

Awareness of Human Immunodeficiency Virus (HIV) infection among antenatal clients in Nnewi Nigeria

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ABSTRACT

Objective: To determine the level of awareness of Human Immunodeficiency Virus (HIV) infection among antenatal clients in Nnewi Nigeria.

Subjects and Methods: A cross sectional descriptive study of six hundred consecutive antenatal clients attending the Nnamdi Azikiwe University Teaching Hospital and five private specialist hospitals (run by Consultant Obstetricians) in Nnewi was conducted over a six-month period (1st September 2008 -28th February 2009). Anonymous, structured, pretested questionnaire designed to assess the awareness of HIV infection was used.

Results: The mean age of all the 600 clients was 31.4 (SD 2.8) years, majority were married (94%) and in the third trimester of pregnancy (69%). Most (58%) attended secondary school while 0.83% had no formal education. Only 2% had complete knowledge of the modes of HIV transmission while majority (96.5%) had partial knowledge. There was a statistically significant relationship between level of education and knowledge of HIV ($p < 0.00001$). HIV test was done on 419(69.84%); 37 tested positive giving a seroprevalence rate of 8.83%. Among those tested, only 51.55% had counseling before testing.

Conclusion: This study showed that the knowledge of HIV among women of child bearing age and the practice of voluntary counseling and testing are still poor in our environment. Improved public enlightenment and training of health workers are urgently needed.

Key words: Antenatal, HIV, awareness, Counseling and Testing.



INTRODUCTION

The human immunodeficiency virus/acquired immune deficiency syndrome (HIV/AIDS) pandemic is a global catastrophe^[1] and a major threat to humanity. On 5th June 1981, the Centre for Disease Control (CDC) Atlanta Georgia, United States in a one paragraph article in their Morbidity & Mortality Weekly Report alerted the world of five active male homosexuals from Los Angeles and New York with *Pneumocystis carinii* pneumonia thus heralding the first published cases of HIV/AIDS.^[2,3] In March 1983, Professor Luc Montagnier and colleagues

of the Pasteur Institute Paris isolated retrovirus from the lymph node of an AIDS patient while in May 1984, Dr. Robert Gallo and colleagues of the National Cancer Institute, USA developed the blood test for HIV antibodies thus making serological tests for HIV generally available from 1985.^[2,3] The first case of HIV/AIDS in Africa was reported in Uganda between 1982 and 1983. The first official report of HIV/AIDS in Nigeria was in a 13 year old girl in 1986. Since those early days, the spread of HIV/AIDS has been overwhelming and never in history has there been a disease so devastating, yet so ignored.^[4] The Nigerian national seroprevalence rose from 1.86% in 1991 to 5.8% in 2001 with a marginal decrease to 4.4% by December 2005 and to 4.6% in 2008 till date.^[5]

According to the Joint United Nations Programme on HIV/AIDS (UNAIDS), Nigeria has the

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third largest number of people living with HIV.^[6] By the end of 2006, AIDS and AIDS-related illnesses had killed more than 25million people worldwide and out of an estimated 39.5-40.3million people living with HIV/AIDS (PLWHA), 17.7million and 2.5million were women and children respectively.^[5] Sub-Saharan Africa (SSA) has continued to bear the greatest burden. Even though it is home to only about 10% of the world's population, SSA accounts for two-thirds (about 63%) of the world's PLWHA, two-thirds of all new infections globally and three-quarters of all AIDS deaths inspite of recent improvements in access to antiretroviral treatment.^[5] Africa currently has over 12million AIDS orphans.^[5] Notwithstanding conflicting reports^[5,6] the prevalence of HIV infection continues to rise in Africa reaching as high as 40% among certain populations like pregnant women and commercial sex workers in some countries.^[7] Several factors including cultural practices, poverty, continuous decline in social services, low rates of condom use, urbanization, migration and conflict, and even male circumcision and herpes simplex virus type 2 (HSV-2) infection have been adduced as contributory to this high HIV prevalence in Africa.^[2,7,8]

National sentinel HIV seroprevalence estimates are usually derived from women of childbearing age (mainly antenatal clients) due to logistic and other reasons. These women constitute up to 25% of the Nigerian population. The World Health organization (WHO) estimates that at least 50% of all people infected with HIV worldwide are female, majority of whom are in their reproductive years and still elect to have children.^[5,8] With global feminization of the epidemic, an approximate 57% of adults living with HIV in Africa are women.^[5,6] Heterosexual transmission of HIV, therefore, appears to be increasing (accounting for nearly 80% of all HIV infections^[5]) even in the developed world where male homosexual practice was the initial predominant mode of spread.

Voluntary counselling and confidential testing (VCT) or HIV counselling and testing (HCT) of all pregnant women at the antenatal clinic is a highly recommended best practice in HIV education and prevention.^[9] Studies suggest that universal routine (opt out) approach has been found to increase uptake of HIV testing.^[10] Universal (opt out) HIV testing means that all individuals attending specified settings are offered and recommended to have an HIV test as part of routine care but an individual has the option to

refuse a test.^[11] Knowledge of HIV status has been associated with reduction in risk behavior.^[11,12] Widespread knowledge about HIV/AIDS is paramount to mitigating the physical and emotional devastations to individuals, families and communities coping with the pandemic and its terrible impact on regional and global security and economy. This study therefore seeks to determine what the average antenatal client in our setting knows about HIV/AIDS, possible determinants of such knowledge and her attitude towards these. Relevant conclusions shall be made and necessary recommendations proffered.

Subjects, Materials and Methods.

This research was a cross-sectional descriptive study based on an anonymous, structured, pretested questionnaire designed to assess antenatal clients' awareness of HIV infection. The questionnaire had two sections. The first section contained eight questions requesting necessary biodata (excluding name) and other demographic parameters of the respondents; the second section had questions testing clients' knowledge of HIV infection. The questionnaires were both self (client) administered and interviewer administered as necessary. Some of the questions demanded simple "Yes", "No" or "Don't know" answers with further questions deriving from these answers. Other questions had options provided with some requiring a choice of more than one option.

Six hundred consecutive antenatal clients participated in the study. The Sample Size was determined using an appropriate statistical formula for estimating sample size in health studies viz: $n = Z^2Pq/d^2$, where n is the required sample size, Z is the coefficient of Z statistic (the standard normal deviation at 95% confidence level obtained from the standard normal distribution table), P is prevalence rate in %, q is 100-P, and d is the desired precision of the study or sampling error tolerated in %. Using a prevalence rate P of 9.2% obtained from a previous similar study in Nnewi, a confidence limit of 95% (d= 5%), and Z of 1.96, the calculated sample size, n was 128. The sample size of 600 used in this study was almost four times the calculated one. This was deliberate in order to reduce sampling error, eliminate bias, obscure possible confounders and thus improve precision of the study.

The hospitals used included the Nnamdi

Azikiwe University Teaching Hospital (a major national PMTCT centre) and 5 private specialist hospitals run by consultant obstetricians and gynecologists uniformly spread around Nnewi's four major communities. Two of the private hospitals serve as outposts of the PMTCT programme in Anambra State while the other three also offer comprehensive PMTCT services.

The proportion of respondents from the various hospitals was determined using their antenatal clinic attendance registers for the previous one year. Based on the records, the allocation was thus 250 clients to NAUTH, 100 to each of the two PMTCT outposts and 50 to each of the other three hospitals. The first 600 consecutive new antenatal clients attending the hospitals within the six-month (26 weeks) study period (1st September 2008 to 28th February 2009) were recruited for the study. Recruitment was stopped once the target for each hospital was reached.

The clients were studied using such demographic variables as age, parity, occupation, place of domicile, religion, educational status, marital status and trimester of pregnancy. Knowledge (awareness) of HIV was obtained using variables like information source, modes of transmission and symptoms of HIV infection.

The data was collated and tabulated. Simple percentages (proportions) were calculated. Statistical analysis was done using EPI-INFO 2002 software. Means with standard deviations were derived where necessary. Significance of some of the demographic variables (educational status and place of domicile) on HIV awareness was tested using the chi square test at 5% level of significance or 95% confidence interval ($P = 0.05$).

RESULTS

Table 1 shows the age and parity distribution of the clients. Two hundred and eight clients (34.67%) were aged 26-30 years; 195 (32.50%) were aged 31-35 years. Combining these, 403 (67.17%) patients were thus 26-35 years old. Only 16 clients (2.67%) were 20 years and below while just 2 (0.33%) were above 45 years. The age range of the clients was 16-46 years with a mean of 31.4 (SD2.8) years. . The multipara (para 2-4) formed the majority with 278 clients (46.33%) followed by the primipara (para 1) with 152 clients (25.33%).

Four hundred and fourteen (69%) of the clients were in the third, 138 (23%) in the second and 48 (8%) in the first trimester of pregnancy. Majority – 246 (41%) were traders; 174 (29%) were housewives; 96 (16%) were students; 72 (12%) were civil servants; others like professionals and restaurateurs were 12 (2%). All the 600 clients were Christians made up of 246 (41%) Roman Catholics; 168 (28%) Anglicans; 150 (25%) Pentecostals; and 36 (6%) from other denominations.

Three hundred and ninety (65%) clients lived in semi-urban towns like Nnewi, 72 (12%) came from urban areas like Onitsha and Awka while 138 (23%) were from rural areas. 348 (58%) had secondary education; 127 (21.17%) were in or had tertiary education; 120 (20%) had primary education while 5 (0.83%) had no formal education. Five hundred and ninety one clients (98.50%) were aware of HIV infection while nine (1.50%) were unaware. The clients' place of domicile did not make any significant difference to awareness of HIV ($p=0.40$; see table 3). There was a statistically significant relationship between clients' level of education and awareness of HIV ($p<0.00001$). The more highly educated a woman was, the more likely she was to have had knowledge of HIV; see table 4.

Table 2 shows that most clients – 579 (96.50%) had partial knowledge of the various modes of HIV transmission. 12 (2%) clients had complete knowledge while 9 (1.50%) had no knowledge. Respondents who correctly answered at least one major mode of transmission were deemed to have partial knowledge while those who correctly answered the two major modes (through sex and through blood/blood products) had complete knowledge. 474 (79%) of the clients first heard of HIV from the electronic mass media - radio and/or television; 72 (12%) first knew about it from the print media; 24 (4%) heard of it in their place of worship - church/fellowship group; 18 (3%) got to know about it from a doctor or other health worker while 12 (2%) heard from other sources like family member, friend, place of work, posters/bill boards. Regarding HIV prevalence, 382 clients (63.67%) tested negative to HIV and 37 (6.17%) tested positive making a total of 419 clients tested. 181 (30.17%) were not tested. Of the 419 clients tested for HIV, 216 (51.55%) had counselling before testing (VCT) while 203 (48.45%) had mandatory testing. The true prevalence was 8.83% among those tested, with 91.17% screening negative.

TABLE 1: Age and parity of the clients (respondents)

Age	No	%	Parity	No	%
20 and below	16	2.67	Nullipara	127	21.17
21-25	52	8.67	Primipara	152	25.33
26-30	208	34.67	Multipara	278	46.33
31-35	195	32.50	grandmultip	53	7.17
36-40	89	14.83	Total	600	100
41-45	38	6.33			
Above 45	2	0.33			
Total	600	100			

TABLE 2:
Knowledge of route of transmission

Knowledge	No	%
Complete knowledge	12	2.00
Partial knowledge	579	96.50
No knowledge	9	1.50
TOTAL	600	100.00

TABLE 3:
Place of Domicile versus Knowledge (Awareness) of HIV

Domicile	Aware	Not aware	Total
Urban	70	2	72
Semi-urban	386	4	390
Rural	135	3	138
Total	591	9	600

Chi square=1.81, degrees of freedom=2, p=0.40

TABLE 4:
Educational status versus Knowledge (Awareness) of HIV

Level of education	Aware	Not aware	Total
Tertiary	127	0	127
Secondary	347	1	348
Primary/None	117	8	125
Total	591	9	600

Chi square=25.71, degrees of freedom=2, p<0.00001

DISCUSSION

The latest HIV seroprevalence sentinel survey in Nigeria indicates a marginal rise in national median rate from 4.4% in 2005 (a previous dip) to 4.6% in 2008 till date.^[6,13] The prevalence rates vary widely between states ranging from 1.2% in Osun to 12.0% in Cross-river.^[5,14] The occurrence of HIV/AIDS in pregnancy has become a global public health problem and as the incidence in women increases, the number of such patients increases. The HIV prevalence of 8.83% among those tested in this study is higher than the 4.6% national prevalence. It is even much higher than those in earlier studies from the Nigerian cities of Kano,^[15] Abuja^[16] and Abakaliki^[17] and from the Mongomo district of Equatorial Guinea^[18] where prevalence of 2.54%, 3.2%, 4.74% and 1.23% were respectively reported. It is however similar to the prevalence of 7.3% and 8.1% respectively reported among pregnant women in Port Harcourt^[19] and Jos^[20] but less than 10.73% reported in Makurdi.^[21] There is no doubt that many factors and confounding variables are at play in these wide variations in seroprevalence rates. Indeed the validity and reliability of sentinel survey figures derived from antenatal clients have been called into question prompting some workers to suggest a redirection of campaign and

surveillance to artisans, traders and those living away from their spouses.^[22] Logistic and other difficulties remain stumbling blocks to this alternative.

The age range, parity and marital status of the clients in this study conform to similar studies elsewhere^[16-18,20,21] where majority included married multiparous or primigravid women in their early reproductive years.

There was a high degree of awareness (98.5%) of HIV infection among the study population as similarly found in an earlier study by Igwegbe and Ilika (99%) in Nnewi.^[23] This high degree of HIV awareness has been similarly reported all over the world by several authors.^[4,8,24,25] The place of domicile had no statistically significant relationship with HIV awareness in this study but the effect could be due to the small numbers of those not aware. The Nigeria Demographic and Health Survey 2003 revealed that 95% of women living in urban areas were aware of AIDS compared to 82% of women living in rural areas.^[26] In all studies, the mass media especially the electronic media (radio and television) were acknowledged as the major source of information. It is pertinent to point out here that clients were specifically asked their first source of information as most had heard of HIV from several sources. The concept of the world as a global village linked by the internet and other information and communication technologies may also be a major factor in awareness.

Despite being aware of HIV, many of the clients lacked detailed knowledge of the modes of transmission, symptomatology and testing to diagnose the disease. The low utilization of antenatal care services among other reasons have been adduced for this finding.^[24] The education of the respondents was also critical as over 99% had formal education with a preponderance of those with secondary education (58%). Several other studies^[14,25,27,28] similarly found a significant relationship between educational status and HIV awareness and prevention.

It has been estimated that less than 1 in 10 people know their HIV status especially in those parts of the world most severely affected by HIV/AIDS and the major hindrance is lack of access to voluntary counselling and testing (VCT) services.^[9,29] Ezegwui et al found good uptake of HIV screening among antenatal clients in Enugu with educational qualification being a significant determinant.^[30] They recommended routine VCT of all antenatal women just like other investigators.^[10,11] Of the 419 clients

tested in this study only 216 (51.55%) received VCT. Others (48.85%) were tested without counselling. While a study in Makurdi^[28] concluded that majority (80%) of 100 respondents were willing to be tested, another study in Kaduna^[31] found that 41.8% of 757 respondents did not wish to be screened but the rate of refusal of screening fell following counselling. A recent study of 200 antenatal women in Benin City showed that out of 50 that had taken an HIV test, only 14 (27.5%) were counselled.^[32] VCT services have been shown in a randomized controlled trial involving some 4,000 participants in Kenya, Tanzania and Trinidad to be highly effective in reducing sexual risk behaviour.^[33]

The finding that clients' place of domicile did not have any impact on knowledge of HIV while level of education did, can be explained by the prevailing socio-economic situation where educational status may not necessarily determine the residence of individuals. Highly educated but unemployed (and thus not economically empowered) women may be found in rural areas while less educated but economically empowered women (with wealthy spouses, good businesses, etc) may reside in urban centres. Secondly, there is a fairly good spread of information to all areas especially via the electronic media (the major source for most clients) even in vernacular which the largely less educated rural population understand.

CONCLUSION

The existence of HIV infection is very widely known in our environment though partial awareness of its mode of transmission is still common. Appropriate sensitization by the mass media, adequate social mobilization and support by all levels of government and their agencies, non-governmental, faith-based and other organizations, with necessary steps taken to demystify and destigmatize HIV/AIDS are highly recommended to increase awareness levels of the various dimensions of the pandemic. More training of the health workers especially in counseling skills is needed. These would undoubtedly improve VCT uptake.

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