AIDS Behav (2014) 18:26–35
DOI 10.1007/s10461-013-0532-y

ORIGINAL PAPER

Situational, Partner, and Contextual Factors Associated with Level of Risk at Most Recent Intercourse Among Black Men Who Have Sex with Men

Jeffrey A. Kelly · Wayne J. DiFranceisco · Janet S. St. Lawrence · Yuri A. Amirkhanian · Michelle Anderson-Lamb

Published online: 19 July 2013

Abstract African American men who have sex with men (MSM) in the United States bear a disproportionate burden of HIV infection and disease incidence. 178 Black MSM provided detailed situational information concerning their most recent act of anal intercourse (AI) with a male partner including condom use, partner characteristics, serostatus disclosure, and substance use. Participants completed scales assessing AIDS-related as well as broader contextual domains. Most recent AI acts occurred with same-race partners outside of main relationships. Over one-third of AI acts were unprotected, and almost half of the unprotected acts were not between known HIV-concordant partners. Nearly half of men reported substance use before sex. In a multiple regression analysis, unprotected AI with a partner not known to be concordant was predicted by low risk reduction intentions and indicators of a casual relationship. The findings highlight issues and partner contexts associated with risk for contracting HIV infection among Black MSM.

Resumen Los hombres Afro-Americanos que tienen sexo con hombres (HSH) en los EEUU son desproporcionadamente afectados por el VIH. 178 En este estudio, HSH Afroamericanos proporcionaron información detallada acerca del acto de sexo anal (SA) más reciente con una pareja masculina, incluyendo uso de condones, características de la pareja, revelación de estatus de VIH, y uso de drogas. Los participantes contestaron escalas que midieron dominios acerca del SIDA y dominios contextuales. Los actos SA más recientes ocurrieron con parejas de la misma raza que no eran pareja principal. Más de un tercio de los actos sexuales anales (SA) ocurrieron sin uso de protección, y casi la mitad de los hombres reportaron uso de drogas antes del acto sexual. Un análisis de regresión múltiple, indico que los actos de sexo anal sin protección con una pareja de estatus de VIH desconocido se relacionaron con bajas intenciones de reducción de riesgo e indicadores de parejas casuales. Los datos muestran los problemas y contextos de pareja asociados con el riesgo de contraer el VIH en HSH Afro-americanos.

Keywords African American/Black Men Who Have Sex with Men · Gay/Bisexual Men · HIV risk · Sexual behavior

Introduction

HIV infection in the United States reflects stark disparities related to sexual orientation and race. Since HIV infection was first identified, the majority of infections in the country have been diagnosed among gay or bisexual men. In 2010, over half of HIV infections in the country and over 75 % of HIV infections diagnosed among males in the United States were attributable to sexual contact with other men [1].

There is also a long history of racial HIV disparities in the US. African Americans constitute ~12 % of the American population but carry the burden of 47 % of the country's HIV infections [2]. Although sexual orientation and race are each disproportionately related to HIV, the greatest disparity of all is represented by men who have sex

J. A. Kelly (✉) · W. J. DiFranceisco · Y. A. Amirkhanian · M. Anderson-Lamb
Department of Psychiatry and Behavioral Medicine, Center for AIDS Intervention Research (CAIR), Medical College of Wisconsin, 2071 North Summit Avenue, Milwaukee, WI 53202, USA
e-mail: cairdirector@mcw.edu

J. S. St. Lawrence
Mississippi State University, Meridian, MS, USA

with men (MSM) who are also Black. African American MSM constitute only a very tiny fraction of a percent of the country's overall population. Yet, Black MSM represent over 25 % of new HIV infections in the United States [3] and over one-third of HIV infections that are diagnosed among gay or bisexual men [2]. Sentinel surveillance studies have long shown that HIV prevalence among Black MSM is much higher than disease prevalence in nonminority gay or bisexual men [4–8]. The goals of the National HIV/AIDS Strategy to reduce HIV incidence and disease disparities [9] cannot be achieved without improved strategies to prevent HIV infection among Black MSM in the United States. This, in turn, requires a better understanding of the factors influencing sexual risk behavior in racial minority gay or bisexual men.

A body of research has examined high-risk behavioral practices among African American MSM and has sought to identify potential differences in the risk characteristics of Black and nonminority gay or bisexual men that might explain why HIV disease so disproportionately impacts MSM of color. Although the methods employed and the results of individual studies differ, reviews and meta-analyses of this literature by Millett et al. [10, 11] have not found convincing evidence that Black MSM have more frequent unprotected sex, greater numbers of male partners, or less frequent condom use than white MSM, nor that they differ in other potential risk-related mediating characteristics such as AIDS knowledge. Research is increasingly being focused on contextual factors that may increase vulnerability. Examples of these contextual factors include how sexual networks or mixing patterns may increase the likelihood of Black MSM encountering partners with undiagnosed and untreated HIV infection or sexually transmitted diseases (STDs), and how having sexual partners drawn from within small networks where disease prevalence is high influences vulnerability [12–15]. Perceptions that condom use is not normative within one's peer group have also been associated with higher levels of risk behavior in some studies of Black MSM [14, 16–18]. Other literature has focused more broadly on the potential role of contextual effects including racism in predominantly white gay communities, homophobia in the general African American community, social and economic oppression, limited health care access, substance use, perceptions of masculinity, and other psychosocial and structural influences on the risk behavior practices of Black MSM [19–24].

To date, most research studying HIV risk behavior of racial minority MSM has employed methodologies that ask men to recall their number of sexual partners or frequency of sexual practices over relatively long retrospective recall windows such as the past month, past 3 months, or past year. This approach is useful because it samples behavior over a considerable length of time. However, these global retrospective approaches can be inaccurate if people do not correctly recall all of their behaviors over a long time period, if behavior occurs frequently and leads persons to roughly estimate or guess rather than count specific events, or if events or partners are forgotten [25]. In addition, count-based methods are rarely conducive to eliciting in-depth information concerning the situational and contextual factors surrounding each individual event. An alternative assessment methodology is to focus on only a single recent sexual event and then elicit much more detailed information about factors, situational influences, and contextual circumstances surrounding that event. Event-level analyses have been used in research studying the relationship between alcohol use and high-risk sex, and have sometimes yielded findings different from the results of studies that measured only global levels of drinking and sexual behavior [26, 27]. Although prior research has examined behavior practices at last sex or at an event level among gay men [28–30], racial minority men have rarely been the main focus of attention in those studies.

The purpose of the present research was to elicit detailed information concerning factors surrounding the most recent occurrence of unprotected anal intercourse (AI) with a male partner in a community-based sample of Black MSM. AI with discordant or serostatus unknown partners was selected for attention because it is the sexual practice most strongly associated with risk for contracting or transmitting HIV infection between male partners. By focusing on the single most recent act of men's AI, we were able to also elicit considerable data about whether or not protection was used, characteristics of the partner and the relationship between the partners, serostatus disclosure by each partner prior to having sex, HIV serostatus concordance or discordance, and substance use associated with the sexual act. Cognitive-behavioral and reasoned action theory [31, 32] postulate that HIV risk behavior should be predicted by an individual's risk knowledge and safer sex attitudes, behavioral intentions, perceived peer norms, and self-efficacy beliefs. We hypothesized that measures of AIDS-specific attitudes, intentions, norms, and self-efficacy would be related to riskiness of behavior at most recent unprotected AI. In addition, broader domains such as self-ascribed masculinity, gay acculturation, internalized homonegativity, resilience, AIDS conspiracy beliefs, and religious/church involvement are potential contextual factors that may also influence risk. Participants completed measures assessing each of these broader contextual domains. We sought to explore, but did not develop a priori hypotheses concerning, relationships between broader contextual constructs with sexual risk of Black MSM.

Methods

Men in this study were participants in a phase of preparatory research preceding the conduct of "Connections Creating Change" (C3), a social network-level HIV prevention intervention trial designed for Black MSM that is currently underway. Participants in the present study were recruited in Milwaukee, Cleveland, and Miami by project staff employed by local community organizations that provide HIV prevention, social, and testing services to minority MSM. To recruit a sample that drew from multiple and diverse community segments, project staff at all sites systematically identified venues that were frequented by Black MSM and locations where men congregated and socialized. Venues included bars, clubs, pageant events, house parties, parks, and "strolls" (cruising areas). Participants were also recruited at university campuses, churches, and community organizations that provided services to Black MSM. Men interested in participating called the study office and were screened using eligibility criteria of being a self-identified Black or African American, age 18 or over, and reporting sex with another man in the past year. 209 participants were recruited studywide, ~70 per city. 20 men said they never had AI with a man or did not provide information about their last AI act. Of the 189 who reported AI, 11 did not indicate their sexual position at last AI. A total of 178 men in the sample (85.2 %) who reported on their sexual position and condom use during their last AI with a male partner were included in the descriptive data analyses.

The study protocol was approved by the institutional review boards at the Medical College of Wisconsin, the AIDS Task Force of Greater Cleveland, and the South Beach AIDS Project. Following written informed consent, each participant individually completed a self-administered paper-and-pencil assessment in a private room at the site office. After completing the measures, each participant received an honorarium for his time and travel.

Assessment Measures

Measurement domains, the specific measures used in this study, and variables to be included were identified through a systemic process that began with a detailed review of the literature followed by a consultation meeting with experts on Black MSM and sexual risk behavior. The domains, along with the specific measures and their psychometric properties are described in the following paragraphs.

Demographic, Background, and Health Characteristics

The assessment requested information about respondents' age, education level, employment status, and whether or not the participant was presently in school. Participants indicated whether they were male or transgender; used a 5-point scale to describe their sexual orientation (from 1 = exclusively gay to 5 = exclusively straight); reported whether they currently had a main, committed male and/or female partner; and indicated whether or not they presently had stable housing. Men were asked whether they ever had an HIV test and—if so—how long ago was their most recent test and the test's result (HIV-positive, HIV-negative, or did not know the result).

Behavior and Circumstances Surrounding Most Recent Anal Intercourse with a Male Partner

Men were first asked whether they ever had AI with a man. Those responding affirmatively were asked how long ago the most recent AI took place (past day, past week, past month, 1–6 months ago, 6–12 months ago, or over a year ago) and their relationship status with the partner (main, committed, and steady; regular but not main and committed; a casual hookup; or a partner with whom gifts, money, or drugs were exchanged). Participants were asked how they met their most recent AI partner (through friends; at a club, bar, party, or hangout place; online; or in some other way) and the partner's race and ethnicity. Men were asked whether they told their most recent AI partner what they knew about their own HIV status before having sex, and also what that partner disclosed about his HIV status before sex (said he was HIV-positive, said he was HIV-negative, said he did not know his HIV status, or did not say anything about his status). Respondents then indicated their sexual position during the most recent AI act (insertive, receptive, or both positions) and whether or not a condom was used by the insertive partner from start to finish. Finally, men were asked about their alcohol or drug use before the most recent anal sex occasion. Participants who reported substance use before the act were presented with a list of drugs including their common street names (alcohol, marijuana, cocaine, crack, prescription opiates, inhaled nitrites, ketamine, methamphetamine, GHB, ecstasy, heroin, and medications used to treat erectile dysfunction). Men were asked which they used prior to sex. They were also asked to describe how much influence they felt at the time from substance use (using one of four response categories that ranged from being completely clear-headed to being a little bit, somewhat, or very high or "buzzed").

Sexual Behavior and Partnerships During the Past 3 Months

Although most recent AI was the focus of attention, men also reported on their overall sexual behavior during the 3 months before the assessment to provide a sexual

behavior context for this most recent act. Participants reported on their total number of male and female partners during the period.

Scales Measuring AIDS-Specific Psychosocial Characteristics

The AIDS-specific psychosocial scales administered to participants were adapted from measures used in prior research with MSM [18, 33, 34]. The AIDS-specific scales used language presented at an 8th grade reading level, and some items on all scales were reverse-scored to minimize response bias.

HIV risk knowledge was assessed by 9 items measuring practical understanding of transmission risk behavior and protective strategies (sample item: "Oral sex is less likely to transmit the HIV/AIDS virus than anal sex," answered true, false, or don't know; score range 0–9, higher score indicates greater knowledge). *Perceived peer norms for condom use* were assessed with an 8-item scale measuring the extent to which the respondent perceived that condom use was an expected norm among his friends (sample item: "My friends always use condoms during anal sex with anyone who is not their exclusive partner," using 3-point Likert response options; score range 8–24, higher score indicates greater norm perception; current sample Cronbach's alpha = 0.79). *Risk reduction behavioral intentions* were also measured with a scale of 8 items with 3-point Likert responses (sample item: "I will use a condom even if I drink or use drugs," score range 8–24, with higher scores indicating stronger intentions; Cronbach's alpha = 0.79). A *condom use attitudes* scale consisted of 8 items with 3-point Likert response options and measured respondent attitudes toward safer sex (sample item: "Condoms destroy the pleasure of sex," score range 8–24, higher score indicates more positive attitudes; Cronbach's alpha = 0.75). *Condom use self-efficacy beliefs* were measured with a 6-item scale (sample item: "I can get any partner to use condoms") using 3-point response options; score range 6–18, with higher scores indicating greater self-efficacy; Cronbach's alpha = 0.70).

Scales Measuring Social and Contextual Domains

Social and contextual domains were chosen based on prior research or theory proposing that the domain may influence sexual risk or protective actions among Black MSM [19–24]. Scales measuring these constructs were either previously used in other studies or were developed specifically for this research.

A scale measuring *self-ascribed masculinity* was adapted from Garcia et al. [35]. It consisted of 4 items, each using 4-point Likert response options (sample item: "I see myself as a masculine man," score range 4–20, higher score indicates greater self-ascribed masculinity; Cronbach's alpha = 0.84). *Gay community acculturation* was assessed with a 7-item Likert scale developed for this research. It measured the respondent's identification with and participation in gay community activities (sample item: "How often do you go to gay bars or clubs?," score range 8–35, with higher scores indicating greater gay community acculturation; Cronbach's alpha = 0.90). *Resilience*, reflecting ability to withstand life stressors, thrive, and derive meaning from challenges, was assessed using 10 items selected from a longer resilience scale developed by Wagnild and Young [36]. Items were answered using 5-point response formats (sample item: "My belief in myself gets me through hard times," score range 10–50, higher score indicates greater resilience; Cronbach's alpha = .91). *Internalized homonegativity* (*homophobia*) was measured with 9 items, each with a 5-point response format, adapted from scales originally developed by Herek et al. [37], Myers [38], and Wagner [39]. A sample item is "I have tried to stop being attracted to men." The score range was 9–45, higher scores indicate greater internalized homonegativity, and the scale's Cronbach alpha was 0.90. *AIDS conspiracy beliefs* were assessed with a 9-item scale developed by Bogart and Thorburn [40]. Respondents indicated extent of agreement with each statement using 5-point response options (sample item: "AIDS is a form of genocide against Blacks," score range 9–45, higher score indicates greater AIDS conspiracy beliefs; Cronbach's alpha = 0.83). Finally, 6 items were adapted from Forehand and Brody [41] to measure the *religious and church involvement* (sample item: "How often do you attend religious services?" The scale's 5-point Likert response options yielded a score that could range from 6–30, with higher scores indicating greater religiosity; Cronbach's alpha = 0.79.

Statistical Methods

Predictive analyses focused on the subsample of 73 participants who did not use condoms at their most recent AI. The dependent variable corresponded to engaging in unprotected anal intercourse (UAI) based on the HIV serostatus of the participant with the partner: HIV discordant or of unknown serostatus ($n = 34$) versus HIV-negative concordant ($n = 30$), which was the reference category. HIV-positive participants who reported UAI with a seroconcordant partner ($n = 9$) were excluded from this analysis of HIV transmission risk. A series of univariate logistic regressions assessed predictors in four domains: context-specific factors surrounding the last AI act; demographic and background factors; AIDS-related psychosocial scales; and social and contextual domain scales. All univariate predictors that resulted in a p value <0.10

were then entered in a multiple logistic regression model. Partial odds ratios (OR) and 95 % confidence intervals (CI) were computed for all associations.

Results

Participant Characteristics

All participants described their race as African American or Black. The mean age of men in the sample was 31.6 years (SD = 10.2). One-third ($n = 59$) were employed fulltime, but 46 % ($n = 82$) were unemployed and an additional 20 % ($n = 36$) had only part-time work. Two-thirds (66 %, $n = 116$) of men had annual incomes of under $20,000 per year, 42 % ($n = 75$) less than $10,000. Approximately 11 % ($n = 19$) of participants said their housing was unstable. One-third of men (32 %, $n = 56$) did not complete high school and 29.8 % ($n = 53$) graduated from high school but had no further education. With respect to sexual orientation self-identity, 50 % of men ($n = 89$) described themselves as exclusively gay, 28 % ($n = 50$) said they were mainly gay, and 22 % ($n = 38$) said they were bisexual, mostly heterosexual, or exclusively heterosexual. Over two-thirds of 170 men who responded to the question said they had been tested for HIV during the past year (69 %, $n = 117$). Thirty-eight percent ($n = 65$) of men who responded to the testing question said that they were HIV-positive and 61 % ($n = 103$) said their most recent HIV test result was negative. Because the study sample consisted of men recruited in three city sites, we compared participants from the three cities in their demographic characteristics. Men in Miami were older than participants in the other cities and more likely than men in Milwaukee to have incomes of over $20,000, while men in Cleveland were more often presently attending school (all $p < 0.05$). Otherwise, participants in the three cities did not significantly differ in any demographic characteristics. Thus, the sample was characterized by high HIV prevalence and consisted primarily of low-income, unemployed or underemployed Black MSM with an average age near 30 and who identified as gay or mainly gay.

Partner Characteristics and Circumstances at Most Recent Same-Sex AI

Nearly half of the men (45 %, $n = 80$) reported that their most recent act of AI took place in the past week, and two-thirds of men ($n = 118$) said that it occurred in the past month. Thus, most of the events being recalled happened in the past 30 days. Thirty-six percent ($n = 64$) reported that they were the insertive partner at last AI, 44 % ($n = 79$) the receptive partner, and 20 % ($n = 35$) positioned in both roles. The large majority of respondents (88 %, $n = 156$) reported that their most recent AI partner was also Black while an additional 8 % ($n = 15$) said the partner was of blended race or ethnicity. Only seven men in the sample reported that their most recent AI partner was of a race or ethnicity other than Black or blended. Nearly 39 % of 176 reporting participants ($n = 68$) said that their most recent AI occurred with a main, committed, or steady male partner; 28 % ($n = 50$) with a regular sexual partner who was not main or committed; 28 % ($n = 50$) with a partner described as a casual hookup; and 5 % ($n = 8$) with a commercial sex partner. Thus, most AI acts occurred with partners not described by the respondent as main, steady, and committed. When asked how they met their most recent AI partner, the most common way was online (29 %, $n = 52$). Most others were met through friends' introductions (28 %, $n = 50$) or at clubs, bars, parties, or hangout places (23 %, $n = 40$).

Although the most recent AI was our focus of attention, men's reports of their sexual behavior over the past 3 months provide a context for interpretation of the most recent act. Most men in the sample reported having multiple male partners in the past 3 months (mean = 4.1, median = 2). Ninety percent of men said they had sex only with men in this period while 10 % ($n = 18$) also reported sex with women. We then examined only the 68 men in the sample who reported their most recent AI was with a partner described as main, committed, and steady. Over 41 % ($n = 28$) of men in this group had 2 or more male partners in the past 3 months (mean = 4.2 male partners, median = 1). Committed partnerships among men in the sample were not necessarily sexually exclusive.

Risk of Sexual Behavior, Substance Use, Serostatus Disclosure, and Serostatus Concordance at Most Recent AI with a Same-Sex Partner

Table 1 summarizes data concerning participants' sexual practices, substance use, and partnership HIV concordance. As Table 1 shows, condoms were used by about half of the men whose most recent AI took place with a partner described as main, committed, or steady. Condom use was slightly higher among men reporting sex with nonmain partners. However, over one-third of men who said that their most recent AI act occurred with a regular but nonmain, with a casual hookup, or with a commercial sex partner also said that the act was unprotected. Nearly half of men in the sample ($n = 83$) reported substance use preceding their most recent AI. Among the 83 men using substances, alcohol (71 % of men, $n = 59$) and marijuana (61 %, $n = 51$) were most commonly used, but 21 % of men ($n = 17$) who reported substance use before sex said they used either cocaine or crack. Other drugs were used by

Table 1 Sexual partner type, serostatus concordance, condom use, and substance use at most recent anal intercourse

Characteristics	% (*n*)
Sexual partner type and condom use[a]	
Main, committed, steady partner	
Condom used	53 % (36)
Condom not used	47 % (32)
Regular but not main partner	
Condom used	62 % (31)
Condom not used	38 % (19)
Casual hookup partner	
Condom used	64 % (32)
Condom not used	36 % (18)
Commercial sex partner	
Condom used	63 % (5)
Condom not used	37 % (3)
Substance use before sex	
Used alcohol or any kind of drug before sex	47 % (83)
Among substance users, those reporting[b]	
Alcohol use	71 % (59)
Marijuana use	61 % (51)
Cocaine use	12 % (10)
Crack use	8 % (7)
Being somewhat or very "buzzed" at time of sex	43 % (36)
HIV seroconcordance with most recent AI partner[c]	
HIV− concordant	43 % (73)
HIV+ concordant	15 % (26)
HIV discordant or unknown	42 % (71)
HIV seroconcordance among men reporting unprotected AI	
With most recent AI partner[d]	
HIV− concordant	41 % (30)
HIV+ concordant	12 % (9)
HIV discordant or unknown	49 % (34)

[a] Percentages shown are for 176 participants who reported on the "partner type" question

[b] Percentages shown are for those 83 men who reported any substance use before sex

[c] Percentages shown are for 170 participants and exclude 8 men who did not respond to questions about their own or their partner's serostatus

[d] Percentages shown are for the 73 participants who reported not using a condom at most recent AI with a male partner

fewer than 5 % of men in the sample. More than 43 % of men ($n = 36$) using substances said they were somewhat or very "buzzed" at the time of their most recent AI sex.

We characterized seroconcordance of men's sexual partnerships based on information provided by study participants concerning their own HIV serostatus (HIV-positive or HIV-negative at last test, or untested or unaware of their HIV status) and also what the participant's partner had disclosed about his HIV status prior to sex. Approximately 55 % ($n = 97$) of men's partners had disclosed they were HIV-negative, 18 % ($n = 32$) had disclosed that their last HIV test was positive, and the remainder of partners (28 %, $n = 49$) either did not talk about their HIV status with study participants in advance of sex or said they did not know their HIV status. Based on the matching of participant and partner reported HIV status, we calculated HIV seroconcordance. As Table 1 shows, 43 % ($n = 73$) of intercourse encounters were among HIV-negative concordant men, 15 % ($n = 26$) between HIV-positive concordant partners, and 42 % ($n = 71$) between men of discordant serostatus or when one or both man's HIV status was unknown. Among 73 men in the sample who reported unprotected AI and responded to self and partner serostatus questions, half (49 %, $n = 34$) had partners of either discordant or unknown serostatus.

Factors Associated with Engaging in Unprotected Anal Intercourse (UAI) with HIV-Discordant Partners or Partners of Unknown Serostatus

Because risk for contracting or transmitting HIV infection is greatest among men who engage in UAI with partners not known to be concordant, we examined predictors of UAI among men who reported that their last sex was with a discordant or potentially discordant partner relative to an HIV-negative concordant partner. Of the 73 men whose last AI was unprotected and who completed responses about their own and their partner's serostatus, 9 men said that both they and their partner were HIV-positive, 30 men said they and their partner were both HIV-negative; and 34 said either that they were of different serostatus or that one or both did not know their HIV status. The regression analysis compared HIV-concordant ($n = 30$) and discordant or potentially discordant men ($n = 34$) reporting unprotected sex.

Table 2 shows the results of univariate and multiple logistic regression analyses that examined situational factors, participant demographic characteristics, AIDS-related psychosocial scales, and social and contextual domain scales as predictors. In univariate analyses, men who had UAI with a partner not known to be serostatus concordant were *more* likely to have been introduced to their partners by a friend or acquaintance, to have had this sex with a casual or commercial partner, and to be older. They were *less* likely to presently attend school, to have a committed main partner, and to have had an HIV test in the past year, and they had lower risk reduction behavioral intentions. Men whose last AI was unprotected and with a potentially discordant partner had significantly less positive attitudes toward safer sex and tended to have lower levels of gay community acculturation and greater AIDS conspiracy

Table 2 Univariate and multiple logistic regression analyses predicting whether men had unprotected anal intercourse with an HIV discordant or potentially discordant partner at most recent sex

Predictor variable	Univariate		Multiple	
	Regression results		Regression results	
	OR	95 % CI	OR	95 % CI
Factors surrounding last AI act				
Was receptive or both insertive and receptive partner	1.32	0.45–3.88		
Introduced by friend/acquaintance	4.30	1.07–17.32$^{\Delta}$	8.78	1.20–64.18*
Casual or commercial partner	7.11	1.80–28.00**	12.13	1.29–113.60*
Drank alcohol before last AI	0.53	0.18–1.57		
Smoked marijuana before last AI	0.59	0.18–1.95		
Used any drug other than marijuana	1.87	0.32–11.00		
Was buzzed or high at last AI	0.97	0.33–2.85		
Demographic and background factors				
Age in years	1.08	1.01–1.14*	0.91	0.79–1.04
Education in years	1.00	0.91–1.09		
Currently in school	0.28	0.09–0.88*	0.96	0.11–8.46
Income (in $10 K increments)	1.06	0.75–1.49		
Currently employed	0.98	0.37–2.63		
Has committed main male partner	0.15	0.05–0.49**	0.20	0.04–1.12$^{\Delta}$
Sexual orientation completely gay	0.88	0.33–2.34		
HIV test past 12 months	0.14	0.04–0.55**	0.05	0.01–0.65*
AIDS-related psychosocial scales				
HIV risk knowledge	0.93	0.66–1.30		
Perceived peer condom use norms	0.92	0.81–1.06		
Risk reduction intentions	0.78	0.66–0.92**	0.65	0.46–0.92*
Condom use attitudes	0.86	0.72–1.01*	1.13	0.81–1.58
Condom use self-efficacy	0.80	0.61–1.06		
Social and contextual domain scales				
Self-ascribed masculinity	0.93	0.81–1.05		
Gay community acculturation	0.91	0.82–1.01$^{\Delta}$	0.92	0.78–1.09
Internalized homonegativity	1.05	0.99–1.11		
Resilience	0.96	0.89–1.03		
AIDS conspiracy beliefs	1.08	0.99–1.19$^{\Delta}$	1.11	0.93–1.33
Religious/church involvement	1.04	0.95–1.15		

These analyses included the 64 men who reported their own and their last male AI partner's serostatus and also reported that their last AI was unprotected, $n = 30$ HIV-negative concordant and $n = 34$ discordant or potentially discordant partnerships. Univariate logistic regressions were performed for each predictor. All predictors that resulted in a p-value <0.10 were entered in the multiple regression model

* $p < .05$, ** $p < .01$

$^{\Delta}$ $p < .10$

beliefs. Multiple logistic regression analysis established four significant predictors of UAI at last sex with a potentially discordant partner. These were being introduced to the partner by a friend or acquaintance, the partner being casual or commercial, not having an HIV test in the past year, and lower risk reduction behavioral intentions. There was also a trend for higher risk to be associated with not having a committed male partner. Thus, and apart from the strong independent influence of men's intentions to practice safer sex, unprotected behavior at last AI with a discordant or potentially discordant partner was mainly associated with circumstances indicative of the partner being casual, being introduced by someone known to the participant, and the participant himself not having been recently tested.

Discussion

By focusing attention on the most recent intercourse act by Black MSM with a same-sex partner, we were able to gain detailed information about situational and contextual circumstances surrounding the event. The study's findings contribute to an understanding of behavioral factors and partner relationship characteristics that contribute to continuing high HIV incidence among racial minority gay or bisexual men and help to identify issues that require attention in HIV prevention efforts directed toward Black MSM. Among the study's contributions to the field are its findings concerning types of sexual partners and the riskiness of behavior that occurs with different types of partners; HIV disclosure, concordance, and potential discordance between

partners with whom unprotected intercourse took place; levels of substance use found in the sample; and psychosocial characteristics and contextual domains that did (or did not) predict riskiness of practices at men's most recent same-sex intercourse.

Condoms were used in a majority of the most recent AI acts reported by men in the sample. However, well over one-third of men reported unprotected acts even when their last partner was a casual hookup, a commercial, or a regular but nonmain partner. Further, almost one-half of men reported unprotected sex acts with partners whose HIV status was discordant, unknown, or not discussed before sex. Only a small proportion of UAI occurred among men who said that both they and their partners were HIV+concordant. It will be important for prevention interventions to encourage greater discussion of HIV status before sex. At the same time, decisions about practicing safer sex based on reported negative HIV serostatus are very imperfect. Thirty-eight percent of men in this sample said they had been tested and were HIV+. However, only 18 % of men's most recent AI partners disclosed prior to sex that they were HIV+. Although it is possible that HIV prevalence was much lower in the partners, it is more likely that many partners did not know or chose not to disclose their seropositive status to study participants. Further concern relates to the interpretation of AI between main, committed, and steady partners where condom use was lowest. Over 40 % of men who said their most recent AI act took place with a main partner also reported having sex with other men in the past 3 months. We do not know if having multiple partners in the past 3 months reflects brief serially monogamous relationships or reflects concurrently having sex with partners outside of main relationships. HIV risk associated with these patterns depends on the safety of practices that take place with other partners. The present study did not assess whether or not participants engaged in strategic positioning or intentional serosorting as potential risk reduction strategies nor whether sexual behavior practices were a result of planned decision-making in relation to concordance or discordance. These issues among Black MSM have received some attention [42–44] but will require more study with much larger samples to definitely examine multiple permutations of serostatus matching and sexual positioning by each partner.

The large majority of study participants said that their last AI acts took place with other racial minority men. This is consistent with assortative sexual mixing patterns reported in past research [15]. Because HIV and STD prevalence as well as untreated HIV infection are higher among African American than nonminority MSM, these sexual mixing patterns create greater exposure vulnerability. The findings lend support to the suggestion that sexual network characteristics are, in part, responsible for high HIV incidence among Black MSM [14].

Substance use commonly preceded men's most recent AI act, usually alcohol, marijuana, or cocaine or crack. Forty percent of men using substances said they felt high or "buzzed" at the time of sex. This calls attention to the importance of recognizing and addressing substance use as a risk cofactor in the lives of many Black MSM. At the same time, substance use was not an independent predictor of unprotected sex with a nonconcordant partner in the multiple regression analysis. Prior studies have shown complex and sometimes inconsistent associations between alcohol use and high-risk sexual behaviors [26, 27].

Although a number of demographic characteristics, situational factors, and scales were associated with last UAI with a noncordant partner in initial univariate tests, most did not remain significant as independent predictors. Apart from lower risk reduction behavioral intentions, significant independent associations were found primarily with situational characteristics that work against mutual serostatus knowledge such as casualness of the partnership, being outside a committed relationship, and not having a recent HIV test. We were surprised that scales measuring broader social and contextual domains were not significant predictors. Domains such as masculinity, resilience, religiosity, and internalized homonegativity as well as indicators of economic distress undoubtedly play important roles in the lives of Black MSM. However, the present research did not establish their independent roles in predicting the indicator of sexual risk that was examined in this study.

In that context, it is appropriate to comment on the study's limitations. The first limitation is sample size and generalizability. The study sample was of modest size and, while diverse community recruitment methods were used, this was a convenience sample, unlikely to represent all segments of the Black MSM community, and findings cannot necessarily be generalized to men in other cities. The sample size was further reduced for subgroup analyses, and this limited the study's generalizability and statistical power for detecting some effects. The study relied on participants' self-reports of their behavior, which are subject to recall, self-presentation, and social desirability bias. However, the high levels of stigmatized behavior reported by participants suggests that this bias was not strong and, because we examined a sexual event very recent for most participants, the likelihood of recall inaccuracy was lessened. Participants' reports of their HIV-negative serostatus must be treated with some caution, especially because we relied on self-reports rather than by performing the testing. Especially if testing took place in the past and was followed by high-risk behavior, some men's actual serostatus may have changed. Finally, a strength of the research is its careful and detailed focus on the most recent AI act. However, this is also a potential limitation because men's most recent AI act may not be representative of their

overall behavior. Even in the context of these limitations, the study employed a novel assessment approach with an HIV-vulnerable population whose needs and risk issues remain understudied. In particular, the research allowed a close analysis of partner characteristics at last intercourse among Black MSM, a method that has not been widely used [42]. Its findings underscore issues that merit attention in HIV prevention efforts for racial minority gay or bisexual men.

Acknowledgments This research was supported by grant R01-MH089128 and by Center Grant P30-MH52776 from the National Institute of Mental Health. We extend appreciation to the study's Senior Scientific Advisory Committee (John Peterson, David Malebranche, Sheldon Fields, and Robert Miller) for their consultation.

References

1. Centers for Disease Control and Prevention. HIV Surveillance Report, 2010. 2012;22:1–79.
2. Centers for Disease Control and Prevention. Subpopulation estimates from the HIV incidence surveillance system—United States, 2006. MMWR. 2008;57:985–9.
3. Centers for Disease Control and Prevention. HIV/AIDS Surveillance Supplemental Report 2007. 2009;19:1–63.
4. Blair JM, Fleming PL, Karon JM. Trends in HIV incidence and survival among racial/ethnic minority men who have sex with men, United States, 1990–1999. JAIDS. 2002;31:339–47.
5. Catania JA, Osmond D, Stall RD, et al. The continuing HIV epidemic among men who have sex with men. AJPH. 2001;91:907–14.
6. Harawa NT, Greenland S, Bingham TA, et al. Associations of race/ethnicity with HIV prevalence and HIV-related behaviors among young men who have sex with men in 7 urban centers in the United States. JAIDS. 2004;35:526–36.
7. Torian LV, Makki HA, Menzies IB, Murrill CS, Weisfuse IB. HIV infection in men who have sex with men, New York City Department of Health sexually transmitted disease clinics: a decade of serosurveillance finds that racial disparities between HIV and gonorrhea persist. STDs. 2002;29:73–8.
8. Balaji AB, Bowles KE, Le BC, et al. High HIV incidence and prevalence and associated factors among young MSM in 21 USA cities, 2008. AIDS. 2012s. doi:IO.1097/QAD.0b013e32835ad489.
9. Office of National AIDS Policy. National HIV/AIDS Strategy for the United States. Washington, DC: White House; 2010.
10. Millett GA, Flores SA, Peterson JL, Bakeman R. Explaining disparities in HIV infection among Black and white men who have sex with men: a meta-analysis of HIV risk behaviors. AIDS. 2007;21:2083–91.
11. Millett GA, Peterson JL, Wolitski R, Stall R. Greater risk for HIV infection of Black men who have sex with men: a critical literature review. AJPH. 2006;97:1007–19.
12. Bingham TA, Harawa NT, Johnson DF, Secura GM, MacKellar DA, Valleroy LA. The effect of partner characteristics on HIV infection among African American men who have sex with men in the Young Men's Survey, Los Angeles, 1999–2000. AIDS Educ Prev. 2003;15:39–52.
13. Murrill CS, Liu K, Guilin V, et al. HIV prevalence and associated risk behaviors in New York City's house ball community. AJPH. 2008;98:1074–80.
14. Peterson JL, Rothenberg R, Kraft JM, Beeker C, Trotter R. Perceived condom norms and HIV risks among social and sexual networks of young African American men who have sex with men. Health Educ Res. 2009;24:119–27.
15. Raymond HF, McFarland W. Racial mixing and HIV risk among men who have sex with men. AIDS Behav. 2009;13:630–7.
16. Bakeman R, Peterson JL, The CITY Study Team. Do beliefs about HIV treatments affect peer norms and risky sexual behavior among African American men who have sex with men? Int J STD AIDS. 2007;18:105–8.
17. Hart T, Peterson JL, The CITY Study Team. Predictors of risky sexual behavior among young African American men who have sex with men. AJPH. 2004;94:1122–3.
18. Kelly JA, St. Lawrence JS, Amirkhanian YA et al. Levels and predictors of HIV risk behavior among Black men who have sex with men. AIDS Educ Prev. 2013;25:49–61.
19. Brooks RA, Etzel MA, Hinojos E, Henry CL, Perez M. Preventing HIV among Latino and African American gay and bisexual men in a context of HIV-related stigma, discrimination, and homophobia: perspectives of providers. AIDS Patient Care STDs. 2005;19:737–44.
20. Fields EL, Bogart LM, Smith KC, Malebranche DJ, Ellen J, Schuster MA. HIV risk and perceptions of masculinity among young Black men who have sex with men. J Adol Health. 2012;50:296–303.
21. Kraft JM, Beeker C, Stokes JP, Peterson JL. Finding the "community" in community-level HIV/AIDS interventions: formative research with young African American men who have sex with men. Health Educ Behav. 2000;27:430–41.
22. Mays VM, Cochran SD, Zamudio A. HIV prevention research: are we meeting the needs of African American men who have sex with men? J Black Psychol. 2004;30:78–105.
23. Stokes JP, Peterson JL. Homophobia, self-esteem, and risk for HIV among African American men who have sex with men. AIDS Educ Prev. 1998;10:278–92.
24. Teunis U. Sexual objectification and the construction of whiteness in the gay male community. Cult Health Sex. 2007;9:263–75.
25. McAuliffe TL, DiFranceisco WJ, Reed BR. Effects of question format and collection mode on the accuracy of retrospective surveys of health behavior: a comparison with daily sexual activity diaries. Health Psychol. 2007;26:60–7.
26. Leigh BC. Alcohol and condom use: a meta-analysis of event-level studies. STDs. 2002;29:476–82.
27. Leigh BC, Stall R. Substance use and risky sexual behavior for exposure to HIV: issues in methodology, interpretation, and prevention. Am Psychol. 1993;48:1035–45.
28. Hensel DJ, Rosenberger JG, Novak DS, Reece M. Sexual event-level characteristics of condom use during anal intercourse among HIV-men who have sex with men. Sex Trans Dis. 2012;39:550–5.
29. Chiasson MD, Hirshfield S, Remien RH, et al. A comparison of on-line and off-line sexual risk in men who have sex with men: an event-based on-line survey. JAIDS. 2007;44:235–43.
30. Mustanski BS. Are sexual partners met online associated with HIV/STI risk behaviours? Retrospective and daily diary data in conflict. AIDS Care. 2007;19:822–7.
31. Bandura A. Social foundations of thought and action: a social-cognitive theory. Englewood Cliffs: Prentice Hall; 1986.
32. Fishbein M, Ajzen I. Belief, attitude, intention, and behavior: an introduction to theory and research. Reading: Addison Wesley; 1975.
33. Amirkhanian YA, Kelly JA, Kirsanova AV, et al. HIV risk behavior patterns, predictors, and sexually transmitted disease prevalence in the social networks of young men who have sex

with men in St. Petersburg, Russia. Int J STD AIDS. 2006; 17:50–6.
34. Kelly JA, Amirkhanian YA, Seal DW, et al. Levels and predictors of sexual HIV risk in social networks of men who have sex with men in the Midwest. AIDS Educ Prev. 2012;22:483–95.
35. Garcia LI, Lechuga J, Zea MC. Testing comprehensive models of disclosure of sexual orientation in HIV-positive Latino men who have sex with men. AIDS Care. 2012;24:1087–91.
36. Wagnild GM, Young HM. Development and psychometric evaluation of the resilience scale. J Nurs Meas. 1993;1:165–78.
37. Herek GM, Cogan JC, Gillis JR, Glunt EK. Correlates of internalized homophobia in a community sample of lesbians and gay men. J Gay Lesbian Med Assoc. 1997;2:17–25.
38. Myers MF. Men sexually assaulted as adults and sexually abused as boys. Arch Sex Behav. 1989;18:203–15.
39. Wagner GJ. Internalized homophobia scale. In: Davis CM, Yaber WL, Bauserman R, Schreer G, Davis SL, editors. Handbook of sexuality-related measures. Thousand Oaks: Sage Publications; 1997.
40. Bogart LM, Thorburn S. Are HIV/AIDS conspiracy beliefs a barrier to HIV prevention among African Americans? JAIDS. 2005;38:213–8.
41. Forehand R, Brody GH. The role of community risks and resources in the psychosocial adjustment of at-risk children: an examination across two community contexts and two informants. Behav Ther. 2000;31:395–414.
42. Marks G, Millett GA, Bingham T, et al. Prevalence and protective value of serosorting and strategic positioning among Black and Latino men who have sex with men. Sex Transm Dis. 2010; 347:325–7.
43. Eaton LA, Kalichman SC, Cherry C. Sexual partner selection and HIV risk reduction among Black and White men who have sex with men. Am J Public Health. 2010;100:503–9.
44. Maulsby C, Millett GA, Lindsey K et al. HIV among Black men who have sex with men (MSM) in the United States: a review of the literature. AIDS Behav. doi:1007/s10461-013-0476-2.