Published in final edited form as:
AIDS Behav. 2013 January ; 17(1): 350–359. doi:10.1007/s10461-012-0337-4.

Communicating HIV Status in Sexual Interactions: Assessing Social Cognitive Constructs, Situational Factors, and Individual Characteristics Among South African MSM

Justin Knox,
HIV Center for Clinical and Behavioral Studies, NYS Psychiatric Institute and Columbia University, 1051 Riverside Drive, Unit 15, New York 10032, USA. Department of Epidemiology, Mailman School of Public Health, Columbia University, New York, NY, USA

Vasu Reddy,
Human and Social Development, Human Sciences Research Council, Pretoria, South Africa. Humanities and Social Sciences, University of KwaZulu-Natal, Durban, South Africa

Farnaz Kaighobadi,
HIV Center for Clinical and Behavioral Studies, NYS Psychiatric Institute and Columbia University, 1051 Riverside Drive, Unit 15, New York 10032, USA

Dawie Nel, and
OUT LGBT Well-being, Pretoria, South Africa

Theo Sandfort
HIV Center for Clinical and Behavioral Studies, NYS Psychiatric Institute and Columbia University, 1051 Riverside Drive, Unit 15, New York 10032, USA

Justin Knox: jrk2115@columbia.edu

Abstract

This study assessed whether social cognitive constructs, situational factors, and individual characteristics were associated with communicating HIV status and whether communication was related to sexual risk behavior. A quota-sampling method stratified by age, race, and township was used to recruit 300 men who have sex with men to participate in a community-based survey in Pretoria in 2008. Participants reported characteristics of their last sexual encounter involving anal sex, including whether they or their partner had communicated their HIV status. Fifty-nine percent of participants reported that they or their partner had communicated their HIV status. HIV communication self-efficacy (aOR = 1.2, 95 % CI: 1.04–1.68), being with a steady partner (aOR = 0.36, 95 % CI: 0.19–0.67), and being Black (versus White; aOR = 0.08, 95 % CI: 0.03–0.27) were independently associated with communicating HIV status. Communicating HIV status was not associated with unprotected anal intercourse. HIV communication self-efficacy increases men's likelihood of communicating HIV status. Being with a steady partner and being Black reduces that likelihood. Communication about HIV status did not lead to safer sex.

Keywords

HIV communication; Disclosure; Sexual risk behavior; MSM; South Africa

Correspondence to: Justin Knox, jrk2115@columbia.edu.

Introduction

Communicating about HIV status among sexual partners is an important component of safer sex behavior. It involves awareness of one's HIV status (positive, negative, or unknown) and disclosing that to a partner, as well as ascertaining a partner's status. Communicating about HIV status provides sexual partners with the opportunity to discuss and negotiate safer sex practices.

Several studies have investigated factors that influence whether sexual partners communicate their HIV status, the majority of which have focused on HIV disclosure among seropositive individuals. Research that has explored the issue qualitatively has concluded that the decision to disclose is highly complex and that it is influenced and shaped by the type and nature of relationships, sense of responsibility, acceptance of being HIV positive, perception of risk, fear of stigma, and the context and meaning of sex [1–3]. Quantitative findings have shown that, in the US, people are less likely to disclose an HIV positive status when they are younger and before their disease has progressed [4]. Another report found that HIV positive South Africans who did not disclose their status were more likely to have experienced discrimination because of being HIV positive and to engage in higher risk activities [5]. A study conducted among a high-risk sample of HIV positive men who have sex with men (MSM) from metropolitan areas across the US found that being very open about their same-sex sexuality and being White increased the likelihood of disclosure [6].

A few studies have explored communicating HIV status among sexual partners beyond disclosure by HIV positive individuals. A study investigating disclosure and asking about a partner's status among high-risk, HIV positive, US Latino gay men found that lower levels of communication were related to higher levels of social isolation and perceived negative consequences of disclosure [7]. Another study looked at communication by either partner in a sample that included both HIV positive and HIV negative immigrant Latino MSM in the US [8]. The results indicated that communication about condom use was less likely to occur when a sexual encounter involved a main partner, higher (vs. lower) level of sexual desire, and substance use. These authors stress the influence of situational factors on HIV communication. In accord with this observation on the importance of situational factors, our research team recently found that a cluster of partnership characteristics during a sexual encounter, including partnership type, where partners met, and age, race, socioeconomic concordance, was associated with risky sexual behavior among South African MSM [9]. These findings suggest that a thorough assessment of factors that influence HIV communication needs to simultaneously consider both individual and situational characteristics.

While studies have attempted to identify individual and situational characteristics that influence communicating HIV status, we are unaware of any literature describing the use of a social cognitive behavioral model to guide an analysis of communicating HIV status among sexual partners. Understanding more about the processes of HIV communication among sexual partners has the potential to inform the development of effective interventions aimed at increasing and strengthening communication about HIV. For the current study, we utilized the information-motivation-behavioral skills (IMB) model as the framework for operationalizing social cognitive correlates of communicating HIV status. The IMB model contends that knowledgeable and motivated individuals will utilize behavioral skills to engage in HIV preventive behavior [10]. The IMB model has been extensively validated to predict safer sex behavior in multiple settings among a variety of populations [11], including in South Africa [12, 13].

An important assumption regarding communicating about HIV among sexual partners is that it facilitates safer sex [14]. Indeed, one of the principal assumptions underlying the anticipated effectiveness of test and treat strategies to reduce HIV incidence [15] is that people who are aware of their HIV status will communicate with their sexual partners about HIV and, correspondingly, adopt the appropriate safe sex practices [16]. A recent review of the literature, however, noted that few studies have examined the link between HIV communication and safe sex using sufficiently rigorous methods and that the studies that have been conducted have reported conflicting evidence [17]. A subsequent meta-analysis reported a moderate association between communication and condom use, while noting that not all studies included found a positive association [18]. It would, therefore, not be appropriate to simply assume that communicating HIV status will translate to safer sex behavior.

The current study aimed to investigate what influences communicating HIV status prior to a sexual encounter. The objective was to answer the following research questions: (1) are constructs from a social cognitive behavioral model able to predict communicating HIV status?; (2) can we explain in which situational contexts communication is most likely to occur?; (3) are there individual characteristics that also allow us to understand if communication is more likely to occur? Subsequent to these analyses, we examined whether communication is associated with safer sex.

This topic was explored among a diverse sample of MSM in South Africa. In terms of same-sex sexuality, South Africa has some specific features that set it apart from other countries. First of all, South Africa is one of the few countries where sexual orientation is acknowledged as grounds for protection in the constitution. However, previously, during Apartheid, homosexuality was criminalized. As a result, the social acceptance of homosexuality is extremely low [19], as it is elsewhere in Africa. For a long time homosexual transmission of HIV did not receive any formal attention [20]; however, gay men and other MSM are now included in South Africa's National Strategic Plan [21]. Exploring communication about HIV status among South African MSM is an important endeavor as it will help increase our understanding of this important component of HIV prevention behavior among this high risk population.

Methods

Participants

For this study, our aim was to recruit a heterogeneous sample of MSM based on age (MSM above and below 25 years of age), race, and residential status (white MSM, black MSM not living in townships, and black MSM living in townships). We chose to include both white MSM and black MSM (those living in townships and those not) in our sample so that we would be able to explore our research questions among both racial groups. Accessibility to MSM in South Africa varies based on race and residential status. For instance, townships in South Africa continue to be characterized by high levels of inequalities (notably, unemployment, poverty, stigma, and low levels of education). As a result, there are low levels of MSM community organization and a lack of an MSM commercial subculture. In order to account for this, multiple recruitment strategies were deployed to accomplish heterogeneity. White men were recruited at a local gay night club. Black men living outside of townships were invited to attend social events at an LGBT community center. For black men living in townships, social functions were held in locations throughout the township. Men were eligible to participate in the study if they [1] lived in the greater Pretoria metropolitan area; [2] were between 18 and 40 years old; [3] reported having had oral, anal, or masturbatory sex with at least one man in the preceding year, regardless of involvement with women and including men who do not self-identify as gay; and [4] were fluent in

English. The 18–40 age range was selected because HIV prevalence and incidence (regardless of transmission mode) are highest among this age group [22]. A total of three hundred men were surveyed for the study. Participant recruitment and data collection were conducted from October to December 2008. The research protocol was approved by the Institutional Review Boards at the New York State Psychiatric Institute (New York, USA) and the Human Sciences Research Council (Pretoria, South Africa).

Procedures

Informed consent was obtained verbally by the interviewers. Once confirmed, all participants were asked to fill out the questionnaire on the spot. Privacy was maintained by having participants complete the survey in quiet, usually adjacent rooms. Interviews were administered using computer-assisted self-interviewing in order to minimize social desirability bias. Participants were compensated financially for their time.

Measures

The survey collected information on characteristics of the last sexual encounter (LSE) that involved anal sex, social cognitive constructs of HIV communication, and individual characteristics. Participants were asked questions about their LSE that involved anal sex, including partnership characteristics such as how long ago they met their partner, where they met, their relationship to the partner, and other relational attributes: concordance in age, race, neighborhood, socioeconomic status, and gender expression. Participants were also asked questions regarding event-level characteristics of the sexual encounter, such as where it took place, whether drugs or alcohol were used, type of sex that occurred (who was insertive and who was receptive), whether it was in exchange for money or food, whether condoms were used, and whether they and or their partner communicated their HIV status. Communicating HIV status was defined as either partner having explicit knowledge of the other partner's HIV status, either from a discussion that occurred during the encounter or previous to it. Seroconcordance was defined as both partners explicitly knowing that they were the same serostatus, either both HIV negative or both HIV positive. Partners were not considered seroconcordant if both men knew that they had discordant serostatuses or if either of the men did not know his status. Unprotected anal intercourse (UAI) was defined as having participated in anal intercourse without the use of a condom during the LSE.

Social cognitive constructs were derived from the IMB model [10]. These constructs included HIV knowledge (information), intention to communicate about safe sex (motivation), and HIV communication self-efficacy (behavioral skills). All of the IMB constructs were assessed using instruments that were previously validated [23, 24], including in South Africa [25]. The items used were all intended to gauge participants' social cognitive constructs in general; the measures were not limited to a specific context or situation. *HIV knowledge* was measured using a 15 item scale [26–28] that included such questions as: 'As long as both partners wash themselves after sex, it is not necessary to use condoms'; 'Having a shower after sex prevents the spread and infection of HIV, therefore it is not necessary to use condoms'; 'It is easy to get HIV by sharing a meal with someone who is HIV infected'; and 'You can tell by looking at someone if they have HIV'. Response options were true, false, or 'do not know'. HIV knowledge scores were calculated as the number of correct answers provided; 'do not know' was coded as incorrect (Cronbach's α = 0.68). *Intention to communicate about safe sex* was assessed by measuring participants' response to the item: 'If I have anal sex, I intend to always talk with sexual partners about safer sex'. Response options ranged from 1 = 'Very unlikely to do' to 5 = 'Very likely'. *HIV communication self-efficacy* was assessed by measuring responses to the item: 'How difficult or easy would it be for you to ask a partner to have an HIV test'. This item was used because it specifically assesses communicating with a partner about ascertaining his HIV

status and it has been previously validated [29, 30]. Response options ranged from 1 = 'Very difficult to do' to 5 = 'Very easy to do'. For all IMB items, a high score indicates a stronger presence of the construct.

Individual characteristics measured included sociodemographic factors such as age, race, residential status (living in a township), educational attainment, income (earning greater than or less than 4,500 South African rand/month), and employment status. *HIV testing* was measured by asking participants if they had ever tested for HIV. If they responded affirmatively, participants were asked to provide the year and month that they were last tested for HIV. Participants were subsequently asked if they had ever tested HIV positive. Participants were also asked about *Sexual Self-Identification*. This was assessed by asking participants if they considered themselves to be gay, bisexual, transgender, or straight. *Femininity* was assessed using two items: if one sees oneself as more masculine or feminine compared to most other men, and if one thinks other people see one as more masculine or feminine than other men. Response options ranged from 1 = 'Much more masculine' to 5 = 'Much more feminine' (Cronbach's $\alpha = 0.84$). *Openness about Sexual Orientation* was also included in analyses because it had previously been found to be associated with communicating HIV status [5]. *Openness about Sexual Orientation* was measured using a number of items designed to assess how many people knew that the participant was sexually attracted to other men. Participants were asked if they ever told someone they were sexually attracted to other men. If they responded 'yes', participants were asked if current heterosexual friends, heterosexual casual acquaintances, colleagues at work, supervisors at work, people they go to school with, or people they attend church with knew they were sexually attracted to other men. These items were assessed on five-point Likert scales with response options ranging from 1 = 'All of them' to 5 = 'None of them'; participants were also given the option to reply that the question was not applicable ($\alpha = 0.94$). *Discrimination in the past year* was also included in analyses because it had previously been found to be associated with communicating HIV status [6]. *Discrimination in the past year* was measured using a previously validated scale adapted specifically for this study [31]. It was assessed by asking participants to list the number of times in the past year that they were verbally insulted, physically threatened, had property damaged, objects thrown at them, been chased, spat upon, punched, hit, kicked or beaten, assaulted and sexually harassed because someone thought they were homosexual. The distribution of this variable was positively skewed so we also calculated the logged value of discrimination in the past year (Skewness = 1.02, Kurtosis = 0.83).

Statistical Analyses

The primary objectives of our analyses were to assess: (1) which constructs of a social cognitive behavioral model are able to predict communicating HIV status prior to the LSE; (2) in which situational contexts is communication most likely to occur; (3) are there individual characteristics that also allow us to understand if communication is more likely occur. In order to accomplish this, univariate analyses were conducted initially to examine variability and central tendency of the study variables. Next, bivariate analyses were run to assess which variables were associated with communication about HIV status. Independent sample *t*-tests were used for continuous and scaled variables and Chi-squared tests were used for dichotomous variables to assess statistical significance in all bivariate analyses. All variables significant at $P < 0.10$ were considered eligible for inclusion in analyses using multiple logistic regression. An initial multivariable model was run that included social cognitive constructs as covariates and communicating HIV status as the outcome. We chose to run this model first in order to answer our primary question: which constructs of a social cognitive behavioral model are able to predict communicating HIV status prior to the LSE. Next, situational characteristics of the LSE were included as covariates in the model. We

chose to run this as a second model in order to answer the subsequent question: beyond the constructs of a social cognitive behavioral model, in which situational contexts is communication most likely to occur. Lastly, individual characteristics were included as covariates in the model. We chose to run this as our final model in order to answer the research question: beyond the previously assessed variables, are there individual characteristics that also allow us to understand if communication is more likely occur. Variables that were not significant in a previous model were not included in subsequent models. In a separate analysis we assessed the relationship between communicating HIV status and sexual risk behavior during the LSE. All statistical tests were two-sided and P <0.05 was considered statistically significant. SPSS 17.0 was used for all statistical analyses.

Results

Participants

Table 1 presents sociodemographic characteristics of the study sample. Participants' ages ranged from 18 to 40 years with a mean of 26.1 years (SD = 5.9). Two-thirds (66 %) of participants were Black, one-third (34 %) were White and none were Asian or Indian. Over half of the participants (52 %), all of whom were Black, reported living in a township. Participants ranged in educational level from having not completed primary school to holding postgraduate degrees. Half (51 %) had more than a high school education. More than half (54 %) reported earning less than 4,500 South African rand per month. Two-thirds (68 %) reported being employed. The majority (85 %) self-identified as gay. Nearly half (42 %) had tested for HIV in the past year. One tenth (10 %) reported being HIV positive.

Correlates of Communicating HIV Status

One hundred sixty-eight (59 %) participants reported that they or their partner had communicated about HIV status prior to the LSE. According to the participants, in 14 % (n = 40) of the LSEs only the participant communicated his HIV status, in 4 % (n = 22) of the LSEs only the partner communicated his HIV status, and in 41 % (n = 116) of the LSEs both men communicated their HIV status.

With respect to individual characteristics, being White, not living in a township, having higher income, being employed and having tested for HIV in the past year were positively associated with either partner having communicated about HIV status prior to the LSE at P <0.10. Femininity was negatively associated with either partner having communicated about HIV status prior to the LSE at P <0.10. With respect to the social cognitive constructs, intention to communicate about safe sex and HIV communication self-efficacy were positively associated with either partner having communicated about HIV status prior to the LSE at P <0.10 (see Table 1).

With respect to situational characteristics, the LSE occurring with a steady partner in a relationship, being with a partner of a different race, the respondent being the receptive partner, using drugs or alcohol prior to the LSE, and the encounter occurring in a public place were all negatively associated with either partner having communicated about HIV status prior to the LSE at P <0.10 (see Table 2).

All variables that were associated with the outcome in bivariate analyses at P <0.10 were included in staged multiple logistic regression analyses to answer our questions regarding independent correlates of men having communicated about HIV status with their partner prior to the LSE. In the initial multiple logistic regression model, including only social cognitive constructs as correlates, HIV communication self-efficacy was independently associated with having communicated about HIV status prior to the LSE, at P <0.05. In the second multiple logistic regression model, which also included situational characteristics in

addition to the social cognitive constructs, higher HIV communication self-efficacy and being with a steady partner were independently associated with having communicated about HIV status prior to the LSE. In the final multiple logistic regression model, which included individual characteristics in addition to social cognitive constructs and situational characteristics, HIV communication self-efficacy was positively associated with having communicated about HIV status prior to the LSE (aOR = 1.26, 95 % CI: 1.04–1.54). Being with a steady partner (aOR = 0.36, 95 % CI: 0.19–0.67) and being Black (vs. White; aOR = 0.17, 95 % CI: 0.07–0.44) were negatively associated with having communicated about HIV status prior to the LSE (see Table 3).

In order to further explore the observed differences in communication about HIV status between black MSM and white MSM, we ran the set of analyses again stratified by race. We observed very similar results among both groups. We also assessed the distribution of HIV communication self-efficacy and intention to communicate about safe sex by race in order to see how these variables helped explain why black men were less likely to communicate about HIV status prior to the LSE. Black men reported lower HIV communication self-efficacy than white men (mean = 2.8 vs. 4.1, $t = -6.93$, $P < 0.001$) but no difference in intention to communicate about safe sex (mean = 4.0 vs. 4.1, $t = -0.48$, $P = 0.63$).

Communicating HIV Status and Sexual Risk Behavior

We also assessed the relationship between communication about HIV status and UAI during the LSE. One hundred eighty-five (67 %) participants reported that UAI occurred during the LSE. Bivariate analyses showed that UAI occurred with similar frequency at encounters where partners had communicated about HIV status compared to encounters where they had not (67 vs. 67 %, $\chi^2 = 0.01$, $P = 0.91$). In situations where HIV status had been communicated ($n = 168$), UAI occurred at similar frequencies in encounters where partners had communicated that they were seroconcordant compared to encounters where they had not (64 vs. 71 %, $\chi^2 = 0.94$, $P = 0.33$) (not shown).

Discussion

The purpose of this study was to assess (1) which constructs of a social cognitive behavioral model are able to predict communicating HIV status; (2) in which situational contexts is communication most likely to have occurred; (3) whether there are individual characteristics that also allow us to understand if communication is more likely to have occurred; (4) does communication about HIV status lead to safer sex. We found that men who reported higher HIV communication self-efficacy were more likely to have communicated about HIV status with their partner prior to their last sexual encounter, even when controlling for situational and individual correlates. Likewise, controlling for other factors, men who were with a steady partner were less likely to have communicated about HIV status than men who were not with a steady partner. Black men were less likely to have communicated about HIV status than white men. Men who communicated about HIV status were as likely to engage in risky sexual behavior as men who did not, regardless of whether safer sex practices were needed based on the content of their communication.

Our finding that HIV communication self-efficacy increases men's likelihood of communicating about HIV status suggests that constructs of a social cognitive behavioral model are associated with HIV communication. This has important implications regarding HIV prevention efforts as it suggests that HIV communication skills could be targeted to help increase the likelihood that sexual partners communicate about HIV status. When considering the usefulness of constructs from a social cognitive behavioral model to predict communication about HIV status, however, it is important to note that the two other constructs of the IMB model that we assessed, HIV knowledge and intentions to

communicate about safer sex, were not correlates of communication about HIV status. Also, we did not include an assessment of attitudes or social norms regarding communication as part of our application of the IMB model. Furthermore, self-efficacy and intentions were assessed using one-item measures that did not fully capture all aspects of communicating about HIV. Future research may build upon this work by using more robust measures to examine this model in order to gain a better understanding of what factors enable men to communicate about HIV status. The current findings; however, suggest that this topic merits further investigation.

Our finding that being with a steady partner decreased men's likelihood of having communicated about HIV status demonstrates that communication is more likely to occur in certain situational contexts. These results are consistent with those reported by Lo and colleagues that safe sex communication was less likely to occur among main partners [8]. It is noteworthy that men did not communicate about HIV status in the contexts where they had the most opportunities to have such a discussion: with a steady partner with whom they were in a relationship. This may be a result of men believing that steady partners are safe partners, therefore precluding the need to communicate about HIV status with them. This hypothesis is supported by our previous finding in this same sample that men who believed that being with a trusted and steady partner meant that you did not need to use condoms and therefore were more likely to engage in risky sexual behavior [32]. Other researchers have also noted that trust often encourages unsafe sexual behavior, particularly among steady partners [33–35]. HIV prevention programs should consider interpersonal factors when promoting HIV prevention behavior and specifically target safe sex behavior among men in relationships. Future research examining this topic should consider other factors that were not included in this study, such as the length of relationships, monogamy status, testing history, serostatus and agreements couples may have about partners outside the relationship.

Our finding that black men were less likely to communicate about HIV status indicates that there are additional characteristics beyond social cognitive behavioral constructs and situational contexts that explain whether communication is likely to occur. This particular finding regarding being Black speaks to the complexity of the issue of race in South Africa. Being Black may represent a set of more proximal correlates, in addition to the constructs of the IMB model that we assessed, which are negatively related to communication about HIV status. It could also be that other structural factors decrease the likelihood of communication about HIV among black men. We are only able to speculate as to what these factors might be. Interestingly, being Black but not living in the resource-limited setting of a township was found to be negatively associated with communication about HIV status. This finding is supported by our previous observation, achieved among this same sample, that some aspects of social vulnerability were negatively associated with HIV prevention behaviors while others were not [36]. Further research needs to be conducted to learn about the dynamics of race and HIV prevention behavior in South Africa.

An assumption often made by HIV prevention efforts is that people who are aware of their HIV status will communicate with their sexual partners about HIV and, correspondingly, adopt the appropriate safe sex practices [14]. However, we found that having tested for HIV in the past year was not an independent predictor of communication about HIV status. Moreover, we found that communication about HIV status did not lead to safer sex. This was the case regardless of whether condom use would have been needed based on the content of the communication, i.e., participants reporting that both partners were seroconcordant versus when they were not. This suggests that communication about HIV and engaging in safe sex practices is a more complex process than often envisioned. Whether communication occurs may further depend on the status of those involved, the level of trust between partners, or a myriad of other factors that characterize sexual

interactions. Furthermore, communication is more than the disclosure of HIV status. It also includes negotiating condom use, sharing information about sexual history or discussing safe sex in general. The content of communication has been shown to influence safe sex behavior differently [13], and our measure did not capture all of these components. We also were unable to discern if men disclosed their actual status and if that status would have been accurate, depending on the recency of their last HIV test and their potential exposures to HIV infection. Further research is needed to explore the complexities of safe sex communication among sexual partners. Meanwhile, HIV prevention efforts should work to ensure that awareness and communication about HIV translates into safer sex behavior.

Over and above the preceding issues, there are several limitations to our study. First, the cross-sectional research design does not allow inference of causality. For example, we assume that men who report higher HIV communication self-efficacy are more likely to communicate about HIV status with their partner. However, our findings may reflect that men who perform this particular behavior feel more efficacious about doing it. Second, our results were found among a convenience sample of MSM in South Africa and are not intended to be generalized outside of this population. Third, even though we used computer-assisted self-interviewing, the data we collected are self-reported and could have been biased by social desirability. Lastly, the constructs measured were developed in Western settings, and although they have previously been demonstrated to be reliable and valid in South Africa, there may be additional culture-specific factors that have not been accounted for in the current study.

Notwithstanding these limitations, our findings suggest that communication about HIV status can be increased by promoting self-efficacy. This is particularly salient as communication about HIV status increases in importance as part of current efforts to expand HIV testing and treatment services. Along with this, a more comprehensive understanding of the processes of communication about HIV and its relationship to safe sex behavior is urgently needed.

Acknowledgments

The study was supported by a Grant from am-fAR (106973; Principal Investigator: Theo Sandfort, Ph.D.) with additional support from a Grant from the National Institute of Mental Health to the HIV Center for Clinical and Behavioral Studies (P30-MH43520; Principal Investigator: Anke E. Ehrhardt, Ph.D.). This research was further supported by a training grant from the National Institute of Mental Health (T32 MH19139, Behavioral Sciences Research in HIV Infection; Principal Investigator: Theo Sandfort, Ph.D.). Special acknowledgement is due to Rudi van der Walt, Marius Steenkamp and the OUT LGBT Well-Being staff for their assistance in conducting the survey.

References

1. Bairan A, Taylor GA, Blake BJ, Akers T, Sowell R, Mendiola R Jr. A model of HIV disclosure: disclosure and types of social relationships. J Am Acad Nurse Pract. 2007; 19(5):242–50. [PubMed: 17489957]
2. Gorbach PM, Galea JT, Amani B, et al. Don’t ask, don’t tell: patterns of HIV disclosure among HIV positive men who have sex with men with recent STI practising high risk behaviour in Los Angeles and Seattle. Sex Transm Infect. 2004; 80(6):512–7. [PubMed: 15572626]
3. Serovich JM, Mosack KE. Reasons for HIV disclosure or non-disclosure to casual sexual partners. AIDS Educ Prev. 2003; 15(1):70–80. [PubMed: 12627744]
4. O’Brien ME, Richardson-Alston G, Ayoub M, Magnus M, Peterman TA, Kissinger P. Prevalence and correlates of HIV serostatus disclosure. Sex Transm Dis. 2003; 30(9):731–5. [PubMed: 12972799]

5. Simbayi LC, Kalichman SC, Strebel A, Cloete A, Henda N, Mqeketo A. Disclosure of HIV status to sex partners and sexual risk behaviours among HIV-positive men and women, Cape Town, South Africa. Sex Transm Infect. 2007; 83(1):29–34. [PubMed: 16790562]
6. Simon Rosser BR, Horvath KJ, Hatfield LA, Peterson JL, Jacoby S, Stately A. Predictors of HIV disclosure to secondary partners and sexual risk behavior among a high-risk sample of HIV-positive MSM: results from six epicenters in the US. AIDS Care. 2008; 20(8):925–30. [PubMed: 18777221]
7. Zea MC, Reisen CA, Poppen PJ, Diaz RM. Asking and telling: communication about HIV status among Latino HIV-positive gay men. AIDS Behav. 2003; 7(2):143–52. [PubMed: 14586199]
8. Lo SC, Reisen CA, Poppen PJ, Bianchi FT, Zea MC. Cultural beliefs, partner characteristics, communication, and sexual risk among Latino MSM. AIDS Behav. 2011; 15(3):613–20. [PubMed: 20652629]
9. Sandfort T, Yi H, Knox J, Reddy V. Sexual partnership types as determinant of HIV Risk in South African MSM: an event-level cluster analysis. AIDS Behav. 201210.1007/s10461-012-0294-y
10. Fisher JD, Fisher WA. Changing AIDS-risk behavior. Psychol Bull. 1992; 111(3):455–74. [PubMed: 1594721]
11. Peterson, JL.; DiClemente, RJ. Handbook of HIV prevention. New York: Kluwer/Plenum; 2000.
12. Kalichman SC, Simbayi LC, Cain D, Jooste S, Skinner D, Cherry C. Generalizing a model of health behaviour change and AIDS stigma for use with sexually transmitted infection clinic patients in Cape Town, South Africa. AIDS Care. 2006; 18(3):178–82. [PubMed: 16546776]
13. Simon MD, Altice FL, Moll AP, Shange M, Friedland GH. Preparing for highly active antiretroviral therapy rollout in rural South Africa: an assessment using the information, motivation, and behavioral skills model. AIDS Care. 2010; 22(4):462–74. [PubMed: 20204909]
14. Miller, HG.; Turner, CF.; Moses, LE. National Research Council (U.S.). AIDS, the second decade. Washington, D.C: National Academy Press; 1990. Committee on AIDS research and the behavioral social and statistical sciences.
15. Granich RM, Gilks CF, Dye C, De Cock KM, Williams BG. Universal voluntary HIV testing with immediate antiretroviral therapy as a strategy for elimination of HIV transmission: a mathematical model. Lancet. 2009; 373(9657):48–57. [PubMed: 19038438]
16. Williamson LM, Dodds JP, Mercey DE, Hart GJ, Johnson AM. Sexual risk behaviour and knowledge of HIV status among community samples of gay men in the UK. AIDS. 2008; 22(9): 1063–70. [PubMed: 18520350]
17. Kalichman, SC. Positive prevention: reducing HIV transmission among people living with HIV/AIDS. New York: Kluwer/Plenum; 2005.
18. Noar SM, Carlyle K, Cole C. Why communication is crucial: meta-analysis of the relationship between safer sexual communication and condom use. J Health Commun. 2006; 11(4):365–90. [PubMed: 16720536]
19. Roberts B, Reddy V. Pride and prejudice: public attitudes toward homosexuality. HSRC Rev. 2008; 6(4):9–11.
20. Reddy, V.; Sandfort, T.; Rispel, LC. From social silence to social science: same-sex sexuality, HIV & AIDS and gender in South Africa: conference proceedings. Cape Town: HSRC; 2009.
21. Council SANA. National Strategic Plan on HIV, STIs and TB 2012–2016. Pretoria: SANAC; 2011.
22. Shisana, O.; Rehle, T.; Simbayi, LC., et al. South African National HIV Prevalence, HIV incidence, Behaviour and Commincation Survey. Cape Town: HSRC; 2005.
23. Bryan AD, Fisher JD, Benziger TJ. Determinants of HIV risk among Indian truck drivers. Soc Sci Med. 2001; 53(11):1413–26. [PubMed: 11710417]
24. Cornman DH, Schmiege SJ, Bryan A, Benziger TJ, Fisher JD. An information-motivation-behavioral skills (IMB) model-based HIV prevention intervention for truck drivers in India. Soc Sci Med. 2007; 64(8):1572–84. [PubMed: 17257724]
25. Simbayi LC, Kalichman SC, Jooste S, Cherry C, Mfecane S, Cain D. Risk factors for HIV-AIDS among youth in Cape Town, South Africa. AIDS Behav. 2005; 9(1):53–61. [PubMed: 15812613]
26. Carey MP, Schroder KE. Development and psychometric evaluation of the brief HIV Knowledge Questionnaire. AIDS Educ Prev. 2002; 14(2):172–82. [PubMed: 12000234]

27. Peltzer K, Promtussananon S. HIV/AIDS knowledge and sexual behavior among junior secondary school students in South Africa. J Soc Sci. 2005; 1(1):1–8.
28. Swenson RR, Rizzo CJ, Brown LK, et al. HIV knowledge and its contribution to sexual health behaviors of low-income African American adolescents. J Natl Med Assoc. 2010; 102(12):1173–82. [PubMed: 21287898]
29. Mongkuo MY, Thomas R, Lucas N, Taylor A. Development and validation of HIV prevention scale for historically black college students. J AIDS HIV Res. 2012; 4(6):165–74.
30. Fisher JD, Fisher WA, Williams SS, Malloy TE. Empirical tests of an information-motivation-behavioral skills model of AIDS-preventive behavior with gay men and heterosexual university students. Health Psychol. 1994; 13(3):238–50. [PubMed: 8055859]
31. D'Augelli AR, Pilkington NW, Hershberger SL. Incidence and mental health impact of sexual orientation victimization of lesbian, gay, and bisexual youths in high school. Sch Psychol Q. 2002; 17(2):148–67.
32. Knox J, Yi H, Reddy V, Maimane S, Sandfort T. The fallacy of intimacy: sexual risk behaviour and beliefs about trust and condom use among men who have sex with men in South Africa. Psychol Health Med. 2010; 15(6):660–71. [PubMed: 21154019]
33. Sayles JN, Pettifor A, Wong MD, et al. Factors associated with self-efficacy for condom use and sexual negotiation among South African youth. J Acquir Immune Defic Syndr. 2006; 43(2):226–33. [PubMed: 16951647]
34. MacPhail C, Campbell C. 'I think condoms are good but, aai, I hate those things': condom use among adolescents and young people in a Southern African township. Soc Sci Med. 2001; 52(11): 1613–27. [PubMed: 11327136]
35. McLean J, Boulton M, Brookes M, et al. Regular partners and risky behaviour: why do gay men have unprotected intercourse? AIDS Care. 1994; 6(3):331–41. [PubMed: 7948089]
36. Knox J, Sandfort T, Yi H, Reddy V, Maimane S. Social vulnerability and HIV testing among South African men who have sex with men. Int J STD AIDS. 2011; 22(12):709–13. [PubMed: 22174050]

Table 1

Individual characteristics and social cognitive constructs by having communicated about HIV status at LSE among MSM (n = 300) in Pretoria, South Africa

	Total		Communication		No communication		χ^2	*P*
	%	*N*	%	*N*	%	*N*		
Individual characteristics								
Age							0.06	0.813
24 or younger	53.1	135	57.8	78	42.2	57		
25 or older	46.9	119	56.3	67	43.7	52		
Race							41.91	<0.001
Black	66.3	189	45.5	86	54.5	103		
White	33.7	96	85.4	82	14.6	14		
Township resident							24.99	<0.001
Yes	52.2	144	43.8	63	56.3	81		
No	47.8	132	73.5	97	26.5	35		
Educational attainment							1.97	0.160
≤Grade 12	49.3	140	55.0	77	45.0	63		
>12 Grade or diploma	50.7	144	63.2	91	36.8	53		
Income							18.00	<0.001
Low income	53.9	152	47.4	72	52.6	80		
High income	46.1	130	72.3	94	27.7	36		
Employed							3.19	0.074
Yes	67.7	191	62.8	120	37.2	71		
No	32.3	91	51.6	47	48.4	44		
Sexual self-identification							0.92	0.338
Not gay	15.5	44	52.3	23	47.7	21		
Gay	84.5	240	40.0	144	60.0	96		
Tested in the past year							11.86	0.001
Yes	42.4	117	70.9	83	29.1	34		
No	57.6	159	50.3	80	49.7	79		
HIV positive							4.56	0.102
Yes	10.2	29	55.2	16	44.8	13		

	Total		Communication		No communication		χ^2	*P*
	%	*N*	%	*N*	%	*N*		
No	59.4	168	63.7	107	36.3	61		
Never tested	39.4	86	50.0	43	50.0	43		

	M	SD	M	SD	M	SD	*T*	*P*
Femininity[a,b]	2.89	1.13	2.76	1.10	3.13	1.15	−2.73	0.007
Openness about sexual orientation[a,b]	3.39	1.37	3.49	1.42	3.23	1.28	1.47	0.142
Discrimination in the past year[c,d]	52.49	287.71	68.54	366.93	25.81	104.47	1.22	0.222
Social cognitive constructs								
HIV knowledge[a,e]	11.50	2.53	11.42	2.66	11.69	2.35	−0.89	0.373
Intentions to communicate about safe sex[a,b]	4.00	1.36	4.16	1.26	3.79	1.46	2.23	0.026
HIV communication self-efficacy[a,b]	3.27	1.59	3.71	1.47	2.68	1.58	5.56	\0.001

[a]Higher scores indicate higher levels of the construct

[b]Range: 1–5

[c]Number of reported events

[d]Although not normally distributed, results did not change when the variable was log transformed

[e]Range: 1–15

AIDS Behav. Author manuscript; available in PMC 2014 January 01.

Table 2

Characteristics of the last sexual encounter by having communicated about HIV status at LSE among MSM (n = 300) in Pretoria, South Africa

	Total		Communication		No communication		χ^2	*P*
	%	*N*	%	*N*	%	*N*		
Situational factors								
Met more than a year ago							0.05	0.821
Yes	28.1	80	60.0	48	40.0	32		
No	71.9	205	58.5	120	41.5	85		
Met online							1.45	0.229
Yes	12.4	35	68.6	24	31.4	11		
No	87.6	247	57.9	143	42.1	104		
Steady partners in a relationship							22.25	<0.001
Yes	60.3	170	47.6	81	52.4	89		
No	39.7	112	75.9	85	24.1	27		
Live in the same neighborhood							0.20	0.655
Yes	31.7	80	57.5	46	42.5	34		
No	68.3	172	60.5	104	39.5	68		
Same age							0.64	0.423
Yes	81.0	218	61.0	133	39.0	85		
No	19.0	51	54.9	28	45.1	23		
Same race							2.90	0.089
Yes	88.0	241	61.0	147	39.0	94		
No	12.0	33	45.5	15	54.5	18		
Same SES							0.32	0.573
Yes	64.0	146	62.3	91	37.7	55		
No	36.0	82	58.5	48	41.5	34		
Same femininity							0.92	0.336
Yes	68.1	190	56.8	108	43.2	82		
No	31.9	89	62.9	56	37.1	33		
Respondent was receptive partner							2.86	0.091
Yes	70.4	195	54.9	107	45.1	88		
No	29.6	82	65.9	54	34.1	28		

	Total		Communication		No communication		χ^2	*P*
	%	*N*	%	*N*	%	*N*		
Alcohol or drug use							5.29	0.021
Yes	45.1	105	52.4	55	47.6	50		
No	54.9	128	67.2	86	32.8	42		
Sex in a public place							5.58	0.018
Yes	11.8	33	39.4	13	60.6	20		
No	88.2	246	61.0	150	39.0	96		
Transactional sex							0.36	0.550
Yes	14.7	42	54.8	23	45.2	19		
No	85.3	243	59.7	145	40.3	98		
Unprotected anal intercourse							0.01	0.914
Yes	67.0	185	58.9	109	41.1	76		
No	33.0	91	58.2	53	41.8	38		

Table 3

Stepwise logistic regression models identifying independent correlates of having communicated about HIV status at LSE among MSM (n = 300) in Pretoria, South Africa[a,b,c]

	Model 1		Model 2		Model 3	
	Social cognitive constructs		Social cognitive constructs and situational factors		Social cognitive constructs, situational factors, and individual characteristics	
	aOR	95 % CI	aOR	95 % CI	aOR	95 % CI
Social cognitive constructs						
Intentions to communicate about safe sex	1.08	(0.90–1.31)	–	–	–	–
HIV communication self- efficacy	1.52***	(1.29–1.79)	1.47***	(1.21–1.79)	1.26*	(1.04–1.54)
Situational factors						
Steady partners in a relationship			0.47*	(0.25–0.90)	0.36**	(0.19–0.67)
Same race			1.79	(0.67–4.75)	–	–
Respondent was penetrated			0.61	(0.31–1.20)	–	–
Alcohol or drug use			0.68	(0.37–1.28)	–	–
Sex in a public place			0.73	(0.28–1.90)	–	–
Individual characteristics						
Race (Black vs. White)					0.17***	(0.07–0.44)
Township resident					1.51	(0.67–3.39)
High income					1.99	(0.93–4.25)
Employed					0.82	(0.39–1.73)
Tested in the past year					1.16	(0.60–2.22)
Femininity					0.81	(0.61–1.08)

[a] All variables significant in bivariate analyses at P<0.10 were included in multivariable models

[b] Variables not significant in the previous multivariable model were not included in subsequent multivariable models

[c] * P<0.05, ** P<0.01, *** P<0.001