

Incidence Cases Of Hiv/Aids Infection In Owerri West Local Government Area Of Imo State, Nigeria.

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ABSTRACT: A study was conducted to determine the incidence cases of HIV/AIDS infection in Owerri West L.G.A of Imo State, Nigeria, between April 2007 and September, 2009. Data was collected from the HIV/AIDS co-ordination and control unit, Owerri General Hospital Umuguma, Owerri West Local Government Area of Imo State, Nigeria. It was observed that a total number of seventeen thousand nine hundred and sixty four patients made up of eleven thousand and ten (16.3%) females and six thousand nine hundred fifty four (38.7%) males were diagnosed on HIV/ AIDS infection. Statistical analysis shows that only one thousand four hundred and sixty two (8.1%) patients were infected with HIV/AIDS. From this number, One thousand two hundred and eighteen (83.3%) patients aged 25 years and above were most infected with HIV/AIDS while two hundred and forty four (16.7%) patients aged below 24 years were also infected. The incidence rate of HIV/AIDS infection was moderate at (8.1) while annual increase in HIV/AIDS infection was not statistically significant at ($p < 0.05$). [Researcher. 2010;2(8):43-50]. (ISSN: 1553-9865).

Keywords: Human Immunodeficiency virus (HIV) Acquired Immune Deficiency Syndrome (AIDS), Patient Transmission, Owerri West Local Government Area.

INTRODUCTION

Human immune deficiency virus (HIV) is a virus which causes acquired immunodeficiency syndrome (AIDS). This virus infects the cells that make up the human body and replicate themselves within those cells. In order to make new copies of itself, it must infect the cells of a living organism (Nielson, 2005). When it gets into the human body system several billions of HIV particle copies are produced every day and circulate in the blood. The replication of viral copies is associated with a decline in the number of CD4 cells which find and kill virus fairly quickly in the blood, increase the rate of Apoptosis in infected cells and killing of infected CD4⁺ cells by CD8 cytotoxic that recognizes infected cells. This will make the immune system not to function adequately and it is considered suppressed. Patients who have this CD4 count fewer than two hundred (200) cells per mm³ are referred to as being immune suppressed. A low CD4 cell count signals that the person is at risk for one of the many usual infections that occur in individuals who are immune suppressed. If

untreated, eventually, most HIV infected individuals develop AIDS (Buchbinder, et al 1998).

Acquired Immunodeficiency Syndrome is a set of symptoms and infections resulting from the damage to human immune system. The major consequence of this is such a progressive effective reduction of the immune system and leaves the individual prone to opportunistic infections. (WHO 2006)

Human immunodeficiency virus infection is contracted through transfusion of infected blood to an un-infected person and sexual fluids of an infected person such as semen, vaginal fluid, breast milk etc. Other routes of transmission include unprotected sexual intercourse with an infected person, mother – to – child transmission during pregnancy delivery and breast feeding. Others include the use of contaminated hypodermic needles and syringes. To this end it is important to note that there is still no cure for HIV/AIDS, but treatment for people living with HIV/AIDS has improved enormously.

MAJOR ROUTES FOR HIV/AIDS TRANSMISSION

HIV spreads from person to person, through body fluids, mainly semen, blood, vaginal secretions and saliva, infection requires direct contact between the body fluids as when semen of infected person contacts a cut of sore (from another sexually transmitted disease) in the vagina, mouth, rectum of another person. (Chukwu, 2008) The mode of transmission remains the same virtually in every human society but significantly differs in rate. The various means of transmission include:

SEXUAL ROUTE

The majority of HIV infections are acquired through unprotected sexual relation. Sexual transmission of HIV has been described from men to men, men to women, women to women, through vaginal and oral sex etc.

BLOOD OR BLOOD PRODUCT ROUTE

The spread of HIV by exposure to infected blood usually results from sharing of contaminated hypodermic needles and syringes used for illicit drugs. HIV can also be spread by sharing of needles for anabolic steroids to increase muscles, tattooing and body piercing. Many individuals also acquire HIV infection from blood transfusion or blood product such haemophilias within two to six (2 - 6) weeks of an exposure, the majority of infected persons will have a positive HIV antibody test with virtually all being positive by six (6) months. The test used most commonly for diagnosing infection with HIV is referred to as Enzymes Links Immunosorbent Assay (ELISA).

MOTHER TO CHILD TRANSMISSION (MTCT).

One of the greatest advances in HIV disease management has been in pregnant women. Prior to antiretroviral therapy, the risk of HIV transmission from an infected mother to her unborn was approximately 25 – 35%. Major advances in this area came with studies conducted after the first trimester of pregnancy. Then intravenously during the delivery process and then after delivery to the new born for six (6) weeks (Coovadia, 2004). This treatment showed a reduction in the risk of transmission to less than 10%. Although less data are available with more potent drug combinations, clinical

experiences suggests that the risk of transmission may be reduced below 5%.

There is little advancement that HIV can be transferred by casual exposure as might occur in house hold setting unless there are open sores or blood in the mouth. Kissing is generally considered not to be a risk factor for transmitting HIV. This is because saliva in contrast to genital secretions has been shown to contain very little HIV. These items should not be shared with infected person.

Medical experts are concerned that the repeated use of unsterilized blades in the circumcision of adolescent male individuals may be spreading HIV.

FACTORS CONTRIBUTING TO THE SPREAD OF HIV

Lack of Sexual Health Information and Education

Before recent times, there was little or no sex education for young people and this has been a major barrier to reducing rates of HIV and other sexually transmitted disease (STD's). In Nigerian tradition, sex is a private subject and discussion about it with teenagers is often seen inappropriate.

Only 18% of women and 21% of men between the ages of 15 – 25 correctly identify how to prevent HIV (UNAIDS, 2006). Lack of accurate information about sexual health has left many people in doubt and misconception about sex. This encourages increasing transmission rate as well as stigma and discrimination towards people living with HIV/AIDS.

The most serious problem is the lack of sensitization on how to use condom among some people, though, some men often wear double condom during sexual intercourse with a view to having double the protection, but on the contrary doubles the chance of contracting HIV.

POOR HEALTH CARE SYSTEM

In the last two decades Nigerian health-care system is deteriorated as a result of political instability, economic mismanagement and poor technology. Some parts of the county even lacked basic health care provision, making it difficult to establish HIV testing and prevention services such as those for prevention of mother to child transmission. Sexual health clinics providing contraception, testing and

treatment for other STD's are few. This makes it very difficult to keep the spread of the epidemic under control (Jonson et al, 2003).

HIV TESTING

One of the major problems of HIV eradication in Nigeria remains that majority of people have not been tested. People find it very difficult to go for HIV test even when it is made free of charge.

In 2003 survey, only six percent (6%) of women and 14% of men had ever been tested for HIV and received results, while in 2005 only 1% of pregnant women were being tested for HIV (UNAIDS, 2006).

CULTURAL PRACTICES

It has been observed that women are particularly affected by the epidemic in Nigeria. In 2006, UNAIDS estimated that women account for 61.5% of all adults aged 15 and above living with HIV. The study also revealed that the younger married girls lacked knowledge on reproductive health which include HIV/AIDS. They also tend to lack the power and education needed to insist upon the use of condom during sexual intercourse. Probably, only two out of every ten sexually active female individuals have seen the female condom and this may be on their attendance to HIV seminars. This situation is coupled with the fact that at times, the husband may be significantly older than the wife and therefore is more likely to have had more sex in the past. Young women are more vulnerable to HIV infection within marriage (Chukwu, 2008).

PREVENTION OF HIV/AIDS

Use of Condom

Restriction in condom promotion have hampered HIV prevention efforts. The female condom can potentially help in reducing the spread of HIV. Advertising practitioners council of Nigeria. (APCON), suggested that it is acceptable to engage in premarital sex provided condom is used (Chukwu, 2008).

SEX EDUCATION

Sex education provides information, knowledge and confidence. It has been observed that well informed children on male and female anatomy handle puberty better than the uninformed ones. Sex education affects a

child's attitude positively. Each sex (Male and Female) becomes more tolerant of the others behavioural pattern and opinion. A sexually oriented child learn to believe in the quality and parental responsibilities.

MEDIA CAMPAIGNS AND PUBLIC AWARENESS

Media campaign to raise awareness of people in different regions. Radio and television campaign like one created by the society for family health are though to have been successful in increasing knowledge and changing behaviour (Chukwu, 2008).

TREATMENTS

Current treatments of HIV infection consist of highly active antiretroviral therapy (HAART) which has been beneficial to many HIV infected individuals. There is no vaccine for the cure of HIV or AIDS, the only safe method known for prevention is abstinence.

There is no evidence that people infected with HIV can be cured by the currently available therapies. Individuals who are treated for up to three years and are repeatedly tested to have no virus in their blood experience a prompt rebound increase in number of viral particles when therapy is discontinued (UNAIDS, 2006). The decision to start therapy must balance the risk of an individual advancing to the stage of symptomatic disease against the dangers associated with the therapy. These risks include depression, feelings of isolation and substance abuse which is a reason that resistance develops as the patient's failure to correctly follow the prescribed treatment by not taking the medication at the current time.

High Active Antiretroviral Therapy (HAART) combination consists of at least three drugs which belong to two classes are nucleoside analogue to reverse transcriptase inhibitor or a non nucleoside reverse transcriptase inhibitor (NNRTI).

For the purpose of this study, the following research questions were formulated to guide this research work.

RESEARCH QUESTION 1

What is the total number each of male and female patients diagnosed?

RESEARCH QUESTION 2

Which age bracket of patients is more infected with HIV/AIDS

RESEARCH QUESTION 3

What is the incidence rate of HIV/AIDS infection as at the time of study.

Ho = there is no significant annual increase in HIV/AIDS infection between April 2007 and September 2009 (p<0.05)

METHODOLOGY

A study was carried out at the Owerri General Hospital Umuguma in Owerri west L.G.A of Imo state, Nigeria. The subject of the study include all the male and female patients within the ages of 0-24yrs and 25 and above who went for HIV/AIDS diagnosis between April 2007 and September 2009, while the population of the study include all the human inhabitants of Owerri west L.G.A with an estimated population of 120,000 in the last national census conducted in 2006. A total

subject size of (males and females) of seventeen thousand nine hundred and sixty four (17,964) were diagnosed (Table iv and v) between April 2007 and September 2009, while only one thousand four hundred and sixty two 1, 462 (8.1%) were found to be HIV/AIDS positive (Table v) Data was collected via a prior permission from the HIV/AIDS co-ordination and control unit, Imo state ministry of health Owerri and was extracted from the documented result sheets from the HIV/AIDS co-ordination and control unit Owerri General Hospital Umuguma. In addition, the researchers made direct observations and copied the required data into a proforma. Table I, II and III show the prevalence of HIV/AIDS infection in the area as at 2007, 2008 and 2009 respectively. Research question 1 was answered using table iv. Question II (2) and III(3) were answered using table v(5) question III(3) was answered by calculating the sum of all percentage proportions, divided by the mean value (n=3). The Null Hypothesis (Ho) was tested using chi-square test of independence at (P<0.05) level of significance.

RESULT

TABLE I,II AND III BELOW SHOW THE PREVALENCE OF HIV/AIDS INFECTION IN OWERRI WEST L.G.A IN 2007, 2008 AND 2009- SOURCE OWERRI GENERAL HOSPITAL UMUGUMA
TABLE 1-2007

MONTH	0-24 YRS		25YRS & ABOVE		TOTAL NO. EXAMINED	TOTAL NO. INFECTED (%)
	NO. EXAMINED	NO. INFECTED (%)	NO. EXAMINED	NO. INFECTED (%)		
APRIL	7	2 (28.6)	4	3(75)	11	5 (45).5
MAY	73	2(2.7)	283	15(5.3)	356	17(4).8
JUNE	71	4(5.6)	259	9(3.5)	330	13(3).9
JULY	52	5(9.6)	264	20 (7.6)	316	25 (7).9
AUG	71	4(5.6)	193	22(11.4)	264	26(9).8
SEPT	81	5(6.12)	187	18(9.6)	268	23(8).6
OCT	69	1(1.5)	164	15(9.14)	233	16(6).9
NOV	95	11(11.68)	238	20(8.4)	333	31(9).3
DEC.	149	3(2.0)	465	32(6.9)	614	25(4).1
TOTAL	668	37(5.6)	2057	154(7.5)	2,725	191(7).0

TABLE II -2008

MONTH	0-24 YRS		25YRS & ABOVE		TOTAL NO EXAMINED	TOTAL NO INFECTED (%)
	NO EXAMINED	NO INFECTED (%)	NO EXAMINED	NO INFECTED (%)		
JAN	59	2(3.4)	282	10(3.5)	341	12(3.5)
FEB	169	4(2.4)	502	27(5.4)	671	31(4.6)
MARCH	113	3(2.7)	552	31(5.6)	665	34(5.1)
APRIL	103	6(5.8)	422	31(7.3)	525	37(7.0)
MAY	110	4(3.6)	479	48(10)	589	52(8.8)
JUNE	192	8(4.2)	546	53(9.7)	738	61(8.3)
JULY	164	14(8.5)	544	60(11)	708	74(10.5)
AUG	217	11(5.1)	762	66(8.7)	979	77(7.9)
SEPT	157	6(3.8)	684	59(8.6)	841	65(7.7)
OCT	245	21(8.6)	647	54(8.3)	892	75(43.4)
DEC	63	11(17.5)	711	41(5.8)	774	52(6.7)
TOTAL	1791	100(5.6)	6642	565(8.5)	8,433	665(7.9)

TABLE III -2009

MONTH	0-24 YRS		25YRS & ABOVE		TOTAL NO EXAMINED	TOTAL NO INFECTED (%)
	NO EXAMINED	NO INFECTED (%)	NO EXAMINED	NO INFECTED (%)		
JAN	183	11(6.0)	527	56(10.6)	710	67(9.4)
FEB	169	11(6.5)	730	63(8.6)	899	74(8.2)
MARCH	152	10(6.6)	738	76(10.3)	890	86(9.7)
APRIL	175	8(4.6)	705	55(7.8)	880	63(7.2)
MAY	40	11(27.5)	142	14(9.9)	182	25(13.7)
JUNE	182	18(9.9)	660	69(10.5)	842	87(10.3)
JULY	161	10(6.2)	494	51(10.3)	655	61(9.3)
AUG	180	14(7.8)	691	63(9.1)	871	77(8.8)
SEPT	207	14(6.8)	670	52(7.8)	877	66(7.5)
TOTAL	1,449	107(7.40)	5,357	499(9.3)	9,806	606(8.9)

Answering Research question 1

What is the total number of each male and female patients diagnosed within the period of study?

Table iv shows sex related rate of diagnosis

	Male	Female	Total
2007	814(29.9)	1911(70.1)	2725
2008	3265(38.7)	5168(61.3)	8433
2009	2875(42.2)	3931(57.8)	6806
TOTAL	6954(38.7)	11,010(61.3)	17,964

From the table above out of seventeen thousand nine hundred and sixty four (17,964) subjects who went for HIV/AIDS diagnosis between April 2007 and September 2009, Eleven thousand and ten (11,010) subjects were female while only six thousand nine hundred and fifty four (6954) were males. Therefore a greater number of male's subjects went for HIV/AIDS diagnosis within the period of study.

Answering Research question II

Which age bracket of patients are more infected with HIV/AIDS diagnosis within the period of study?

Table (v) shows an overall prevalence rate of HIV/AIDS infection in Owerri West L.G.A from April 2007 - Sept, 2009

YEAR	Grand total exam	Grand total Infected	Proportion infected	P ¹ – P ²	0-24 Years G/T infected	25-Ab G/T Infected
2007	2725	191(7.00)	0.0262	0.0700	37(19.4)	154(80.6)
2008	8433	665(7.90)	0.0258	0.00788	100(15.0)	56(85.0)
2009	6806	6060(8.9)	0.0214	0.0930	107(17.7)	499(82.3)
Total	17,964	1462(8.1)	0.0734	0.2418	244(16.7)	1218(83.3)

Key; G/T = Grand Total

Table (v) above reveals that, out of a total of Seventeen thousand nine hundred and sixty four (17964) subjects who were examined on HIV/AIDS infections between April 2007 and September 2009, one thousand two hundred and eighteen 1218 (8.7%) patients aged 25yrs and above were infected with HIV/AIDS while only a total subject number of two hundred and forty four (244) whose ages were below 24yrs were infected. Therefore high rate of infection were observed among patients between 25yrs and above.

Answering research question III

What is the incidence rate of HIV/AIDS infection as at the time of study?

From table (v), incidence rate = $\frac{7.00 + 7.88 + 9.30}{3} = 0.2418$

$\therefore 0.2418 \times 100 = 24.18$

i.e mean of percentages; n= 3

$\therefore \frac{7.00 + 7.88 + 9.30}{3} = \frac{24.18}{3} = 8.06\%$

TESTING NULL HYPOTHESIS

H₀ = there is no significant annual increase in HIV/AIDS infection between April 2007 and September 2009 (p<0.05).

Proportion positive = p+ = $\frac{N+}{G/T} = 0.2418$

G/T

Where N+ = Number infected

GT = Grand total infected

$\therefore Q = 1 - P$ where q = p complement (p¹)

(Table (v)) P+ = P₁ + P₂ + P₃ = 0.2418

Q = 1 - P+ = 1 - 0.2418 = 0.7582

Pq = 0.1833.

$X^2 \text{ cal} = \frac{1}{Pq} \sum (P^1 P+)^2$

$X^2 \text{ tab} = X^2 (5.4, 0.05) = 4.2142$

$X^2 \text{ cal} < X^2 \text{ tab}$

Therefore, the null hypothesis is accepted thus:

There is no significant annual increase in HIV/AIDS infection among the inhabitants of Owerri West LGA with time.

DISCUSSION

Data obtained from Owerri General Hospital Umuguma in Owerri West LGA Cover only a period of thirty six months, that is, between April 2007 and September, 2009. Out of a total number of seventeen thousand nine hundred and sixty four (17,964) subjects examined on HIV/AIDS infection within this period, only one thousand four hundred and sixty two 1,462 (8.1%) subjects were found to be infected with HIV/AIDS (Table v). Females were more diagnosed than males with a total of eleven thousand and ten (11010) and six thousand nine hundred and fifty four (6,954) subjects respectively and are likely to be more infected with HIV/AIDS. On the contrary, in 2003 survey only, 6% of females and 14% of males had ever been tested and received result and 1% of pregnant women were being tested in 2005. (UNAIDS/Unicef 2006) higher percentage diagnosis among females could attribute to the fact that certain deviation from normal body physiology such as unset and breech in menstruation as well as attainment to menopause may attract fear that may lead to quick diagnosis response. Irrespective of the fact that one of the major problems militating against HIV/AIDS eradication is that many have not been tested, yet women accounts for 61.5% of all adult aged 15 and above living with HIV/AIDS (UNAIDS, 2006). High rate of infections among females may be due to the fact that body is prone to infections during pregnancy and oestrous cycle.

Subjects aged 25 years and above were more infected with HIV/AIDS than subjects aged below 24 years. This could be due to some surrounded higher institutions in Owerri West LGA such as FUTO, FEDPONEK, IMOPOLY as well as Army barracks which have made the area a semi urban status resulting to high influx of people into the area. The settling of herdsmen who might not be living with the spouse may in no small measure contribute to having multiple sex partners which undoubtedly results to high rate of HIV/AIDS infection among the inhabitants.

Incidence rate is moderate at 8.06% compared to that of the state level at 8.0% and increase in HIV/AIDS infection between April 2007 and September 2009 was not statistically significant at $X^2 = 4.2$, $p = 5.4$ ($p < 0.05$).

This could be as a result of increased in sensitization and awareness campaign including sex education on the control and management

of HIV/AIDS infection. The recent inclusion of HIV/AIDS education into the NCE curriculum may also have contributed to an extent.

CONCLUSION AND RECOMMENDATIONS

From the analysis, it was evident that the prevalence of HIV/AIDS infection is still on the increase. This is majorly due to the fact that most people are yet to know their HIV status despite the fact that awareness of HIV/AIDS epidemic had been made and diagnosis in Owerri General Hospital is free.

The researchers therefore recommend that a follow up where people can learn more on through the establishment of HIV counseling units in all wards of the state. Furthermore people should be encouraged to know their HIV status by going for test which is free while those already infected should be treated and not stigmatized by the society, by so doing the indecent case of HIV will reduce drastically.

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