

Full Length Research Paper

HIV/AIDS in Northeastern Nigeria: A review

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The HIV/AIDS situation in Nigeria has undergone a lot of transformation following a long period that was plagued by superstition and denial. The HIV Sero Prevalence Sentinel Surveys were conducted among the antenatal clinic (ANC) attendees in Nigeria being considered to be a homogenous community of persons with steady sexual partners. Included in the survey were pregnant women aged between 15 to 49 years of age from rural and urban areas across all the 36 states of the federation and the Federal Capital Territory (FCT). The clinic attendance pattern at enrollment from one of the HIV/AIDS care clinics in the zone was also added, to highlight the burden of the problem. The recent survey revealed that the National prevalence of HIV stands at 4.1%, although there are centers that recorded prevalence rates far greater than the national average in many zones of the country. We later discussed the epidemiology of the disease in the northeast region with some peculiarities that encourage the spread of HIV/AIDS, especially related to this part of Nigeria.

Key words: HIV/AIDS, prevalence, Nigeria, north-east zone.

INTRODUCTION

Since 1986 when the first case of the Acquired Immune Deficiency Syndrome (AIDS) was reported in Nigeria (Nasidi et al., 1986), the disease has grown to epidemic proportions with the prevalence of its causative agent - the Human Immunodeficiency Virus (HIV) being observed to be steadily rising since the early days of the epidemic. The Federal Republic of Nigeria is divided into 36 states and the Federal Capital Territory (FCT) (Figure 1), which are further sub-divided into 774 Local Government Areas for ease of administration. Nigeria being a multi-cultural and multi-lingual country has also been divided into zones that differ from each other in size, language and historical background; namely North Central (NC), North East (NE), North West (NW), South East (SE), South South (SS) and South West (SW). Nigeria remains the most populous country in Africa with a population of 140,003,542 and a growth rate of 3.2% (Federal Republic of Nigeria Official Gazette, 2007), and a relatively young

population. Approximately two-thirds of the population lives in rural areas (NPopC, 2006).

Socio-demographic characteristics

There are about 400 ethnic groups in Nigeria with Christianity and Islam constituting the major religions. The country has had a mixed public/private economy since independence with the national revenue being derived mainly from crude oil. Other sources of national revenue include agriculture, industry, solid minerals and trade. The main mode of HIV transmission in Nigeria, as it is in the rest of sub-Saharan Africa, is heterosexual contact. There are many factors that contribute to increasing rates of HIV in Nigeria, such as poverty, gender disempowerment, social and financial inequality, STIs, social and religious norms, and political and social changes (e.g., labor migration and ignorance).

Most Nigerian rural dwellers are involved in the agricultural sector. Life expectancy at birth increased from 45 years in 1963 to 51 years in 1991 and this was mainly due to improved living conditions and better health

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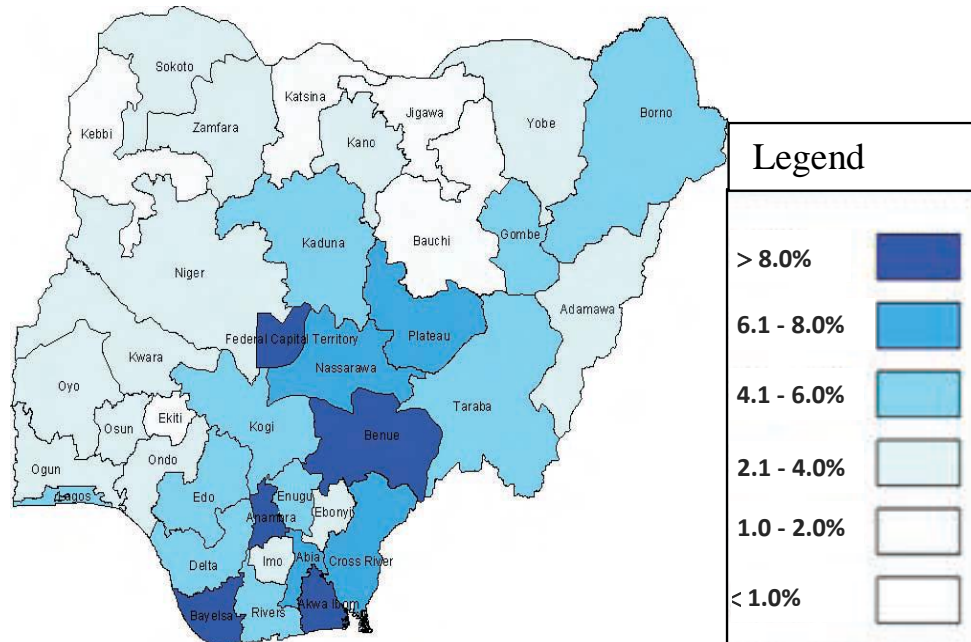


Figure 1. Geographical distribution of HIV prevalence by states (courtesy: ANC HIV Sentinel Survey Nigeria 2010).

services. This dropped to 46.5 years by 2005 (HDR 2007/8) and currently, it is 48.4 years (UNDP HDR, 2010). The reduction in life expectancy may be partly due to the effects of the HIV and AIDS epidemics on the population.

Objectives

The objective of this review is to provide information on the current HIV situation in northeastern Nigeria and to highlight on the factors that drive the epidemic. It will also serve as a reference for future reviews.

METHODOLOGY

The study population was made up of 36,427 consecutive pregnant women, aged 15 to 49 years, who were attending antenatal clinics (for the first time during that pregnancy) in 160 selected sentinel sites across the 36 States and the FCT of Nigeria. Pregnant women represent the sexually active population and for this reason constitute the most practical group for ease of access for enrollment and investigations. HIV testing was performed in a two-step serial algorithm. Screening was performed using Determine HIV test kits. Non-reactive samples were reported as negative. Reactive samples were re-tested with Stat-Pak HIV test kits for confirmation. Discordant samples were re-tested with Enzyme Immunosorbent-Assay (EIA) HIV test kits. Specimen handling and testing was done according to laid down protocols and procedures. The data for the HIV/AIDS clinic attendance was derived from the daily register between January and December of 2007, from the APIN-Plus (PEPFAR) ARV clinic of the University of Maiduguri Teaching Hospital, operated by the Harvard School of Public Health, Boston.

RESULTS

Characteristics of the surveyed population

Majority of those in the survey were in the 20 to 29-year age group (58.4%), with the least population (2.4%) aged 40 to 49 years old. Most of the women were married (96.4%) and this makes the population fairly homogenous in all the zones. The prevalence of HIV has grown steadily from 1.8% in 1991 to 5.8% in 2001; subsequent surveys in 2003 and 2005 revealed a slight downward trend to 5.0 and 4.4% respectively. This trend has somewhat stabilized in 2008 to 4.8% but showed a slight decline to 4.1% in 2010 as shown in Figure 2 (ANC HIV Sentinel Survey Nigeria 2010). The study found that HIV prevalence was highest in NC Zone (7.5%) followed by SS Zone (6.5%). The NW Zone had the lowest prevalence of 2.1% (Figure 3). The epidemic has grown beyond the high-risk groups (in which it was earlier described) to affect the general population. Based on the national prevalence of 4.1%, it is estimated that 3.1 million people are living with HIV/AIDS in Nigeria in 2010. Thus, Nigeria has the second highest number of people living with HIV (PLWHA) in the world, second only to South Africa (UNAIDS HIV epidemic update 2010). Although HIV prevalence is much lower in Nigeria than in other African countries, the size of Nigeria's population means that the disease burden is much higher (UNAIDS 2010 'UNAIDS report on the global AIDS epidemic').

Some sites have shown consistency in HIV prevalence since the beginning of the epidemic. However, wide

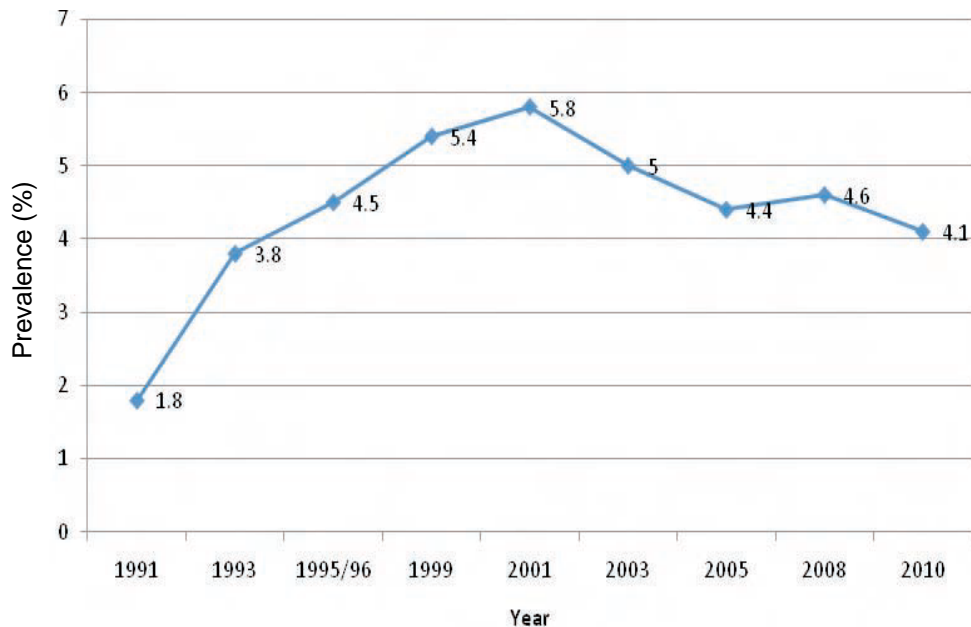


Figure 2. National HIV prevalence trend from 1991 to 2010. Source: ANC HIV Sentinel Survey Nigeria 2010.

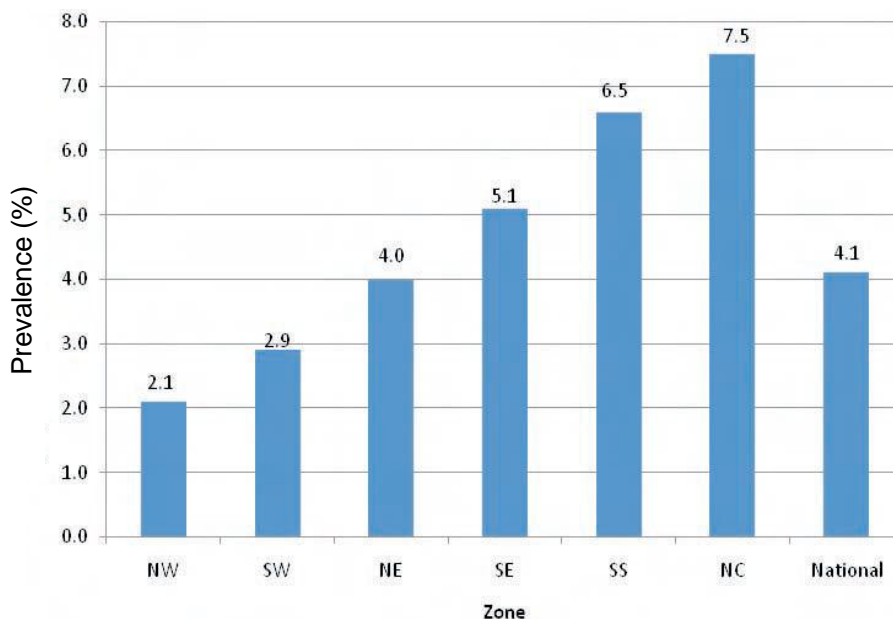


Figure 3. Nigerian HIV prevalence by zone. Source: ANC HIV Sentinel Survey Nigeria 2010. Legend: NE-North east, NW-north west, NC-north central, SE-south east, SW-south west, SS-south south.

variations still exist across the country with fluctuations in others except one State which showed a consistent rise. Although the Survey revealed a National prevalence of 4.1%, this ranged between 1.0% in Kebbi State to 12.7% in Benue State. Sixteen out of the 36 States in the Federation had prevalence rates above 5%. Prevalence rates were higher in urban areas than rural areas with

few exceptions (Figure 4). The average HIV prevalence for the Six States in the NE zone is shown in Figure 5, below. The highest site prevalence of 21.3% in the country was reported in Wannune (Benue State) while the lowest prevalence of 0.0% was reported in four sites, namely Kwami (Gombe State), Rano (Kano State) Owhelogbo (Delta State) and Ganawuri (Plateau State).

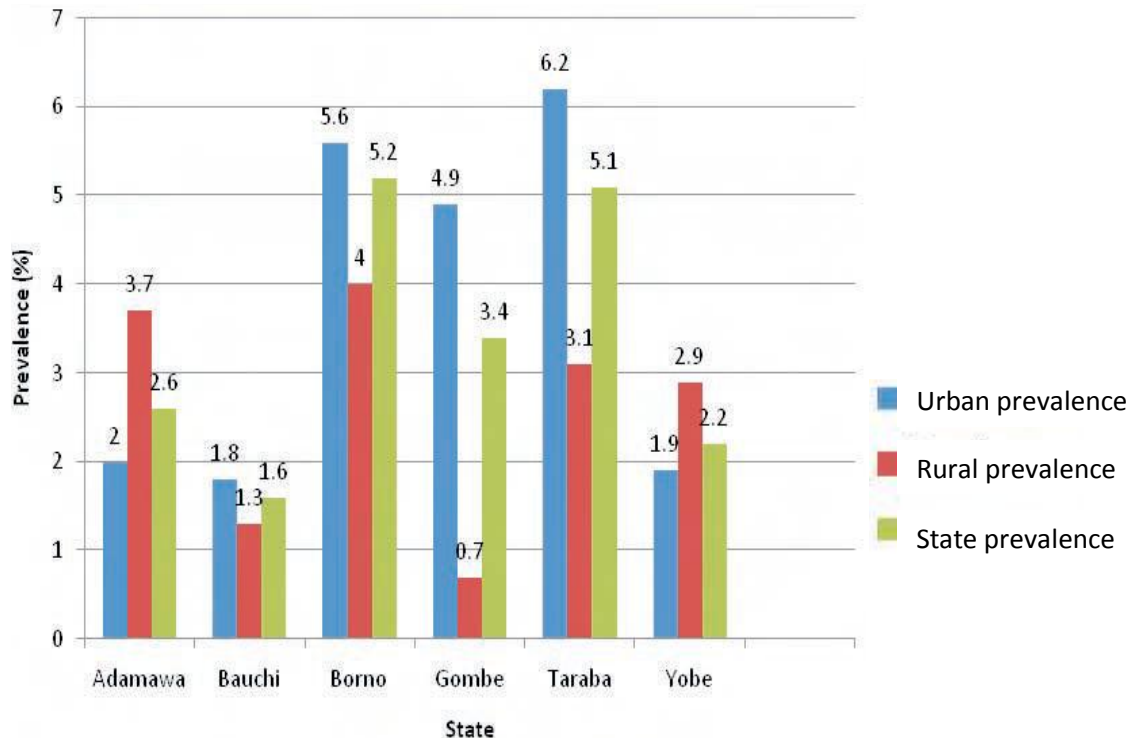


Figure 4. North East Zone HIV prevalence by states in urban and rural areas. Source: ANC HIV Sentinel Survey Nigeria 2010.

Taking a closer look at the current figures (ANC HIV Sentinel Survey Nigeria, 2010) some parts of the country appear to be more affected than others.

North-east zone

Northeastern Nigeria is comprised of 6 states - namely; Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe. The estimated population of this region of Nigeria stands at Twenty million, Nine hundred thousand, Two hundred and Thirty (20,900,230) inhabitants according to the 2005 estimates; harboring 1-in-7 Nigerians. A closer look at the figures revealed that Bauchi State which occupies a land area of 49,259 square kilometers is the most populous in the zone. This is closely followed by Borno, Adamawa, Taraba, Yobe and Gombe states, with 4,588,668, 3,737,223, 2,688,944, 2,532,395, and 2,353,000 inhabitants respectively. HIV sero-prevalence trend between 1991 and 2010 is presented in Table 1.

Northeastern Nigeria shares international boundaries with Cameroon and Chad to the Northeast and Niger Republic to the North. This has led to the transmission of a mixture of HIV subtypes that exist in these regions as revealed by an earlier study (McCutchnan et al., 1999). The zone is also internally bounded by Jigawa, Kano and Plateau States to the West and Benue State to the South. It can be seen that the states in the zone that share

boundaries with Benue, that is Taraba, Adamawa, Bauchi and Gombe have higher prevalence rates compared with those farther North (Borno and Yobe); this might represent across-the-border transmission of the virus. Young people between the ages of 15 to 24 years account for a large portion of the population and also form the majority of the victims of unwanted pregnancies, complication from unsafe abortions, and sexually transmitted infections in Nigeria. Unfortunately, because initiatives that provide sexual and reproductive health services to young people began to emerge only in the last decade, there is a dire lack of the skilled providers and youth-friendly facilities with the capacity to offer these services. The situation is much worse in those parts of the country where young women, are forced to marry at earlier ages, and have minimal access to modern family planning methods and formal education.

While the far North is predominantly Muslim, large swathes of the area immediately South is populated by Christians and animists. Religious beliefs notwithstanding, various communities in Nigeria (like many parts of the world) tend to engage in early sex and marriage. Where women do not get married early, they, along with their male counterparts, are expected to start fending for themselves from their early teens. Very few have access to any education and many have to make a living through subsistence farming, the primary occupation of many communities. The progression from early marriage to

Table 1. HIV prevalence (%) in the six states of northeastern Nigeria from 1991 to 2010.

State	'91/'92	'93/'94	'95/'96	1999	2001	2003	2005	2008	2010
Adamawa	0.3	1.3	5.3	5.0	4.5	7.6	4.2	6.8	3.8
Bauchi	ND	ND	ND	3.0	6.8	4.8	3.4	3.1	2.0
Borno	4.4	6.4	1.0	4.5	4.5	3.2	3.6	2.0	5.6
Gombe	ND	ND	ND	4.7	8.2	6.8	4.9	4.0	4.2
Taraba	ND	ND	6.0	5.5	6.2	6.0	6.1	5.2	5.8
Yobe	ND	ND	ND	1.9	3.5	3.8	3.7	2.7	2.1

Legend: ND- Data not available.

rebellion and prostitution is common. For girls sex quickly becomes a convenient way to have fun and make some extra income. The boys who go to work in the farms to earn a living are easily inclined to spend their earnings on girlfriends. In such a situation of widespread promiscuity, sexually transmitted diseases, including HIV spread rapidly.

An average of 266 newly diagnosed ARV naive HIV positive patients were enrolled into the ARV Clinic of the University of Maiduguri Teaching Hospital monthly between January and December 2007 as shown in Figure 6. The clinic receives support for comprehensive from the US President's Emergency Plan for AIDS Relief (PEPFAR) through the APIN-Plus program. Other non-governmental organizations like GHAIN also operate in some states in the region. A close scrutiny of the data revealed that women out-numbered men in all the months reviewed. Factors that might explain this discrepancy in figures include, but not limited to: polygamy (having multiple spouses), polygyny (getting married to more than one wife), increased vulnerability of women to HIV infection by either socio-economic, biological or cultural factors etc. The substantial age difference between female and male sexual partners has been found to be the major behavioral determinant of the more rapid rise in HIV prevalence among young women than in men (Gregson et al., 2002).

DISCUSSION

The major factors fuelling the spread of HIV in this region include sexual activities of adolescents and young adults (Standing and Kisekka, 1989; Renne, 1993; Kinsman et al., 2000) polygamy and multiple sexual partners, illiteracy, ignorance, and deep-seated poverty (Nnko et al., 2007; Abdoolkarem et al., 1992a). Low level of female enrollment in school, high drop-out rate, and early pregnancy and unsafe sexual practices due to ignorance contribute to the acquisition of HIV (Montgomery et al., 2002). The response to the issue of condoms is as diverse as the myths surrounding the disease itself. Even though condom use is increasing in many developing countries, sexual contacts are frequently unprotected and

some communities strongly oppose the teaching about or providing young people with condoms. Arguments to support such behaviors include encouraging adolescent sexual promiscuity, teenage pregnancies, etc. The low levels of condom use and HIV/AIDS education in addition to high levels of sexual promiscuity have been found to contribute to the rapid spread of the pandemic in many developing communities in Africa (Agyei and Epema, 1992; Asimwe-Okiror et al., 1997; Caldwell, 1999; Konde-Lule et al., 1997; Holmes et al., 1997).

In a behavioral survey (Olowu, 2006), 615 Secondary school students were interviewed (364 males and 251 females) to determine their extent of knowledge about HIV/AIDS prevention and also to assess their sexual behavior. The major risk factor for HIV acquisition was multiple sexual partners, where 39% of respondents in the survey had sexual intercourse 6 months preceding the interview, while 17% had sex with up to five partners. Only 17% used condom the last time they had sexual intercourse and 69% of sexually active respondents admitted inconsistent use of condom. Despite these behaviors, only 32% thought they were at risk for HIV infection, 42% did not think so and 26% were unsure (Olowu, 2006). The survey revealed that these adolescents have the basic knowledge and awareness about HIV/AIDS (over 90%) but this alone was not enough in preventing risky sexual behaviors. Furthermore, while awareness about HIV/AIDS may be relatively high in some contexts, most studies suggest a combination of adequate knowledge and continued high-risk behavior (Varga, 1999). A recent knowledge, attitude and practice (KAP) pilot survey among both new and old students of the University of Maiduguri revealed a generally informed population on HIV/AIDS education. This, however, did not translate to an improved acceptance of HCT services. From the pilot survey, about 4.7% of a cross-section of the student population from the institution tested positive to the virus (Garbati, unpublished report, February 2008). All these go a long way towards understanding the enormous scale of the HIV/AIDS epidemic throughout the region, but it also provides an invaluable platform on which AIDS educators can base their work. An additional factor among the Kanuri and Shuwa people of northeastern Nigeria is tattooing of lips by young girls and

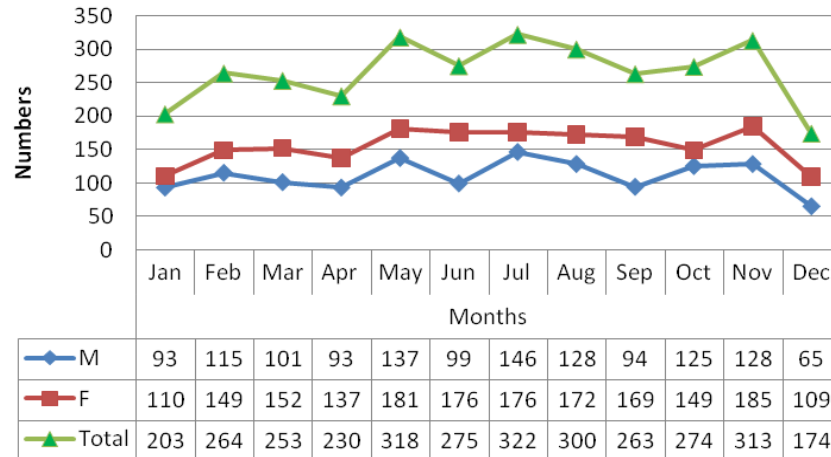


Figure 5. Figure 6: Newly enrolled HIV/AIDS patients attending UMTH ART Clinic Jan-Dec 2007.

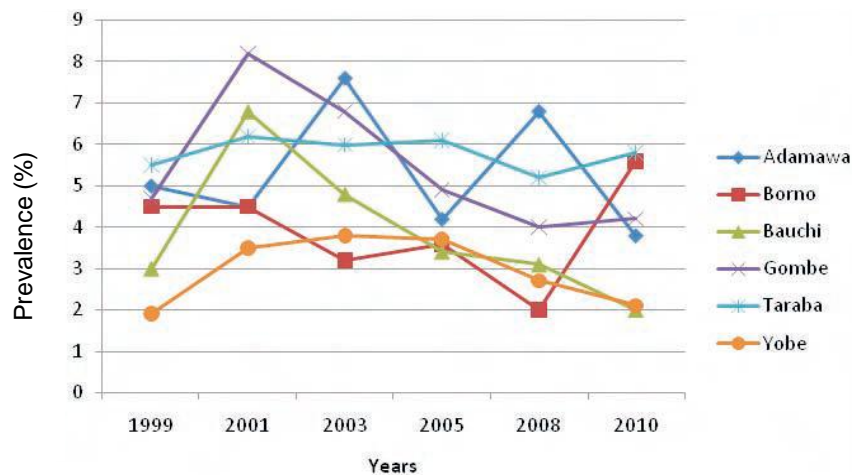


Figure 6. Trends of HIV prevalence (average) in north east zone by states. Source: ANC HIV Sentinel Survey Nigeria 2010.

women (believed to enhance their beauty and value). Despite the high level of awareness of risks associated with traditional scarification and other harmful cultural practices among the respondents from a recent study (Bukar et al., 2006), a majority of the men still prefer their women to have tatoos.

The rising prevalence of HIV infection in northeastern Nigeria was closely monitored by repeated sero-epidemiological surveys. Harry and Mohammed (1992) reported that among 1,059 pregnant women who attended the ante-natal clinic at the University of Maiduguri Teaching Hospital in Maiduguri, Northeastern Nigeria from September, 1988 to April, 1990, 5 (0.47%) tested positive for HIV antibodies. Three of the 5 women were positive for HIV-1, while 2 were positive for HIV-2. In a repeat study on women in the same institution between July, 1991, and February, 1993, the same

workers noted an increase in prevalence rate to 2.3% (Harry et al., 1994) indicating a fivefold increase in sero-prevalence. None of their 1993 cohorts had HIV-2 infection. HIV-2 is a mutant of a strain that originated in West Africa and has been found to be less transmissible (5-8 times less efficient) than HIV-1 and hardly causes vertical transmission (Olaleye et al., 1993; DeCock et al., 1993).

Northeastern Nigeria is very much involved with international trade, therefore viral strains from the neighboring countries were also discovered during an earlier survey (McCutchnan et al., 1999). The instability in Chad, one of Nigeria's neighbors to the northeast, had encouraged influx of Chadian rebels into northern Nigeria, thereby contributing to the high HIV prevalence rates in this region. Ten patients had their HIV strains sub-typed; 4 had Subtype G while 6 had recombinant

viruses. Two had strains sharing the A/G recombinant structure of IbNG. Two had a previously un-described recombinant, mostly subtype A, whose carboxyl-terminal gp41 could not be classified. An A/G recombinant different from IbNG but similar to CA1, a Cameroonian strain, was found in one patient. The remaining patient had a strain that was otherwise subtype G but shared an unclassified carboxyl-terminal gp41 segment with the CA1-like strains. Other subtypes and group O were not found.

Conclusion

The dynamics of HIV/AIDS in northeastern Nigeria is driven by ignorance, poverty and disease. To effectively tackle the menace in this poverty stricken zone of Nigeria, our leaders have to go beyond rhetoric and empty promises to deliver meaningful leadership for any reasonable impact to be noticeable. The north east zone is disadvantaged by its location; where it is externally bounded by countries crippled by conflicts and internally by states that have the highest HIV prevalence in the Country. HIV is a "social disease". It disrupts the fabrics of society through stigmatization of sufferers, as well as through years of education and of productivity lost.

In the absence of an effective vaccine, education has been described as a "social vaccine" in the fight against the pandemic. This fight, especially in the developing world, has to involve people not normally responsible for health issues such as political, community, and religious leaders, teachers and administrators, traders, leaders of women and youth associations, and other representatives of key stakeholder groups. Governments have to act in concert with non-governmental agencies to help this region of Nigeria and others attain at least the first six of the millennium development goals (MDGs) by the year 2015 to check this ugly trend.

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