Original Research Article

ADHERENCE TO ANTIRETROVIRAL THERAPY (ART) AMONG PREGNANT WOMEN LIVING WITH HIV/AIDS IN OKIGWE IMO STATE, NIGERIA

ABSTRACT

The antiretroviral medication (ART) compliance of expectant HIV/AIDS patients in Nigeria's Okigwe Imo state was investigated in this study. In particular, the study established the prevalence of HIV among expectant mothers in Okigwe Imo State, Nigeria, identified the behavioral and demographic factors associated with ART adherence, and looked at the obstacles to ART use among expectant mothers in Okigwe Imo State, Nigeria. The study adopted the AIDS risk reduction model by Catania, Kegeles and Coates, (1990), the pathway of survival model theory by Mosley and Chen (1984) and the health belief model by Rosenstack et al (1950). From the responses obtained and analysed, the findings revealed that the extent of the prevalence of HIV among pregnant women in Okigwe *Imo State, Nigeria is low. Also, the findings revealed that there is a significant relationship between demography and ART adherence among pregnant women in* Okigwe *Imo State, Nigeria. The findings further revealed that there is a significant relationship between behaviour and ART adherence among pregnant women in* Okigwe *Imo State, Nigeria. The study therefore recommends that PMTCT services should be accessible to every pregnant woman attending antenatal care, either onsite or through a referral to a nearby clinic, to improve coverage. When it comes to locating PMTCT facilities, using a geographic information system can help eliminate inequity and enhance accessibility within states.*

Keywords: Adherence, Antiretroviral therapy, Pregnant women, HIV/AIDS

THE STUDY'S HISTORY

The HIV epidemic is one of the most significant health issues the world is now dealing with. Since 1981, almost 25 million individuals have perished from AIDS globally. 2.3 million of the estimated 38.6 million HIV-positive people are children, and roughly 15 million of them are women (Abdool-Karim, Sibeko, & Baxter, 2018). In 38 nations, the average life expectancy has decreased since 1999, mostly due to HIV. Currently, the worst-affected countries have an average life expectancy of 49 years, which is 13 years lower than it was before AIDS (Ahdieh, 2015). Women and children continue to experience disproportionately high rates of new HIV infections, according to Alemu, Yalew, Fantahun, &Ashu (2015).

HIV-related diseases and fatalities are common. 90 percent of new HIV infections in children in 2005 occurred in Sub-Saharan Africa, which had more than 540 000 new cases of the virus.

Human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) infections in young women and girls are disproportionately common, and women make up almost half of those infected globally (UNAIDS, 2015). The HIV/AIDS epidemic is a gendered illness since 18.8 million of the estimated 37 million persons living with HIV are women, according to the UNIADS (UNAIDS, 2018). In 2017, a whopping 7000 women got HIV per week (UNAIDS, 2018). The condition is one of the leading causes of mortality among women of reproductive age (UNAIDS, 2015). Due to the nature of the female reproductive system, women seem to be more prone to developing HIV than males (Townsend, Cortina-Borja, Peckham, & Tookey, 2017).

Cohort studies and clinical trials believe that the lowering prevalence reveals high HIV incidence rates in women despite indications that the prevalence of HIV in women is stable or declining in some parts of Africa, such as Southern Africa (Shaffer, 2014). Women in this region are at high risk for HIV infection if they are under 25 years old, unmarried, or have STDs.

Nigeria is the country that causes 10% of all HIV/AIDS cases globally (UNAIDS, 2018). Since the first AIDS case was identified in 1986, HIV has spread throughout the six geopolitical regions of the country: the North East, North West, North Central, South East, South South, and South West. NACA (National AIDS Control Association), 2014. According to Amusa (2013), the severe stigma and prejudice associated with HIV/AIDS hindered individuals from being tested, disclosing their status, and seeking treatment, which aided in the virus's spread across the country. Nigeria has the second-highest incidence of new HIV infections among women in the world, with 110,000 infected women aged 15 to 49. (Ebuy, Yebyo, &Alemayehu, 2015). In Nigeria, 1.5% of the population was estimated to have HIV in 2018, with 1.6 million women infected vs 1.3 million males (UNAIDS, 2018).

In addition, studies on the incidence of HIV/AIDS in Nigeria have revealed that the disease affects more women than males (Shaahu, Lawoyin, &Sangowawa, 2018). Suleiman, Momo, and others (2016) argued that a number of highly regarded cultural practices, including polygamy, levirate marriages, and child marriage, are harmful to women's health because they promote HIV transmission. It's crucial to remember that as more women develop the disease, the risk of HIV transmission from mother to child rises (MTCT). Abdool-Karim, Sibeko, and Baxter (2018) assert that the availability of highly active antiretroviral therapy (ART) has been essential in the worldwide response to the HIV pandemic given the absence of a primary preventive vaccine. Antiretroviral medications (ARVs) have advanced throughout time from only treating HIV-positive people to also preventing the spread of the illness. One of the most important prophylactic applications of ARV is to stop HIV transmission during pregnancy, which is the main source of HIV infection in children under the age of 15. Early research in Europe and the United States on the use of antiretrovirals during pregnancy uncovered contradictory links between the drugs and birth outcomes, including preterm birth, low birth weight, and stillbirths (Alemu, Yalew, Fantahun, & Ashu, 2015). Clinical trial results suggest that the benefits of antiretroviral use during pregnancy may far outweigh the risk of adverse birth outcomes, but the

changing trend in child mortality, particularly neonatal deaths in countries with high HIV prevalence, raises the possibility that HIV and antiretroviral use may be linked to adverse birth outcomes (Ebuy et al, 2015). Contradictory findings have come from studies conducted in Sub-Saharan Africa. Preterm birth and/or low birth weight were shown to be strongly correlated with the severity of the HIV illness as indicated by high viral load or low CD4+ count in early investigations before the widespread introduction of antiretroviral therapy in Africa (Townsend et al, 2017). Studies have indicated that stillbirth, preterm delivery (PTD), short for gestational age (SGA), and neonatal mortality are more common in HIV positive women in Botswana than in HIV negative women. But the introduction of HAART has increased this danger (Amusa, 2015). Recent results from a multi-national PMTCT study suggest that a triple ARV regimen, as opposed to a dual regimen based on zidovudine, may increase the risk of preterm delivery and low birth weight. The study also found that compared to a triple regimen based on Combivir, a triple regimen based on Truvada was associated with a greater rate of birth outcomes that were more severe (PTD 34w) (Ebuy et al., 2015).

Since the 1990s, multiple studies have demonstrated the value of ARV medications in lowering the risk of HIV transmission from mother to child. Despite the effectiveness of antiretroviral therapy (ART), certain children in Sub-Saharan African countries like Nigeria continue to develop HIV through vertical transmission. According to UNAIDS' joint program on HIV/AIDS, 159 000 of the 180 000 new infections among children globally occurred in Sub-Saharan Africa in 2017. Nigeria accounted for 23% of these new infections (UNAIDS). 5 With an anticipated 160 000 persons needing ARV medication each year, Nigeria will likely have the second-highest number of pregnant HIV-positive people in the whole world, behind South Africa (UNAIDS, 2018).

Nigeria established a nationwide PMTCT program in 2002 as a result of the restoration of a democratic government in 1999, which sparked an enhanced HIV response. UNAIDS (2018) asserts that the country's efforts to lower new infections among children have been hampered by the inadequate coverage of PMTCT services. Nigeria performed the lowest out of the 22 priority nations that the UNAIDS global plan targeted for the eradication of new HIV infections among children by 2015, with a 21% decline in new HIV infections among children between 2009 and 2015. In 2017, just 32% of pregnant HIV-positive women used antiretroviral drugs to lower the risk of perinatal transmission (Chesney, 2016).

A functional health system that ensures the provision of high-quality services, the availability of HIV commodities, skilled healthcare providers, and adequate funding is crucial for PMTCT initiatives to have the intended impact. Strong health systems have been shown to be beneficial in nations like Cuba and Thailand that have eradicated mother-to-child HIV and syphilis transmission, according to Connor, Sperling, Gelber, Kiselev, Scott, O'Sullivan, VanDyke, Bey, Shearer, & Jacobson (2014). It is essential to identify and address barriers related to the health system that inhibit PMTCT in order to meet the current global goal of eliminating the HIV pandemic by 203014, especially in nations with a high HIV prevalence.

Additionally, getting an HIV test during pregnancy is challenging due to the dearth of PMTCT facilities. Due to the low rates of HIV testing and response among pregnant women and their male partners, scaling up has not resulted in a rise in PMTCT ARV coverage that is

proportionate to those rates (Dapaah, 2016). This investigation will look at how effectively pregnant HIV-positive women in Okigwe IMO State, Nigeria, take their antiretroviral drugs (ART). Finding out the prevalence of HIV among pregnant women in Okigwe Imo State, Nigeria, as well as the demographic and behavioral correlates of ART adherence among pregnant women in Okigwe Imo State, Nigeria, as well as the barriers to ART adherence among pregnant women in Okigwe Imo State, Nigeria, will be the focus of this study. The participants in this study's survey will be pregnant women in Okigwe Imo State, Nigeria.

Psychosocial Effects of HIV/AIDS

Patients with HIV are troubled by the danger of contracting the illness. Such trauma may be of a social or psychological character. The victims frequently have thoughts of anger (why should it happen to them), fear of dying, guilt over unintentionally spreading it to others, thoughts about how to fit into social circles, how to handle work, how to face family members and employers, having to lose their jobs if their employers learn of their HIV status, and so forth. Out of fear of stigma, the majority of persons with HIV/AIDS are hesitant to openly declare their disease. Some people may not dare to visit the surrounding hospitals for treatment or therapy because they are terrified of being shunned (Abdool-Karim, Sibeko, & Baxter, 2018).

People with HIV/AIDS are reluctant to adopt practices that might prevent the transmission of HIV because of the stigma associated with the disease, claim Abdool-Karim et al. (2018). An HIV-positive guy, for example, could be reluctant to bring up the topic of condom use with his wife and other sex partners out of fear of stigma, but he might be open with other infected persons. Vulnerable workers avoid using the on-site medical services because of concern that they may be discovered to be HIV positive and stigmatized. These victims will also escape losing their employment because the majority of businesses renege on their agreements with workers who test positive for HIV (Adedimeji, Abboud, Merdekios, & Shiferaw, 2015).
The family structure is not exempt from the stigma associated with HIV. Prostitution and any other sort of aberrant sexual behavior are taboo in Nigerian culture. HIV/AIDS and obscenity and unethical behavior are commonly connected. A individual who tests positive for HIV consequently reflects shame to their family and the wider community. Adefolalu (2018) asserts that while a sick individual may not feel like discussing safety precautions with those who aren't afflicted, they do so without hesitation when they recognize another person as having the same condition.

Nigeria's HIV/AIDS Etiology

Nigeria is anticipated to bear more than 11% of the global disease burden and has the third-highest rate of HIV infection in the world, with over four million infected people. For instance, Rivers State, Nigeria's largest industrial zone, acts as a microcosm of the entire country. It is located in the very productive Niger Delta area (Adefolalu, 2018). It attracts entrepreneurs and job seekers from all around Nigeria and beyond since it is the center of the oil industry. HIV seroprevalence in the state was 8% on average in 2001. Notable prevalence percentages include 10.5% for people aged 15 to 29 and 7.9% for people aged 20 to 24. (Adekunle, 2013).

Following is a description of the region's knowledge, attitudes, and behaviors from the Ministry of Health's HIV/AIDS Control Program: Between 1997 and 1999, the region was classified as having a very low HIV knowledge level. The dynamics of HIV/AIDS were not well understood

in general. People who act normally on the outside but are actually at risk of HIV transmission On the other side, there was a lot of shame around the sick. They ran against resistance from coworkers, acquaintances, and relatives. Even physicians and nurses refused to treat patients in hospitals and clinics because of their unreasonable worries and judgemental attitudes (Ashimi, Omole-Ohonsi, Amole, &Ugwa, 2014).

This flagrant ignorance, disdain, antagonism, and stigmatization set the setting for severe misunderstandings and uncertainty, the pinnacle of which is the open denial of AIDS. The state's etiology of HIV transmission is influenced by a number of variables, including political leaders who refuse to provide adequate funding to address the issue, religious organizations and community activists who only promote chastity education and abstinence, and parents who avoid discussing sexuality with their children out of concern that it will encourage them to be more promiscuous. According to the Nigerian organization "Project for Human Development," providing sex education in schools will enhance young people's interest in sex. Additionally, it is not advised since it might be harmful to children at a young age. Additionally, the group claims that "sex education is necessary inside the family but not in the school." It is unknown to our people and may result in the breakup of our nation (Desmond, 2019). People who mistakenly discover their HIV status and subsequently engage in unprotected intercourse as a form of personal vengeance have also been linked to the disease's transmission. It goes without saying that this level of ignorance and attitude about sexuality needs to be addressed if the sickness in the region is to be under control. HIV/AIDS incidence in the region has increased by 120 percent after the publication of the aforementioned study (Enwereji, & Eke, 2016).

Women and HIV/AIDS

According to the Joint United Nations Programme on AIDS, young women and girls make up roughly half of all persons living with HIV and AIDS worldwide and account for a disproportionate number of new infections (UNAIDS, 2015). 18.8 million of the 37 million persons living with HIV globally, according to the International AIDS Society, are women (UNAIDS, 2018). Every week in 2017, more than 7000 women got HIV (UNAIDS, 2018). The disorder has been identified as the primary cause of death among women of reproductive age (UNAIDS, 2018). Women tend to be more likely than males to get HIV based on the design of the female reproductive system (Abdool- Karim, Sibeko, and Baxter, 2018). The increasing feminization of the disease has been attributed to sociocultural and economic variables that are connected to the HIV pandemic and render women more psychologically and socially susceptible (Boateng, Kwapong&Agyei-Baffour, 2013). If laws and institutions favor men's interests above women's, young women might not be able to protect themselves from HIV and obtain treatment. This can be mostly the result of gender-based violence and inequity (UNAIDS, 2018; UNAIDS, 2015). The negative consequences of the pandemic on women are further made worse by societal duties like looking after orphans and HIV-positive persons (UNAIDS, 2015). However, the prevalence of HIV among women is surprisingly low in places like Oceania, Central Asia, and Western and Eastern Europe (UNAIDS, 2018). The high availability of antiretroviral treatment (ART) and other HIV preventive services in these regions contributes to the low prevalence of HIV among women. The majority of pregnant women get routine HIV testing; if positive, they are instructed to immediately begin antiretroviral therapy (ART) and receive guidance on behavior adjustment (European Centre for Disease Prevention and Control (ECDC), 2013). However, in other regions, such as Sub-Saharan Africa (SSA), women are far

more likely to get HIV (UNAIDS, 2018). In Sub-Saharan Africa, women account for 60% of new HIV infections and 75% of those among adults between the ages of 15 and 24. 2018 (UNICEF). According to UNAIDS, women in SSA are twice as likely as men to develop HIV (2018). Duffy (2015) asserts that the continent's patriarchal culture may be to fault for Africa's greater prevalence of HIV among females. Because their preferences and needs, particularly their health requirements, are not recognized in this setting, women are not permitted to make sexual decisions (such as whether to use condoms) or communicate their sexual ideas (Rudrum, Oliffe, & Brown, 2017). While some statistics indicate that the prevalence of HIV in women is stable or dropping in some SSA countries, such as Southern Africa, cohort studies and clinical trials claim that the stabilizing prevalence masks abnormally high HIV incidence rates in women. Age under 25 and being single, as well as sexually transmitted illnesses, are variables that contribute to the region's high rates of HIV incidence in women, claim Rujumba, Neema, Byamugisha, Tylleskär, Tumwine, and Heggenhougen (2013).

Nigeria is the country that causes 10% of all HIV/AIDS cases globally (UNAIDS, 2018). Since 1986, when the first case of AIDS was noted, HIV has progressively expanded throughout the nation's six geographical zones: North East, North West, North Central, South East, South South, and South West, according to the National Agency for the Control of AIDS (NACA, 2014). According to Amusa (2015), a high degree of discrimination and widespread misunderstandings about the illness prevented individuals from getting tested for HIV, disclosing their status, and seeking treatment, which allowed the virus to spread across the country. Nigeria has the second-highest incidence of new HIV infections among women in the world, with 110,000 infected women aged 15 to 49. (NACA, 2014). Nigeria has a 1.5% HIV prevalence in 2018, with 1.6 million women infected compared to 1.3 million males, according to UNAIDS (2018) (UNAIDS, 2018). Additionally, research examining prevalence have revealed that the HIV/AIDS epidemic in Nigeriadisproportionately affects women more than males (Emeka-Nwabunnia, Ibeh &Ogbulie, 2014). Stephen, Jakonda, and Alexander (2015) contend that a number of cultural practices cherished in Nigerian culture, such as polygamy, levirate marriages, and child marriage, facilitate the transmission of HIV and are consequently harmful to the health of women. It's crucial to remember that as more women develop HIV, the risk of mother-to-child transmission (MTCT) of the illness to children increases (Rudrum, Oliffe, & Brown, 2017).

HIV and AIDS in Pregnant Women

The pandemic of the human immunodeficiency virus (HIV) is one of the most significant health issues the world is now dealing with. Since 1981, more than 25 million people have died from AIDS, and an estimated 38.6 million people worldwide have HIV, including more than 2.3 million children (Rudrum, Oliffe, & Brown, 2017). Since 1999, the average life expectancy has decreased in 38 nations, mostly as a result of HIV. The average life expectancy in the most seriously afflicted nations is presently 49 years, which is 13 years shorter than it was before the AIDS epidemic. Women and children have been disproportionately burdened since females continue to have high rates of new HIV infections, as well as HIV-related morbidity and death, in many situations. In 2005 alone, it is anticipated that 540 000 children would have caught HIV for the first time, with Sub-Saharan Africa accounting for 90% of these infections (Saleem, Kyeyagalire, & Lunsford, 2014).

The majority of HIV infections in children occur as a result of mother-to-child transmission (MTCT), which can occur during pregnancy, childbirth, or nursing. In populations where breastfeeding is not practiced, there is a 15% to 30% likelihood of transmission without therapy. Breastfeeding from an infected mother raises the risk by 5-20%, bringing the range total to 20-45%. A few obstetric interventions that can lower the risk of MTCT to less than 2% include elective caesarean delivery (prior to the onset of labor and rupture of membranes), antiretroviral (ARV) prophylaxis given to women during pregnancy and labor, as well as to the infant during the first weeks of life. (4–6). These programs have reduced the number of new HIV infections in children throughout the world, particularly in high-income nations (Saleem, Kyeyagalire, & Lunsford, 2014).

Elective caesarean delivery is seldom practicable in situations with limited resources, and it's often neither acceptable nor safe for moms to quit breastfeeding. The initial focus of attempts to limit MTCT during labor and delivery—which accounts for between one-third and two-thirds of overall transmission, depending on whether the mother breastfeeds—was on avoiding HIV infection in newborns in these situations. In order to improve the efficacy of PMTCT (prevention of mother-to-child transmission) programs, many countries with high HIV prevalence have recently adopted more effective ARV regimens that begin in the third trimester of pregnancy and can reduce the risk of transmission during pregnancy and childbirth to 2-4%. (Dinwoke, &Okafor, 2013). Even after the administration of these regimens, infants continue to have a significant risk of infection during breastfeeding. Several cutting-edge techniques for avoiding HIV transmission while breastfeeding are being researched.

Antiretroviral Therapy Concept (ART) According to the World Health Organization (2018), anti-HIV drugs are used in antiretroviral treatment (ART) to treat people who have the infection (HIV). The most effective form of treatment, known as "highly active antiretroviral therapy," or HAART, is a combination of antiretrovirals that prevents HIV replication. The combination of drugs aims to improve effectiveness while lowering the possibility that the virus may acquire resistance. Antiretroviral therapy (ART) reduces mortality and morbidity rates in HIV-infected people while significantly enhancing quality of life. Reduced HIV replication in HIV-positive people decreases HIV transmission, which is another benefit of ART. The "undetectable equals untransmittable" (U=U) benefit of ART (WHO, 2018). In those with advanced HIV infections, mortality and related opportunistic infections have decreased since the introduction of antiretroviral medications in 1986. The World Health Organization (WHO, 2015) recommendations on the use of antiretroviral drugs have led to a considerable decrease in mortality in North America, Europe, and Africa as a result of HAART becoming more widely accessible. Due to their high cost and the absence of the necessary healthcare infrastructure, antiretroviral medicines are challenging to administer in developing countries. Additionally, there were worries that the challenges of following complex medication regimens would lead to treatment failure and the formation of virus strains that were drug-resistant, promoting the spread of drug resistance (WHO, 2019).

Significant advancements in the treatment of HIV-positive people have been made, claims a 2015 European Collaborative Study. Each patient must be given the best opportunity to

live a long and healthy life while living with HIV by adopting an efficient combination antiretroviral treatment made up of three different medication classes and prophylactic measures to stave against opportunistic infections. A sizeable percentage of people in South Africa also use complementary, alternative, and traditional therapies. Drug usage education is vital, as is the prevention and treatment of side effects, drug interactions, and dosage errors due to the use of such a large variety of potentially incompatible medications (European Collaborative Study, 2015).

Because taking one HIV medication at a time had such a poor success rate, antiretroviral treatment was created in 1996. An important turning point in the development of HIV therapy was the introduction of the three-drug antiretroviral regimen. What was once a deadly diagnosis has now been transformed into a curable sickness because of the new therapeutic approach.

According to the WHO (2014), antiretroviral medicine has two effects on the body. It strengthens the immune system while reducing the body's viral cell population.

Antiretroviral medications benefit HIV in the following ways:

i. Prevents it from multiplying in the blood

ii. Decreases viral load, which refers to the quantity of HIV copies in the blood.

iii. Increases the quantity of CD4 cells, immune cells that are susceptible to HIV infection, which improves the efficiency of the immune system.

iv. Reduces the risk of contracting stage 3 HIV, sometimes known as AIDS, and prevents it from occurring.

stopping the transmission

vi. Complications are handled more harshly, increasing the chance of survival.

vii. Reduces the viral load in the blood.

To increase the possibility of lowering HIV levels in the body, doctors frequently recommend a regimen of three or more drugs while administering antiretroviral treatment. A patient and their doctor might talk about the idea of taking a single tablet that contains many medications. According to certain reports, antiretroviral therapy can reduce viral load to undetectable levels. This shows that using condoms prevents the virus from being spread during sexual contact (WHO, 2014). The effectiveness of antiretroviral (ARV) medications depends on faithful adherence to the suggested treatment plan. For the remainder of one's life, one must take ARVs. To avoid the quick establishment of medicine resistance and treatment failure, 90% to 95% of patients must follow their treatment plans. Large-scale research on ART patient adherence in African countries has shown contradictory results. It is critical to assess treatment compliance and find therapies that could complement the therapy given the rapid expansion of patient access to ART in Nigeria (Udoh, Mantell, Sandfort, & Eighmy, 2019). The results of studies on patient adherence to highly active antiretroviral medication are examined, and possible institutional, sociological, and/or economic issues, as well as other factors, affecting pregnant women's adherence to ART in Nigeria, are addressed. Additionally, some issues with ART programs that are specific to Nigeria are acknowledged and should be taken into account when modifying the guidelines for these programs.

Compliance with Antiretroviral Therapy

According to Tymejczyk, Hoffman, Kulkarni, Gadisa, Lahuerta, Remien, Elul, El- Sadr, Melaku, & Nash (2016), treatment adherence refers to a person's degree of current drug adherence. It is well established that in order to attain an undetectable viral load and avoid developing treatment resistance, an individual taking ARV drugs must take at least 95% of the prescribed doses on time. There is no ideal metric for determining compliance. Patient self-report, pill counts, pharmacy refill records, drug level monitoring, electronic drug monitoring, and physician assessment are some of the frequently utilized techniques. Each has unique advantages and drawbacks. In environments with limited resources, self-reporting or information on medication refills is the most often employed strategy (Tymejczyk, 2016).

According to research, adherence is a highly important predictor of death, viral suppression, the formation of ART medication resistance, and disease progression. Therefore, monitoring and analyzing ART adherence are crucial HIV preventive techniques in high-, middle-, and low-income countries. Adherence to medication, also known as compliance with medication, is a crucial indicator of how well ART therapy is working for a patient. Poor or inadequate adherence

to therapy is often associated with higher morbidity, premature death, and economic loss (Wasti, van Teijlingen, Simkhada, Randall, Baxter, Kirkpatrick, & Singh, 2017). The rapid progression of the illness, the emergence of complications, the decline in quality of life, the rise in direct and indirect healthcare costs, the risk of treatment failure, the emergence of drug resistance, and the loss of therapeutic options are all additional effects that jeopardize the advancements made in the control of HIV. Adherence to highly active antiretroviral therapy inevitably leads to increased patient well-being, decreased risk of HIV transmission, lower healthcare costs, and enhanced patient safety (WHO, 2016). Studies in Sub-Saharan Africa have indicated that individuals with HIV are adequately adhering to ART; yet, adherence rates below 95% have been associated with subpar treatment outcomes. With initial financing granted by the Federal Government, Nigeria began a widespread ART program in 2002 as a part of the World Health Organization's "3 5" effort. In 2005, funds for the President's Emergency Plan for AIDS Relief was used to expand the ART program. Due to the fast growth of ART services through the development of new ART facilities and improved healthcare workers' abilities to treat HIV/AIDS, the access to ART was made possible (UNAIDS, 2015).

Barriers to adherence to ART

The degree of a person's current drug adherence, as defined by Tymejczyk, Hoffman, Kulkarni, Gadisa, Lahuerta, Remien, Elul, El- Sadr, Melaku, & Nash (2016), is referred to as treatment adherence. It is commonly known that an individual receiving ARV medications must take at least 95% of the recommended doses on time in order to achieve an undetectable viral load and prevent developing treatment resistance. There is no perfect metric to use to gauge compliance. Some of the widely used methods are patient self-report, pill counts, pharmacy refill records, drug level monitoring, electronic drug monitoring, and physician assessment. Every one has particular benefits and downsides. Self-reporting or information on medication refills is the most frequently used tactic in environments with limited resources (Tymejczyk, 2016).

The development of ART medicine resistance, mortality, viral suppression, and disease progression are all predicted in large part by adherence, according to study. Therefore, in high-, middle-, and low-income countries, ART adherence monitoring and analysis are essential HIV prevention strategies. Medication adherence, also known as compliance with medication, is a critical sign of how effectively ART therapy is benefiting a patient. Poor or insufficient adherence to therapy is frequently linked to increased morbidity, early death, and financial loss (Wasti, van Teijlingen, Simkhada, Randall, Baxter, Kirkpatrick, & Singh, 2017). Additional effects that jeopardize the progress made in the control of HIV include the illness' rapid progression, the emergence of complications, the decline in quality of life, the rise in direct and indirect healthcare costs, the risk of treatment failure, the emergence of drug resistance, and the loss of therapeutic options. Adherence to highly active antiretroviral medication invariably results in elevated patient safety, cheaper healthcare costs, and lowered risk of HIV transmission (WHO, 2016). However, adherence rates below 95% have been linked to subpar treatment outcomes. Studies in Sub-Saharan Africa have shown that people with HIV are adequately adhering to ART. Nigeria launched a nationwide ART program in 2002 as a part of the World Health Organization's "3 5" initiative, with initial funding provided by the Federal Government. The President's Emergency Plan for AIDS Relief funds were used in 2005 to expand the ART program. Access to ART was made feasible by the rapid expansion of ART services brought on

by the construction of new ART facilities and enhanced HIV/AIDS treatment skills among healthcare professionals (UNAIDS, 2015).

The ART initiative in Nigeria

In January 2002, the Nigerian Federal Government launched an ARV program as part of a larger effort to treat and aid PLWHA. The program was then deployed countrywide. The three-drug ARV regimen used in this program to treat 10,000 adults and 5000 children included NRTI (lamivudinestavudine) and NNRT (nevirapine) (Sholeye, Animasahun, Salako, &Oyewole, 2017). The project was funded at a cost of US$ 10 per patient per month and started in February 2002 with 25 treatment facilities dispersed across the nation's six geographical zones. Unfortunately, the effort suffered a serious setback in 2004 when it was unable to make use of the $3.5 million worth of pharmaceuticals supplied by India. There was a structurally-induced nonadherence problem in the country's ARV drug program at this time due to the large number of patients who stopped taking their drugs for as long as three months. When extra medications for US$ 3.8 million were bought and delivered, the plan was eventually revived (Eze, 2016). In 2006, a different project was launched with the goal of providing over 250,000 HIV-positive patients with free antiretroviral treatment. By the end of 2006, this program had 74 treatment centers, but only 15% of Nigeria's PLWHA who need ARV medications had access to it15.THE

PREGNANCY AND HIV

Whether or not a woman has HIV, pregnancy lowers her immune system's capacity owing to a reduction in cell-mediated immunity (Mor & Cardenas, 2016). These physiological changes in a pregnant woman's body may hasten the development of HIV and increase the chance of MTCT, claim Calvert and Ronsmans (2015). (Birlie et al., 2016). Though equivocal, the data suggesting that HIV development is sped up during pregnancy is still a topic of scholarly dispute and a driving force for more study (Calvert & Ronsmans, 2015; Wall et al., 2017). There is no correlation between pregnancy and HIV progression, according to some research (Ahdieh, 2015; Bessinger et al., 2018; Wall et al., 2017), whereas pregnancy actually reduces HIV progression, according to Wall et al (Ahdieh, 2015; Bessinger et al., 2018; Wall et al., 2017). Tai et al (2017) But some investigations have shown that women's CD4 levels fall more quickly after pregnancy (Calvert &Ronsmans, 2015).

MTCT risk is increased by low birth weight, which has been linked to decreased maternal CD4 counts, even though HIV-positive pregnant women's reduced CD4 levels do not persist after delivery (Heffron et al., 2014). (Van der Merwe and colleagues, 2017) HIV infection has a little impact on pregnancy-related issues or outcomes since richer countries have more access to healthcare (Udoh, Mantell, Sandfort, &Eighmy, 2019). But in low-resource environments, HIV during pregnancy is a well-known pregnancy problem that requires a referral to tertiary facilities for the proper care. Studies suggest that women with HIV may be more prone to obstetric problems and have lower newborn outcomes (Calvert & Ronsmans, 2015). Although some small-scale studies have generated hopeful results, there are many more ways that HIV may cause obstetric problems and negative consequences (Berer, 2016). First off, chorioamnionitis, an infection of the uterus that can result in membrane rupture, low birth weight, premature birth, as well as puerperal sepsis, may make women with HIV more susceptible to developing MTCT (King, Ellington, & Kourtis, 2013). 2017 (Graham & Hussein) (Graham & Hussein). Higher

rates of sickness among HIV-positive women have been associated to sexually transmitted infections (STIs), bacterial pneumonia, urinary tract infections, and genital tract infections (King, Ellington & Kourtis, 2013). Women with HIV experience increased ectopic pregnancies, most likely as a result of concomitant STDs. Second, it has been hypothesized that HIV-induced thrombocytopenia may increase the risk of bleeding in pregnant HIV-positive women. Sebitloane (2016) discovered no link between HIV and thrombocytopenia during pregnancy, despite previous research to the contrary. HIV-infected women may be at an elevated risk because of the stigma associated with the infection, but inadequate access to healthcare is connected to an increased risk of obstetric difficulties in general (Worku, Yalew, &Afework, 2013). (Valencia-Garcia et al., 2017). Maternal mortality is considered to be increased by HIV, and surgical recovery may be more challenging for HIV-positive mothers (McIntyre, 2018). Pregnant women who are HIV positive are estimated to have an eight times increased risk of maternal mortality (Calvert &Ronsmans, 2015). Pregnant women living with HIV in SSA account for around 25% of all fatalities (Zaba et al., 2013). It can be challenging to pinpoint how HIV influences problematic pregnancies and undesirable outcomes, though, as other factors including drug use and ART may also be at play (Szyld et al., 2016).

Transmission from the mother to the fetus in utero (MTCT)

In utero transmission from mother to child (MTCT), childbirth, and breastfeeding are a few instances when it can happen (WHO, 2015). It is commonly acknowledged that the majority (about 50%) of MTCT occur during labor and delivery because child virus detection occurs within the first 48 hours of life (Cavarelli& Scarlatti, 2017). According to Chama, Gashau, and Oguche's (2017) hypothesis, HIV detection in newborns' peripheral blood within 48 hours of delivery is regarded to be a sign of intrauterine transmission of the virus. A negative pregnancy test does not necessarily mean that there was no in utero transmission, claim Dunn et al (2017). This is because newborn plasma can harbor HIV for up to seven days after delivery without being detected. Lewis et al. (1990) found HIV in placental tissues and in foetal tissues acquired during the first trimester of pregnancy, indicating the possibility of intrauterine transmission, according to Desmond (2019). (2019). Indeed, whether an infant carries HIV within 48 hours of delivery or within seven days of birth determines whether MTCT occurs intrauterine or intrapartum, respectively (DePaoli, Manongi, &Klepp, 2014). A study found that approximately half of MTCT cases occur as the placenta starts to split from the uterine wall in the final weeks of pregnancy, possibly a few days before delivery (Dapaah, &Senah, 2016). Only 4% to 20% of MTCT appear to develop during the first trimester of pregnancy, with the bulk presenting around week 36. (2013) The European Center for the Prevention and Control of Disease Given that the infant will have both intrapartum and nursing exposure soon after birth, determining the length of MTCT in breast milk could be difficult (Cavarelli& Scarlatti, 2017). In the first six to eight weeks of nursing, 5 to 6 percent of MTCT is thought to occur, while in the latter six to eight weeks of breastfeeding, 23 to 42 percent (JohnStewart et al., 2014). Despite improvements in our understanding of MTCT and its timing, it is crucial to highlight that the mechanism of HIV transmission from mother to child is still unknown.

Routes and the mechanism of MTCT

MTCT can happen if a fetus consumes contaminated amniotic fluid while the mother is pregnant, blood, vaginal secretions, or breast milk when the baby is delivered (Cavarelli& Scarlatti, 2017). Studies reveal that HIV-positive women's amniotic fluid is HIV-free, contrary to claims that intrauterine infection happens when infected amniotic fluid passes through the mucosal surfaces of the foetal gut. According to this, the placenta likely contributes significantly to intrauterine transmission (Cavarelli& Scarlatti, 2017). 2017 (Cavarelli & Scarlatti). The placenta is believed to be crucial in acting as an HIV barrier during pregnancy due to the rarity of intrauterine transmissions (Schnack, Rempis, Decker, Braun, Rubaihayo, Busingye, Tumwesigye, Harms, &Theuring, 2016). (2016) Schnack, Rempis, Decker, Braun, Rubaihayo, Busingye, Tumwesigye, Harms, and Theuring Even though it has been demonstrated that both HIV-positive and HIV-negative women's placentas contain HIV, the amount of cell-free virus that can pass through the placenta is quite little (Schnack et al., 2016). (2016) Schnack et al. As a result, in utero transmission can occur when the placenta ruptures or when the mother's blood is transferred to the fetus when it is infected. While placenta tears can occur at any stage of pregnancy, they are believed to occur more frequently around the start of labor when the uterus's stronger contractions rupture the membranes, necessitating the mother's blood to be infused (Gray, & McIntyre, 2017). Gray, McIntyre, & Gray (2017).

Despite helping newborns satisfy their nutritional needs and protecting them from illnesses, breast milk is still the main oral route for MTCT (Van de Perre et al., 2015). Consumption of blood and cervicovaginal secretions from infected moms is another oral route for MTCT infection. Despite the fact that the actual mechanism of oral HIV transmission in children is still unknown, researchers have identified the tonsil and intestinal mucosa as probable entrance points for oral HIV transmission in neonates. Adults seldom contract HIV orally, and tonsil epithelium-bound HIV only sporadically progresses to infection (UNAIDS, 2015). 2015 (UNAIDS). Anti-HIV medications that are thought to stop oral HIV transmission include defensins, salivary-secretory-leukocyte-protease inhibitor, lysozyme, and thrombospondin. On the other hand, UNICEF (2017) doubts how much of these anti-HIV substances develop in infants' oral cavities.

Contaminated maternal fluids come into contact with the tonsils' and the gut's mucosal barriers throughout pregnancy, delivery, and nursing, giving MTCT lots of opportunities to proliferate (Wood et al., 2013). However, the thin epithelial barrier that covers these mucosal interactions helps to protect the newborns by generally preventing MTCT (Buesseler, Kone, Robinson, Bakor, &Senturia, 2014). Thus, for MTCT to occur, susceptible cells must first acquire maternal HIV infection inside or below the epithelial layer before being transferred to lower layers, where the virus is then transmitted to blood and lymphatic arteries (Milliganand&Overbaugh, 2014). According to studies, MTCT happens when mucosal surfaces are exposed to HIV despite the epithelial layers' protection (Buesseler, et al., 2014). Recent research has revealed a significant number of HIV-susceptible target cells in the intestinal epithelia of newborns and fetuses, increasing the prospect that MTCT could happen when these surfaces come into touch with HIV-infected fluids. Alternatively, HIV can enter this epithelium through rupturing the mucosal layer or by the process of transcytosis, which is the transfer of materials between cells (Milligan &Overbaugh, 2014). The primary cells in breast milk are mammary cells, which serve as a barrier between the interstitium and the milk. However, mastitis impairs this barrier, allowing

HIV virions and infected cells to passively enter the milk (Wood et al., 2013). (Wood and others, 2013) Because babies' stomachs don't secrete any acid, tainted milk may easily pass past their stomachs and into their intestines (Van de Perre et al., 2015).

Many studies have shown that limiting the exposure of neonates to mother's fluids that are HIV-positive, such as blood, breast milk, and cervicovaginal secretions, reduces the risk of MTCT. For instance, when C-sections are carried out before the onset of labor and the rupture of the membranes, reductions have been developed to safeguard the unborn child from HIV-infected blood and cervicovaginalsecretions in the genital system (Kennedy et al., 2017; Sebitloane, 2016). Similar to this, feeding formula decreased the risk of MTCT by around 50%. However, respiratory infections were more likely to occur in infants who were fed formula (Chen and Rogan, 2014). According to Schwartz et al. (2016), addressing the root causes of child mortality is essential for a successful PMTCT intervention. Avoiding MTCT is not the primary goal of PMTCT programs. Due to breastmilk's ability to reduce pneumonia, diarrhea, and malnutrition in children who are HIV-exposed and their mothers who are getting antiretroviral treatment (ART), the WHO advises breastfeeding HIV-exposed neonates (WHO, 2015).

A crucial component of PMTCT is ART

When given throughout pregnancy, during delivery, and to the newborn during the first six weeks of life, ART is especially effective in reducing the risk of MTCT, a crucial component of PMTCT (WHO, 2015). Prior to the development of ART, life expectancy was low even in the developed world, and the chance of MTCT was significant (about 15% in Europe) (van Benthem et al., 2013). Because of this, there were fewer live births and more abortions among HIV-positive women who chose not to become parents (van Benthem et al., 2013). However, the availability of ART has reduced the risk of MTCT, as well as mortality and morbidity, among HIV-positive pregnant women (WHO, 2015). The randomised trial carried out in 1994 by French and American experts revealed that pregnant women using AZT may have a decreased risk of developing MTCT. This study examined the efficacy of AZT in preventing the development of MTCT in 477 HIV-positive pregnant women. These mothers underwent AZT treatment for six weeks, and their children also received treatment. MTCT was less likely to occur by 67% (95% CI). This was a pivotal moment in the fight against HIV/MTCT (WHO, 2015).

Due to the success of utilizing ART for PMTCT, the WHO advised that pregnant women receive lifetime ART regardless of their CD4 cell count (WHO, 2015). In situations with limited resources, antiretroviral therapy (ART) during pregnancy has been demonstrated to be successful in reducing intrauterine and postnatal HIV transmission. HIV-positive pregnant women from Tanzania, Mozambique, and Malawi were enrolled in the Drug Resource Enhancement against AIDS and Malnutrition cohort trial at 25 weeks of pregnancy regardless of CD4 status (Van de Perre, Rubbo, Viljoen, Nagot, Tylleskär, Lepage, Vendrell, & Tuaillon, 2015). Between 2004 and 2006, pregnant HIV-positive mothers were given a triple ARV regimen and an optional baby formula for six months. Between one month and six months, HIV transmission rates among 1,150 live newborns were 1.2 (breastfeeding) and 0.8 (formula), respectively (Sivarajah, Venus, Yudin, Murphy, Morrison, & Tan, 2017). In a similar vein, the Kisumu Breastfeeding Research, a recent clinical study in Kenya, found that women who got a three-drug regimen from 34–36 weeks of pregnancy to six months after giving birth had a decreased risk of getting MTCT. At

birth, MTCT rates for 487 live babies were 2.5 percent; at six weeks, 4.2 percent; at six months, 5.0 percent; at twelve months, and at 24 months, 7.0 percent (WHO, 2015).

Maternal ART might not be available if HIV is found later in pregnancy or even after birth. This happens frequently in Sub-Saharan Africa, where most pregnant women who deliver in hospitals do not know whether they have HIV (Ndidi&Oseremen, 2016). When administered to an infant, ARVs are still helpful at preventing MTCT. In South Africa, a randomised experiment was carried out to compare the effectiveness of neonatal AZT and NVP. HIV testing and counseling were provided to the women who gave birth within 24 hours of learning they were HIV positive. Within 24 hours after birth, 1,051 children born to women who tested positive for the trial received either a single dose of NVP or AZT. At six weeks and twelve weeks, the probability of MTCT was 12.8% and 16.3%, respectively (95 percent confidence interval) (Gray et al., 2015). While infants can successfully treat PMTCT with monotherapy, ART is more effective. A randomised experiment in Malawi compared a single dosage of NVP to a combination of NVP and AZT (Taha et al., 2013). Immediately following delivery, 1,119 neonates received NVP (once daily) and AZT (twice daily). When NVP was used with AZT, MTCT happened at a rate of 15.3%, and when NVP was used alone, it occurred at a rate of 20.9 percent, at six to eight weeks (Taha et al., 2013).

On the other hand, maternal ART in conjunction with newborn ART prophylaxis has superior results. MTCT among women and infants undergoing ART prophylaxis was only about 2.8 percent, according to a prospective research on 726 mother-infant pairs carried out in Nigeria. On the other side, poor maternal adherence to ART can result in the mother developing medication resistance, increasing the risk of HIV and drug-resistant viral transmission to the newborn (Delaugerre et al., 2019; Newell &Bunders, 2013). In a cohort study carried out in France between 1999 and 2004, it was discovered that 20% of HIV-infected infants born during those years had medication resistance. 2019 (Delaugerre et al.). To guarantee the best possible PMTCT treatment, there is a need for ongoing adherence, assessment, and counseling after the start of ART.

RESEARCH METHODOLOGY

RESEARCH DESIGN

Research designs are perceived to be an overall strategy adopted by the researcher whereby different components of the study are integrated in a logical manner to effectively address a research problem. In this study, the researcher employed the survey research design. This is due to the nature of the study whereby the opinion and views of people are sampled. According to Singleton & Straits, (2009), Survey research can use quantitative research strategies (e.g., using questionnaires with numerically rated items), qualitative research strategies (e.g., using open-ended questions), or both strategies (i.e., mixed methods). As it is often used to describe and explore human behaviour, surveys are therefore frequently used in social and psychological research.

AREA OF STUDY

Okigwe is the third largest city, after Owerri and Orlu, while Ohaji/Egbema is fourth in Imo state. Okigwe is located in Okigwe Local Government Area of Nigeria. The city lies between the Port Harcourt-Enugu-Maiduguri rail line. being the nearest city to the biggest cattle market in

Nigeria located at the Umu Nneochi Area of Abia state Thus, the city has grown into a major cattle transit town for the southeast and south subregions of Nigeria. Okigwe has a population of 132,237 (2005 census). Most of the population is made up of immigrant workers from other states. Okigwe city was the primary host site of the old Imo State University (now Abia State University). Okigwe has various tourist and historical sites. The Federal Government College in the city has remained one of the best unity schools in Nigeria. Okigwe remains one of the breadbaskets of Nigeria with terrace cultivation practised on its hilly farmlands. Okigwe also boasts many relaxation spots. Geographic limits of the map: N: 14° N S: 4° N W: 2° E E: 15° E
Okigwe has five autonomous communities with different villages (in bracket) namely;

- Ikigwu (Aro-ubaha, Aro-Okigwe, Ope, Ubanaka, Umuka, Umuokpara),
- Otanzu (Amaeze-Ogii, Umuawa-Ogee, Unualumoke), Amuro (Amuro, Aro-Amuro),
- Umulolo (Agbobu, Agbuala, Aku/Ihette, Aku/Ikenga, Amaosu, Amasator, Aro-Agbobu, Aro-Umulolo West, Aro-Umulolo East, Ibinta, Ndi-Oji, Ndi-Okoroji, Okanachi, Umuawa-Ibu)
- Ihube (Agbala, Akpugo, Amagu, Amalator, Amano, Nkoto, Ogube, Ozara)
- Otan-Chara (Alaike-Ogwaku, Alaocha-Igwaku, Ihitte-Isiokwe, Ikenga, Ikenga-Isiokwe) umuinem, umuzegem, Umueze, Umukeoke

POPULATION OF THE STUDY

According to Udoyen (2019), a study population is a group of elements or individuals as the case may be, who share similar characteristics. These similar features can include location, gender, age, sex or specific interest. The emphasis on study population is that it constitute of individuals or elements that are homogeneous in description.

This study was carried out to examine the adherence to antiretroviral therapy (ART) among pregnant women living with HIV/AIDS in Okigwe Imo State Nigeria. Selected pregnant women living with HIV/AIDS in Okigwe IMO State form the population of the study.

SAMPLE POPULATION / SAMPLE SIZE

A study sample is simply a systematic selected part of a population that infers its result on the population. In essence, it is that part of a whole that represents the whole and its members share characteristics in like similitude (Udoyen, 2019). In this study, the researcher adopted the convenient sampling method to determine the sample size.

SAMPLING TECHNIQUE AND PROCEDURE

According to Nwana (2005), sampling techniques are procedures adopted to systematically select the chosen sample in a specified away under controls. This research work adopted the convenience sampling technique in selecting the respondents from the total population.

In this study, the researcher adopted the convenient sampling method to determine the sample size. Out of all the entire population of pregnant women living with HIV/AIDS in Okigwe IMO State, the researcher conveniently selected 147 out of the overall population as the sample size for this study.

According to Torty (2021), a sample of convenience is the terminology used to describe a sample in which elements have been selected from the target population on the basis of their accessibility or convenience to the researcher.

INSTRUMENT OF DATA COLLECTION

The research instrument used in this study is the questionnaire. A survey containing series of questions were administered to the enrolled participants. The questionnaire was divided

into two sections, the first section inquired about the responses demographic or personal data while the second sections were in line with the study objectives, aimed at providing answers to the research questions. Participants were required to respond by placing a tick at the appropriate column. The questionnaire was personally administered by the researcher.

VALIDITY AND RELAIABILTY OF THE STUDY

Validity referred here is the degree or extent to which an instrument actually measures what is intended to measure. An instrument is valid to the extent that is tailored to achieve the research objectives. The researcher constructed the questionnaire for the study and submitted to the project supervisor who used his intellectual knowledge to critically, analytically and logically examine the instruments relevance of the contents and statements and then made the instrument valid for the study.

The reliability of the research instrument was determined. The Pearson Correlation Coefficient was used to determine the reliability of the instrument. A co-efficient value of 0.68 indicated that the research instrument was relatively reliable. According to (Taber, 2017) the range of a reasonable reliability is between 0.67 and 0.87.

ETHICAL CLEARANCE

The study was approved by the Project Committee of the Department. Informed consent was obtained from all study participants before they were enrolled in the study. Permission was sought from the relevant authorities to carry out the study. Date to visit the place of study for questionnaire distribution was put in place in advance.

METHOD OF DATA COLLECTION

Two methods of data collection which are primary source and secondary source were used to collect data. The primary sources was the use of questionnaires, while the secondary sources include textbooks, internet, journals, published and unpublished articles and government publications.

METHOD OF DATA ANALYSIS

The responses were analyzed using the frequency tables, which provided answers to the research questions.

In analyzing one of the data collected, a mean score was used to achieve this. The four-point rating scale will be given values as follows:

SA = Strongly Agree 4
A = Agree 3
D = Disagree 2
SD = Strongly Disagree 1

Decision Rule:

To ascertain the decision rule; this formular was used

$$\frac{4+3+2+1=10}{4 \quad 4} = \mathbf{2.5}$$

Any score that was 2.5 and above was accepted, while any score that was below 2.5 was rejected. Therefore, 2.5 was the cut-off mean score for decision taken.

The hypothesis test was conducted using the Chi-Square and the Pearson Correlation Coefficient statistical tool, SPSS v.23.

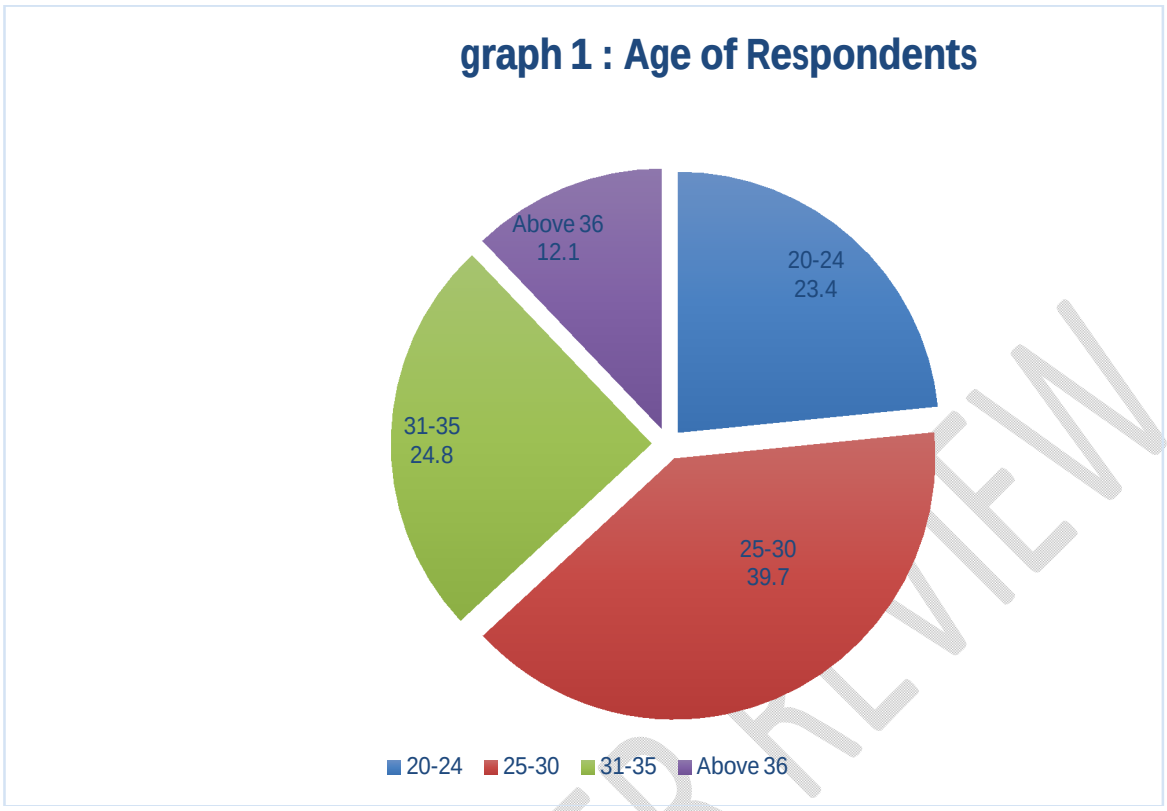
DATA PRESENTATION AND ANALYSIS

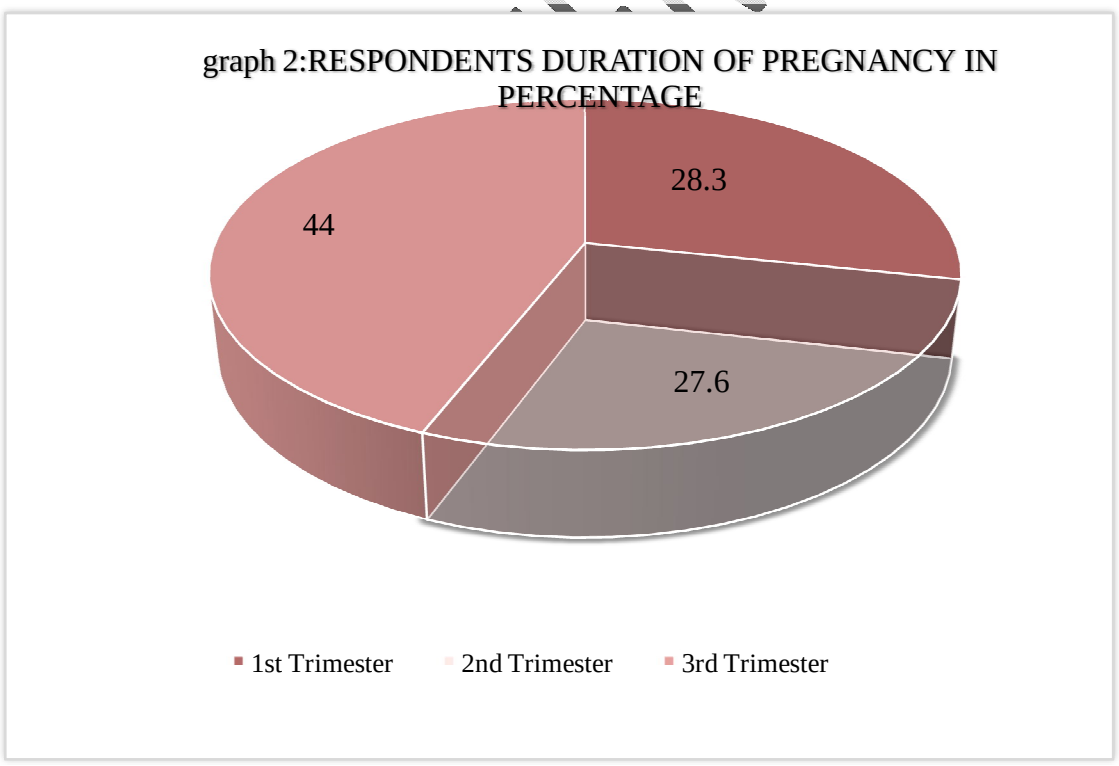
This chapter includes the analysis of the data obtained from the key informant interviews and the questionnaire given to respondents in the study region. The study's findings served as the basis for the analysis and interpretation. The data analysis shows the respondents' simple frequency and response rate as well as an interpretation of the data collected. One hundred and forty-seven (147) questionnaires total, of which one hundred and forty-one (141) were validated, were received from respondents.

Table 1 Demographic Information

Demographic information	Frequency	percent
Gender		
Female	141	100%
Age of mothers		
20-24	33	23.4%
25-30	56	39.7%
31-35	35	24.8%
36+	17	12.1%
Duration of pregnancy		
1st Trimester	40	28.3%
2nd Trimester	39	27.6%
3rd trimester	62	44.0%
Educational qualification		
SSCE	41	29.0%
BSC/HND	80	56.7%
MASTERS	20	14.1%

Source: Field Survey, 2022





All of the poll respondents are female, according to the figures that have been obtained. The survey found that respondents between the ages of 25 and 30 participate in 56 surveys annually,

or 39.7% of all surveys. After this figure, the respondents between the ages of 20 and 24 and those between the ages of 31 and 35 earn the distribution's next greatest percentages. The people who are 36 years of age and older made the least contribution.

A master's degree is held by 14.1% of respondents, compared to 56.7% who have a BSC or HND and 29.0% who have an SSCE, according to the poll. The survey finds that most responders have advanced degrees. The average amount of time spent by pregnant women throughout each trimester is around 44.0% in the third trimester, followed by 27.6% in the first and 27.0% in the second. The table above provides a summary of the distribution.

DATA PRESENTATION

Research Question One: To what extent is the prevalence of HIV among pregnant women in Okigwe Imo State, Nigeria?

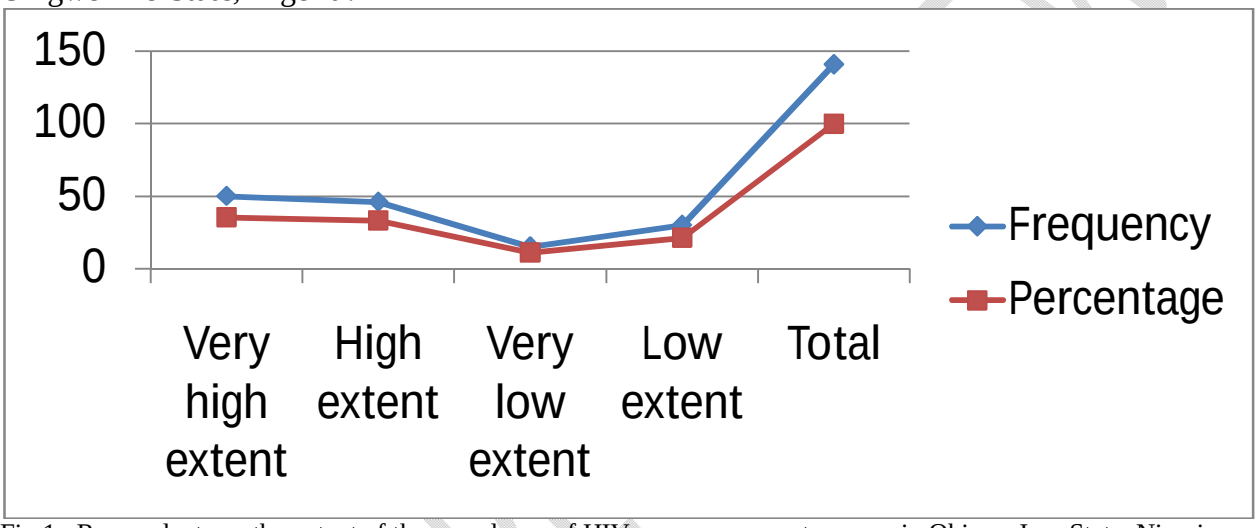


Fig 1: Respondents on the extent of the prevalence of HIV among pregnant women in Okigwe Imo State, Nigeria

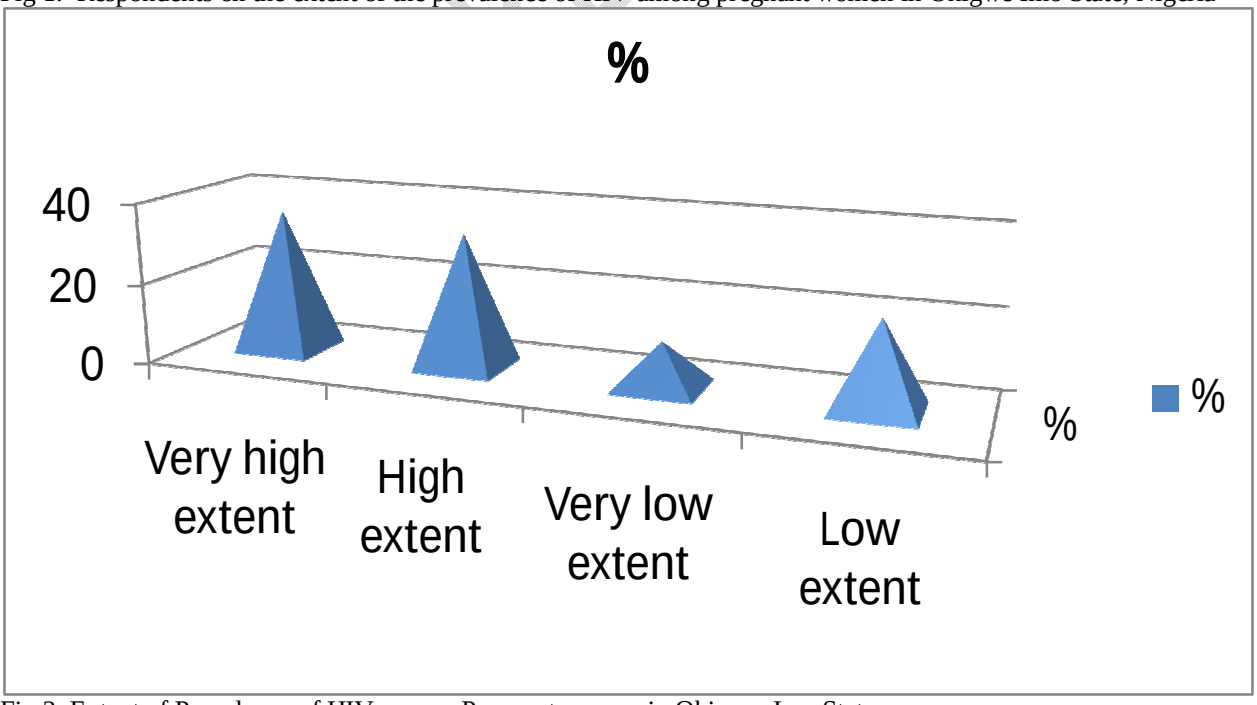


Fig 2: Extent of Prevalence of HIV among Pregnant women in Okigwe, Imo State

According to the results of the survey on the prevalence of HIV among pregnant women in Okigwe Imo State, Nigeria, shown in the table above, 35.4% of respondents checked "very high extent," 33% of respondents checked "high extent," 11% of respondents checked "very low extent," and the remaining 21.2% of respondents were unsure. The results show a significant incidence of HIV among expectant mothers in Okigwe Imo State, Nigeria.

Research Question Two: Is there a relationship between demography and ART adherence among pregnant women in Okigwe Imo State, Nigeria?

Table 2: Respondents on the relationship between demography and ART adherence among pregnant women in Okigwe Imo State, Nigeria

Options	Frequency	Percentage
Yes	100	70.9
No	30	21.3
Undecided	11	7.8
Total	141	100

Field Survey, 2022

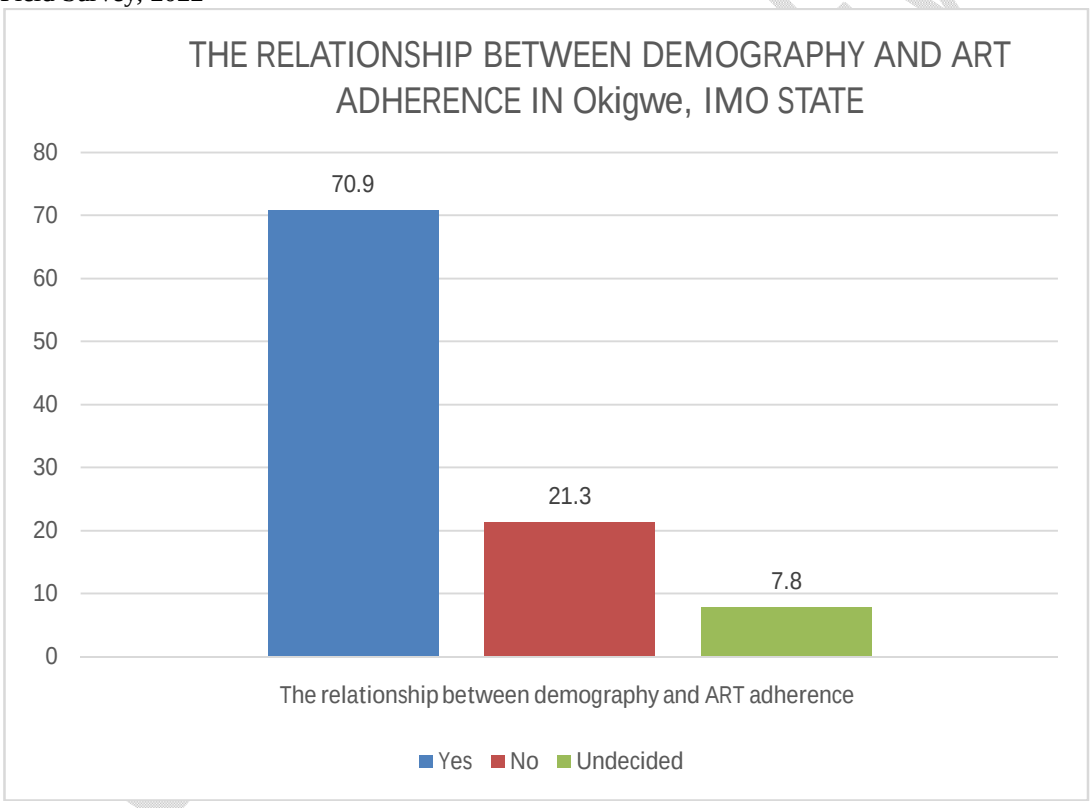


Fig 3: The relationship between Demography and ART adherence in Okigwe, Imo State

According to the responses collected and displayed in the table above regarding the correlation between demographics and ART adherence among pregnant women in Okigwe Imo State, Nigeria, the majority of respondents—roughly 70.9% of them—ticked "yes," 21.3% "no," and 7.8% "undecided."

Third research question: Are pregnant women in Okigwe Imo State, Nigeria's behavior and ART adherence related?

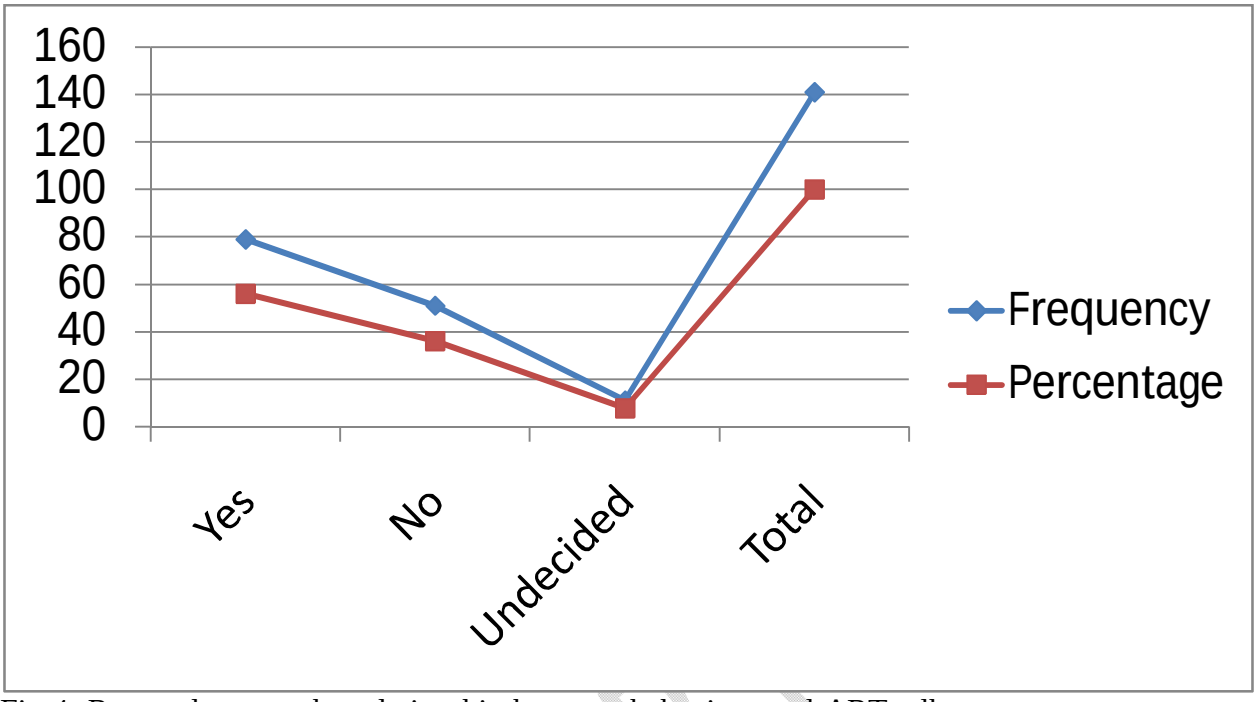


Fig 4: Respondents on the relationship between behaviour and ART adherence among pregnant women in Okigwe Imo State, Nigeria

According to the responses collected and displayed in the table above regarding the relationship between behavior and ART adherence among pregnant women in Okigwe, Imo State, Nigeria, the majority of respondents—roughly 56% of them—ticked yes, 36.1% of them—ticked no, and the remaining 7.8%—ticked neither yes nor no.

Research question 4: What are the barriers to ART adherence among pregnant women in Okigwe Imo State, Nigeria?

Table 3: Respondent on the barriers to ART adherence among pregnant women in Okigwe Imo State, Nigeria

S/N	ITEM STATEMENT	SA 4	A 3	D 2	SD 1	X	S.D	DECISION
1	HIV related stigma	99	21	12	09	3.5	4.5	Accepted
2	Side effects of the drugs	78	43	14	06	3.4	4.4	Accepted
3	Bitter taste of the tablets	86	15	26	14	3.2	4.3	Accepted
4.	Lack of disclosure	99	21	12	09	3.5	4.5	Accepted

5	Fear of abandonment	79	42	14	06	3.4	4.4	Accepted
6	Inadequate information	98	20	12	09	3.5	4.5	Accepted

Source: Field Survey, 2022

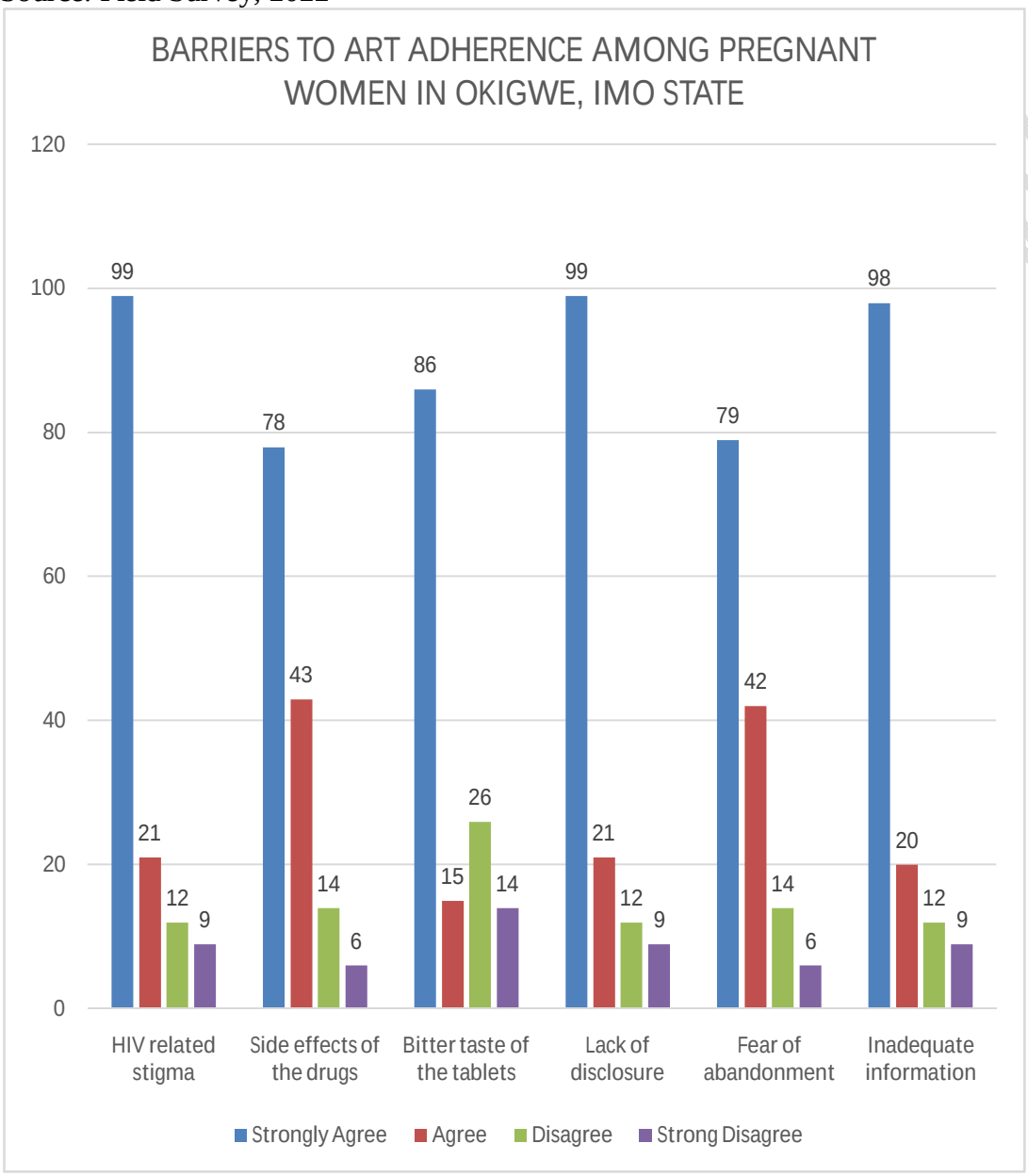


Fig 5: Barriers ART Adherence among Pregnant women in Okigwe, Imo State

The responses to the questions about the barriers to ART adherence among pregnant women in Okigwe Imo State, Nigeria, are compiled in the table above. The average response to item 1 was 3.4, also acknowledging the negative effects of the medicine, while the average score for item 2 was 3.4, the average score for item 3, and the average reaction to item 1 was 3.5. Additional responses included accepting the non-disclosure in item 4, which received a mean score of 3.5, accepting the fear of abandonment in item 5, which received a mean score of 3.4, and accepting

the insufficient information in item 6, which received a mean score of 3.5. Items 1, 2, 3, 4, 5, and 6 all have average scores that are at or above 2.50. This demonstrates that all of the respondents agreed with the statements made in the questions about the challenges to ART adherence faced by expectant mothers in Orlu Imo State, Nigeria.

TEST OF HYPOTHESIS

H0: The prevalence of HIV among pregnant women in Okigwe Imo State, Nigeria is high.
H1: The prevalence of HIV among pregnant women in Okigwe Imo State, Nigeria is low
Table 4: The prevalence of HIV among pregnant women in Okigwe Imo State, Nigeria is high

Options	Fo	Fe	Fo - Fe	(Fo - Fe)2	(Fo--Fe)2/Fe
Yes	70	47	23	529	11.3
No	36	47	-11	121	2.6
Undecided	35	47	-12	144	3.1
Total	141	141			17.0

Source: Extract from Contingency Table

Degree of freedom = (r-1) (c-1)
(3-1) (2-1)
(2) (1)
= 2

At 0.05 significant level and at a calculated degree of freedom, the critical table value is 5.991.
Findings
The calculated X^2 = 17.0 and is greater than the table value of X^2 at 0.05 significant level which is 5.991.

Decision
The alternative hypothesis, which claims that the prevalence of HIV among pregnant women in Okigwe Imo State, Nigeria, is low, is accepted since the X2 computed value is higher than the critical table value, which is 17.0 is larger than 5.991.
The second hypothesis, Ho2, states that there is no discernible connection between ART adherence and demography or behavior.

Ha2: The demographics and behavior have a substantial impact on ART adherence.

Table 5: Pearson Correlation Table showing the relationship between the Demography (D) and behaviour(B) to ART adherence(ARTA)

		D	B	ARTA
D	Pearson Correlation	1	.821**	.821**
	Sig. (2-tailed)		.000	.000
	N	141	141	141
B	Pearson Correlation	.821**	1	.821**

	Sig. (2-tailed)	.000		.000
	N	141	141	141
ARTA	Pearson Correlation	.821**	.821**	1
	Sig. (2-tailed)	.000	.000	
	N	141	141	141

Source: Survey data, 2022

**. Correlation is significant at the 0.05 level (2-tailed)

The Pearson Correlation result in table 5 contains the degree of association between D, B and ARTA. From the result, the Pearson correlation coefficient, r, value of 0.821 was positive and statistically significant at ($p< 0.000$). This indicates that demography (D) and behaviour(B) affects HIV pregnant women ART adherence(ARTA).
Thus, D, B and ARTA are correlated positively.

SUMMARY

In this investigation, we examined pregnant HIV/AIDS patients' compliance with antiretroviral therapy in Nigeria's Okigwe IMO state (ART). Finding out the prevalence of HIV among pregnant moms in Okigwe Imo State, Nigeria, as well as the demographic and behavioral characteristics related with ART adherence and the barriers to ART usage among expecting mothers in Okigwe Imo State were the study's specific aims.

Five distinct, yet related chapters present the study's findings. In chapter one, we explicitly state the objectives of the study and describe the motivation for this examination. As the parameters of this study were established, research hypotheses were developed and put to the test.

In chapter two, a review of pertinent and significant literature was conducted. The concept of HIV/AIDS was the main topic of this chapter's introduction. Other topics discussed in this chapter include the WHO clinical staging of HIV/AIDS, HIV Subtypes, HIV Epidemiology, HIV Transmission, HIV Invasion and Mutation, HIV Diagnosis, Overview of HIV/AIDS, Awareness and Attitude Towards HIV and AIDS, and Management Strategies of HIV/AIDS. The rationale for offering HIV/AIDS counseling, the psychological effects of the condition, the history of HIV/AIDS in Nigeria, the concept of antiretroviral therapy (ART), and the Nigerian ART program are among the additional concepts presented. According to Amusa's (2015) investigation into the subject of HIV and pregnancy, these women face a variety of challenges, from stigma to the size and abrasiveness of the pills to the effects these medications have on them. The study was based on three theories: the health belief model proposed by Rosenstack et al., the path of survival model proposed by Mosley and Chen (1984), and the AIDS Risk Reduction Model proposed by Catania, Kegeles, and Coates (1990). (1950).

The review also looked at empirical studies. Important studies, including work by Sherr, Mueller, and Varrall, were assessed (2019). The fact that Amusa (2015) had done more research was also acknowledged. Pregnant women with HIV/AIDS in Okigwe IMO state, Nigeria, were polled using a survey study design. The sample, which was taken from the senior classes of the secondary schools, contained 141 pregnant women. The replies were analyzed using the Chi-square and Pearson correlation statistics, and the mean, standard deviation, frequency counts, and percentages were utilized to present the results in tables.

RECOMMENDATION

In light of the responses, the researcher offers the following advice:

To expand coverage, every pregnant woman receiving ANC should have access to PMTCT services, either on-site or through a referral to a nearby clinic. The use of a geographic information system when locating PMTCT locations aids in reducing disparities in distribution and improving accessibility between states. It is also crucial to equip some of the facilities offering PMTCT treatments with new equipment in order to deliver top-notch services. This can be done in stages, beginning with facilities with a huge capacity.

ii. Expanding access to medical supplies will help prevent missed opportunities to provide PMTCT services. One of the main causes of supplies of HIV-related products being discontinued in Nigeria is poor data management of commodities, especially at the facility level, which leads to insufficient requests and a scarcity of commodities. Long lead times and the availability of products with short shelf lives are further influencing variables. The management of logistical data can be improved by healthcare workers through on-the-job training and encouraging supervision.

All pregnant patients getting antenatal care have to have access to PMTCT services, either on-site or via a referral to a nearby clinic, to broaden coverage. Locating PMTCT facilities using a geographic information system can help to lessen disparity and increase accessibility between states.

CONCLUSION

To achieve long-term HIV suppression, enhance immune system function, prevent drug resistance, and enhance general health, adherence to ART is essential. Cost, stigma, alcohol use, and structural barriers including a lack of transportation and pharmacy stock-outs are the most important and frequent factors that negatively affect adherence in developing nations, according to systematic reviews carried out by UNAIDS in 2018.

Using SNS technology for social purposes has long been a common method of communication for many individuals. These kinds of linkages have been warmly welcomed by students, especially those at the Higher Center, who see them as wonderful opportunities to engage with family and friends through extracurricular activities. Among these pupils, social networking services including Facebook, 2go, BB Messenger, and WhatsApp are the most often used.

The success of antiretroviral (ARV) treatments depends on careful adherence to the approved dosing schedule, which is a lifetime need for pregnant women. An adherence rate of between 90% and 95% is required to avoid the rapid formation of drug resistance and the failure of the therapy.

The study's findings indicate that Okigwe Imo State, Nigeria, has a very high prevalence of HIV among pregnant women.

Additional studies show a link between ART adherence and the demography of pregnant women in Okigwe Imo State, Nigeria.

Finally, the study's findings revealed a link between behavior and ART adherence among pregnant women in Okigwe Imo State, Nigeria.

Our study's findings lead us to the conclusion that pregnant women with HIV/AIDS who stick to their antiretroviral therapy (ART) are protecting both the mother and the growing fetus. "Pregnant women who cannot comply to their medications further encounter treatment failure and secondary HIV infection," according to a 2017 study by Afolabi, Ijadunola, Fatusi, and Olasode.

PROGRESS IN KNOWLEDGE

Despite the fact that many specialists have made significant contributions to ART compliance among HIV/AIDS patients, few research have been conducted on the adherence of pregnant women to ART. For instance, Sherr, Mueller, and Varrall (2019) conducted a clinical trial to compare the suppression of the viral load at delivery and throughout lactation among women randomised to receive different ARV regimens. Studies about women's adherence to ART during pregnancy have not been conducted.

Given that it would be concentrated on the Okigwe LGA in Imo State, this research is useful. In contrast to other parts of the federation and throughout the world, Okigwe, Imo State, has seen little to no study. As a result of this study, knowledge in this area will grow.

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