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"Straight Talk" for African American heterosexual men: Results of a single-arm behavioral intervention trial

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Abstract

In the United States, heterosexual transmission is the second leading cause of HIV/AIDS, and two-thirds of all heterosexually acquired cases diagnosed between 2005 and 2008 occurred among African Americans. Few HIV prevention interventions have been designed specifically for African American heterosexual men not seeking clinical treatment. Here we report results of a single-arm intervention trial of a theory-based HIV prevention intervention designed to increase condom use, reduce concurrent partnering and increase HIV testing, among heterosexually active, African American men living in high HIV prevalence areas of New York City. We tested our hypothesis using McNemar discordant pairs exact test for binary variables and paired t-tests for continuous variables. We observed statistically significant declines in mean number of total and new female partners, unprotected sex partners and partner concurrency in both primary and non-primary sex partnerships between baseline and three months post-intervention.

Introduction

African Americans comprised 52% of new HIV cases among adults and adolescents diagnosed in 2009(Center for Disease Control and Prevention, 2011) in the United States (US), but only 14% of the US population(Humes, Jones, & Ramirez, 2011). Between 2005 and 2008, African Americans made up two-thirds of all heterosexually acquired HIV/AIDS cases(Center for Disease Control and Prevention, 2011). In New York City (NYC), African American men, who comprise an estimated 22.2% of the city's population(New York City

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Department of City Planning - Population Division, 2011), made up 51% of heterosexually acquired HIV/AIDS cases among men(New York City Department of Health and Mental Hygiene, 2011). In NYC, heterosexually transmitted HIV is geographically concentrated in poor and racial/ethnic minority neighborhoods, with Central Harlem (in Manhattan) and the South Bronx having the greatest number of residents with HIV/AIDS in 2009(New York City Department of Health and Mental Hygiene, 2006).

Decreasing the prevalence of HIV among African Americans living in urban areas is a critical public health goal, with public health leaders and others calling for concerted and effective efforts to interrupt HIV transmission among African Americans(Black AIDS Institute, 2011). Most behavioral HIV prevention interventions for heterosexuals focus on women, injection drug users and men seeking treatment for sexually transmitted infections (STIs)(Johnson et al., 2009; Darbes, Crepaz, Lyles, Kennedy, & Rutherford, 2008). Few interventions have been designed specifically for heterosexual African American men who are not bisexually active, seeking STI treatment or partnered with an HIV-positive female partner(Johnson et al., 2009; Darbes et al., 2008). Here we report results of a theory-based, HIV prevention intervention designed for African American heterosexual men living in high HIV prevalence neighborhoods in NYC, using a single-arm intervention design with pre- and post-test assessments.

Overview of the “Straight Talk” Intervention

The four-session, group intervention was designed for and tailored to the needs of African American heterosexual men through a rigorous formative research phase that included focus groups, in-depth interviews, component testing of the intervention modules, and a pilot of the intervention among men in the target population. The intervention design process, content and approach are described in detail elsewhere(Frye et al., 2011), as are the primary results of the formative research(Bond et al., 2011). In brief, the resultant intervention integrated empowerment (Zimmerman, 1995; Carli, 1999; Rappaport J, 1984), social identity (Tajfel & Turner, 1979; Tajfel & Turner, 1986; Turner, 1982), and rational choice theories(Hechter & Kanazawa, 1997; McCarthy, 2002) and focused on four major content areas: HIV/AIDS education; condom application and skills training; key relational and behavioral turning points; and masculinity and fatherhood. The intervention also incorporated readings from the anthology Brotherman, The Odyssey of Black Men in America – An Anthology(Boyd & Allen, 1996). Entitled “Straight Talk”, the intervention sought to provide African American heterosexual men the knowledge, skills and opportunity to consider, practice and adopt new practices to increase their well-being and promote sexual health. The focal population for this study was heterosexually active African American men living in two high HIV prevalence neighborhoods in New York City: Harlem and the South Bronx.

Methods

Sample Recruitment and Eligibility

Men were recruited by trained outreach staff using active street recruitment between November 2010 and January 2011. Eligibility screening was conducted over the phone. In order to be eligible for the study, men had to: 1) be between 18 to 45 years old; 2) reside in the South Bronx or Harlem; 3) self-identify as male; 4) self-identify as African American, black, Caribbean black or multiethnic black; 5) report unprotected vaginal or anal intercourse with 2 or more female partners in the past 3 months; 6) self-report as HIV-negative or unknown HIV status; 7) understand and read English; and 8) be willing and able to provide informed consent. Men who reported oral or anal sex with a man in the past 5

years; injected drugs in the last 3 years; or participated in any HIV or substance use prevention studies in the previous 6 months were ineligible to participate.

Study Procedures

Eligible men were invited to complete a baseline visit, which consisted of the informed consent process, a baseline assessment and the first of four intervention sessions. The baseline assessment was an audio computerized-assisted self-interview (ACASI) survey that took approximately 25 minutes to complete. The intervention, consisting of four 2-hour sessions, was delivered to six cohorts of men (N=47; range=6-10 men per cohort; mean=8) in two sessions per week, held in the evenings. Participants received $30 and a two-way Metrocard for each intervention session attended and ACASI survey completed. All sessions were facilitated by teams of two African American men, with work experience in the areas of HIV or health, but not trained as clinicians. All facilitators engaged in in-depth training with experienced behavioral interventionists using standard methods. The training lasted four days in total and covered the following issues: study purpose, procedures and goals; ethical conduct of research involving human subjects; information and discussion of the focal issues (HIV/AIDS prevalence, risk factors for acquisition and transmission, known efficacious interventions, HIV testing, social issues facing African American men etc.); formative research phase results; theoretical rationale for the intervention content and approach; group dynamics; session logic and module content; practice and feedback on module delivery; and safety, harm to self or others and other mental, social or physical health concerns. Digital tape recordings of all sessions were reviewed by the research team for intervention fidelity, group dynamics issues and assessment of feasibility and acceptability. Sessions were discussed weekly with the facilitators, who received feedback on the sessions from the primary tape reviewer (SB). The institutional review boards at the New York Blood Center and New York Academy of Medicine approved the study.

Measures

Standard measures for age, race/ethnicity, education, employment, income, children, incarceration history, and sexual identity were included. All behaviors were asked in reference to the three months prior to interview. Participants were asked about total number of female sexual partners, new female sexual partners, number of unprotected sex partners, primary female partners and unprotected vaginal or anal intercourse with partners. Sex partner concurrency was defined as vaginal or anal sex with two or more people during a three month period, with at least one instance where sex with partner A occurred both before and after sex with partner B; it was assessed for primary partnerships as well as among non-primary partnerships. Sex in exchange for money or other support, alcohol or drug use in conjunction with sex and use of condoms during alcohol or drug use and sex were assessed. The sexual risk behavior outcomes derived from these questions were: number of female sexual partners; number of new female sex partners; number of unprotected female sex partners; primary female partner concurrency; non-primary female partner concurrency. Finally, we assessed HIV testing in the past three months, HIV-status communication with primary and non-primary partners, as well as testing with a primary female partner.

Statistical Analysis

We tested the hypothesis that compared to baseline, participants reported a statistically significant reduction in the number of female sex partners, occurrence of unprotected sex and engagement in concurrent partnering at the follow up visit. Differences between baseline and the 3-month visit were calculated for behavioral outcomes and compared using contingency tables and exact tests. Changes in outcomes between baseline and three month follow-up were assessed using McNemar discordant pairs exact test (binary variables) or

paired t-tests (continuous variables) and Wilcoxon rank sign test. To consider potential biases resulting from those who discontinued participation, dropouts were compared to completers with respect to baseline behavior and other characteristics. Various analyses of within and between cohort variability in select outcome and key sociodemographic measures were conducted to assess evidence of clustering by cohort (teaching class), and none was found (data not shown).

Results

A total of 362 men were screened to participate in the study; 64 (5.7%) met the eligibility criteria and 53 of these men (82.8%) completed an ACASI survey. Forty-seven men (88.7%) were enrolled in the intervention. Men who did not enroll in the intervention, but completed the ACASI, were more likely at baseline to report being a current student than were men who did enroll (50.0% vs. 6.4%; $p<.05$). No other significant differences in select outcome and key sociodemographic measures were found. Completion of the intervention sessions was high with 179 of a possible 188 sessions completed (95%); 81% of men completed all 4 sessions and 96% completed at least 3 sessions. Men who completed three or fewer intervention sessions were more likely to report HIV testing in the 3 months prior to baseline (100% vs. 57%; $p<.05$) No other significant differences in select outcome and key sociodemographic measures were found. The three-month visit was completed by 83% of participants; 6 of the 8 men who could not be interviewed at the three-month visit were incarcerated during the follow-up interview window period. Men lost to follow-up were less likely to report an income of more than $10,000 per year (0% vs. 45.7%; $p<.05$) and were less likely to have children (37.5% vs. 76.3%; $p<.05$) at baseline. They were more likely to have been on parole at baseline (87.5% vs. 31.0%; $p<.05$). Men lost to follow-up were also more likely to have reported concurrency with their non-primary female partners at baseline (100% vs. 51.4%; $p<.05$).

Study population

The mean age of the enrolled participants was 35.0 years (sd=7.4); 6 (12.8%) identified as Latino, in addition to African American or black (Table 1). Almost half of the men (46.8%) had less than a high school degree or GED or some vocational or technical training, but no degree or GED. Over three-quarters (76.6%) were unemployed and over half (55.4%) had an annual income of less than $10,000; 76.6% reported receiving some form of public assistance. Almost one in five (19.8%) of men reported that their household income was fairly or very often insufficient to meet basic needs. Over two-thirds (69.6%) had children; 14.6% of these men lived with their children. Almost all men (93.6%) had been arrested in their lifetime; 78.7% reported a lifetime history of incarceration and 27% of these men had been incarcerated in the past 3 months.

The mean number of female sex partners in the 3 months prior to baseline was 4.2 (SD=3.7); the mean number of *new* female sex partners was 2.5 (SD=3.0). The mean number of unprotected sex partners was 3.4 (SD=3.5). Three men reported no female sex partners at baseline, despite reporting three or more during the telephone screening, and are included in these descriptive analyses. Over half (52.2%) reported sexual partner concurrency in primary partnerships; 56.8% reported sexual partner concurrency in non-primary partnerships. All 47 men reported a lifetime history of HIV testing and 91.5% and 65.1% had been tested in the past year and past 3 months, respectively.

Outcomes

We observed statistically significant declines from baseline to the 3 month follow-up visit in the mean number of female partners (baseline: 3.9; 3m: 1.9; $p<.001$); mean number of new

female partners (baseline: 2.1; 3m: 0.7; p<.01); and mean number of unprotected sex partners (baseline: 3.2; 3m: 0.9; p<.001). We also observed decreases in the occurrence of sex partner concurrency in primary partnerships (baseline: 47.4%; 3m: 18.4%; p<.01), as well as non-primary partnerships (baseline: 48.6%; 3m: 18.9%; p<.05). We did not observe a statistically significant increase in HIV testing at the 3-month follow-up assessment (baseline: 62.9%; 3m: 71.4%; p=.63) (Table 2).

Discussion

Risk-reduction interventions have been developed for African American sero-discordant couples, African American or Latino men seeking treatment at STI clinics, and men who inject drugs(Johnson et al., 2009; Darbes et al., 2008). We know of no published studies reporting interventions developed specifically for African American heterosexual men, engaged in high-risk sexual activities and living in high prevalence areas, who are not bisexually active, seeking STI treatment or partnered with a known HIV-positive woman. We found promising preliminary evidence that the intervention was efficacious, with intervention participation associated with a statistically significant reduction in the number of total, new and unprotected female sex partners, as well as partner concurrency in the context of both primary and non-primary sexual partnerships. Although the proportion of men who had been tested for HIV increased between baseline and the 3-month follow-up assessment, this difference was not statistically significant, perhaps because the baseline level of testing was so high.

There are several limitations to this study that must be acknowledged. First, this single-arm study design did not include a control condition. Second, we were only able to assess short-term effects of the intervention; thus whether the effects are lasting or not is unknown. Third, because of our small sample size only bivariate analyses were conducted; a larger trial would enable multivariable analyses. Finally, we lost 17% of the sample to follow-up, due primarily to men being incarcerated during the follow-up window. This could have resulted in a bias towards finding a positive intervention effect, however there were no statistically significant differences in mean number of female sex partners, new female sex partners or unprotected female sex partners at baseline between men who had been incarcerated for any amount of time in the three months prior to baseline and men who had not. Future tests of this and similar HIV prevention interventions must build in procedures for following incarcerated men and include an attention control arm.

The results of this trial are encouraging, particularly the finding around sex partner concurrency, a sexual behavior that is thought to be driving the heterosexual epidemic among African Americans in particular(Adimora, Schoenbach, & Doherty, 2007). Interventions for heterosexual men generally focus on decreasing unprotected sex and number of sex partners(Johnson et al., 2009; Darbes et al., 2008). The Straight Talk intervention focused specifically on concurrency, with interactive modules that illustrated how concurrency propagates HIV, as well as analysis of how social structures relate to sexual health outcomes. Although not a structural intervention, the session content reflected and analyzed the structured positions of African American men in society. For example, participants examined how African American men's social roles and identities, as fathers and men, economic realities and life experiences relate to concurrency.

Conclusion

The National HIV/AIDS Strategy for the United States (The White House, 2010) focuses specifically on reducing disparities in HIV infections through prevention efforts focused in communities where HIV is most heavily concentrated and applying evidence-based

prevention approaches. The Straight Talk intervention was designed specifically for African American heterosexual men; analyses reported here demonstrate preliminary evidence of efficacy, however it is important to test the intervention using a more rigorous study design. The results reported here represent a promising step forward in the effort to reduce HIV prevalence in the African American community, via a culturally congruent HIV prevention intervention focused on inconsistent condom use, partner concurrency and unknown HIV status, and reflecting the structured life experiences of heterosexual, African American men.

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Table 1

Characteristics of participants in the Straight Talk Study, New York City 2010-11 (n=47)

Characteristic	Baseline N (%)
Sociodemographics	
Mean age, years (SD)	35.0 (7.4)
Race/Ethnicity	
Hispanic/Latino	6 (12.8%)
Sexual Orientation	
Heterosexual	46 (97.9%)
Questioning/Other	1 (2.1%)
Education	
< HS/GED	19 (40.4%)
Some vocational/technical school	3 (6.4%)
HS/GED	17 (36.2%)
Completed vocational/technical school	1 (2.1%)
Completed some college	5 (10.6%)
College degree or more	2 (4.3%)
Employment	
Unemployed	36 (76.6%)
Employed, part-time	7 (14.9%)
Employed, full-time	4 (8.5%)
Income (average annual)	
≤ $10,000	26 (55.4%)
≥ $10,001	16 (34.0%)
Unknown	5 (10.6%)
Receives public assistance	36 (76.6%)
Has child/children	32 (69.6%)
Live with their children (of those who have children; N=32)	5 (15.6%)
Arrested in lifetime	44 (93.6%)
Incarcerated in lifetime (of full sample; N=47)	37 (78.7%)
Incarcerated in past 3 months (N=37)	10 (27.0%)
HIV Status & Testing	
HIV-negative status (self-report)	47 (100%)
Ever tested	47 (100%)
Tested, past year	43 (91.5%)
Tested, past 3 months (n = 43)	28 (65.1%)
Most recent HIV test result **HIV-negative** (n=46)	46 (100%)
Sexual Behaviors in past 3 months	
Mean number of female sex partners[a] (SD)	4.21 (3.7)

Characteristic	**Baseline N (%)**
Mean number of *new* female sex partners[a] (SD)	2.45 (3.0)
Mean number of unprotected female sex partners[a] (SD)	3.54 (3.5)
Had vaginal/anal sex with a primary female partner[a]	40 (90.1%)
Any vaginal or anal sex with primary female partner without a condom (N=40)	39 (97.5%)
Concurrency	
Concurrency with primary female partner	22 (52.2%)
Concurrency with non-primary female partners	25 (56.8%)

[a] of men reporting sex with women (N=44)

Table 2

Baseline and 3-Month Follow-up Comparisons of Sexual HIV Risk Behaviors among African American Heterosexual Men Completing Follow-up in the Straight Talk Study (n=39)

Variable	Baseline N (%)	Follow-up N (%)	p-value
Sexual Behavior in prior 3 months			
Any female sex partners, p3m (N=39)	37 (94.9%)	32 (82%)	0.125
Number female sexual partners, p3m (SD)	3.92 (3.99)	1.92 (2.15)	p < 0.001
Number new female sex partners, p3m (SD)	2.14 (3.06)	0.69 (1.09)	0.005
Number unprotected female sex partners, p3m (SD)	3.16 (3.82)	0.89 (0.86)	0.001
Vaginal or anal sex with a primary female partner, p3m (N=38)	34 (89.5%)	26 (68.4%)	0.039
Any vaginal or anal sex without a condom with a primary female partner, p3m (yes/ever) (N=24)	23 (95.8%)	19 (79.2%)	0.125
Concurrency with a primary female partner, p3m (N=38)	18 (47.4%)	7 (18.4%)	0.013
Concurrency with a non-primary female partner, p3m (N=37)	18 (48.6%)	7 (18.9%)	0.019
Sex under the influence of alcohol, p3m (N=30)	19 (63.3%)	16 (53.3%)	0.561
Sex under the influence of drugs, p3m (N=30)	10 (33.3%)	11 (36.7%)	1.00
HIV testing			
Tested, p3m (N=35)	22 (62.9%)	25 (71.4%)	0.629
HIV Communication - discussed *your* HIV status with partner(s) (N=38)	30 (78.9%)	27 (71%)	0.581
HIV Communication - discussed *your partner's* HIV status (N=38)	27 (71%)	28 (73.7%)	1.00

p3m=past three months