Sexual Behaviors of HIV-Infected Men who Have Sex with Men in Jos, Plateau State, North Central Nigeria

Tolulope Olumide Afolaranmi, Zuwaira Ibrahim Hassan1, Zaman Misari2, Obinna Joseph Ugwu1, Philip Adewale Adeoye1, Oluwaleke James Fayenuwo2, Eugene Chidi Eugene2, Akinwumi Olubogbenga David Ofakunrin1, Moses Peter Chingle, Ali Ishaq Shugaba1

Department of Community Medicine, University of Jos, 1Department of Community Medicine, Jos University Teaching Hospital, 2Ginza Medical Centre, 3Department of Pediatrics University of Jos, 4Department of Human Anatomy, University of Jos, Jos, Plateau State, 5Department of Community Medicine, Abubakar Tafawa Balewa University, Bauchi, Bauchi State, Nigeria

Abstract

Background: Sub-Saharan Africa region remains heavily plagued by HIV/AIDS with recent information suggesting that sex between men is a significant contributor to the spread of this infection. It was against this backdrop that this study was conducted to examine the sexual behaviors of HIV-infected men who have sex with men (MSM) in Jos, Plateau state, North Central Nigeria. Materials and Methods: A cross-sectional study was conducted among 114 HIV-infected MSM 18 years and above using a quantitative method of data collection. Respondent-driven sampling technique was employed in sampling the study participants, and EpiInfo statistical software version 7 was used for the data analysis. Results: The mean age of the respondents was 26.0 ± 5.4 years with condom use in the last anal sex being 77 (67.5%), while majority (83.3%) of the respondents was adjudged to have been engaged in risky sexual behaviors. Conclusions: This study has brought to light a significant level of risky sexual behaviors among HIV-infected MSM with condom use, multiple same sexual engagement, transactional sex, and bisexual concurrency as areas of possible interventions.

Keywords: HIV/AIDS, men who have sex with men, Nigeria, Plateau state, sexual behaviors

Introduction

Sub-Saharan Africa region remains heavily plagued by HIV/AIDS with recent information suggesting that sex between men is a significant contributor to the spread of HIV infections.[1] Findings from studies conducted in some African countries inclusive of Nigeria indicated that a significant number of HIV infections occur among men who have sex with men (MSM), with this group constituting a conduit for HIV transmission.[2-4] Furthermore, studies conducted in countries within the African continent on the prevalence of HIV among MSM have reported a consistently higher prevalence than the national figures with a reported prevalence of 9.8% in Banjul, the Gambia, 18.0% in Abidjan, Côte d’Ivoire, 34.3% in Accra-Tema, Ghana, 34.9% in Abuja, Nigeria, and up to 50.0% among MSM engaging in sex work in Abidjan, Côte d’Ivoire.[1,3,4] It was against this backdrop that this study was conducted to examine the sexual behaviors of HIV-infected MSM in Jos, Plateau state, North Central Nigeria.

Materials and Methods

Study area

This study was conducted among HIV-infected MSM linked to HIV care and affiliated to nonhealth facility HIV support groups within the network of MSM in the state. The MSM network had an estimated membership of 150 persons diagnosed with HIV positive and linked to HIV care in various health facilities. The HIV-infected MSM constitute the membership of the HIV support group.

Study population

The study population comprised all HIV-infected MSM affiliated to the HIV support group within the network of MSM in the state.

Address for correspondence: Dr. Tolulope Olumide Afolaranmi, Department of Community Medicine, University of Jos, P M B 2084, Jos, Plateau State, Nigeria.
E-mail: toluene42002@yahoo.com

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: reprints@medknow.com

How to cite this article: Afolaranmi TO, Hassan ZI, Misari Z, Ugwu OJ, Adeoye PA, Fayenuwo OJ, et al. Sexual behaviors of HIV-infected men who have sex with men in Jos, Plateau State, North Central Nigeria. Indian J Community Med 2020;45:550-3.

Received: 02-11-19, Accepted: 15-06-20, Published: 28-10-20
**Study design**

This was a cross-sectional study conducted in 2019 using a quantitative method of data collection.

**Sample size estimation**

An appropriate sample size determination formula for a cross-sectional study was used for this study,[5] with the proportion of MSM who engaged in risky sexual behavior from a previous study being 34% (0.34, 0.823) giving a minimum sample size of 344.[6] Application of correction for the finite population was instituted using an appropriate formula,[5] giving a minimum sample size of 105.

**Criteria for inclusion in the study**

All HIV-infected MSM affiliated to the HIV support group within the MSM network in the state who were 18 years and above were eligible to participate in the study.

**Sampling technique**

Respondent-driven sampling technique was used to recruit consenting eligible MSM into the study.[7] Eligible HIV-infected MSM were recruited for the study through the identified MSM network and HIV support group coordinators who were well-regarded by their peers and influential within their networks and the sampling process continued until a saturation point was reached where all consenting eligible respondents had been sampled, and no respondents were gotten for a 1-month period.

**Data collection**

A semi-structured interviewer-administered questionnaire adapted from a previous similar study was used.[8] Content validity of the data collection tool was ensured by translation and back translation into the predominant language (Hausa) of location and the instrument pretested in a comprehensive HIV treatment site in the state while three trained MSM network coordinators carried out the data collection. Written and verbal informed consent was obtained from all the respondents prior to the data collection with the assurance of confidentiality and anonymity of their responses given. Ethical approval was obtained from the Jos University Teaching Hospital Institutional Human Research Ethics Committee prior to the commencement of the study.

**Data analysis**

Data analysis was carried out using Epi Info statistical software version 7 CDC 1600 Clifton Rd. Atlanta, GA 30333 USA. Mean and standard deviation were used as summary indices of quantitative variables such as the age of the respondent and age at first same and/or heterosexual experience upon fulfillment of the assumptions of normality. Other qualitative variables were expressed in frequencies and percentages. Sexual behavior was adjudged risky if respondents engaged in sex without a condom and with more than one male partner.[6]

**RESULTS**

One hundred and fourteen HIV-infected MSM linked to HIV care participated in this study with a mean age of 26.0 ± 5.4 years. Seventy-three (64.0%) respondents were strictly homosexuals, while 41 (36.0%) were bisexuals. Furthermore, the average age at same-sex sexual debut was 19 ± 5 years with 46 (40.4%) debuting the same sexual experience before the age of 18 years [Table 1].

Majority (77.2%) of the MSM are mainly penetrative partners, while 51 (44.7%) also affirmed to being engaged in transactional sex. Condom use in the last sexual experience with a male partner was attested to by 77 (67.5%), while more than half (61.0%) of those who engaged in bisexial intercourse also used condoms in their last sexual engagements. With regard to the number of same-sex sexual partners, 97 (85.1%) had multiple sexual partners, while majority (83.3%) of the respondents were adjudged to have engaged in risky sexual behaviors [Table 2].

**DISCUSSION**

Sexual behavior is an important driver of transmission of new HIV infections in the general population but more importantly among the MSM population. Bisexual concurrency was expressed in slightly above a third of the respondents in this study, which is slightly higher than what was reported in studies conducted among MSM in Mexico, United Kingdom, and Abuja, Nigeria.[10-12] However, other studies found a much higher level of engagement in the bisexual act.[10-12] This implies that MSM still constitutes an unrecognized link in the transmission

**Table 1: Demographic characteristics of the respondents (n=114)**

| Characteristics                              | Frequency (%) |
|----------------------------------------------|---------------|
| Mean age (years), mean±SD                    | 26.0±5.4      |
| Marital status                               |               |
| Single                                       | 105 (92.1)    |
| Married                                      | 7 (6.1)       |
| Separated                                    | 2 (1.8)       |
| Sexual orientation                           |               |
| Homosexual                                   | 73 (64.0)     |
| Bisexual                                     | 41 (36.0)     |
| Age at same-sex debut (years)                |               |
| <18                                          | 46 (40.4)     |
| ≥18                                          | 68 (59.6)     |
| Mean age at same-sex debut (years), mean±SD  | 19.1±5.1      |
| Family type                                  |               |
| Monogamy                                     | 41 (36.0)     |
| Polygamy                                     | 73 (64.0)     |
| Family history of same-sex orientation       |               |
| Absent                                       | 74 (64.9)     |
| Present                                      | 40 (35.1)     |
| Highest level of education attained          |               |
| Primary                                      | 8 (7.0)       |
| Secondary                                    | 62 (54.4)     |
| Tertiary                                     | 44 (38.6)     |
| Employment status                            |               |
| Employed in paid job                         | 42 (36.8)     |
| Not employed                                 | 72 (63.2)     |

SD: Standard deviation
of HIV infection in the general population. Furthermore, the variation that exists in the level of bisexual engagement among the MSM within Nigeria and even in other countries could be attributable to the contributions of societal perception of same-sex relationship, nonacceptability of same-sex practices following it criminalization in some countries, and social marginalization of MSM. This invariably is promoting occult sexual behaviors among this group resulting in the act of having female sexual partners to safe face.\[^{13}\]

Engagement in transactional sex was reported in slightly below half of the study participants with shared similarities with findings of other studies conducted in Nigeria.\[^{3,14}\] However, dissimilarities exist with findings of other studies reporting a much lower level of engagement transactional sex, while a Kenyan study reporting a much higher level.\[^{3,6,8,12}\] This variation has further brought to light that sex in exchange for money or gift may be prompted by different factors bothering on economic viability, pressure from peers, and behavioral disposition of individuals. In addition, it is also imperative to state that this study was conducted among HIV infection MSM population as against other studies conducted among the general MSM population who may not have been aware of their HIV status.

Sexual intercourse with multiple partners is an important vehicle in the chain of transmission of HIV and sexually transmitted infections (STIs). In the study, majority of the respondents had multiple same-sex sexual partners in 3 months preceding this study which is much higher than the findings of other studies.\[^{3,9}\] The implication to practice is that more MSM will continue to be vehicles in the transmission of HIV and STIs if appropriate behavior change intervention is not targeted at them.

Consistent condom use is an important component of the assessment of risky sexual behavior as well as the fulcrum for the prevention of transmission of HIV and STIs. Condomless anal sex was reported by one-third of the participants in this study, of which other studies across different countries and cultural settings found a much higher practice among this population.\[^{3,6,8,12}\] Similarly, other studies have reported a lower level of practice of condomless anal sex than that of this study. These findings have brought to light that condom use is largely influenced by an individual’s disposition regardless of the settings but could also be driven by availability and affordability of the condom itself as well as the ability to negotiate sex, particularly in a mutual sexual relationship and also in transactional sexual engagement. Furthermore, it is important to note that this study was limited to HIV-infected MSM linked to HIV care as against other studies carried among the general MSM population. Nonetheless, it is becoming needful and necessary to refocus condom programming interventions among MSM in the settings where MSM activities permitted within the law and developing such in other settings where MSM activities are criminalized to avert an impending outburst of new HIV infections. It is also important to note that this study did not assess the practice of group sex or oral sex among this population bring to light its limitation in generalizing the level of condom use in sexual engagement among the MSM population. Assessment of the level of risky sexual behavior among the MSM in this study was done using a combination of sexual activity. Majority of the study participants were adjudged to have been engaged in risky sexual behavior which is way higher than what was reported in another Nigerian study though conducted in using of secondary national data.\[^{11}\] In this light, it is important to bring to fore that HIV prevention and control activities may not achieve its desired results if MSM and other key affected population are not given the needed behavioral change interventions.

**Conclusions**

This study has brought to light a significant level of risky sexual behaviors among HIV-infected MSM which highlighted areas of possible interventions targeting condom use, multiple same sexual engagement, transactional sex, and bisexual concurrency.

**Acknowledgments**

This study was supported by the Fogarty International Center; Office of the Director/National Institutes of Health (NIH); National Institute of Neurological Disorders and Stroke/NIH; and the National Institute of Nursing Research/NIH of the NIH under Award Number D43 TW010130. The content is solely the responsibility of the authors and does not necessarily represent the views of the NIH.
Financial support and sponsorship
This study was supported by the Fogarty International Center; Office of the Director/National Institutes of Health (NIH); National Institute of Neurological Disorders and Stroke/NIH; and the National Institute of Nursing Research/NIH of the NIH under Award Number D43 TW010130. The content is solely the responsibility of the authors and does not necessarily represent the views of the NIH.

Conflicts of interest
There are no conflicts of interest.

REFERENCES
1. Djomand G, Quaye S, Sullivan PS. HIV epidemic among key populations in West Africa. Curr Opin HIV AIDS 2014;9:506-13.
2. Merrigan M, Azeez A, Afolabi B, Chabikuli ON, Onyekwena O, Eluwa G, et al. HIV prevalence and risk behaviours among men having sex with men in Nigeria. Sex Transm Infect 2011;87:65-70.
3. Vu L, Adebajo S, Tun W, Sheehy M, Karlyn A, Njab J, et al. High HIV prevalence among men who have sex with men in Nigeria: Implications for combination prevention. J Acquir Immune Defic Syndr 2013;63:221-7.
4. Mason K, Ketende S, Peitzmeier S, Ceesay N, Diouf D, Loum J, et al. A cross-sectional analysis of population demographics, HIV knowledge and risk behaviors, and prevalence and associations of HIV among men who have sex with men in the Gambia. AIDS Res Hum Retroviruses 2013;29:1547-52.
5. Adeyemi AO, Oyediran K, Issa KB, Azeez A, Atebale A, Fakunle O. HIV risk among men who have sex with men (MSM) in Nigeria: A potential population for HIV vaccine trial. Retrovirology 2012;9 Suppl 2:223.
6. Ibrahim T. Sample size determination. In: Research Methodology and Dissertation Writing for Health and Allied Health Professionals. 1st ed. Abuja, Nigeria: Cress Global Link Limited; 2009. p. 75.
7. Federal Ministry of Health, Nigeria. HIV/STI Integrated Biological and Behavioural Surveillance Survey; 2014. Available from: http://www.moh.gov. [Last accessed on 2019 May 15].
8. Semple SJ, Pipitinan EV, Goodman-Meza D, Strathdee SA, Chavarin CV, Rangel G, et al. Correlates of condomless anal sex among men who have sex with men (MSM) in Tijuana, Mexico: The role of public sex venues. PLoS One 2017;12:e0186814.
9. Sewell J, Cambiano V, Speakman A, Lampe FC, Phillips A, Stuart D, et al. Changes in chemsex and sexual behaviour over time, among a cohort of MSM in London and Brighton: Findings from the AURAH2 study. Int J Drug Policy 2019;68:54-61.
10. Sekoni AO, Ayoola OO, Somefun EO. Experiences of social oppression among men who have sex with men in a cosmopolitan city in Nigeria. HIV AIDS (Auckl) 2015;7:21-7.
11. Ochonye B, Folayan MO, Fatusi AO, Bello BM, Ajidaagba B, Emmanuel G, et al. Sexual practices, sexual behavior and HIV risk profile of key populations in Nigeria. BMC Public Health 2019;19:1210.
12. Möller LM, Stolte IG, Geskus RB, Okuku HS, Wahome E, Price MA, et al. Changes in sexual risk behavior among MSM participating in a research cohort in coastal Kenya. AIDS 2015;29:S211-9.
13. Beyrer C. Pushback: The current wave of anti-homosexuality laws and impacts on health. PLoS Med 2014;11:e1001658.
14. Crowell TA, Keshinro B, Baral SD, Schwartz SR, Stahilman SS, Nowa RG, et al. Stigma, access to healthcare, and HIV risks among men who sell sex to men in Nigeria. J Int AIDS Soc 2017;20:21489.