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An HIV Intervention Tailored for Black Young Men Who Have Sex with Men in the House Ball Community

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Abstract

Black young men who have sex with men (BYMSM) are the group most disproportionately impacted by HIV in the United States and most in need of efficacious interventions to address community-level factors that increase their vulnerability to HIV. The House Ball Community (HBC) is a distinct social network within the larger BYMSM community that may be particularly vulnerable to social norms and stigma around HIV. This study tailored an evidence-based, community-level popular opinion leader (OL) intervention for use within the HBC. The intervention, called *POSSE*, was then piloted to evaluate feasibility, acceptability and preliminary efficacy. Recruiting opinion leaders from the community and training them to deliver risk reduction messages was found to be feasible and highly acceptable. Community-level surveys (n=406) were completed over 5 waves of data collection. Overall exposure to the intervention increased across waves. Statistically significant ($p < .05$) declines were observed for multiple sexual partners, condomless anal intercourse with any male partners and with male partners of unknown HIV status. HIV stigma declined as well, but the trend was not statistically significant.

Keywords

HIV; Youth; Community Interventions

INTRODUCTION

Black young men who have sex with men (BYMSM) are disproportionately affected by HIV/AIDS in the U.S. accounting for more new infections than any other subgroup of MSM by race/ethnicity or age (CDC, 2014). Disproportionately high infection rates among Black men who have sex with men (BMSM) exist despite lack of evidence that BMSM engage in

riskier sexual practices than their non-Black counterparts (Millett, Peterson, Flores, Hart, & Jeffries, 2012) and may be explained in part by higher rates of undiagnosed infection and lower rates of treatment than other MSM, resulting in increased HIV infectivity due to acute HIV infection or high viral load (CDC, 2011; Millett, Flores, Peterson & Bakeman, 2007; Malenbrache, 2003). Researchers have suggested that in addition to individual and group-level behavioral interventions, future research should also focus on the contribution of other factors among BYMSM, such as social networks (Millet et al., 2007), social/structural factors (Lightfoot, 2012) and the role of community-level interventions (Millett et al., 2012). The House Ball community (HBC) represents a diverse but often overlooked BYMSM network ideal for intervention (Arnold & Bailey, 2009; Kraft, Beeker, Stokes, Peterson, 2000).

The HBC is a clandestine community consisting of primarily Black gay, bisexual, transgendered, and queer people (Arnold & Bailey, 2009). The “houses” in this community adopt a family structure that serves as a refuge for BYMSM from the stigma of the “outside world”, while providing social support, guidance, and nurturing along with the opportunity to host and compete in balls (i.e., dance/performance pageants).

There is a limited but growing base of scholarly literature on HIV in the HBC. Several studies have found HIV prevalence rates upwards of 39% among African-American HBC participants, as well as high rates of unawareness of HIV status (e.g., 73%), despite reporting testing rates as high as 81% in the last 6 months (Murrill, Liu, Guilin, Colon, Dean et al., 2008; Castillo, Palmer, Rudy, Fernandez & ATN, 2012; Kipke, Kubicek, Supan, Weiss, & Schragger, 2013).

The uniqueness of the HBC warrants customized, evidence-based programs to ensure acceptability and effectiveness. We therefore tailored an efficacious HIV prevention intervention (*d-up! Defend Yourself!*) (Jones, Gray, Whiteside, Wang, Bost et al., 2008) using the popular opinion leader (OL) model (Kelly, Lawrence, Diaz, et al., 1991) and conducted a small, pilot trial to test for feasibility, acceptability and preliminary efficacy.

METHODS

Intervention Tailoring

We convened monthly meetings with a study-specific Community Advisory Board (CAB) representing both youth and leaders from area Houses and conducted focus groups with members of the HBC (Lemos et al., 2012) in order to identify persuasive risk reduction messages and intervention targets, assist with the design of recruitment materials, and evaluate the relevance and acceptability of the project name (*POSSE – Promoting Ovahnness through Safer Sex Education*) and logo.

In addition, we updated the OL training manual (see Table 1) to reflect recent HIV prevention advances (e.g., PrEP, Treatment as Prevention). The *POSSE* OL training empowers participants to use their natural leadership skills to influence their friends and acquaintances to protect themselves from HIV. The training demonstrates to OLs their role in shaping norms among local BYMSM, raises awareness of the social and cultural factors

that influence BYMSM, and increases skills and comfort in starting risk reduction conversations. The community-level intervention occurs when OLs begin to deliver messages within their networks.

Recruitment Sites

While developmental activities sought to recruit participants that were representative of the wider community of BYMSM the preliminary stage of intervention development and testing was limited to one community-based organization called The School of Opulence. HBC leaders created the School of Opulence to provide community members an outlet for their creative expressions while providing health promotion education. The school is staffed by HBC leaders, called “School Masters”, and approximately 80 youth attend each of several weekly school sessions with some participant overlap across sessions.

Recruitment and Training of Opinion Leaders

Identifying Popular OLs—Our trained research staff and CAB members observed School sessions on varying days of the week for 3 consecutive months. At each observation period, we recorded individuals’ behaviors along a set of criteria associated with being a good OL (Kelly et al., 1991).

The project director, in collaboration with the CAB, approached each potential OL to explore willingness to participate and described the study and the requirements for participation. We obtained written informed consent from all OLs, including those under the age of 18, prior to initiating the training. The IRB granted a waiver of parental consent for this study.

OL Training—A total of 68 OLs were identified and 50 agreed to participate in the POSSE OL training. We trained the OLs in groups of 10-12. Two facilitators who identify as Black, gay men conducted the OL trainings, which consisted of four 2-hour training sessions held weekly to allow time to practice conversations, reflect, and refine approaches between sessions. OLs were asked to set goals in order to increase their intentions to engage in frequent risk reduction conversations. OLs received monitoring forms to track their conversations in the weeks following the training and submitted those to the project director on a monthly basis. We then held monthly OL “reunions” for the duration of the study period for OLs to discuss barriers and facilitators to these conversations (Jones et al., 2008). The OLs completed session evaluation forms at the end of each OL training to assess the acceptability, content and delivery of the training.

Participants

Participants were recruited for the community assessment from weekly School of Opulence sessions. Eligible youth self-identified as Black, were between the ages of 15-24, and were in attendance at the School of Opulence at the time of the assessment.

Assessment Procedures

To assess OL influence on social norms and behaviors in the community, cross-sectional surveys were administered to House Ball members over 5 separate 3 week periods – at

baseline, and at 3, 6, 9 and 12-months post-baseline. Youth were approached by research staff as they entered the School of Opulence and interested participants received a brief overview on the use of a handheld tablet, which was used to administer the survey. Informed consent documented on the tablet prior to beginning the assessment. Staff remained in the vicinity to answer questions or to provide additional instructions as needed. This was an anonymous cross-sectional survey which was not designed to examine within participant changes over time, and participants were not assigned a unique identification number. No participants were denied the opportunity to complete the assessment, but we attempted to identify participants who completed multiple surveys within an assessment period by matching zip code and month and day of birth and apparent within-wave duplicates were removed from analysis following manual comparison of additional data fields (i.e., age, house affiliation, sexual orientation). The assessment lasted approximately 10-15 minutes and participants received a \$10 gift card for participation.

Measures

The survey measures assessed social and demographic characteristics, including House Ball status and house affiliation; sexual risk behavior to assess condom/barrier protected and condomless oral, vaginal and anal sexual activity (ATN BLG; 2008(a)); substance use and sex (ATN BLG; 2008(b)); HIV testing history; and Exposure to Tailored Intervention. Psychometric measures included an adaptation of the Perceived Safer Sex Social Norms scale (Jones et al., 2008; Kelly et al., 1991), the HIV Stigma Scale (Berger, Ferrans, & Lashley, 2001), and the Health Activist Questions (Friedman, Maslow, Bolyard, Sandoval, Mateu-Gelabert et al., 2004).

We also collected feasibility assessments throughout the study period including the number of OLs recruited that agreed to be trained, the number of risk reduction conversations reported by OLs, and retention of the OLs over the project period. OLs completed session evaluations to assess the acceptability of the OL training.

Sexual behavior outcomes were examined in their original metric and were categorized for analysis due to skewness in the variable distributions. Total number of sex partners was categorized as ≥ 2 partners (i.e., 'multiple partners') vs. 0 or 1 partner. Any CAI with male partners was defined as ≥ 1 episode of CAI with a male partner vs. no CAI or no male sex partners. Sex with a partner of unknown HIV status was defined as any oral or anal sexual contact regardless of condom use with a partner of unknown HIV status and CAI with a partner of unknown serostatus was defined as ≥ 1 episode of CAI with a partner of unknown serostatus. Condomless vaginal or anal intercourse (CVAI) under the influence of substances was defined as any condomless sex under the influence of alcohol, marijuana, or other drugs.

Statistical Analysis

Sociodemographic characteristics, HIV testing histories, intervention outcomes, and acceptability and feasibility ratings were summarized using frequencies, means, and standard deviations.

Differences across the five survey points in the outcomes of interest were assessed using Kruskal-Wallis tests for non-normally distributed continuous outcomes and Pearson chi-square tests for categorical outcomes. Trend tests were then used to assess for monotonic increasing or decreasing trends across assessment waves using the non-parametric Jonckheere-Terpstra test for continuous variables (Jonckheere, 1954; Terpstra, 1952) due to non-normality of several of the outcome variables, and the Cochran-Armitage test for trend for binary variables (Armitage, 1955). Analyses were conducted in SAS version 9.2 (SAS Institute, Cary NC).

RESULTS

Participant Characteristics

Opinion Leaders—Forty-nine male and 1 female OLs (100% Black; age range 17-44) completed the POSSE training. At baseline, over half (52%) were currently unemployed; the majority had completed high school (20.7%) or some college courses (55%). Twenty-one percent had been kicked out of their homes due to their sexual orientation and 41.4% reported that they had exchanged sex for money or a place to stay.

Community Assessment Participants—A total of 428 surveys were completed across five waves of data collection. Of these, twenty-one assessments were removed as within-wave duplicates, and one was removed as an outlier due to a reported 221 male partners in a single three month time period. Thus a total of 406 surveys remained (mean age = 20.93) (see Table 1). Participants primarily identified as male (90%) and gay (63.5%). About half of participants were currently employed (49%), attending school (54.7%), and living with parents or other family members (50.2%). In their lifetime, half of participants had received some form of public assistance, 32% had been kicked out of their homes due to their sexual orientation, 27% had spent the night in a shelter, and 26% had exchanged sex for money or a place to stay. Over 75% of participants across all waves had recently taken an HIV test, with 4% reporting a positive HIV test result (see Table 2).

Feasibility and Acceptability of the OL Training

Training evaluation forms showed that 99% of OLs reported learning a lot from the training, 98.4% would recommend it to others, and 97.8% felt the topics were relevant to their lives. Self-efficacy to reduce acquaintances' HIV risk improved post-training (82% vs. 93%) as did HIV transmission risk knowledge scores ($M=26.54$ vs. 27.46 ; $p=0.006$).

OLs reported a total of 637 conversations over the course of the study. Most of the conversations focused on HIV prevention and/or sexual risk reduction (42%), followed by STI education (14.1%), and emotional support to both HIV-negative and HIV-positive friends (9.4%). Other topics (4.7%) included HIV stigma reduction, healthy living and the provision of community resources and information.

Intervention Exposure

Overall mean exposure to the intervention increased from of 1.3 (SD, 2.8) at wave 2 to 3.6 (SD, 6.7), 3.9 (SD, 9.7), and 3.6 (SD, 8.3) at waves 3, 4, and 5 respectively ($p=0.011$) (Table

3), suggesting that the initial increase in intervention coverage was maintained over the course of the follow-up period.

Risk Behavior and Stigma Outcomes

Declines were observed over the study period in total male sex partners and in reported frequency of CAI with male partners overall and with male partners of unknown HIV status (Table 3). The mean number of male sex partners declined from 4.5 at baseline to 3.0 at wave 5 ($p=0.004$); total CAI acts with male partners declined but the trend was not statistically significant. The proportion of participants reporting 2 male sex partners in the previous 3 months declined from 79.5% at baseline to 43.2% at wave 5 (p for trend= 0.003 ; Table 3). The proportion reporting sex with male partners of unknown HIV status declined from 73.7% at baseline to 16.8% at wave 5 ($p < 0.001$) and CAI with unknown status partners declined from 31.6% at baseline to 10.5% at wave 5 ($p=0.031$). The frequency of CVAI under the influence of alcohol, marijuana, and/or other substances fluctuated during the study period, declining from 26.3% at baseline to 17.6% at wave 2 but increasing to 31.0% at wave 3; tests for trend were not statistically significant (Table 3). A non-statistically significant decline in mean HIV stigma was observed, from 15.4 (SD, 4.7) at baseline to 14.0 (SD, 4.5) at wave 5 ($p=0.204$).

DISCUSSION

The clandestine nature of the HBC, coupled with stigmatizing experiences from the “outside world”, suggests that interventions that are implemented from “within” the community and sustained through community practices are ideal (Bailey, 2009; Friedman, Maslow, Bolyard, Sandoval, Mateu-Gelabert, & Neaigus, 2004). In this study, we were able to successfully tailor a community-based intervention for the HBC with high acceptability and strong evidence of preliminary efficacy. We successfully replicated previously published procedures for identifying OLs and we were able to approach and engage OLs to participate in the POSSE training. Through analysis of our formative work with substantial input from the representative CAB, we were able to tailor the intervention material appropriately, thus making the training content acceptable and relevant to the OLs. Our trained OLs were able to disseminate risk reduction messages and engage in POSSE-related conversations within their community. The community-level assessments demonstrated decreased sexual risk, including a reduction in the number of partners and condomless sexual acts, which coincided with increased intervention exposure. In addition, reported HIV stigma declined, though not statistically significant.

BYMSM are at high risk of acquiring HIV infection due to a multitude of factors and interventions addressing community-level social norms around sexual behavior, HIV risk and stigma are critical to adequately reduce HIV transmission. Our findings are consistent with other popular OL interventions that have been tested in the United States among gay men in general and Black gay men specifically (Jones, et al., 1998; Kelly et al., 1991). However, to the best of our knowledge, this is the first time a popular OL intervention has been focused exclusively on adolescent and young adult BMSM and tested specifically

within the HBC. The HBC serves an important psychosocial role in the lives of BYMSM and its hierarchical structure appears to lend itself to intervention by OLs or change agents.

BYMSM in the HBC have often been rejected by their families of origin, religious institutions, and society at large (Arnold & Bailey, 2009). While the balls create a space of affirmation and celebration, the importance placed on image and status in the HBC can make HIV/AIDS prevention work difficult because members may distance themselves from the topic of HIV for fear that it will tarnish their image and are reluctant to get tested (Arnold & Bailey, 2009). Qualitative work by our research team (Lemos et al., 2012) revealed that the importance of image facilitates HIV stigma within the HBC. As one participant stated, “you can still be fierce when you’re broke, but you can’t be fierce with AIDS.” Thus, strong histories of stigma and rejection from those outside the community, coupled with stigma, fear, and secrecy from within the community make BYMSM in the HBC in urgent need of interventions to address HIV stigma. While the original popular OL interventions did not specifically focus on HIV stigma, a more recent international intervention successfully reduced the level of HIV-related stigma among the community at the 12-month follow-up, and the effect increased by two-fold (with respect to odds ratios) at the 24-month follow-up compared to no change in the control group (Li, Liang, Lin, Wu, Rotheram-Borus, et al, 2010). Our POSSE intervention did show declines in HIV stigma, but they were not statistically significant. Given the exploratory nature of this pilot study, the absence of statistical significance may be due to lack of power or the need to utilize a more sensitive measure of HIV stigma. Either way, exploration and measurement of HIV stigma and interventions to decrease it are desperately needed within the HBC.

While the results of this pilot trial show promising reductions in HIV risk behavior, several limitations must be noted. First, this was an exploratory study that utilized a quasi-experimental study design with no control condition, which limits our ability to compare primary outcomes by intervention group. Second, we intentionally designed this trial to enroll only a small subset of BYMSM in the HBC who attended the School of Opulence, thus limiting the generalizability to the larger HBC. However, the geographical isolation of the School from the rest of the MSM community, the stability of the School’s population over time, and the function of the School as a major social scene for many BYMSM supports the choice to employ this study design. Third, the measures of behavioral risk reduction are all based on self-report and may be influenced by social desirability and other biases.

In the future, it is unclear whether further controlled trials of popular OL interventions are needed or whether it is time to move toward effectiveness and implementation evaluations. Either way, the primary outcomes for future trials should include biological measures of risk, such as STI testing, to support self-report measurement. Most importantly, it is critical that we scale-up evidence-based interventions as expeditiously as possible to address the urgency of the HIV epidemic among BYMSM. This is a population that is highly vulnerable to HIV due to risk at multiple levels. Community-level interventions that take advantage of existing community structures are valuable and conducive to community-based participatory research methods. Community-level interventions, such as *POSSE*, provide methods for

engaging communities and training indigenous leaders to implement high impact prevention approaches (e.g., combination prevention) (Mermin, 2011).

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Table 1

Opinion Leader Training Sessions

Session	Topics & Activities
Session 1: Why do we need this?	Icebreaker Introductory Activity; Welcome/Overview of Ground Rules; House Ball Q&A; Opinion Leader Training Overview; Exploring Multiple Identities Activity; Why POSSE is important and how it works?; HIV/AIDS 101 (Importance of HIV testing and Treatment); Wrap- Up and Preview of Session 2
Session 2: Changing norms through communication	Welcome; Sex in the City: Transmission Activity (intro to PrEP/ARVs); Overview; Myths and Misconceptions activity (<i>intro to Substance Use</i>); Air Balls Common Myths Fact Sheets; Casual Transmission of HIV; Use of Social Norms to Change Behavior Overview (<i>role of Substance Use</i>); Elements of an Effective Risk Reduction Message – including all prevention options; Condom, Condom Types, and Sizes; Condom Demonstration Activity; Identification of Conversation Practice Opportunities; Wrap-Up and Preview of Session 3
Session 3: Practicing risk reduction conversations	Welcome; Tops & Bottoms: Roles and Risks; Get the Message out: Risk reduction conversations; Planning risk reduction conversations; Overview of Local Community resources (including testing venues and substance abuse referral centers); Activity—Planning conversations; Making it real-Using POSSE Logo materials; Wrap-up and Preview of Session 4
Session 4: Continuing risk reduction conversations and inspiring maintenance	Welcome; Review Risk Reduction Conversation Experience; Moving Forward with Conversations; Revisit HIV 101; Revisit Sex in the City; Revisit Levels of Behavioral Risk; Maintaining the Momentum; Closing and Training Review

Table 2

Demographics

	Overall, n=406	Wave 1, n=39	Wave 2, n=74	Wave 3, n=116	Wave 4, n=82	Wave 5, n=95
Current Gender, n (%)						
Male	366 (90.1)	36 (92.3)	66 (89.2)	103 (88.8)	76 (92.7)	85 (89.5)
Male-to-female trans	31 (7.6)	2 (5.1)	7 (9.5)	10 (8.6)	5 (6.1)	10 (10.5)
Female-to-male trans	6 (1.5)	1 (2.6)	1 (1.4)	3 (2.6)	1 (1.2)	-
Age, years						
Mean	20.93	20.87	20.85	21.29	20.46	20.97
Sexual Orientation, n (%)						
Gay	258 (63.5)	25 (64.1)	47 (63.5)	79 (68.1)	46 (56.1)	61 (64.2)
Bisexual	69 (17.0)	9 (23.1)	12 (16.2)	19 (16.4)	16 (19.5)	13 (13.7)
Straight	31 (7.6)	3 (7.7)	6 (8.1)	5 (4.3)	10 (12.2)	7 (7.4)
Other (Queer, Trade, ?)	48 (11.8)	2 (5.1)	9 (12.2)	13 (11.2)	10 (12.2)	14 (14.7)
Employed, n (%)	199 (49.0)	17 (43.6)	35 (47.3)	61 (52.6)	33 (40.3)	53 (55.8)
Currently in School, n (%)	222 (54.7)	21 (53.8)	40 (54.1)	66 (56.9)	44 (53.7)	51 (53.7)
Highest Grade, n (%)						
College graduate or higher	39 (9.6)	2 (5.1)	4 (5.4)	13 (11.2)	9 (11.0)	11 (11.6)
Some college/tech school	122 (30.0)	11 (28.2)	25 (33.8)	35 (30.2)	19 (23.2)	32 (33.7)
HS diploma/GED	190 (46.8)	20 (51.3)	39 (52.7)	54 (46.6)	38 (46.3)	39 (41.1)
8th – 11th grade	48 (11.8)	5 (12.8)	5 (6.8)	13 (11.2)	15 (18.3)	10 (10.5)
8th grade or less	7 (1.7)	1 (2.6)	1 (1.4)	1 (0.9)	1 (1.2)	3 (3.2)
HIV Test Past 3 Mos, n (%)						
Yes, with positive result	16 (4.0)	2 (5.3)	-	5 (4.3)	3 (3.7)	6 (6.3)
Yes, with negative result	297 (73.5)	27 (71.1)	55 (74.3)	83 (72.2)	59 (72.0)	73 (76.8)
Yes, but never got results	10 (2.5)	3 (7.9)	1 (1.4)	4 (3.5)	2 (2.4)	-
No	81 (20.0)	6 (15.8)	18 (24.3)	23 (20.0)	18 (22.0)	16 (16.8)
Current Living, n (%)						
Parents, other family	204 (50.2)	22 (56.4)	46 (62.2)	45 (43.1)	48 (58.5)	38 (40.0)

	Overall, n=406	Wave 1, n=39	Wave 2, n=74	Wave 3, n=116	Wave 4, n=82	Wave 5, n=95
Your own residence	145 (35.7)	8 (20.5)	20 (27.0)	49 (42.2)	23 (28.0)	45 (47.4)
Someone else's residence	33 (8.1)	8 (20.5)	4 (4.5)	11 (9.5)	7 (8.5)	3 (3.2)
Foster/group home/shelter	15 (3.7)	-	3 (4.1)	4 (3.4)	2 (2.4)	6 (6.3)
Streets, vacant lot, other	9 (2.2)	1 (2.6)	1 (1.4)	2 (1.7)	2 (2.4)	3 (3.2)
Miscellaneous, n (%)						
Ever received public aid	205 (50.5)	20 (51.3)	38 (51.4)	61 (52.6)	39 (47.6)	47 (49.5)
Ever kicked out of house	130 (32.0)	18 (46.2)	17 (23.0)	44 (37.9)	17 (20.7)	34 (35.8)
Ever spent night in shelter	111 (27.3)	13 (33.3)	20 (27.0)	38 (32.8)	14 (17.1)	26 (27.4)
Ever exchange sex	106 (26.1)	18 (46.2)	16 (21.6)	29 (25.0)	16 (19.5)	27 (28.4)

Table 3

Trends in Sexual Risk and HIV Stigma by Assessment Wave, N=406

	Wave 1, n=39	Wave 2, n=74	Wave 3, n=116	Wave 4, n=82	Wave 5, n=95	Test for trend ^a
HIV Stigma, Social Norms, and Health Activism						
HIV Stigma, M (SD)	15.4 (4.7)	14.8 (4.1)	14.6 (4.9)	15.0 (4.3)	14.0 (4.5)	0.204
Social norms [†] , M (SD)	3.0 (0.6)	3.0 (0.7)	3.0 (0.7)	3.0 (0.7)	2.8 (0.7)	0.057
# Times talked to friend or acquaintance about the importance of having safe sex, M (SD)	2.9 (3.3)	2.9 (3.9)	5.5 (11.2)	4.1 (10.9)	4.3 (9.2)	0.518
Health Activism ^{††} , Total, M (SD)	3.9 (2.3)	3.6 (2.6)	4.1 (2.6)	3.7 (2.8)	3.4 (2.6)	0.400
Sexual Behaviors						
Total male sex partners, M (SD)	4.5 (4.9)	3.1 (6.8)	3.6 (7.4)	3.5 (8.7)	3.0 (5.5)	0.004
Total CAI acts with male partners, M (SD)	4.8 (10.6)	3.4 (12.8)	4.1 (15.0)	4.9 (15.3)	2.8 (7.3)	0.153
2 male sex partners, n (%)	31 (79.5)	32 (43.2)	58 (50.0)	30 (36.6)	41 (43.2)	0.003
Any CAI with male partners, n (%)	17 (43.6)	16 (21.6)	38 (32.8)	21 (25.6)	21 (22.1)	0.076
Any oral or anal sex with unknown status male partners, n (%)	28 (73.7)	12 (16.2)	27 (23.3)	17 (20.7)	16 (16.8)	<0.001
Any CAI with unknown status male partners, n (%)	12 (31.6)	9 (12.2)	20 (17.2)	12 (14.6)	10 (10.5)	0.031
Substance Use and Sex						
Any CVAI after drinking alcohol, n (%)	8 (21.1)	7 (9.5)	28 (24.1)	8 (9.8)	24 (25.3)	0.294
Any CVAI after smoking marijuana, n (%)	9 (23.7)	10 (13.5)	22 (19.0)	10 (12.2)	20 (21.1)	0.950
Any CVAI after using other drugs, n (%)	7 (18.4)	7 (9.5)	21 (18.1)	7 (8.5)	12 (12.6)	0.470
Any CVAI after using any substances, n (%)	10 (26.3)	13 (17.6)	36 (31.0)	11 (13.4)	25 (26.3)	0.955
Intervention Exposure						
Logo, M (SD)	--	1.3(2.9)	4.3(9.5)	4.6(10.1)	4.3(10.3)	0.001
Recruitment materials, M (SD)	--	1.2(2.7)	3.6(9.3)	4.0(9.9)	2.8(6.9)	0.238
POLs, M (SD)	--	1.5(3.5)	2.8(4.6)	3.3(11.2)	3.7(9.7)	0.209
Total, M (SD)	--	1.3(2.8)	3.6(6.7)	3.9(9.7)	3.6(8.3)	0.011

^aTrends were assessed with the Jonckheere-Terpstra test for continuous variables and the Cochran-Armitage test for binary variables.

CAI=Condomless anal intercourse; CVAI=Condomless vaginal or anal intercourse; M=mean; SD=standard deviation

[†] Calculated as the mean of the 3 social norms items, with item 3 reverse coded so that higher values indicate higher social norms around safer sex; Items are rated on a 4-point Likert scale from 1 ("Strongly Disagree") to 4 ("Strongly Agree").

^{††} Calculated as the sum of the 7 individual health activism items, with scores of 1 assigned to “yes” responses and 0 for “no” responses; scale range is from 0 to 7.