Published in final edited form as:

Int J STD AIDS. 2018 June ; 29(7): 673–679. doi:10.1177/0956462417751812.

Assessment of HIV disclosure and sexual behavior among Black men who have sex with men following a randomized controlled intervention

Julianne M Serovich, Tanja C Laschober, Monique J Brown, Judy A Kimberly

College of Behavioral and Community Sciences, University of South Florida, Tampa, FL, USA

Abstract

Disclosure is important in human immunodeficiency virus (HIV) transmission risk reduction. This randomized controlled intervention assessed changes in and predictors of disclosure and risky sexual behavior among Black men who have sex with men (BMSM) living with HIV in the U.S. BMSM were randomly assigned to either the disclosure intervention or attention control case management group. Predictors of three disclosure types (behavior, beliefs, intentions) and condomless anal intercourse (CAI) included disclosure consequences (rewards and costs), disclosure readiness, and safer sex readiness. Mixed-effect results showed no differences between the groups in any of the outcomes; although disclosure behavior increased over time. Relationships were found between readiness to change and CAI; disclosure consequences and different disclosure types; and disclosure behavior and receptive CAI. When working with BMSM living with HIV, practitioners and prevention specialists should consider the importance of disclosure pertaining to receptive CAI and factors that support overall disclosure and safer sex.

Keywords

Human immunodeficiency virus disclosure; risky sexual behavior; living with human immunodeficiency virus; African American; men who have sex with men

Introduction

In the United States (U.S.), men who have sex with men (MSM) are at greatest risk of contracting human immunodeficiency virus (HIV) compared to other individuals.¹ MSM accounted for 70% of Americans newly diagnosed with HIV and for 56% of Americans living with HIV in 2014.¹ Among MSM, Black men have the highest rates of new HIV infections compared to other racial and ethnic groups.² In 2015, of all new HIV diagnoses among men, 39% were Black, 29% White, and 27% Hispanic.

Reprints and permissions: sagepub.co.uk/journalsPermissions.nav

Corresponding author: Julianne M Serovich, College of Behavioral and Community Sciences, University of South Florida, 13301 Bruce B Downs Blvd., MHC 1110, Tampa, FL 33612-3807, USA., jserovich@usf.edu.

Declaration of conflicting interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

According to the Centers for Disease Control and Prevention (CDC), HIV-related conversations including disclosure of HIV status to sexual partners is one important strategy in negotiating safer sex and reducing HIV transmission risks.^{3–5} HIV disclosure to casual sexual partners is an ongoing process that can be communicated in a number of ways.⁶ MSM may state point-blank that they are HIV-positive or use indirect methods to convey the message (e.g. leaving out HIV medications). The latter strategies make assumptions that the message is received as intended and leaves opportunities for miscommunication.

Campaigns developed by the CDC such as *Start Talking. Stop HIV* are designed to help MSM openly and directly communicate with their sexual partners about HIV testing, disclosure of their HIV status, condom use, engagement in less risky sexual behaviors, and treatment and prevention of HIV.³ However, HIV seropositive status disclosure is a complex process rather than a single event. Interventions can facilitate this process by helping MSM decide whether and how to disclose their status to casual sexual partners. Additionally, interventions can assist MSM in acquiring effective disclosure strategies, building communication skills, developing self-efficacy, and assessing and reducing the risk of HIV transmission^{7–11}

However, HIV-related conversations, sexual behaviors, and transmission risks among Black MSM (BMSM) remain understudied areas. Previous research has shown that HIV disclosure tends to differ between racial and ethnic groups. For example, Black compared to White MSM are less likely to disclose their HIV status¹² and are less likely to know their HIV status.¹³ They are also less likely to engage in risky sexual behaviors than other MSM.¹⁴ Additionally, empirical support is mixed regarding the relationship between HIV status disclosure, transmission risk, and sexual behavior.⁵ Some studies show that greater HIV status disclosure is associated with less risky sexual behavior and transmission risk.^{15,16} Other studies find mixed, or no significant relationships, between disclosure and sexual behavior.^{5,17}

Theoretical frameworks and current study

There are various theories that inform disclosure, sexual behavior, and the relationship between disclosure and sexual behavior. The consequences theory of disclosure proposes that HIV disclosure is most likely when the rewards outweigh the costs of disclosing.^{18,19} Rewards of disclosure may include feelings of “doing the right thing” as well as improved physical and mental health.^{20,21} Costs of disclosure may entail fears of abuse, rejection, isolation, stigma, degradation, ostracism, and anxiety.²²

Rewards and costs assessments are also found in other theories that help explain sexual behavior change. The transtheoretical model of behavior change suggests that individuals move through a series of readiness stages to change risky sexual behavior.²³ Prior studies, for example, have shown that less readiness to use condoms is related to greater condomless anal intercourse (CAI).^{24,25} Readiness may be encouraged through rewards and discouraged through costs associated with changes in sexual behaviors (e.g. contemplation stage). Finally, regarding the link between disclosure and risky sexual behavior, the theory of planned behavior suggests that disclosure beliefs, intentions, and behavior predict sexual behavior.²⁶

The main purposes of this study are to assess changes in and predictors of HIV seropositive status disclosure and sexual behavior among BMSM following a disclosure intervention (DI). The following hypotheses (Hs) are examined: The intervention compared to the control group will have (H1) a greater increase in disclosure (beliefs, intentions, behavior) and (H2) a greater decrease in risky sexual behavior (insertive and receptive CAI) over time; (H3) perceptions of disclosure consequences (costs and rewards) and readiness to change will predict disclosure; (H4) perceptions of disclosure consequences (costs and rewards) and readiness to change will predict risky sexual behavior; and (H5) disclosure will predict risky sexual behavior.

Methods

Procedure

The current study used data from 123 BMSM living with HIV who participated in a larger intervention study. The larger study was conducted between 2009 and 2014 and included 339 MSM who agreed to participate in a two-arm randomized controlled DI in two U.S. metropolitan areas. To be eligible for inclusion, MSM had to be 18 years of age or older, English-speaking, HIV-positive, sexually active in the past three months with at least one man, interested in learning more about serostatus disclosure to casual sexual partners, and plan on living in the area for at least one year. MSM were randomly assigned to either the DI or the attention control case management (ACCM) group. The study protocol was approved by the Institutional Review Boards of the University of South Florida and Ohio State University. Written consent was obtained prior to the onset of the study from all eligible men who agreed to participate.

Each group followed the same sequence and participated in seven one-on-one sessions with trained facilitators over 12 months. The DI group focused on HIV disclosure to casual sexual partners (e.g. engaged in extensive practices and exercises related to HIV disclosure). The ACCM group followed the CDC's HIV prevention case management program "Comprehensive Risk Counseling and Services" (CRCS).²⁷ Each session took 60–90 min to complete. Survey data were collected during five sessions (sessions 1, 4–7) using audio computer-assisted self-interviewing (ACASI). The condition was administered during three sessions (sessions 2–4). A booster session was administered during session 5 to reinforce previously acquired skills. Facilitators also worked with both groups on reducing risky sexual behaviors.

Measures

Disclosure.—Three disclosure to sexual partner measures were administered at each of the five time-points. The measures (13 items each) examined the extent of (1) disclosure behavior, (2) disclosure beliefs, and (3) disclosure intentions in different sexual situations and with different sexual partners. The stem question for disclosure behavior was "In the last 30 days, I have disclosed my HIV status to ... (e.g. sexual partners with whom I had oral sex without a condom.)". Response options ranged from 1 = *none of my sexual partners* to 5 = *all of my sexual partners*. The stem question for disclosure beliefs was "People with HIV should disclose their status to ... (e.g. casual sexual partners.)". Response options ranged

from 1 = *Strongly Disagree* to 4 = *Strongly Agree*. The stem question for disclosure intentions was “I plan to tell my future sexual partners ... (e.g. with whom I have insertive anal sex without a condom about my HIV status.)”. Response options ranged from 1 = *Strongly Disagree* to 4 = *Strongly Agree*. Each measure was created by calculating the mean across the corresponding items.

Risky sexual behavior.—Participants were first asked about the number of sexual encounters they had in the past 30 days. If they had at least one sexual encounter, participants were asked to report on the number of sexual encounters that involved insertive CAI and receptive CAI. The number of insertive and receptive CAI was divided by the number of sexual encounters and multiplied by 100 to obtain the percentage of sexual encounters that involved insertive and receptive CAI. In some instances, BMSM mistakenly reported a greater number of insertive and receptive CAI than sexual encounters, resulting in percentages greater than 100. When percentages were greater than 100 (8 of 328 insertive CAI encounters; 5 of 332 receptive CAI encounters), they were recoded to 100%.

Readiness to disclose or engage in safer sex.—Readiness was assessed at baseline and included readiness to have safer sex with all sexual partners and readiness for seropositive status disclosure to all sexual partners. A readiness to change ruler was used, ranging from 1 to 10, with higher numbers indicating greater readiness.^{24,28}

Consequences of disclosure.—Rewards and costs of disclosing one’s HIV status to a sexual partner were measured at baseline.^{18,19} The rewards measure was created by summing the number of *yes* responses to 12 items (0 = *no*, 1 = *yes*). The costs measure was created by summing the number of *yes* responses to 9 items (0 = *no*, 1 = *yes*).

Control variables

The following control variables were included in the analyses – participant’s age in years, time since HIV diagnosis in years, and viral suppression (0 = *not virally suppressed*, 1 = *virally suppressed*). Also controlled for was location of data collection (0 = *Midwest*, 1 = *Southeast*).

Data analysis

Data were analyzed using descriptive statistics and mixed-effects models for repeated measures (proc mixed) in SAS software version 9.4 (SAS Institute Inc., Cary, NC, USA). Separate mixed-effects models were run for each of the three disclosure outcomes and each of the two CAI outcomes. Models were run in multiple steps and examined for fit. The final best fitting model for each outcome included random slopes for the intercept only and fixed effects for the predictor and control variables.

Results

BMSM baseline demographic characteristics

Of the 123 BMSM, most (63.4%) were identified as gay and 36.6% as bisexual. More than half self-reported viral suppression (56.1%), 43.1% had some college experience, and 25.2%

were employed. About one-third earned less than \$500 (37.4%) or between \$501 and \$1000 (37.4%) per month. Around half (55.3%) of the BMSM lived in the Midwest and 44.7% lived in the Southeast. The mean age was 40.9 years ($SD = 11.6$) and mean time since HIV diagnosis was 10.1 years ($SD = 8.3$).

Approximately half of the BMSM (55.3%) were randomly assigned to the DI group and half (44.7%) to the ACCM group. With one exception, there were no significant group differences in demographic characteristics. BMSM in the DI group were older than in the ACCM group (43.4 vs. 40.5 years, respectively; $F = 8.27$, $p = 0.004$), which was controlled for in the analyses.

Disclosure: Behavior, beliefs, and intentions

Descriptive statistics of disclosure behavior, beliefs, and intentions at each of the five time-points are displayed in Table 1. Table 2 shows that disclosure behavior but not beliefs and intentions significantly increased over 12 months. There were no significant differences in the disclosure outcomes between the DI and ACCM group (H1 was not supported). Regarding H3, both readiness to disclose and perceived rewards of disclosure were significantly positively associated with disclosure behavior, beliefs, and intentions. Greater readiness to engage in safer sex was significantly related to greater disclosure beliefs and intentions. Greater perceived disclosure costs were significantly associated with lower disclosure behavior. Among the control variables, time since HIV diagnosis was negatively related to disclosure beliefs and intentions.

Risky sexual behavior: CAI

Table 1 also includes descriptive statistics for insertive and receptive CAI at each time-point. Table 3 shows that there was no significant change in insertive or receptive CAI over time. There was also no significant difference in CAI between the DI and ACCM groups (H2 was not supported). Pertaining to H4, greater readiness for safer sex was significantly related to lower rates of insertive and receptive CAI, and greater readiness to disclose was significantly related to greater receptive CAI. With respect to H5, there was a negative relationship between disclosure behavior and receptive CAI. Among the control variables, older BMSM reported less insertive and receptive CAI.

Discussion

The goals of this randomized controlled intervention were to assess changes in and predictors of HIV seropositive status disclosure and sexual behavior among BMSM following a DI. The increase in disclosure behavior but not beliefs and intentions suggests that behavior can change even when beliefs and intentions toward the behavior do not change, which is counter to the premise of the theory of planned behavior.²⁶ The lack of differences between the DI and ACCM groups is unexpected because only the DI group had extensive exposure to the DI. However, similarities might also indicate that different treatments can achieve similar positive outcomes in behavioral interventions. This finding further suggests that increased disclosure to sexual partners in the current intervention study might have occurred through other shared experiences that are not specific to disclosure.

The shared experiences between the DI and ACCM groups were the number and sequence of sessions, one-on-one sessions with trained facilitators, the focus on reducing risky sexual behavior, and all MSM having to have an interest in finding out more about disclosing their status to a sexual partner in order to be eligible for inclusion in the study. There is much empirical support for a relationship between the therapeutic alliance (e.g. therapist and patient, facilitator and participant) and treatment outcomes,^{29,30} which might explain the similarities between the groups. Future interventions should consider the therapeutic alliance as a possible effect on outcomes to support or refute this speculation.

The lack of differences in CAI between the DI and ACCM groups might be explained by the fact that both groups discussed safer sex strategies with the facilitators. Previous research concluded that intervention effects were greatest when the control group received minimal to no treatment.⁸ In contrast, it is surprising that there was no change in CAI over time. It may be that BMSM in this study used other strategies to reduce the risk of HIV transmission (e.g. serosorting, strategic positioning). It is worth noting here that there is no clear evidence that these strategies are effective in HIV transmission risk reduction.^{31,32}

Findings on predictors confirmed that greater readiness to change and perceived disclosure rewards were associated with greater disclosure behavior, beliefs, and intentions; greater perceived costs were related to less disclosure behavior. Greater readiness to engage in safer sex was related to less insertive and receptive CAI. These findings are in line with the transtheoretical model of behavior change²³ and the consequences theory of disclosure.^{18,19} These findings are also supported by previous research on the relationship between readiness to change and risky sexual behavior.^{24,25} Finally, greater disclosure behavior was related to less receptive CAI but not less insertive CAI. These findings are similar to prior research on the relationship between disclosure and risky sexual behavior that have also noted mixed findings.⁵

Limitations and conclusions

Limitations of this study should be taken into consideration when interpreting the findings. One limitation is the non-random sample of MSM in the larger study. Although MSM were randomly assigned to either the DI or the ACCM group, they were not randomly sampled from the larger population. Instead, recruitment occurred through various HIV-related venues, advertisements, and word-of-mouth. As a result, findings may not be generalizable to BMSM as a whole. Future studies using larger random samples with longitudinal designs are needed to test interventions that may replicate or refute findings from this study.

Another limitation is the use of self-reported measures of disclosure and risky sexual behavior. Even with the use of ACASI, which is recommended for collecting sensitive self-reported information,^{33–35} it is possible that BMSM in this study over- or under-reported their behaviors due to social desirability, which may overestimate or underestimate the associations assessed in the current study.

Despite these limitations, findings from this study are important for practitioners and the design of future studies. HIV prevention and intervention programs could consider integrating strategies (e.g. motivational interviewing) to encourage and support readiness to

change, and to help BMSM understand and identify the consequences of disclosing their HIV status to sexual partners. Prevention and intervention programs are needed that integrate culture-specific aspects (e.g. socio-cultural and socio-historical influences of racism, stigma, homophobia, poverty, masculinity, cultural beliefs, and/or geographic location on risky sexual behaviors) when working with BMSM in reducing HIV transmission risks.^{36–38}

The general lack of a treatment effect regarding disclosure and sexual behavior further opens up new opportunities for research in this area but also deepens our understanding of treatments that may or may not have the greatest impact on long-term behavior changes among BMSM. Instead, other prevention strategies that are culturally informed and are sensitive to the needs of BMSM need to be considered, tested, and implemented because disclosure by itself may not necessarily result in HIV transmission risk reduction.

Acknowledgments

The authors thank the men who participated in this study.

Funding

The authors disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was supported by a grant from the National Institute of Mental Health (R01MH082639) awarded to the first author.

References

- Centers for Disease Control and Prevention (CDC). CDC fact sheet. HIV among gay and bisexual men, www.cdc.gov/nchhstp/newsroom/docs/factsheets/cdc-msm-508.pdf (2017, accessed 19 December 2017).
- Centers for Disease Control and Prevention (CDC). HIV among African American gay and bisexual men, www.cdc.gov/hiv/group/msm/bmsm.html (2017, accessed 19 December 2017).
- Centers for Disease Control and Prevention (CDC). Start talking. Stop HIV. Preventing new HIV infections through open conversations, www.cdc.gov/nchhstp/newsroom/docs/factsheets/stsh-factsheet-508.pdf (2014, accessed 19 December 2017).
- Pinkerton SD and Galletly CL. Reducing HIV transmission risk by increasing serostatus disclosure: a mathematical modeling analysis. *AIDS Behav* 2007; 11: 698–705. [PubMed: 17082982]
- Simoni JM and Pantalone DW. HIV disclosure and safer sex In: Kalichman SC (ed.) *Positive prevention: reducing HIV transmission among people living with HIV/AIDS*. New York, NY: Kluwer Academic/Plenum, 2005, pp. 65–98.
- Serovich JM, Oliver DG, Smith SA, et al. Methods of HIV disclosure by men who have sex with men to casual sexual partners. *AIDS Patient Care STDS* 2005; 19: 823–832. [PubMed: 16375614]
- Johnson WD, Diaz RM, Flanders WD, et al. Behavioral interventions to reduce risk for sexual transmission of HIV among men who have sex with men. *Cochrane Database Syst Rev* 2008; 16: CD001230.
- Johnson WD, Holtgrave DR, McClellan WM, et al. HIV intervention research for men who have sex with men: a 7-year update. *AIDS Educ Prev* 2005; 17: 568–589. [PubMed: 16398578]
- Kalichman SC, Kalichman MO, Cherry C, et al. HIV disclosure and transmission risks to sex partners among HIV-positive men. *AIDS Patient Care STDS* 2016; 30: 221–228. [PubMed: 27158850]
- Serovich JM, Laschober TC, Brown MJ, et al. Longitudinal findings on changes in and the link between HIV-related communication, risky sexual behavior, and relationship status in men who have sex with men living with HIV. *Sex Transm Dis* 2017; 44: 732–738. [PubMed: 28876301]

11. Serovich JM, Laschober TC, Brown MJ, et al. Evaluation of HIV disclosure behavior following a randomized controlled disclosure intervention for men who have sex with men living with HIV. *Arch Sex Behav* 2017 Epub ahead of print 15 November. DOI: 10.1007/s1050801710559.
12. Bird JD, Fingerhut DD and McKirnan DJ. Ethnic differences in HIV-disclosure and sexual risk. *AIDS Care* 2011; 23: 444–448. [PubMed: 21271405]
13. Centers for Disease Control and Prevention. Healthy people 2020 leading health indicators. Objective HIV-13: proportion of persons living with HIV who know their serostatus, www.cdc.gov/hiv/pdf/library/factsheets/healthy-people-2020-leading-health-indicators-objective-hiv-13.pdf (2012, accessed 19 December 2017).
14. Millett GA, Peterson JL, Flores SA, et al. Comparisons of disparities and risks of HIV infection in black and other men who have sex with men in Canada, UK, and USA: a meta-analysis. *Lancet* 2012; 28: 341–348.
15. Crepaz N and Marks G. Serostatus disclosure, sexual communication and safer sex in HIV-positive men. *AIDS Care* 2003; 15: 379–387. [PubMed: 12745398]
16. O'Connell AA, Reed SJ and Serovich JA. The efficacy of serostatus disclosure for HIV transmission risk reduction. *AIDS Behav* 2015; 19: 283–290. [PubMed: 25164375]
17. St De Lore J, Thiede H, Cheadle A, et al. HIV disclosure and subsequent sexual behaviors among men who have sex with men who meet online. *J Homosex* 2012; 59: 592–609. [PubMed: 22500995]
18. Serovich JM. A test of two HIV disclosure theories. *AIDS Educ Prev* 2001; 13: 355–364. [PubMed: 11565594]
19. Serovich JM, Lim J and Mason TL. A retest of two HIV disclosure theories. The women's story. *Health Soc Work* 2008; 33: 23–31. [PubMed: 18326447]
20. Gaskins S, Foster PP, Sowell R, et al. Reasons for HIV disclosure and non-disclosure: an exploratory study of rural African American men. *Issues Ment Health Nurs* 2011; 32: 367–373. [PubMed: 21692575]
21. Parsons JT, VanOra J, Missildine W, et al. Positive and negative consequences of HIV disclosure among seropositive injection drug users. *AIDS Educ Prev* 2004; 16: 459–475. [PubMed: 15491957]
22. Bird JD and Voisin DR. You're an open target to be abused": a qualitative study of stigma and HIV self-disclosure among Black men who have sex with men. *Am J Public Health* 2013; 103: 2193–2199. [PubMed: 24134345]
23. Prochaska JO, DiClemente CC and Norcross JC. In search of how people change: applications to the addictive behaviors. *Am Psychol* 1992; 47: 1102–1114. [PubMed: 1329589]
24. Lovejoy TI, Heckman TG, Suhr JA, et al. Telephone-administered motivational interviewing reduces risky sexual behavior in HIV-positive late middle-age and older adults: a pilot randomized controlled trial. *AIDS Behav* 2011; 15: 1623–1634. [PubMed: 21809048]
25. Peterson JL, Miner MH, Brennan DJ, et al. HIV treatment optimism and sexual risk behaviors among HIV positive African American men who have sex with men. *AIDS Educ Prev* 2012; 24: 91–101. [PubMed: 22468971]
26. Ajzen I The theory of planned behavior. *Organ Behav Hum Decis Process* 1991; 50: 179–211.
27. Centers for Disease Control and Prevention (CDC). Comprehensive risk counseling and services (CRCS), <https://www.cdc.gov/hiv/programresources/guidance/crcs/index.html> (2017, accessed 22 December 2017).
28. Center for Evidence-Based Practices. Readiness ruler. Cleveland, OH: Case Western Reserve University, 2010.
29. Horvath A, Del Re AC, Flückiger C, et al. The alliance In: Norcross JC (ed.) *Relationships that work*. New York, NY: Oxford University Press, 2011, pp. 25–69.
30. Martin DJ, Garske JP and Davis KM. Relation of the therapeutic alliance with outcome and other variables: a meta analytic review. *J Consult Clin Psychol* 2000; 68: 438–450. [PubMed: 10883561]
31. Cassels S and Katz DA. Seroadaptation among men who have sex with men: emerging research themes. *Curr HIV/AIDS Rep* 2013; 10: 305–313. [PubMed: 24234489]
32. Cassels S, Menza TW, Goodreau SM, et al. HIV sersorting as a harm reduction strategy: evidence from Seattle, Washington. *AIDS* 2009; 23: 2497–2506. [PubMed: 19834319]

33. DesJarlais DC, Paone D, Milliken J, et al. Audio-computer interviewing to measure risk behaviour for HIV among injection drug users: a quasi-randomized trial. *Lancet* 1999; 535: 1657–1662.
34. Kelly CA, Hewett PC, Mensch BS, et al. Using biomarkers to assess the validity of sexual behavior reporting across interview modes among young women in Kampala, Uganda. *Stud Fam Plann* 2005; 45: 43–58.
35. Perlis TE, DesJarlais DC, Friedman SR, et al. Audio-computerized self-interviewing versus face-to-face interviewing for research data collection at drug abuse treatment programs. *Addiction* 2004; 99: 885–896. [PubMed: 15200584]
36. Maulsby C, Millett G, Lindsey K, et al. A systematic review of HIV interventions for black men who have sex with men (MSM). *BMC Public Health* 2013; 13: 625. [PubMed: 23819660]
37. Wyatt GE. Enhancing cultural and contextual intervention strategies to reduce HIV/AIDS among African Americans. *Am J Public Health* 2009; 99: 1941–1945. [PubMed: 19762666]
38. Peterson JL and Jones KT. HIV prevention for Black men who have sex with men in the United States. *Am J Public Health* 2009; 99: 976–980. [PubMed: 19372510]

Table 1.

Descriptive statistics: disclosure and condomless anal intercourse (CAI).

	Disclosure			CAI	
	Behavior <i>M (SD)</i>	Beliefs <i>M (SD)</i>	Intentions <i>M (SD)</i>	I-CAI <i>M (SD)</i>	R-CAI <i>M (SD)</i>
Baseline	3.08 (1.44)	3.28 (0.63)	3.25 (0.64)	26.12 (37.33)	26.06 (37.38)
1.5 months post-baseline (post-treatment)	3.54 (1.55)	3.30 (0.64)	3.23 (0.70)	20.29 (37.24)	16.46 (33.45)
3 months post-baseline (booster)	3.65 (1.36)	3.30 (0.57)	3.27 (0.65)	30.31 (44.36)	22.56 (38.11)
6 months post-baseline	3.63 (1.40)	3.20 (0.66)	3.13 (0.75)	28.63 (39.17)	21.10 (37.94)
12 months post-baseline	3.90 (1.25)	3.32 (0.69)	3.27 (0.74)	29.04 (43.05)	24.64 (39.40)

I-CAI: insertive condomless anal intercourse; R-CAI: receptive condomless anal intercourse.

Table 2.

Changes in and predictors of HIV disclosure behavior, beliefs, and intentions.

	Behavior		Beliefs		Intentions	
	Estimate (SE)	t-Value	Estimate (SE)	t-Value	Estimate (SE)	t-Value
Time	0.19 (0.05)	3.98***	-0.00 (0.02)	-0.14	-0.01 (0.02)	-0.42
Treatment, DI group	-0.01 (0.21)	-.04	0.05 (0.09)	0.58	-0.02 (0.10)	-0.25
Time × treatment	-.01 (0.07)	-0.12	0.01 (0.03)	0.34	0.02 (0.03)	0.66
Readiness safer sex	0.06 (0.04)	1.44	0.04 (0.02)	2.39*	0.06 (0.02)	3.05**
Readiness disclosure	0.15 (0.04)	4.28***	0.04 (0.02)	2.78**	0.06 (0.02)	3.82***
Disclosure rewards	0.10 (0.04)	2.64**	0.05 (0.02)	2.89**	0.05 (0.02)	3.03**
Disclosure costs	-0.12 (0.04)	-2.91**	0.01 (0.02)	0.46	0.01 (0.02)	0.40
Age	-0.01 (0.01)	-0.89	0.00 (0.00)	1.21	0.00 (0.00)	0.88
Time since HIV diagnosis	-0.02 (0.01)	-1.67	-0.01 (0.00)	-2.41*	-0.01 (0.01)	-2.44*
Viral suppression	0.07 (0.13)	0.50	0.01 (0.06)	0.14	-0.01 (0.06)	-0.12
Location, Southeast	0.12 (0.19)	0.65	-0.01 (0.08)	-0.09	-0.03 (0.09)	-0.37

 $p < .001$;**
 $p < .01$;*
 $p < .05$.

Table 3.

Changes in and predictors of condomless anal intercourse (CAI).

	Insertive CAI		Receptive CAI	
	Estimate (SE)	t-Value	Estimate (SE)	t-Value
Time	0.23 (1.70)	0.14	2.00 (1.72)	1.16
Treatment, DI group	3.59 (7.03)	0.51	11.17 (6.44)	1.73
Time × treatment	-0.85 (2.32)	-0.37	-3.81 (2.38)	-1.60
Readiness safer sex	-5.74 (1.42)	-4.04***	-2.56 (1.24)	-2.07*
Readiness disclosure	1.71 (1.25)	1.37	2.56 (1.10)	2.33*
Disclosure rewards	0.01 (1.26)	0.01	0.42 (1.10)	0.38
Disclosure costs	0.92 (1.32)	0.69	0.09 (1.17)	0.08
Disclosure behavior	-0.81 (1.93)	-0.42	-6.47 (1.89)	-3.43***
Disclosure beliefs	-4.77 (5.27)	-0.90	-3.44 (5.22)	-0.66
Disclosure intentions	14.19 (5.07)	2.80**	6.90 (5.09)	1.36
Age	-1.12 (0.32)	-3.51***	-1.10 (0.28)	-3.86***
Time since HIV diagnosis	0.30 (0.43)	0.70	0.73 (0.39)	1.88
Viral suppression	3.33 (4.64)	0.72	1.30 (4.55)	0.29
Location, Southeast	3.71 (6.37)	0.58	0.43 (5.59)	0.08

 $p < .001$;**
 $p < .01$;*
 $p < .05$.