original article

Seroprevalence of HIV among faithful Muslims in Osun State; southwest Nigeria

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Social lifestyle plays a significant role in the transmission of human immunodeficiency virus (HIV). Hence, abstinence and faithfulness are important for preventing HIV transmission.

This study aimed to determine the prevalence of HIV antibodies among Muslims in Osun state, Nigeria.

A total of 1554 Muslims who attended mosques for worship and provided consent were recruited for this study. Relevant data were obtained using a pro forma designed for this purpose. Blood specimens were collected for HIV screening using Determine, Unigold, and Stat Pak HIV kits according to an approved serial algorithm.

Out of 1554 subjects, who opted for HIV counseling and testing, 434 (36.29%) belonged to the highly productive age group and were aged 28–37years. Among the subjects, 689 (44.34%) were unmarried individuals; however, 13 (0.84%) were divorcees and 25 (1.61%) were widows/widowers. Among the married participants, 207 (25.03%) belonged to polygamous families, whereas, 620 (74.97%) were from monogamous families. There were 200 (12.87%), 52 (3.35%), 70 (4.5%), and 128 (8.24%) unemployed individuals, uniformed men, drivers, and students, respectively. Seroprevalence of HIV was found to be very low (0.064%). However, seroprevalence of other subgroups was 0.0%. Among the subjects, illiterate, unemployed, married women from monogamous families, who were aged 28–37 years, were found to have HIV antibodies. The study reveals that there is a very low prevalence of HIV among faithful Muslims in Osun state, Nigeria. There is a need for intensive health education through religious groups that emphasize moral fidelity among married and unmarried individuals.

KEYWORDS: seroprevalence; blood; HIV; Muslims; Osun state

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Human immunodeficiency virus (HIV) was first described in the early 1980s in homosexual men; later, it was described in drug users in San Francisco and New York City who presented with unusual features of opportunistic infections (1-4). HIV-1 and HIV-2 are the 2 species of HIV that infects humans. HIV-1 is more virulent, easily transmitted, and is the source of most HIV infections globally than HIV-2, which is largely confined to West Africa (5). HIV transmission can occur through unprotected sexual intercourse (anal or vaginal), transfusion of contaminated blood and blood products, the sharing of contaminated needles among intravenous drug users, and from an infected mother to her baby at birth or through breast milk (3 and 6).

At the end of 2010, an estimated 34 million people were living with HIV, including 16.8 million women and 3.4 million children (6). Sub-Saharan Africa remains the most affected region, with 22.9 million people living with HIV, followed by South and Southeast Asia (6). In 2010, acquired immune deficiency syndrome (AIDS) claimed 1.8 million lives (6). While the number of people being infected with HIV continues to fall, there are more than 7000 new infections every day, with 97% of new infections occurring in low- and middle-income countries (6-8). Between 1991 and 2001, Nigeria experienced an increase in the HIV prevalence level. The national HIV seroprevalence level, which was obtained through

a sentinel survey of antenatal care attendees, increased from 1.8% in 1991 to 5.8% in 2001 and then declined to 5.0% in 2003 and further to 4.4% in 2005. This decline was followed by a recent increase to 4.6% in 2008 (9 and10). Based on the latest results, the National Agency for the Control of AIDS estimates that 2.95 million people in Nigeria are currently living with HIV. This figure ranks Nigeria as third among countries with the highest burden of HIV infection in the world, next only to India and South Africa (9).

Osun state was created on August 27, 1991 along with 8 other states in Nigeria. The state covers a geographical area of 14,875 km2. It is bordered on the West by Oyo state, on the East by Ekiti and Ondo, on the North by Kwara and on the South by Ogun. Osun state lies within a tropical rain forest with thick, deciduous vegetation in the southern region, which are grasslands towards the North (10). The population of Osun state according to the 2006 National Population Census figures is 3,423,535, including 1,740,619 (50.8%) men and 1,682,916 (49.2%) women (11). Osun state consists chiefly of the Yoruba people, but with variations in dialects; approximately half of the residents are Muslim, with several mosques in major towns such as Iwo, Ede, Osogbo, Ikire, and Ejigbo.

Osun state has consistently experienced fluctuating HIV prevalence since 2001. The HIV prevalence decreased from 4.3% in 2001 to 1.2% in 2003 and again increased to 2.0% in 2005 and decreased to 1.2% in 2008 (9 and 11).

Factors driving the epidemic in Osun state include poverty, multiple sex partners, marital infidelity, high unprotected sexual activities among youths, ignorance, low risk assessment, negative cultural activities such as female circumcision, and migration of people from the high prevalence states that share borders with Osun (11).

The leading route of HIV transmission in Nigeria is heterosexual intercourse, accounting for over 80% of the infections. Mother-to-child transmission and transfusion of infected blood and blood products are generally estimated to account for nearly 10% of the infections (9). Factors driving the HIV epidemic in Nigeria include low risk perception, multiple concurrent partners, informal transactional and inter-generational sex, and poor quality of health services. Moreover, gender inequalities, poverty, and HIV/AIDS-related stigma and discrimination significantly contribute to the spread of infection (9 and 13).

It is known that those adhering to the Islamic faith abstain from extramarital sex, as prescribed by the Holy Quran; however, they still practice polygamy and marry widows and divorcees (14), which are postulated to increase HIV transmission (3 and 15). However, studies consistently reveal a high prevalence of HIV/AIDS in non-Muslim-dominated states in Nigeria such as Benue state (8 and 9) and a very low prevalence in Muslim-dominated countries of the world (16 and 17). Hence, this research was conducted to determine the prevalence of HIV among Muslims in Osun state, a south-western state of Nigeria.

METHODS

Between October 2008 and December 2011, a total of 1554 Muslim were recruited to participate in this study during 13 mobile HIV counseling and testing (HCT) sessions conducted in the mosques across the 3 senatorial districts of Osun state. Approval was granted by the Osun State Muslim Community. The participants included adults (aged 18–60 years) who attended community programs and daily salats (prayer sessions) as committed members and who gave informed consent to participate in the study. Relevant biographical and socio-demographical data were collected from each subject using a semi-structured questionnaire. Antibodies against HIV were screened using the Determine HIV 1/2 test kits (Abbott Laboratories, Tokyo, Japan), Unigold test kits (Trinity Biotech, Wicklow, Ireland), and Stat Pak Test Kits (Chembio Diagnostic Systems, Medford, NY, USA) in accordance with an HIV testing algorithm approved by Federal Government of Nigeria (FGN) (15). These kits have been validated by FGN regulatory agencies as screening, confirmatory, and tie-breaker kits, respectively (15). Data were analyzed using SPSS version 17 to calculate descriptive statistics and generate frequency tables.

RESULTS

Of the 1554 subjects who opted for HCT, 434 (36.29%) were in the active reproductive age group (28–37 years), which accounts for the majority of subjects in this study; whereas, 94 (6.05%) subjects were aged above 57 years, which constituted the minority. More men (59.97%) were recruited than women (40.03%). In Islamic culture, men are more encouraged to go outside of their homes to pray in mosques than the women. Unmarried individuals included 689 (44.34%) subjects; however, there were 13 (0.84%) divorcees and 25 (1.61%) widows/widowers. Of the married participants (827; 53.22%), 207 (25.03%) belonged to polygamous families, whereas, 620 (74.97%) were from

monogamous families. The numbers of participants who were unemployed, uniformed men, drivers, and students were 200 (12.87%), 52 (3.35%), 70 (4.5%), and 128 (8.24%), respectively. Seroprevalence of HIV was found to be very low, as only 1 participant out of 1554 (0.064%) tested positive, which translated to 0.18% for those aged 28–37 years. Among the subjects, illiterate, unemployed, married women from monogamous families, who were aged 28–37 years, were found to have HIV antibodies. Socio-demographical characteristics of the study group are shown in Table 1; Table 2 shows the prevalence of HIV in the subgroups to which the positive subjects belong.

Table 1. Socio-demographic characteristics of the study group

Characteristics Age (Year)	Frequency	%
18–27	135	8.69
28–37	564	36.29
38–47	434	27.93
48–57	327	21.04
>57	94	6.05
Gender		
Male	932	59.97
Female	622	40.03
Marital status		
Married	827	53.22
Single	689	44.34
Widow/Widower	25	1.61
Divorcees	13	0.84
Type of family		
Monogamous	620	74.97
Polygamous	207	25.03
Educational level		
Illiterate	224	14.41
Primary school	200	12.87
Secondary school	157	10.11
University/ Polytechnic/NCE	894	57.53
Only literate in Arabic	79	5.08
Occupation		
Unemployed	200	12.87
Uniformed Men	52	3.35
Traders	349	22.46
Professionals/ Business men	190	12.23
Drivers	70	4.50
Students	128	8.24
Civil Servants	565	36.36

Table 2. Prevalence of HIV among specific subgroups to which the positive subjects belong.

Characteristics	Subgroup	Frequency	Prevalence (%)
Age (Year)	28–37	564	1 (0.18)
Gender	Female	622	1 (0.16)
Marital status	Married	827	1 (0.12)
Type of family	Monogamy	620	1 (0.16)
Educational level	Illiterate	224	1 (0.45)
Occupation	Unemployed	200	1 (0.50)

DISCUSSION

Prevalence of HIV in the study group was very low (0.064%). These results agree with the results of studies conducted in Muslim-dominated communities worldwide, including North African countries (17, 18). According to the United Nations statistics, North Africa and the Middle East account for less than 1% of the total number of HIV-infected people worldwide (19). Sudan, though a Sub-Saharan African country, has a low prevalence of HIV infection, particularly in the north, which is dominated by Muslim population (19). A published prevalence study by Kraiser et al. reported that the prevalence of HIV infection among those aged 15–49 years in Rumbek town of post-conflict Southern Sudan is 0.4% (19).

It was postulated that adhering to religious tenets may impact health and disease transmission. Due to common constraints set by religions on sexuality, religiosity may be negatively related to sexually transmitted diseases (20). The Islamic religion mandates a specific prohibition on risk behaviors that are known to be associated with HIV infection, such as homosexuality, premarital and extramarital sex, adultery, drugs, alcohol, anal intercourse, and sexual intercourse during menstruation (17, 20, and 21). Additionally, many Muslim men undergo circumcision, and studies have shown that medically performed circumcision can reduce the risk of HIV infection in men by approximately 60% (21 and 22). However, there have been HIV epidemics in Muslim countries; this reveals that despite religious teachings and cultural restrictions, some Muslims engage in prohibited activities, making HIV spread inevitable. Notably, HIV can be transmitted through routes unrelated to morality or a negative social lifestyle; thus, culturally compatible awareness among Muslim communities for preventing the spread of HIV among faithful Muslims is necessary. HIV can be spread through blood transfusion and the use of contaminated sharp objects (20). High prevalence of HIV has, however,

been associated with intravenous drugs usage and high-risk sexual behaviors among heterosexuals (24).

The HIV/AIDS crisis has spread throughout the world; HIV prevalence rates among non-Muslim populations have remained significantly higher than among Muslim populations. This trend can be observed in Nigeria, where the highest prevalence rates are found in non-Muslim-dominated regions of the country, such as the Benue state, where 10% of the population is HIV positive (9). On a fundamental level, non-Muslims and Muslims in Nigeria share similar views regarding the continuing HIV spread; both groups identify promiscuous behavior as the root cause of the HIV crisis. Promiscuity is viewed negatively because of religious teachings and the underlying cultural traditions within the Nigerian society. Nigerian cultural traditions emphasize the importance of sexual discretion and the fact that sex should be reserved for marriage (20). However, the HIV and AIDS epidemic in Nigeria remains a public health problem of large magnitude that must be given attention. One of the tools being under-utilized towards mitigating the impact of HIV and AIDS in Nigeria and world over is religious institutions. Islamic teachings, if religiously imbibed, may assist in reducing the spread of HIV/AIDS. Teachings should commence very early in the lives of children; according to some Islamic teachings, this education should begin in children aged 7 years. Islam is a religion that teaches human sexuality, which should be incorporated into the educational curriculum of the faithful. It is recommended that studies be conducted to evaluate the impact of introducing teenagers and other unmarried youth to sex by advocating condom usage so that HIV spread can be prevented.

References

Sepkowitz K. AIDS–The first 20 years. N Engl J Med. 2001;344:1764-72.

Sharp DA. Controversial HIV/AIDS hypothesis. Lancet. 1999;35:1129-30.

Funnyé J, Akthar AJ. Syphilis and human immunodeficiency co-infection. J Natl Med Assoc. 2003;95:363-82.

Selik RM, Haverkos HW, Curran JW. Acquired immune deficiency syndrome (AIDS) trends in United States, 1978- 1982. Am J Med. 1984;76:493-500.

Reeves JD and Doms RW. Human immunodeficiency virus type 2. J Gen Virol. 2002;83:1253-65.

UNAIDS; HIV/AIDS: At a Glance.
Available from: http://www.unaids.org/en/resources/presscentre/pressreleaseandstatementarchive/2011/november/20111121wad2011report/.

WHO; Progress report 2011: Global HIV/AIDS response.
Available from: http://www.who.int/hiv/pub/progress_report2011/en/index.html. UNAIDS
Available from: http://www.unaids.org/globalreport/.

Nigeria Federal Ministry of Health; 2008. National HIV sero-prevalence survey. Abuja Nigeria

UNGASS Country Progress Report; Nigeria National Agency for the Control of AIDS: 2010. Reporting Period: January 2008–December 2009.

Osun State Government. Osun State Response Review for State Strategic Plan 2010–2015; 2010:11.

Federal Republic of Nigeria. Official Gazette; Legal Notice on Publication of the Details of the Breakdown of the National and State Provisional Totals 2006 Census.
Available from: http://www.nigerianstat.gov.ng.

Abdulazeez AA, Alo EB, Nassar AS. Harmonization of HIV testing in Nigeria: A missing step in HIV/AIDS control. Nig J Biomed Sci. 2006; 2:23-6.

Holy Qu'ran - Translation by Yusuf Ali.

Hope KR Sr. Mobile workers and HIV/AIDS in Botswana. AIDS Anal Afr. 2000;10:6-7.

IHVN; 2009. HIV Screening and National Testing Algorithm.

Gray PB. HIV and Islam: Is HIV prevalence lower among Muslims? Soc Sci Med. 2004; 58:1751-56.

Lenton C. Will Egypt escape the AIDS epidemic? Lancet. 1997;349:1005.

Report on the global HIV/AIDS epidemic. Geneva & Joint Nations programme on HIV/AIDS, 2002.

Kraiser R, Kedamo T, Lane J, Kessia G, Downing R, Handzel T, et al. HIV, syphilis, herpes simplex virus 2, and behavioral surveillance among conflict-affected populations in Yei and Rumbek, southern Sudan. AIDS. 2006;20:942-44.

Muhibi MA. What Muslims should know about HIV/AIDS. Quintessence Publishing Limited; 1st ed: Osogbo. 2010.

Halperin DT, Bailey RC. Male circumcision and HIV infection: 10 years and counting. Lancet. 1999;354:1813-15.

Szabo R, V Short R. How does male circumcision protect against HIV infection? BMJ. 2000; 320:1592-94.

The HIV Counseling and Testing at CDC-Funded Sites, United States, Puerto Rico, and the U.S. Virgin Islands, 2006-2007. Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention, Centers for Disease Control and Prevention, Atlanta, Georgia.

Siker JS, editor. Homosexuality and Religion: An Encyclopedia. Toronto: Greenwood Press; 2011.