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Alcohol and cocaine use among Latino and African American MSM in 6 US cities

Nick Zaller [a,*], Cui Yang [b], Don Operario [c], Carl Latkin [b], David McKirnan [d], Lydia O'Donnell [e], Maria Fernandez [f], David Seal [g], Beryl Koblin [h], Stephen Flores [i], Pilgrim Spikes [i]

[a] Health Behavior and Health Education, University of Arkansas for Medical Sciences, Little Rock, AR, USA
[b] Department of Health, Behavior and Society, Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA
[c] Brown University School of Public Health, USA
[d] Psychology Department, University of Illinois at Chicago, Chicago, IL, USA
[e] Education Development Center, Inc., Newton, MA. USA
[f] NOVA Southeastern University, Miami, FL, USA
[g] Tulane University School of Public Health and Tropical Medicine, New Orleans, LA, USA
[h] Laboratory of Infectious Disease Prevention, New York Blood Center, New York, NY, USA
[i] CDC Division of HIV/AIDS Prevention, Atlanta, GA, USA

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1. Introduction

Gay, bisexual, and other men who have sex with men (MSM) are disproportionately affected by HIV. MSM comprise roughly 2% of the US population, yet approximately two-thirds of new HIV infections are among MSM (Centers for Disease Control and Prevention, 2016). Additionally, significant racial and ethnic disparities exist with respect to HIV transmission among MSM. Based on the current HIV diagnoses rates in the US, about 1 in 2 African American men who have sex with men (AAMSM), 1 in 4 Latino MSM

(LMSM) and 1 in 11 white MSM will be diagnosed with HIV during their lifetime (Center for Disease Control and Prevention (CDC), 2016a). In general, substance-using MSM are among the groups with the greatest risk for HIV infection (Centers for Disease Control and Prevention, 2011; Margolis, Joseph, Hirshfield, et al., 2014; Pines, Gorbach, Weiss, et al., 2014; Plankey, Ostrow, Stall, et al., 2007); nearly a third of incident HIV infections among MSM may be associated with non-injection drug use (Mansergh et al., 2008; Van Tieu & Koblin, 2009). Substance-using sexual minorities are more likely to underutilize substance use treatment (McCabe, Bostwick, Hughes, West, & Boyd, 2010) and may be an HIV transmission bridge to non-drug-using populations (Lambert et al., 2011).

With respect to alcohol use, high rates of both alcohol consumption and binge drinking have been documented among MSM populations (Finlayson et al., 2011). Additionally, previous studies have found associations between heavy drinking, as define as having 6 or more drinks on one occasion or 4 or more drinks daily, and HIV risk behaviors among MSM, such as condomless anal intercourse and greater number of sexual patterns (Colfax et al., 2004; Greenwood et al., 2001; Koblin et al., 2003a; Woolf & Maisto, 2009). Previous studies also suggest that many substance-using MSM populations engage in use of multiple substances, often concomitantly (Santos et al., 2013). There also may be a dose response with number and frequency of substances used with respect to condomless anal sex among HIV negative MSM (Santos et al., 2013). However, patterns of substance-use vary across racial and ethnic MSM populations, e.g. African American substance-using MSM being more likely to use crack/cocaine relative to other substance-using MSM populations (Goldstein, Burstyn, LeVasseur, & Welles, 2016; Halkitis & Jerome, 2008; Hatfield, Horvath, Jacoby, & Simon Rosser, 2009; Mimiaga, Reisner, Fontaine, et al., 2010; Paul, Boylan, Gregorich, Ayala, & Choi, 2014). Thus, it is important to better understand patterns of concomitant substance-use, e.g. methamphetamine, crack/cocaine and alcohol, across specific

* Corresponding author at: University of Arkansas for Medical Sciences, Fay W. Boozman College of Public Health, 4301 West Markham #820, Little Rock, AR 72205, USA.
E-mail address: NDZaller@uams.edu (N. Zaller).

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sociodemographic categories among MSM populations (Santos et al., 2013). Sociodemographic characteristics which may be particularly relevant for specific MSM populations include poverty and history of incarceration. For example, pronounced racial disparities have been found between AAMSM and other MSM populations with respect to structural barriers, such as low income, unemployment and incarceration, associated with HIV infection (Millet, Peterson, Flores, Hart, et al., 2012). Additionally, a recent study conducted by Rutledge et al., found a high proportion of MSM reporting both a history of incarceration and substance use. This study found rates of incarceration highest among men who classified themselves as "down-low", e.g. endorsing secrecy about same-sex sexual behavior, prompting the authors to posit that this population may engage in trading sex for money more often and thus increase their risk for incarceration (Rutledge, Jemmott, O'Leary, & Icard, 2016).

An additional area that warrants attention is the mental health of substance-using MSM. Marshall et al., found an increase in depressive symptomology among heavy-drinking MSM (Marshall, Shoveller, Kahler, et al., 2015a). Other studies have documented high rates of depression, distress and post-traumatic stress disorder (PTSD) among MSM populations (Marshall et al., 2015a; McCabe, Hughes, Bostwick, West, & Boyd, 2009; Rutledge et al., 2016). Thus, there is a growing consensus that many MSM face co-occurring mental health and substance use disorders which warrant integrated treatment approaches (Batchelder, Saften, Mitchell, Ivardic, & O'Cleirigh, 2017). Furthermore, the increased HIV burden, both in terms of HIV risk and HIV acquisition, among AA MSM and LMSM may exacerbate the vulnerability to mental health problems (Bedoya, Mimiaga, Beauchamp, et al., 2012).

Numerous studies have documented associations between drug and alcohol use and HIV transmission risk (Colfax et al., 2004); (Koblin, Chesney, Husnik, et al., 2003b; Mayer, Wang, Koblin, et al., 2014; Ostrow, Plankey, Cox, et al., 2009; Pappas & Halkitis, 2011; Sander, Cole, Stall, et al., 2013; Skeer, Mimiaga, Mayer, et al., 2012). However, MSM subpopulations are not homogenous and often exhibit different substance-use related risk profiles (Newcomb, Ryan, Greene, et al., 2014). A recognition that different patterns of substance use among MSM populations may be associated with poor health or substance use treatment related outcomes is important in order to better tailor risk-reduction and substance use treatment related interventions (Tobin, Yang, King, et al., 2015). Thus, understanding how specific types of risk behaviors interact to place substance-using MSM populations, including those with co-occurring mental health disorders, at potentially greater overall risk for HIV infection and transmission can guide the development of intervention frameworks addressing multiple risk behaviors for these populations. Additionally, amelioration of the adverse consequences associated with such risk profiles may have important implications for HIV disease progression and achieving optimal clinical outcomes among those MSM who are HIV-positive.

We sought to determine the correlates of substance use (binge drinking and crack/cocaine use) among AAMSM and LMSM enrolled across six cities in the United States in a study to evaluate the preliminary efficacy of recently developed behavioral interventions to reduce HIV transmission among AAMSM and LMSM.

2. Methods

Data came from the Latino and African American Men's Project (LAAMP), a CDC-funded multi-site, randomized HIV behavioral intervention project. AAMSM were enrolled from Baltimore, Chicago, greater Milwaukee/greater Detroit region, and New York City, and Latino MSM were enrolled from Miami and New York City. Data reported here are from baseline interviews that were collected from 2008 to 2009. Institutional review boards at each of the study locations and the Centers for Disease Control and Prevention approved the questionnaire, data collection and study procedures. Participants were reimbursed between $25 and $40 for participation, depending on study site.

2.1. Recruitment

Recruitment occurred at gay bars, dance clubs, house parties, gay chatrooms, college campuses, health departments, and community-based organizations that provided services to the MSM population. Additional methods included referrals from study participants and service providers, online chatrooms, the placement of recruitment materials (flyers and study cards) at locations frequented by MSM and the placement of ads in local gay magazines and newspapers.

A brief screening was conducted to identify eligible men for the studies. Written informed consent was obtained for individuals who indicated a willingness to participate and who met eligibility requirements. Eligibility criteria across the six sites included being at least 18 years of age, identifying as male and African American or black or Latino, having at least 2 sexual partners in the past 3 months (at least 1 of whom must have been male) and engaging in anal sex without condoms with a man in the past three months. For the four African American sites, participants' HIV status was not part of the eligibility criteria. However, participants were required to take an HIV-test if they indicated their HIV-status as negative or unknown to stay in the study. If they provided documentation of their being HIV-positive, testing was not conducted. Although HIV-testing was available to all participants at the Latino sites, it was not conditional for participation in the study. Since one of the goals was to examine if participants took an HIV test after completing the intervention, the eligibility criteria were slightly different. Latino participants had to be between 18 and 49 years of age and report being HIV-negative or unknown status during the baseline interview. Latino and African American participants were ineligible to participate if they identified as transgender, or did not reside in the catchment areas where the interventions were occurring for all sites.

At the baseline visit, participants reconfirmed eligibility and provided written informed consent. Participants completed a behavioral assessment using audio computer-assisted self-interview (ACASI) technology. Following completion of the assessment, all participants received HIV risk-reduction counseling. A rapid HIV antibody test was conducted if participants self-reported being HIV-negative, or did not know their current HIV status. Preliminary positive rapid test results at the baseline visit were confirmed by Western blot testing. New positive HIV-participants were referred to medical and social services and informed they could re-screen in six months to participate in the intervention. One site allowed already-enrolled participants who were newly diagnosed with HIV to be randomized and participate in the study without delay. Reimbursement for participation (time and expenses) was determined by each site.

2.2. Measures

Questions were asked on the frequency of substance-use, including alcohol, marijuana, ecstasy, powered cocaine, rock/crack cocaine, methamphetamines/other amphetamines, poppers, club drugs, heroin, Viagra, recreational/prescription drugs. Other than marijuana and alcohol, the most commonly reported drug frequently used by participants in this sample was crack/cocaine. The prevalence of other drug use, e.g. heroin (2.1%) and methamphetamine (0.8%), was relatively low, thus, we chose to focus our analyses on frequency of crack/cocaine use among study participants. Additionally, while questions on the frequency of powdered cocaine and crack cocaine use were asked separately we chose to combine powdered cocaine and crack cocaine into one variable as frequent cocaine use and to maximize the statistical power for our analyses. The current analyses focused on frequent binge drinking, and frequency of crack/cocaine use over the last 3 months. Frequent binge drinking was assessed using one of items from the Alcohol Use Disorders Identification Test (AUDIT)-C (Frank et al., 2008) "Over the last 3 months, how often did you have six or more drinks on one occasion?" Frequency of crack/cocaine use was assessed by one question "Over the last 3 months, how often did you use powdered cocaine/rock or crack cocaine?" Response options for both questions being "never," "less than