseases Associated with AIDS

Because people with AIDS have weakened immune systems, they are more prone to infections called opportunistic infections. Opportunistic infections are caused by organisms that typically don't cause disease in healthy people but affect people with damaged immune systems. These organisms attack when there is an opportunity to infect. Deterioration of the immune system is caused by the decline in CD4<sup>+</sup> T-cells, which are key infection fighters. As soon as HIV enters the body, it begins to destroy these cells. Symptoms of opportunistic infections common with AIDS include: Coma, coughing and shortness of breath, difficulty or painful swallowing, extreme fatigue, fever mental symptoms such as confusion and forgetfulness, nausea, abdominal cramps and vomiting, seizure and lack of co-ordination, severe persistent diarrhea vision loss and weight loss. Many opportunistic infections associated with AIDS cause serious illness. Some may be prevented. Below is a list of infections and how they affect the body (Wesley, 2001).

#### Opportunistic infection: Brain

- Cryptococcal meningitis: This is a yeast-like fungus infection that usually involves the brain and lungs, although it can affect almost any organ. The fungus that

causes this condition is found in soil throughout the world. It is most common in soil contaminated by bird droppings. This disease most often occurs when a person's CD4<sup>+</sup> T-cell count falls below 100 cells per cubic millimeter of blood.

- HIV-related Encephalopathy: Encephalopathy is a term for diseases that alter brain function or structure, leading to problems with cognitive function, or mental process, and memory in people with HIV and AIDS
- Progressive Multifocal Lenkoencephalopathy (PML): is a rare disorder of the nervous system caused by a common human polyomavirus, It leads to the destruction of the myelin sheath that covers nerve cells. which is the fatty covering that acts as an insulator on nerve fibres in the brain. Symptoms include: mental deterioration, vision loss, speech disturbances, inability to coordinate movements, paralysis and ultimately coma, among others. This disease can occur when the CD4<sup>+</sup> T-cell count fall below 200 cells per cubic millimeter of blood.
- Toxoplasmosis: Symptoms include confusion, or delusional behavior, severe headache, fever, seizures and coma. It can affect the eyes, causing eye pain and reduced vision.

#### • **Opportunistic Infection: Eyes**

Cytomegalovirus (CMV); commonly affects the eye's retina, causing blurry vision and in severe cases, blindness. Other common symptoms include: chronic diarrhea and nerve problems. It is most likely to occur when a person's CD4<sup>+</sup> T-cell count falls below 100 cells per cubic millimeter of blood.

#### **Opportunistic infections – Gastro-intestinal**

- Cryptosporidiosis: This is a parasite that can cause chronic diarrhea. Other symptoms include stomach cramps, nausea, fatigue, weight loss, appetite loss, vomiting and dehydration. This infection is difficult to treat and there is no definite effective treatment
- Cytomegalovirus: commonly occurs in the stomach, causing fever, diarrhea and stomach pain.
- Mycobacterium Avium Complex: This is a bacterial infection that can cause persistent fever, night sweat, fatigue, weight loss, anaemia, abdominal pain, dizziness and weakness. The bacteria that cause this infection are found in water, dust, soil and bird droppings.

#### **Opportunistic infections: Genitals**

- Candidiasis: Candidiasis is an infection caused

by the candida fungi, also known as 'Yeast fungi'. It is the most common HIV related fungus infection. It can affect the entire body, but most commonly occurs in the mouth, called thrush or vagina. An overgrowth of yeast in the vagina can cause irritation, itching, burning and thick white discharge.

- Herpes Simplex: This virus causes genital herpes, which are painful blisters in the genital area, or cold sores. Severe conditions are more common in the advanced stage of AIDS.
- Human Papilloma Virus (HPV); It can cause warts on the anus, cervix, esophagus, penis, urethra, vagina and vulva. Studies have shown that certain types of HPV can contribute to the development of cervical and anal cancer. Individuals with HIV and AIDS are at increased risk of developing precancerous and cancerous lesions.

#### **Opportunistic infections: Liver**

Liver Disease~: Liver diseases is one of the leading cause of death among AIDS patients, especially liver disease caused by the hepatitis 'B' and hepatitis 'C' virus. Many drugs used in the treatment of HIV and AIDS can cause liver disease or hepatitis. It is important that patients infected with hepatitis receive treatment and follow-up care.

#### **Opportunistic infections: Lungs**

1. Cacciidiomycosis: This infection is caused by inhaling an infective fungus called 'coccidioidesimmitis' The lungs are most commonly affected by the infection. In severe cases, it can involve the kidneys, lymph and spleen. Symptoms include cough, weight loss and fatigue. Meningitis is a common complication when left untreated.

2. Histoplasmosis: This infection involves the lungs, although other organs may be affected. It is usually found in soil contaminated with bird droppings and must be inhaled to cause infection. Signs and symptoms include: high fever, weight loss, respiratory complaints, an enlarged liver, spleen or lymph nodes, depressed production of white cells, red blood cells and platelets from the bone marrow, and life threatening, unstable low blood pressure and Pneumocystis Carinii: which is characterized by fever, cough, difficult breathing, weight loss, night sweat and fatigue. Recurrent pneumonia is most likely to occur when CD4<sup>+</sup> T-cell count falls below 200 cells per cubic millimeter of blood.

3. Tuberculosis (TB): This is a serious and often deadly bacterial infection that primarily infects the lungs, and is transmitted when a person with active TB coughs or

sneezes, releasing microscopic particles into the air. If inhaled, these particles may transmit the condition. Once infected by TB, most people remain healthy and develop only a latent infection. People with latent infection are neither sick nor infectious. However, they do have the potentials to become sick and infectious with active TB.

### **Opportunistic infection: Lymphatic System**

**Non-Hodgkins Lymphoma:** This is a disease in which tumours develop from white blood cells in the lymphatic system.

### **Opportunistic Infections: Mouth and Throat**

**Candidiasis:** This is a most common HIV-related fungus infection. It can affect the entire body, but most commonly occur in the mouth (thrush) or vagina. An overgrowth of yeast causes white patches on gums, tongue, pain, difficulty in swallowing and loss of appetite. Candidiasis in the esophagus, trachea, bronchi or lungs is AIDS defining.

### **Opportunistic Infections: Skin**

1. **Herpes Simplex:** This virus causes cold sores or genital herpes, which are painful blisters in the genital area. Chronic herpes simplex virus (HSV) lesions and severe mucocutaneous HSV disease are common in the advance stages of AIDS.
2. **Kaposi's Sarcoma:** This is the most common AIDS-related cancer. It causes reddish-purple lesions that usually appear on the skin. They also appear on the lymph, nodes, moth, gastro intestinal tract and lungs.
3. **Shingles:** Shingles are caused by a reactivation of the chickenpox virus. It may cause a painful rash or blisters that follow the path of nerves.

### **Prevalence and Burden of HIV/AIDS**

HIV/AIDS has been named a global epidemic with its toll being felt significantly especially in Africa. It has been a major cause of death in the world, it also continues to be a public health concern. It poses a risk to future generations with villages being wiped out due to its impacts. The most affected generation being the most active age group leaving the elderly and aged to look after the young. Widows and orphans have been a major occurrence in many villages and they struggle through thick and thin to survive the impact of HIV (Illefe, 2003).

Statistics have proved that Africa has been most affected with the situation being aggravated by the

poverty levels in the continent. The statistics from the World Health Organization have shown that 34.3 million people in the globe have the AIDS virus and of the 34.3 million, 24.5 million live in the sub-sahara Africa. The effects continued to bite with people being infected and affected by the impacts of the HIV virus. Children bear the largest blunt of the problem when they are left as orphans too take care of themselves. Of the 13.2 million children orphaned globally 12.1 million are in Africans. This means that majority of the people with HIV live in Africa (Shah, 2006).

UNAIDS, (2006); states that practically 19 million people have died from the deadly AIDS virus with 3/8 million of dead being children who are under the age of 15. To add insult to injury 5.4 million HIV global cases were recorded 1999 with 4 million occurring in Africa. This means that people continue to get infected more. Statistics of 1999 indicate that, of the 2.8 million deaths caused by AIDS, 2.4 million were recorded in Africa. Children are also infected through parent children – transmission due to care for their young siblings and more so. They have to care for their ailing parent .They are either forced to drop out of school and engage in child labour to be able to provide for those depending on them. The girls are forced to participate in degrading activities such as prostitution so that they are able to provide for the others and themselves.

The opportunistic infections have continued to make the people spend so much money in treating them without knowing they have the virus for example tuberculosis has been a main infection which infected people; struggle to heal. The stigma from family members and society also continue to be a major problem, since they are left, to struggle on their own to earn a living and provide for the medicines and diets. The family cast them out on grounds that are bewitched, which means they are not fit to be in society, they are condemned to die, which contributes to more problems in society (Shah, 2006).

The anti-retro viral medications are unavailable to many so that they may be able to live a normal life. In addition they are supposed to feed on a very rich diet which is a must for them to be able to live properly. However this is unavailable and unaffordable to most individuals who have to toil day and night to earn a living. Most of the people in Africa live below the poverty level, millions living below a dollar a day (Illefe, 2003). He also states that HIV/AIDS had been a great hindrance to development since it has affected the people's productivity and even the continent has lost so many resourceful people who would have contributed to this development. On the other hand the numerous amount of money channeled towards, could have been channeled to other development activities. The effect of the AIDS virus had made it more problematic to fight poverty, promote development, and progress health. The individuals are not able to work to either support



themselves or their families.

There is also a crisis in the socio-economic and gender disparities, making women at high risk of infections and therefore cannot be able to provide for their families. The children are also affected by the illness of their parents or resulting to social break down. Life expectancy has reduced with the average life expectancy being below 50 years this has affected the social system and people in general. There had been high child mortality rate, and more deaths on the youths aged 20-49 This impact transmits to the future where the society will have imbalance settings. Hence the effect of HIV/AIDS in Africa range from the health sector, households, education sector, on children, enterprises and the work place; on the economy and on life expectancy (Shah 2006).

Victoria, (2012) on Vanguard news pronounces that 70,000 children infected annually, Nigeria has highest mother-to-child infection burden. While the Abuja – Director-General National Agency for the Control of AIDS, NACA, Prof John. Idoko, in 2014, said that over 25 million reported in 1981, noting that more than 33 million people were still living with virus at present. He also declared that 7,000 individuals were infected daily with the HIV virus in the world, more than twice as many as the number of people who start on anti-retro therapy each day. That we still have significant gaps every year, having 281,000 new infections. Of the three million people infected in the country, 1.5 million require to be on life-saving anti-retroviral drugs. Only 400,000 are receiving these”. According to him Nigeria had the largest burden of transmission of HIV mother –to-child in the world, stressing that 30 per cent of these about 70,000 children born every year with HIV hardly lived to see their third birth day without treatment.

### **Epidemiology of HIV/AIDS**

According to a new report by the Joint United Nations programme on HIV/AIDS (UNAIDS, 2011), nearly 50% of people who are eligible for antiretroviral therapy now have access to life saving treatment. It show that 2011 was a game changing year for the AIDS response with unprecedented progress in science, political leadership and results. The report also shows that new HIV infections and AIDS related deaths have fallen to the lowest level since the peak of the epidemic. New HIV infections were reduced by 21% since 1997, and deaths from AIDS related illnesses decreased by 21% since 2005.

Even in a very difficult financial crisis, countries are delivering results in AIDS responds “said Michel Sidibe, Executive Director of UNAIDS”. We have seen a massive scale up in access to HIV treatment which has had a dramatic effect on the lives of people everywhere.

According to UNAIDS and WHO estimates, 47% (6.6 million) of the estimated 14.2 million people eligible for treatment in low and middle –income countries were accessing life saving antiretroviral therapy in 2010, on therapy of 1.35 million since 2009. The 2010 UNAIDS World AIDS Day report also highlights that there are early signs that HIV treatment is having a significant impact on reducing the number of new HIV infections.

### **Factors Contributing to the High Prevalence of the Disease (AIDS)**

The behaviour change has also contributed to an increase in the disease where odd and unwelcoming behaviour such as wife inheritance contributing to the spread of AIDS. Political will has also not been present since they have continued to watch the menace rip-off the citizens without committing themselves to action. The governments have remained under-debt from the international donors in that they cannot have any more to spare for the national disaster. The countries rely on donors, international organizations such as World Health Organization, UNICEF and UNAIDS and well wishers for any help they can get to combat the disease and its effects. Some after getting the money they squander it with other expenses while corruption swindle the rest orphans, widows, and people infected by the disease are left at the mercy of the cruel disease. (Shah, 2006).

### **Prevention for HIV/AIDS**

According to Robert (2001); measures taken to try to minimize the risk of sexually transmitted disease especially AIDS include the avoidance of promiscuity, fidelity to the partner, the use of condom, non penetrative sexual activity and avoidance of contact with body fluids such as blood, genital secretion and saliva. It is worth bearing in mind that since late 1999, the majority of HIV infections in Britain have resulted in intersexual rather than homosexual intercourse. A workshop held in Jos-Nigeria from April 2<sup>nd</sup>-18<sup>th</sup> 1998; Training program in AIDS prevention and surveillance studies, sponsored by the grant from the World AIDS Foundation: Bulkerly, emphasized the fact that, early in the epidemic, most prevention activities in Africa were focused in capital cities because of their infrastructures. Although capitals represent only a fraction of the population in most non-urbanized African countries, fortunately the initial wave of the epidemic was often concentrated in these urban activities.

He went further to state that for an HIV prevention and treatment strategy to be comprehensive, the national education effort must include all health care workers not just physicians, the traditional receivers of continuing

education, but also Nurses, public health workers, sanitarians, medical assistants, and midwives and community health workers. It is especially important to include traditional medicines practitioners, who have proven particularly useful because of their iniquitousness and trust by local population. In many communities they out number other health care providers and are likely to be consulted about a disease as difficult to understand and as sensitive as HIV/AIDS. Because health workers often have standing in their communities and one responsible for caring for those who are ill, ensuring that they correctly understand the models and routes of transmission of HIV and approach those infected with empathy is crucial in setting the standard for the communities.

The best strategy for preventing the sexually transmission of HIV is to abstain from sexual activities. Most studies in Africa have suggested that partaking in non-monogamous sexual relationship is a risk factor for HIV transmission. However it is the selection of partners, not the absolute number, that affect the risk for acquiring the virus. Each new sexual contact carries with it a risk that depends on the aggregate of the sexual experience of all previous partners. An increase in the number of sexual partners overall, then will increase the risk of acquiring HIV as one increases the risk of encountering an infected partner understanding the concept of "core groups" is also important for developing strategies for preventing transmission of HIV. Currently the only barrier method that has practical usefulness is protecting against HIV/AIDs is the Africa context is the male condom, when properly used, it has been shown to reduce HIV transmission (Arlahy, 2007).

However, according to Patrick (2007) the use of condom has major disadvantage; unless the woman is empowered to control the sexual relationship, its use depends on her partner, it reduces sensitivity, it may elicit religious disapproval, it cannot be reused, and therefore each couple requires a large number, hence distribution is problematic in many parts of Africa it is too expensive for the poorest persons: it is not 100% effective in preventing HIV transmission

### **Mother to Child Prevention of HIV**

According to Achalu (2008). Preventing of mother to child transmission of HIV/AIDS by the following interventions: Voluntary counselling and confidential testing for HIV, administration of anti-retroviral drugs-Nevirapine, modification of infant feeding, modification of delivery practice and HIV screening before marriage and avoiding breast feeding by infected mother.

### **Preventing HIV by Blood Transmission:**

The first rule of medicine is to do no harm; therefore, the

avoidance of estrogenic spread of HIV is particularly important both as a fundamental duty of the health care providers and as a prerequisite to keeping the public confidence to the practice of medicine. The World AIDS Foundation (1998), estimates blood transmission to be responsible for less than 10% of transmission in sub-sahara Africa, thus to avoid HIV transmission by blood transfusion to ensure that the blood is tested or screened for the presence of HIV before being transfused to a patient, and to avoid unnecessary contact with blood.

### **Preventing HIV Transmission by Injection**

Providers of traditional and modern health care must also be taught the importance of using sterilized equipment and proper techniques for discarding disposable equipment's. Although destructive techniques are best, when this recommendation is difficult to implement disposable syringes and needles can safely and effectively be discarded into pit latrines UNICEF is currently developing the ability to monitor the sterilization of injection equipment. But the safest and more effective strategy for prevention of HIV transmission by injection is to discard the sharps into a sharp box and to be incinerated to avoid being used by another person. Avoid unnecessary injections or scarifications

### **Progress in HIV Prevention**

New HIV infections have been significantly reduced or have stabilized in most parts of the world in sub-sahara Africa the new HIV infections has dropped by more than 26% from the height of the epidemic in 1997, led by a one third drop in south Africa the country with the largest number of new HIV infections in the world. In the caribbean, new HIV infections were reduced by a third from 2001 levels and by more than 25% in Dominican Republic and Juinaica similarly the number of new HIV infections in south and south-East Asia dropped by more than 40% between 1996 and 2010, in India new HIV infections fell by 56% However, the number of new HIV infections continues to rise in Eastern Europe and central Asia, Oceania and middle-East and North Africa, while it has remained stable in other regions of the world (Arlahy, 2007).

According to the above author; declines in new HIV infections are also being spurred by changes in sexual behaviour, particularly in young people, as people reduce their number of sexual partners, increase condom use and are waiting longer before becoming sexually active. HIV prevalence decline among young people in at least 21 of 24 countries with national HIV prevalence countries, Burkina Faso, Congo, Ghana, Nigeria and Togo have been seen HIV prevalence decline by more than 25%

between 2001 and 2010 among young people. The rate of new HIV infections in urban Zimbabwe fell from almost 6% in 1991 to less than 1% in 2010 without changed in behaviour studies estimate that there would have been an additional 35000 new infections annually.

### Treatment for HIV / AIDS

AIDS remain an incurable disease despite all scientific efforts to develop effective cure for it. There are numbers of drugs that have been developed to limit the incidence and severity of opportunistic infections resulting from full-blown AIDS and slow down the progress of infection to full blown AID. The available drugs are therapeutic and not preventive some of the available drugs are very expensive and beyond the reach of most people in the society (Achal, 2008).

Because of the nature of HIV; treatment must be in the form of multi-therapy combination incidentally some of these drugs have dangerous side effects such as sleep problems, cramps, nausea, vomiting, headache, stomach pains, numbness of leg and feet. On a one day sensitization seminar on management of HIV /AIDS, held on the 18<sup>th</sup> of June 2002, sponsored by the Rivers state Government, ministry of Health HIV AIDS control division: lecture by Ejele (Dr) on the Antiretroviral (ARV) treatment modalities were as follows:-

That, monotherapy is infective. Double or Tripple therapy is the current approach: 2NRTI e.g. AZT + 3TC or 2NRTI + PI (e.g AZT +3TC + Nelfinavir) or 2NRTI + NNRTI (Best with potent NRTI e.g Abacavir). Highly active art (HAART) is preferred that is an anti-retro viral regimen that can reasonably be expected to reduce the viral load to < 50c / ml in a treatment naïve patient.

**Problems of ARV therapy:** According to Ejele Long-term compliance difficult, toxicity (short and long-term), does not fully suppress HIV replication, neither eradicate disease and resistance development. On the other hand, the aim of ARV treatment is to:

- Decrease viral load (<1.500 RNA copies/ml, cannot effectively transmit the disease) and therefore delay disease progression and prolong survival.
- Preserve or restore immunological function improve quality of life (28 weeks is the fastest known progression from infection to death)
- Minimizes toxicity, and prevents resistance failure to compliance leads to rebound of infection and resistance to ARVA.

**Side effects of ARV Therapy include;** Anaemia, rash, liver derangement, neuropathy, Hyperlipidaemia, Pancreatitis, Nausea, Vomiting, Headache, bone marrow

suppression, weakness and dyspnoea.

### Looking Towards 2015

UNAIDS (2013); Global Plan progress report suggests that only about half of priority countries are on track to achieve the 2015 target. The report concluded that improving the situation would require a number of steps, including: reducing the number of women acquiring HIV infection, reducing the unmet need for family planning, increasing access to safe and no coercive HIV testing, improving the availability of antiretroviral medicines for pregnant women living with HIV and improving the diagnosis and treatment of HIV among children.

According to Dr. Bilali Camara, Country Director, Joint United Nations Programme on HIV and AIDS (UNAIDS), the former President Goodluck Jonathan's administration had good programmes to control the incidence of HIV/AIDS. That Nigeria has been able to focus attention on the major intervention in the areas where it can achieve success. The former President's Comprehensive Response Plan for HIV/AIDS in Nigeria (PCRP) is a tool designed to respond to the system and service delivery challenges facing the HIV and AIDS response in Nigeria, and also sought to intensify efforts to eliminate HIV and AIDS. He said that UNAIDS believed that the integration of the HIV and AIDS interventions to some programmes had increased the number of people accessing drugs for the treatment of the disease and that between January and April 2015, the number of people accessing HIV and AIDS treatment has increased from 600,000 to 800,000. The integration has been working well in the fight to eliminate the scourge in the country; it has been applied in Nigeria for a year and half now, and it has yielded the desired result.

Sharing similar sentiments, Prof. John Idoko, Director-General, NACA, said the goal of the programme was to accelerate the implementation of key interventions between 2014 and 2015. The plan was designed to bridge existing service gaps and address key financial and health systems, and to coordinate challenges and promote greater responsibility for the HIV response at federal and state levels. The effect of the control efforts is that the HIV and AIDS prevalence has dropped in the country which was attributed to the decrease in the rate of HIV infection in the country to extensive public awareness of the virus and patronage of HIV related services by Nigerians. They therefore, urge the incoming government to build on the existing structures and move towards achieving the desired goals of making Nigeria HIV and AIDS free. (NAN Features, 2015).

Despite the shooting down of the Kuala Lumpur bound plane occurred and unfortunately, consumed the lives of about seven passengers billed to attend the 20<sup>th</sup> World AIDS Conference, among them a leading researcher in to the Human Immunodeficiency Virus (HIV), Jeep and

**Table 1.**The Antiretroviral (ARV) treatment modalities

<b>Nucleoside Reverse Transcriptase Inhibitors (NRTI)</b>	<b>Non-nucleoside Reverse Transcriptase Inhibitors (NRTI)</b>	<b>Protease inhibitors (PI)</b>
Zidovadine(Retrouvira) AZT	Nevirapine (viramune)	Saquinari (NURVIR)
Didanosine-DDI (Videx)	Efavirenz (sustiva)	RitanaVir(NURVIR)
Zaicitabine-DDC (Hivid)		Indinavir (Cafxiran)
Lamirudine-3TC (Epivir)	Delavirdine	Nelfinavir (viracept)
Staavvdine-D4 T		Amprenuir
Abacavir		Lopinavir

Source: Ministry of Health HIV/ AIDS control division,2002

WHO Media Office Glenn Thomas, it became even more beckoning on the annual conference to put the global impact of the HIV/AIDS menace in proper perspective. It was on this reflective mode that the conference ended with call for uniting HIV, Global Health and Human Rights on the global spectrum. This arouses the call for Nigerians struggle against the global epidemic of HIV/AIDS. That Nigeria and other Sub- Saharan African countries like South Africa and Boutswana-lead countries most ravaged by the menace is no longer news. Nigeria has been a national prevalence rate of up to 5.1 per cent of the population infected with HIV in the early 2000 with the rate dropping to a manageable 4.1 per cent as at 2012. Of this figure, 26.7 of the population know their HIV status with 5.8 and 5.6 prevalence rates for males and females respectively. Another important fact is the efforts of the National Agency for the control of AIDS, (NACA), and the rallying platform in the fight against HIV/AIDS in Nigeria in combating the menace. At the heart of NACA's interventions is "preventing new HIV infections and providing treatment and care services to those already with the virus",which had defined NACA's actions in recent times with appreciable results (Adams, 2014)

On the contrary a recent courtesy visit by Bilali, (September 12, 2015), to Majority leader of the house of Representative, Hon Femi Gbajabiamila concerning the 3.4milliom Nigerians living with AIDS and 60,000 children infected with HIV , his response express dismay at the magnitude of the scourge with regards to the figures reeled out , saying that HIV/AIDS has clearly become a human right issue that requires more commitment from all stakeholders.

**CONCLUSION**

The fact that for every problem there must be a solution; Despite the pandemic nature of HIV/ AIDS and in Nigeria, AIDS has continue to weigh down on the many progresses made but with a combined effort the impacts of the virus can be reduced and tamed down.

**RECOMMENDATIONS**

AIDS had been fought through a very renowned

campaign known as the ABC of AIDS to Africa people Nigeria in particular, thus this should be stressed through public campaigns to help kick out the virus from the country, "A" is for abstinence, "B" is for being "faithful" and "C" is for using condom. The ABC is another form of telling the people of Nigeria to change their sexual behaviours least they die. Behaviour change can be cultivated through numerous campaigns that will help people leave their sexual life and make it more responsible.

Voluntary counseling and testing (VCT) to make people known their HIV status should be encouraged, as this will make them to be more responsible in their actions in view of the fact that those who are not yet positive will strive to remain negative while those who are positive will reduce re-infections town suspecting individuals with such measures the rate of new infection will be drastically reduced and hence there will be only the old cases to deal with.

To generate robust demand for HIV treatment, countries such as Nigeria should re-conceptualize HIV testing by adopting multiple, proactive strategies to encourage knowledge of HIV status; invest in community literacy initiatives; remove deterrents to HIV treatment access; and emphasize the preventative, as well as therapeutic, benefits of HIV treatment.

Continued strides should be made in improving the efficiency of HIV treatment programmes, health and community systems should be strengthened, programmatic innovation to spur swifter scale-up should be encouraged, and the means to manufacture antiretroviral medicines in Nigeria should be created.

The culture factor that increases infections such as wife inheritance should be campaigned against, where they will have to abandon such practice and ensure if they have to then the necessary precautions are taken.

Government should layout a strategy that can make the people with the virus not to spread it and those without the virus protected. In addition, the government has the mandate of working with NGO and other donor organizations to ensure that anti retro viral drugs are made available to the people for free, so that they are able to live a longer life

Mother to child transmission should also be minimized through providing proper and adequate medical care to

the mother and should give the appropriate advice when the mothers are pregnant. Campaigns should be targeted to pregnant mothers to know their status so as to enable, save the unborn children contacting the HIV virus through measures such as not breast feeding from the mother with HIV instead should be provided with the appropriate milk and dietary food to feed the child.

The education system also needs to be restructured. The syllabus should be all inclusive where children in school can learn what is HIV/AIDS and the effects it has in the society, they should be able to get information from credible sources and not from their peers who may mislead them.

Youths should be taught on how to stay safe and from indiscriminate sexual habits to protect themselves. The use of condoms should be taught and the safe use of it. Reducing the stigma on those whose are positive is of paramount importance since the stigma may make them less productive in their workplaces.

Setting-up an organization that will be involved in the monitoring of the situation i.e the rates of new infections the progress of drug use, the number of orphans and other related statistics will help in having an organized approach to fight against HIV/AIDS in Africa.

Finally, steps are needed to effectively deliver services through implementation of efficient, innovative delivery models; take steps to ensure equitable access; promote accountability through rigorous measurement of outcomes.

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