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ORIGINAL PAPER

Sexual Venue Choice and Sexual Risk-Taking Among Substance-Using Men Who have Sex with Men

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Abstract Commercial sex venues (CSVs) and public sex environments (PSEs) offer men who have sex with men (MSM) sexual privacy and anonymity. Sociodemographic characteristics (e.g., race/ethnicity, sexual identity, age, HIV status) are correlated with individuals' choice of sexual venue, potentially suggesting environmental associations with both sociodemographics and sexual risk. From March 2005 through March 2012, 1298 substance-using MSM provided information on their most recent sexual encounter; iterative logit models estimated associations between sociodemographics and sexual venue, and/or whether sexual venue was associated with sexual risk-taking while controlling for sociodemographics. More than a third of participants' most recent sexual encounters took place in either a PSE (23.0%) or a CSV (11.3%); anonymous, HIV-serodiscordant, and/or sex while on methamphetamine and/or marijuana was significantly more likely to occur in CSVs/PSEs than in a private location, even when controlling for sociodemographics. Findings demonstrate that socioenvironmental factors were associated with sexual risk-taking among high-risk, urban MSM.

Keywords Men who have sex with men (MSM) · Commercial sex venues · Public sex environment · HIV · Sexual risk

Introduction

Sexual Venues and Men Who have Sex with Men

Men who have sex with men (MSM) more commonly seek sex in commercial sex venues (CSV; e.g., bathhouses or sex clubs)[1] and/or public sex environments (PSE; e.g., parks or truck rest stops) relative to other populations [1]. Previous findings suggest that CSVs and PSEs provide privacy, anonymity, and access to sex [2, 3] for a group whose sexual practices can be stigmatized [4]. CSVs in particular may shield against the stigma often associated with same-sex sexual activity, as these venues charge a fee for entry, shelter activities, openly embrace gay cultural images and themes, and it can be assumed that all patrons are there for similar reasons [5]. Such cost may also, however, act as a barrier to individuals of lower socioeconomic status. In contrast, PSEs provide a cost-free means of congregating to find sexual partners. Further, gay culture is not a central facet in PSEs (as opposed to bathhouses and sex clubs) and, thus, public venues may be particularly attractive to MSM who may not identify as gay [4, 6, 7]. Humphreys [8], in his now classic *Tearoom Trade*, was the first to identify same-sex sexual behaviors among non-gay identified men in PSEs.

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[1] Though bathhouses are a sub-type of CSV, there are a large number of prior studies whose findings are specific only to bathhouse attendees. As such, the term "CSV" is used when discussing results inclusive of all commercial sex venues, while "bathhouse" is used when discussing results that focused specifically on only bathhouse attendees.

Choice of Sexual Venue Among MSM

Prior research has shown that various identities (race/ethnicity, sexual identities) and sociodemographic factors (educational attainment, HIV serostatus, housing status) have been associated with choice of sexual venue among MSM [6, 7, 9–14]. For example, although racial/ethnic minority (particularly Hispanic/Latino) MSM comprise less than half of all CSV attendees, they are disproportionately represented in CSVs relative to the makeup of the general population [9, 13]. Additionally, the cost of entry to CSV may exclude some MSM who are unable or unwilling to pay the entry fee [15], a situation which could increase the attendance of low socioeconomic status (i.e., low income, reduced educational attainment) MSM at PSEs—which are free to access [6, 9]. MSM may also be drawn to CSVs if they are unwilling to bring partners back to their home [16], or to PSEs if they are experiencing housing instability and, thus, do not have a residence where they can have sex in a private location [6].

Sexual identity also impacts where MSM choose to have sex. A 2010 study found that MSM who attend CSVs are more likely to identify as gay than MSM who prefer PSEs or private locations [7]. Additionally, MSM recruited from public parks were more likely to identify as heterosexual or bisexual than gay [6], and more than half of behaviorally bisexual MSM reported completely avoiding any venues they perceive as gay-specific [12]. One probable cause of these findings was identity maintenance: unlike at a CSV, an individual (MSM or otherwise) at a PSE cannot automatically be assumed to be seeking sex and, therefore, attendance at a PSE may be less threatening to the sexual identities of behaviorally bisexual and other heterosexually identified MSM [5]. To the extent that these different identities and sociodemographic characteristics are associated with disproportionate attendance to various sexual venues, any risk behaviors enacted in these venues may disproportionately impact various subpopulations of MSM.

Risk Behaviors in Sex Venues

Drug Use in High-Risk Venues

A probability telephone sample of MSM found that 88% of urban MSM report either drug or alcohol use, or both [17]. Extant literature has shown that club drug use (e.g., methamphetamine, amphetamines, ecstasy, amyl nitrite, hallucinogens) is more frequently reported by MSM that attend CSVs than among those who do not [7, 9, 18–21]; among bathhouse attendees in particular, the most commonly reported drugs are stimulants, especially methamphetamine [10, 22]. In contrast, depressants (e.g., sedatives, barbiturates) use has been more frequently reported by MSM that seek sex in PSEs than those who do not [21, 22]. Substance use, especially stimulant use, has been associated with increased sexual risk taking among MSM [23].

Sexual Risk-Taking in CSVs

MSM who seek sexual partners at CSVs were more likely to report both condom use and condomless anal sex (CAS) with non-primary male partners than MSM who sought sexual partners from other locations [9, 10, 24, 25]. Prior studies have found that 11% of bathhouse attendees reported CAS within the past 30 days [26], 39.2% reported an episode of CAS with a HIV serodiscordant or status unknown partner in the previous 90 days [27], and 29.6% reported CAS during their most recent bathhouse visit [28]. Perhaps as a result of these prevalent high-risk behaviors, MSM that seek sexual partners at CSVs have been more likely to report a HIV-positive serostatus and/or infection with a sexually transmitted infection than MSM who do not [9, 29]. A study with HIV-positive MSM also found that those who went to CSVs reported more episodes of both insertive and receptive anal sex with either known serodiscordant or undisclosed partners, and reported more episodes of CAS and oral sex than MSM who did not attend CSVs [21].

Sexual Risk-Taking at PSEs

Among MSM seeking sex at PSEs, HIV status disclosure has occurred at a lower rate compared to MSM who do not report seeking sex in public environments [22], a finding perhaps related to the cultural norm of silence and the need to remain hidden when engaging in sex in a public setting [5]. An estimated 20% of MSM at PSEs reported CAS with non-primary male partners in the past year [9]. MSM who attend PSEs have more likely reported oral sex and mutual masturbation instead of anal sex [30], and qualitative research has shown that when CAS occurred, it was often the result of an inability to interpret nonverbal communication in situ [31], rather than a conscious decision to engage in risk. In the classic study of nonverbal communication, Weinberg and Williams [32] found that certain forms of eye contact specified particular sexual acts.

Though much attention has been paid to the role of venue in the sexual risk-taking of MSM, only one prior study has explicitly compared risk behaviors of MSM that prefer CSVs versus PSEs versus private locations [7], and that study only included HIV-positive, methamphetamine-using MSM. In the absence of consistent comparisons of sexual behaviors in private and without more inclusive samples of various MSM populations, it is unclear how choice of venue impacts sexual risk-taking in this population. Furthermore, no prior study has simultaneously

estimated the effects of identity and sociodemographic characteristics (e.g., race/ethnicity, sexual identity, HIV status, age, educational attainment, and housing status) on choice of venue, and the unique associations between sexual venue and both sexual risk-taking and drug use among MSM while controlling for sociodemographics. Given the research reviewed above, it was hypothesized that participant racial/ethnic and sexual identities, as well as their sociodemographic characteristics, would be associated with differential choice of sexual venue, and that choice of sexual venue would be associated with different risk behaviors during that sexual encounter even after controlling for sociodemographics.

Methods

Participants

Participants were 1298 unique MSM who attended a community-based health education/risk reduction HIV prevention program serving substance-using gay, bisexual, and heterosexually identified MSM in the Hollywood and West Hollywood area of Los Angeles County. Potential participants were eligible for program participation if they self-reported sex with a male and any substance use in the previous 12 months.

Procedures

Data were collected from March 1, 2005 through March 31, 2012. Potential participants were recruited to the HIV prevention program by teams of two-to-three indigenous outreach workers who canvassed areas frequented by substance-using MSM including sex clubs, bars, bathhouses, cruising areas, parks, coffee houses, inexpensive hotels, and specific street corners and alleys. Outreach activities were conducted by rotating teams between 11:00 a.m. and 1:00 a.m. Individuals who appeared to match the target population were approached by the team who then conducted encounters that lasted from 16 to 60 min. Although outreach activities were often conducted on the streets and in public venues, each outreach worker received a 6–8 week intensive training that included both didactic instruction and mock outreach on how to protect the privacy and confidentiality of the participant. Enrollment into the HIV prevention program occurred when an eligible MSM attended his first 60-min group or his first individual intervention session. All program materials were approved by the funding agency.

Assessments

Using a unique identifier to ensure anonymity, staff recorded participant responses on a paper behavioral risk assessment instrument that was subsequently scanned into an electronic database. The behavioral risk assessment was designed by the senior author, and recorded data on participants' sociodemographic characteristics, substance use in the past 30 days, number, type and gender of sexual partners in the past 30 days, as well as details about the participants' three most recent sexual encounters within the previous 12 months. Details of the three most recent sexual encounters included partner type, number of partners in the encounter, HIV status of partner(s), sexual activities during the encounter, substance use by participant and partner(s), and location of the sexual encounter (i.e., CSV, PSE, or a private location). All data were self-reported.

Variables

Sociodemographic characteristics investigated through analysis included sexual identity, race/ethnicity, education level, HIV serostatus, and housing stability. Sexual identity was dichotomized to indicate either a gay identity or a non-gay identity, the latter of which included participants who identified as either bisexual, or heterosexual but also reported same-sex sexual encounters. Race/ethnicity was dichotomized to white or non-white. Education level was dichotomized into less than high school, or high school graduate/GED equivalent or greater. HIV serostatus was dichotomized into known HIV-positive serostatus or HIV-negative/unknown serostatus. Housing stability was dichotomized into renting/owning one's home, or not.

Characteristics of the most recent sexual encounter included the location of the encounter, partner number and type(s) present, sexual risk behaviors, and substance use. The location of the most recent sexual encounter was a mutually-exclusive multinomial variable where participants could have indicated the encounter was at a CSV, PSE, or private location. Partner number was dichotomized to indicate either one partner, or two or more partners. Partner type(s) were dichotomized to indicate the presence or absence of that partner type at the most recent sexual encounter and include main, casual, anonymous, and exchange partners. Sexual risk behaviors were dichotomized to indicate whether the most recent sexual encounter included known serodiscordant partnering and/or CAS. Drug use during sex was dichotomized to capture the presence or absence of methamphetamine and/or marijuana use during the most recent sexual encounter.

Statistical Analysis

Data for this study were taken from each participant's first program intervention (i.e., either their first group or their first individual intervention session), prior to the delivery of any HIV prevention information and analyses focused on their most recent sexual encounter. Participant sociodemographic characteristics and self-reported behaviors were arrayed according to the location of that most recent encounter; counts and their corresponding percentages are provided for all variables, and Chi square analyses were used to test for significant associations between participant sociodemographics, behaviors, and location of most recent sexual encounter. Chi square analyses were optimal, given the sufficient sample size and limited operationalizations. During the sensitivity testing, the time at which each participant was sampled (operationalized first by year, and then in a second test operationalized as continuous days) was determined to have no significant effect on the outcomes either directly, or through suppression or augmentation of the estimated effects of the covariate. Given that it was statistically unrelated to the outcomes under study, time was not included as a covariate in the final models. All data related to participants' most recent sexual encounters were event level data, meaning participants were asked to recall their most recent sexual encounter and provide details about the sexual partner(s) present, the behaviors engaged in, the substance(s) used, and the location of the act. A total of 1436 MSM were provided an encounter; of those, 138 either did not have a sexual encounter in the past 12 months or declined to provide information on their most recent sexual encounter in the past 12 months and were not included in analyses, leaving an analytical sample of 1298 unique MSM. Only drugs that were used by at least 10% of the sample during the most recent sexual encounter (i.e., methamphetamine, marijuana) were included to maintain analytical power. Multivariate analysis was carried out using multinomial logistic (for sexual encounter location estimation) and binomial logistic (for distal behavioral outcomes estimation) in Stata 13SE (Statacorp). Multinomial logistic regression equations were optimal for sexual encounter location estimation due to the non-dichotomous, categorical nature of the data and the large number of cases; binomial logistic regressions were optimal for distal behavioral outcomes due to the dichotomous nature of the outcomes in question.

Multinomial logistic regression analyses estimated multivariate associations between participant sociodemographic characteristics and location of most recent sexual encounter, while binomial logistic regression analyses were used to test associations between sociodemographics and/or the location of the most recent sexual encounter with sexual partner types (e.g., multiple partners, main partners, casual partners, anonymous partners, exchange partners), engagement in various risk behaviors (i.e., serodiscordant partnering, condomless anal sex), and use of methamphetamine or marijuana during sex. In all cases, coefficients were derived using maximum likelihood estimation employing robust variance/covariance matrices. All significance tests are flagged beginning at $\alpha \leq 0.05$, two-tailed, while the non-significant p values between 0.05 and 0.10 are also noted for further discussion.

Results

Table 1 presents participant sociodemographic characteristics arrayed across the location of their most recent sexual encounter. Most sampled participants identified as gay (63%) and/or non-white (52.5%) and reported less than a high school education (79.2%), while a minority reported an HIV-positive serostatus (29.6%). Though most participants reported currently residing in a temporary living situation (e.g., single room occupancy; sleeping on a friend's couch; homeless; 87.0%), nearly two-thirds of participants reported that their most recent sexual encounter took place at a private location (n = 852; 65.6%); the remainder of the sample reported that their most recent sexual encounter took place at either a PSE (n = 299; 23.0%) or CSV (n = 147; 11.3%).

Contrasting across the reported location of the most recent sexual encounter, participants whose last sexual encounter occurred in a CSV were most likely to identify as gay (78.2%) while those whose most recent sexual encounter occurred at a PSE were overrepresented in the non-gay identified MSM category (48.2%). Self-identified white participants were overrepresented in the CSV category (54.4%), while minority MSM were more likely to report their most recent sexual encounter occurred at a PSE (58.9%). Lower educational attainment was significantly associated with recent sex at a CSV (93.2%), while HIV-negative/status unknown participants were overrepresented at PSEs (78.6%). Lastly, MSM who reported owning or renting their own house, apartment, or condo were overrepresented in the CSV group (46.9%) and underrepresented in the PSE group (2.7%).

Self-reported sexual partnering, sexual behaviors, and drug use during the participant's most recent sexual encounter were each contrasted across venue type in Table 2 and compared to participants in each venue who did not report each item. Participants whose most recent sexual encounter occurred in a CSV were significantly more likely to report multiple simultaneous partners (i.e., group sex; 19.1%) and/or sex with anonymous partners (82.3%) than participants whose most recent sexual

Table 1 Participant sociodemographic characteristics by location of most recent sexual encounter ($N = 1298$)

	Location			Total *n* (%)	Sig.[d]
	CSV[a] *n* (%)	PSE[b] *n* (%)	Private[c] *n* (%)		
Sexual identity					
Non-gay identified	32 (21.8)	144 (48.2)	304 (35.7)	480 (37.0)	$\chi^2_2 = 31.3$;
Gay identified	115 (78.2)	155 (51.8)	548 (64.3)	818 (63.0)	$p \leq 0.001$
Race					
Non-white	67 (45.6)	176 (58.9)	439 (51.5)	682 (52.5)	$\chi^2_2 = 8.0$;
White	80 (54.4)	123 (41.1)	413 (48.5)	616 (47.5)	$p = 0.018$
Educational attainment					
Less than high school	137 (93.2)	219 (73.2)	672 (78.9)	1028 (79.2)	$\chi^2_2 = 24.0$;
High school or greater	10 (6.8)	80 (26.8)	180 (21.1)	270 (20.8)	$p \leq 0.001$
HIV positive					
No/unknown	107 (72.8)	235 (78.6)	572 (67.1)	914 (70.4)	$\chi^2_2 = 14.4$;
Yes	40 (27.2)	64 (21.4)	280 (32.9)	384 (29.6)	$p \leq 0.001$
Housing status					
Temporary living situation	78 (53.1)	291 (97.3)	760 (89.2)	1129 (87.0)	$\chi^2_2 = 181.3$;
Owns/rents house/apt/condo	69 (46.9)	8 (2.7)	92 (10.8)	169 (13.0)	$p \leq 0.001$

[a] Commercial sex venue; $n = 147$

[b] Public sex environment; $n = 299$

[c] $n = 852$

[d] All tests of statistical significance are two-tailed

Table 2 Bivariate associations of participant sexual partnering, sexual risk behavior, and drug use during sex by location of most recent sexual encounter ($N = 1298$)

Encounter characteristics	Location				Sig.[d]
	CSV[a] *n* (%)	PSE[b] *n* (%)	Private[c] *n* (%)	Total *n* (%)	
Sexual partner(s)					
Multiple partners	28 (19.1)	23 (7.7)	98 (11.5)	149 (11.5)	$\chi^2_2 = 12.5$; $p = 0.002$
Main partner(s)	4 (2.7)	64 (21.4)	247 (29.0)	315 (24.3)	$\chi^2_2 = 48.8$; $p \leq 0.001$
Casual partner(s)	22 (15.0)	105 (35.1)	333 (39.1)	460 (35.4)	$\chi^2_2 = 31.9$; $p \leq 0.001$
Anonymous partner(s)	121 (82.3)	105 (35.1)	216 (25.4)	442 (35.1)	$\chi^2_2 = 181.3$; $p \leq 0.001$
Exchange partner(s)	5 (3.4)	30 (10.0)	98 (11.5)	133 (10.3)	$\chi^2_2 = 9.0$; $p = 0.011$
Sexual risk behavior(s)					
Serodiscordant partner(s)	125 (85.0)	181 (60.5)	443 (52.0)	749 (57.7)	$\chi^2_2 = 57.4$; $p \leq 0.001$
Condomless anal sex	30 (20.4)	92 (30.8)	314 (36.9)	436 (33.6)	$\chi^2_2 = 16.6$; $p \leq 0.001$
Drug use during sex					
Methamphetamine	72 (49.0)	94 (31.4)	349 (41.0)	515 (39.7)	$\chi^2_2 = 14.4$; $p \leq 0.001$
Marijuana	12 (8.2)	68 (22.7)	133 (15.6)	213 (16.4)	$\chi^2_2 = 16.4$; $p \leq 0.001$

[a] Commercial sex venue; $n = 147$

[b] Public sex environment; $n = 299$

[c] $n = 852$

[d] All tests of statistical significance are two-tailed; Chi square test for differences in proportion of participants reporting compared to participants not reporting (not shown) encounter characteristics, stratified by location

encounter occurred at a PSE or in a private location. Also, participants who reported recent sex at a CSV were significantly less likely to report sex with main (2.7%), casual (15.0%), or exchange partners (3.4%) than participants reporting recent sex at a PSE or in a private location. Furthermore, participants who reported sex at a CSV were

more likely to report having a sexual encounter with a HIV-serodiscordant partner (85.0%) than participants reporting sex at a PSE (60.5%) or in a private location (52.0%), but were also less likely to report CAS (receptive or insertive; 20.4%) than their PSE (30.8%) or private location (36.9%) counterparts. Methamphetamine use during sex was common for the group as a whole (39.7%), but was most likely to occur among participants reporting sex at a CSV (49.0%); marijuana use was less commonly observed in the full sample (16.4%), but was most common among those reporting sex at a PSE (22.7%).

Table 3 presents the partial estimated associations between participant sociodemographics and choice of sexual venue. Estimates revealed that, when compared to MSM reporting sex in a private location (the reference category), participants whose most recent sexual encounter took place in a CSV were estimated to be approximately 69% more likely to be gay identified [Relative risk ratio (RRR) = 1.69; 95% confidence interval (CI) 1.09–2.63], less likely to have not graduated from high school (RRR = 0.45; 95% CI 0.22–0.90), and were estimated to be over five times more likely to own/rent their own house, apartment, or condo (RRR = 6.12; 95% CI 4.13–9.07). In contrast, participants whose most recent sexual encounter occurred in a PSE were less likely to be gay identified (RRR = 0.71; 95% CI 0.54–0.94), less likely to self-report as white (RRR = 0.74; 95% CI 0.57–0.98), were less likely to be HIV positive (RRR = 0.59; 95% CI 0.43–0.82), and were estimated to be 76% less likely to own/rent their own house/apartment/condo (RRR = 0.24; 95% CI 0.11–0.51) than participants reporting sex at a private location.

Table 4 presents the partial estimated associations between participant sociodemographics, choice of sexual venue, and partner type(s) at the most recent sexual encounter. Analyses revealed that during their most recent sexual encounter, participants who reported sex with multiple partners were: (a) more likely to self-report a HIV-positive serostatus (Adjusted odds ratio [AOR] = 1.61; 95% CI 1.11–2.31), (b) less likely to report owning or renting their own house/apartment/condo (AOR 0.44; 95% CI 0.22–0.86), (c) more likely to report sex at a CSV (AOR 2.30; 95% CI 1.36–3.89), and (d) marginally less likely to report sex at a PSE (AOR 0.67; $p = 0.098$). Participants who reported that their last sexual encounter was with a main partner were: (a) more likely to identify as gay (AOR 1.35; 95% CI 1.01–1.80), (b) less likely to self-report a HIV-positive serostatus (AOR 0.63; 95% CI 0.46–0.86), (c) more likely to report owning or renting their own house/apartment/condo (AOR 1.59; 95% CI 1.05–2.42), (d) less likely to report sex at a CSV (AOR 0.05; 95% CI 0.02–0.15), and (e) less likely to report sex at a PSE (AOR 0.68; 95% CI 0.50–0.94).

Participants that reported that their last sexual encounter was with a casual partner were less likely to identify as white (AOR 0.77; 95% CI 0.61–0.97), and also less likely to report sex at a CSV (AOR 0.30; 95% CI 0.18–0.50). Participants who reported sex with an anonymous partner were: (a) more likely to identify as white (AOR 1.55; 95% CI 1.20–2.00), (b) more likely to self-report a HIV-positive serostatus (AOR 1.44; 95% CI 1.09–1.92), (c) more likely to report sex at a CSV (AOR 13.51; 95% CI 8.19–22.29), and (d) more likely to report sex at a PSE (AOR 1.81; 95% CI 1.35–2.43). Participants who reported that their most recent sexual encounter was with an exchange partner were less likely to identify as gay (AOR 0.58; 95% CI 0.39–0.85) or own or rent their own house/apartment/condo (AOR 0.26; 95% CI 0.09–0.76). Reporting

Table 3 Estimates of the partial associations between participant sociodemographics and location of most recent sexual encounter ($N = 1298$)

Outcome	Correlate(s)	RRR[a]	95% CI[b]	Sig.[c]
Commercial sex venue	Gay identified	1.69	1.09–2.63	*
	White	1.02	0.70–1.48	*ns*
	Less than HS education	0.45	0.22–0.90	*
	HIV positive	0.80	0.51–1.24	*ns*
	Own/rent house/apt/condo	6.12	4.13–9.07	***
Public sex environment	Gay identified	0.71	0.54–0.94	*
	White	0.74	0.57–0.98	*
	Less than HS education	1.13	0.83–1.55	*ns*
	HIV positive	0.59	0.43–0.82	**
	Own/rent house/apt/condo	0.24	0.11–0.51	***
Private location (ref cat)				

[a] *RRR* relative risk ratio

[b] 95% *CI* 95% confidence interval

[c] $*p \leq 0.05$; $**p \leq 0.01$; $***p \leq 0.001$; *ns* not significant ($p \leq 0.10$); *p* values of greater than 0.05 but less than 0.10 provided; all significance tests two-tailed

Table 4 Estimates of the partial associations between participant sociodemographics, location of most recent sexual encounter, and sexual partner types during most recent sexual encounter ($N = 1298$)

Outcome	Correlate(s)	AOR[a]	95% CI[b]	Sig.[c]
Multiple sex partners	Gay identified	1.20	0.80–1.77	*ns*
	White	1.15	0.81–1.62	*ns*
	Less than HS education	0.90	0.56–1.42	*ns*
	HIV positive	1.61	1.11–2.31	**
	Own/rent house/apt/condo	0.44	0.22–0.86	*
	Commercial sex venue	2.30	1.36–3.89	**
	Public sex environment	0.67	0.42–1.08	$p = 0.098$
Main partner(s)	Gay identified	1.35	1.01–1.80	*
	White	0.89	0.69–1.16	*ns*
	Less than HS education	0.87	0.62–1.23	*ns*
	HIV positive	0.63	0.46–0.86	**
	Own/rent house/apt/condo	1.59	1.05–2.42	*
	Commercial sex venue	0.05	0.02–0.15	***
	Public sex environment	0.68	0.50–0.94	*
Casual partner(s)	Gay identified	0.94	0.73–1.21	*ns*
	White	0.77	0.61–0.97	*
	Less than HS education	1.08	0.81–1.44	*ns*
	HIV positive	1.09	0.84–1.42	*ns*
	Own/rent house/apt/condo	0.86	0.57–1.28	*ns*
	Commercial sex venue	0.30	0.18–0.50	***
	Public sex environment	0.81	0.62–1.08	*ns*
Anonymous partner(s)	Gay identified	1.23	0.94–1.62	ns
	White	1.55	1.20–2.00	***
	Less than HS education	0.81	0.58–1.13	*ns*
	HIV positive	1.44	1.09–1.92	**
	Own/rent house/apt/condo	1.02	0.70–1.49	ns
	Commercial sex venue	13.51	8.19–22.29	***
	Public sex environment	1.81	1.35–2.43	***
Exchange partner(s)	Gay identified	0.58	0.39–0.85	**
	White	1.01	0.70–1.45	*ns*
	Less than HS education	1.45	0.97–2.16	$p = 0.071$
	HIV positive	1.08	0.71–1.65	*ns*
	Own/rent house/apt/condo	0.26	0.09–0.76	**
	Commercial sex venue	0.44	0.17–1.14	$p = 0.090$
	Public sex environment	0.74	0.47–1.16	*ns*

[a] AOR adjusted odds ratio

[b] 95% *CI* 95% confidence interval

[c] * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; *ns* not significant ($p \leq 0.10$); p values of greater than 0.05 but less than 0.10 provided; all significance tests two-tailed

less than a high school education was marginally associated with an increase in likelihood of reporting engagement in exchange sex (AOR 1.45; $p = 0.071$). The coefficient on sex with exchange partners at CSV was negative and trending towards significance (AOR 0.44; $p = 0.090$).

Table 5 presents the partial estimated associations between participant sociodemographics, choice of sexual venue, and sexual risk behaviors at the most recent sexual encounter. Estimates showed that participants who reported sex with serodiscordant partners were more likely to self-report a HIV-positive serostatus (AOR 1.42; 95% CI 1.09–1.84). Participants were more likely to report sex with HIV serodiscordant partner(s) during their most recent sexual encounter if that encounter occurred at either a CSV (AOR 5.80; 95% CI 3.39–9.91) or a PSE (AOR 1.46; 95% CI 1.11–1.92), rather than in a private location.

Table 5 Estimates of the partial associations between participant sociodemographics, location of most recent sexual encounter, and sexual risk behaviors during most recent sexual encounter ($N = 1298$)

Outcome	Correlate(s)	AOR[a]	95% CI[b]	Sig.[c]
Serodiscordant partner(s)	Gay identified	1.05	0.82–1.34	*ns*
	White	0.96	0.76–1.21	*ns*
	Less than HS education	1.05	0.79–1.40	*ns*
	HIV positive	1.42	1.09–1.84	**
	Own/rent house/apt/condo	0.84	0.58–1.23	*ns*
	Commercial sex venue	5.80	3.39–9.91	***
	Public sex environment	1.46	1.11–1.92	**
Condomless anal sex	Gay identified	2.22	1.69–2.91	***
	White	1.28	1.00–1.63	*
	Less than HS education	1.02	0.75–1.39	*ns*
	HIV positive	1.74	1.34–2.25	***
	Own/rent house/apt/condo	0.71	0.48–1.05	$p = 0.084$
	Commercial sex venue	0.44	0.28–0.69	***
	Public sex environment	0.88	0.65–1.18	*ns*

[a] *AOR* adjusted odds ratio

[b] 95% *CI* 95% confidence interval

[c] * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; *ns* not significant ($p \leq 0.10$); p values of greater than 0.05 but less than 0.10 provided; all significance tests two-tailed

Participants that reported engaging in CAS at their last sexual encounter were: (a) more likely to report a gay identity (AOR 2.22; 95% CI 1.69–2.91), (b) more likely to be white (AOR 1.28; 95% CI 1.00–1.63), (c) more likely to self-report a HIV-positive serostatus (AOR 1.74; 95% CI 1.34–2.25), and (d) may have been less likely to report owning or renting their own house/apartment/condo (AOR 0.71; $p = 0.084$). Participants were estimated to be less likely to report CAS during their last sexual encounter if that encounter occurred at a CSV (AOR 0.44; 95% CI = 0.28–0.69), relative to a private location.

Table 6 presents the partial estimated associations between participant sociodemographics, choice of sexual venue, and drug use at the most recent sexual encounter. Participants that reported using methamphetamine during their last sexual encounter were: (a) more likely to identify as gay (AOR 1.48; 95% CI 1.15–1.91), (b) more likely to identify as white (AOR 1.60; 95% CI 1.27–2.03), (c) more likely to self-report a HIV-positive serostatus (AOR 1.92; 95% CI 1.49–2.47), and (d) less likely to report owning or renting their own house/apartment/condo (AOR 0.38; 95% CI 0.25–0.58). Methamphetamine use during sex was more likely to occur at a CSV (AOR 1.95; 95% CI 1.32–2.87), and significantly less likely to occur at a PSE (AOR 0.71; 95% CI 0.53–0.95), relative to a private location. Participants who reported using marijuana during their last sexual encounter were: (a) less likely to identify as gay (AOR 0.47; 95% CI 0.34–0.65), (b) more likely to identify as white (AOR 1.53; 95% CI 1.13–2.07), and (c) less likely to self-report a HIV-positive serostatus (AOR 0.68; 95% CI 0.47–0.99). Marijuana use during sex, in contrast, was significantly less likely to be reported at a CSV (AOR 0.46; 95% CI 0.24–0.91), and significantly more likely to occur at a PSE (AOR 1.47; 95% CI 1.04–2.08), compared to sex in a private location.

Discussion

The hypothesized associations (i.e., sociodemographic characteristics were associated with access to/choice of sexual venue; venue choice was associated with exposure to sexual risk among MSM) have been understudied and, thus, the potential influence of socioenvironmental factors on sexual risk in this vulnerable population (i.e., substance-using MSM) is not yet well understood. Study participants exhibited high prevalence of HIV infection, elevated rates of housing instability, reduced rates of educational attainment, and high rates of engagement in sexual risk behaviors and illicit drug use. Such a heavily impacted, high-risk cross-section of gay, bisexual, and heterosexually identified MSM in Los Angeles County is not representative of MSM in general, or even MSM outside of dense urban communities, or non-substance-using MSM, but it may be a useful sample to elucidate patterns of sexual risk behavior occurring in venues visited by risk-taking urban MSM.

As the results demonstrated, patterns of sexual partnering in this sample differed significantly by the location of participants' most recent sexual encounter. "Known" sexual partners (i.e., main or casual partners) were more

Table 6 Estimates of the partial associations between participant sociodemographics, location of most recent sexual encounter, and drug use during most recent sexual encounter ($N = 1298$)

Outcome	Correlate(s)	AOR[a]	95% CI[b]	Sig.[c]
Methamphetamine	Gay identified	1.48	1.15–1.91	**
	White	1.60	1.27–2.03	***
	Less than HS education	1.08	0.81–1.44	*ns*
	HIV positive	1.92	1.49–2.47	***
	Own/rent house/apt/condo	0.38	0.25–0.58	***
	Commercial sex venue	1.95	1.32–2.87	***
	Public sex environment	0.71	0.53–0.95	*
Marijuana	Gay identified	0.47	0.34–0.65	***
	White	1.53	1.13–2.07	**
	Less than HS education	1.33	0.93–1.91	*ns*
	HIV positive	0.68	0.47–0.99	*
	Own/rent house/apt/condo	1.46	0.88–2.44	ns
	Commercial sex venue	0.46	0.24–0.91	*
	Public sex environment	1.47	1.04–2.08	*

[a] *AOR* adjusted odds ratio

[b] 95% *CI* 95% confidence interval

[c] * $p \leq 0.05$; ** $p \leq 0.01$; *** $p \leq 0.001$; *ns* not significant ($p \leq 0.10$); p values of greater than 0.05 but less than 0.10 provided; all significance tests two-tailed

frequently brought to a private location than a CSV or PSE, perhaps due to the familiarity and comfort with such individuals. Sex with "known" partners was rarely engaged in at CSVs or PSEs. Exchange partners were also more frequently brought to private locations for sex, perhaps due to the illegality of sex work, or perhaps because otherwise unhoused participants were exchanging sex for a place to stay (i.e., the "private location" was the house/apartment of their exchange sex partner). Sex with anonymous partners was significantly more likely to occur at a CSV or PSE than in a private location, marking anonymity as a primary characteristic of interest for understanding MSM sexual practices and patterns of risk-taking at CSVs and PSEs.

Anonymity was attended by increased levels of HIV risk. Previous research has attributed this to the decreased information one has available about their partner's serostatus or recent behaviors [33], as well as (in many cases) decreased freedom and ability to communicate about preferences or risks [31, 33]. For example, participants who reported that their most recent sexual encounter occurred at a CSV or a PSE were also more likely to have self-reported sex with a HIV serodiscordant partner when compared to sex in a private location. This may have been a function of decreased knowledge and communication with anonymous sexual partners [31, 33], rather than a conscious decision to seek out serodiscordant partners when attending CSVs or PSEs, however, some HIV-positive men have reported less self-perceived responsibility to discuss their HIV status in settings where anonymous sex seeking occurs [34].

Such increased engagement in sexual behavior with HIV serodiscordant partners implies that, when controlling for the indicated covariates, HIV transmission risk was higher in CSVs and PSEs than in private locations. Thus, if attendance at CSVs and/or PSEs was related to sociodemographic differences between MSM (e.g., socioeconomic status; identity), increased HIV prevalence commonly observed among subsamples of MSM (e.g., racial minority MSM, gay-identified MSM) may have been partly the result of disproportionate attendance at such venues of increased sexual risk-taking [35, 36].

Evidence presented here also suggests that participants reporting sex in CSVs and PSEs may have employed risk reduction strategies to mitigate the increased risk of engaging in sexual acts with anonymous partners. For example, CAS, universally regarded as the riskiest sexual act for the transmission of HIV, was most common in private locations and was significantly more likely to occur in private compared to a CSV or PSE. Coupled with the findings that the most frequent sexual partner type was known partners, and that most known partners were brought to private locations, participants may have used information about their partners' serostatus to selectively engage in CAS with reduced risk in private locations. During sexual encounters at PSE and CSV, where known partners were less frequently reported, condom use during anal sex was significantly more likely to occur. The cross-

sectional nature of the current study data does not allow for causal conclusions; however, results do show significantly higher rates of condom use at locations where sex with fewer known partners was occurring. These data would support the idea that the MSM who engaged in more frequent anonymous sex were aware of the risks and, therefore, took extra effort to mitigate those risks. However, future research should specifically inquire about serosorting and decision-making processes around condom use to test this hypothesis.

Methamphetamine and marijuana use during sex was widely reported throughout the sample, and demonstrated significant venue-specific patterns. Methamphetamine use was significantly more frequently used with sex at a CSV than in a private location, and was significantly less likely to be used with sex at PSEs. This coincides with prior evidence demonstrating high rates of stimulant use among MSM at bathhouses and other CSVs [37], and continues to demonstrate the ubiquity of methamphetamine use within the contexts of MSM sexual risk, especially on the West coast. Marijuana use, in contrast, was commonly reported with sex at PSEs and rare at CSVs. Each of these findings demonstrated how social environment influences specific drug use choices. For example, as CSVs have become associated with a self-reported gay identity, it is not surprising that methamphetamine use, a drug intimately tied to the gay identity [38], is more common in CSVs compared to PSEs, which have been shown to be more significantly frequented by non-gay identified MSM. Marijuana, which has a shorter-lasting effect than methamphetamine as well as a pungent and recognizable smell, which dissipates quickly outdoors [39], would linger in the closed setting of a bathhouse or sex club that prohibits drug use and might result in expulsion without refund. For these identity-related reasons and perhaps to avoid conflict with authorities or management, it is not surprising that drug use patterns during sex varied widely across the environment in which the sexual acts occurred. Future research should investigate, directly, the motivations between selective drug use associated with different sex venues.

The disproportionate representation of gay-identified MSM at CSVs (and non-gay identified MSM at PSEs) supports the assertion that a non-gay identity can be more easily maintained in a private or public location than at a venue specifically designed for sexual encounters with other males. Similar patterns were observed in terms of racial/ethnic identity, as non-white MSM were significantly more likely to have had their last sexual encounter at a PSE than at a CSV, or at a private location. This may further support prior observations that African American/Black and Latino/Hispanic MSM have been less likely to adopt gay culture than white MSM [40, 41], and reveal that in addition to reduced identification as gay, African American/Black and Latino/Hispanic MSM may be less likely to attend the social environments associated with gay culture and/or the gay community. However, this study did not directly assess an intentional relationship between identity and behavior so only associations are noted.

Reporting a gay sexual identity appeared to be both a protective factor and a risk factor, as gay-identified participants demonstrated both a decreased likelihood of reporting sex with an exchange partner during the most recent sexual encounter, but were also more likely to report attendance to CSVs, engagement in CAS and methamphetamine use during sex when compared to the non-gay identified participants. Racial/ethnic identity contributed similarly complex and nuanced outcomes, as white-identified participants were less likely to report engaging in sex with casual partners or at PSEs, but were more likely to report sex with anonymous partners, engagement in CAS, and methamphetamine/marijuana use during sex when compared to their non-white counterparts. As these results demonstrated, both sexual and racial/ethnic identities were associated with sexual risk-taking in at least two ways. First, issues of identity may have either facilitated or impeded attendance to various sexual venues (i.e., gay-identified MSM at CSVs, non-white MSM at PSEs), as the cultural norms, mores, and cues imbuing such environments signal to the attendees the appropriate patrons for and behaviors within each sexual venue. Insofar as CSVs cater explicitly to gay culture and sexual norms, and insofar as PSEs correspondingly are devoid of such cultural norms, gay-identified MSM will be more likely to attend CSVs. In contrast, non-white MSM (who were less likely to identify as gay in this sample) may have been less likely to attend CSVs and prefer PSEs instead, where gay cultural norms were explicitly avoided. In each case, MSM attending CSVs and PSEs were exposed to the drugs and risky sexual practices endemic to each sexual venue, diverging their expected levels of HIV risk, and demonstrating the complex and interactive ways in which identity influences health risks among MSM.

HIV-positive participants most frequently reported that their last sexual encounter occurred at a private location. Additionally, HIV-positive MSM may still perceive their status as stigmatizing (especially in sexual contexts), which could have precipitated a reduction in attendance to CSVs/PSEs [42]. A HIV-positive status was also associated with increased likelihood of reporting multiple simultaneous sex partners, decreased likelihood of sex with a main partner, increased likelihood of sex with an anonymous or serodiscordant partner, increased likelihood of engagement in CAS, and increased likelihood of methamphetamine use during sex. This constellation of findings suggests that HIV-positive MSM engage in significantly higher rates of

sexual risk behaviors than their HIV-negative counterparts, including sex with serodiscordant partners. However, these sexual practices occurred largely in a private location; it is beyond the scope of these data to determine if strategic positioning or other risk-reduction strategies, which do not involve condoms, were employed.

The associations of educational attainment in this sample were complex, and implied some interaction or suppression effects that were as-of-yet unspecified: at the bivariate level, having less than a high school education appeared to be associated with sex at a CSV, but after applying controls the findings indicated an association with sex at a private location. Neaigus et al. [6] found that participants recruited in parks were the least likely to have obtained a high school diploma, which runs somewhat counter to these findings which show, at the bivariate level, that participants with a high school diploma were proportionally more likely to engage in sex at a PSE. This evidence suggests that educational attainment may have complex or interactive effects when influencing the decision to seek sexual partners and engage in sexual acts at various venues.

Housing stability (i.e., owning or renting one's own house/apartment/condo) was most likely to be reported among those that also reported their most recent sexual encounter at a CSV, followed by those at a private location, and was extremely rare among those who had their last sexual encounter at a PSE. Increased socioeconomic status (of which housing stability is a common indicator) affords individuals the ability to pay for attendance at a CSV, while for many who experience housing instability, a PSE may be a convenient and cost-efficient location for meeting other men for sex.

Importantly, housing stability had numerous protective and beneficial associations with sexual risk-taking of the MSM sampled. After controlling for all covariates, housing stability was associated with reduced likelihood of reporting multiple simultaneous sexual partners, increased likelihood of sex with a main partner, decreased likelihood of engagement in sex with an exchange partner, decreased engagement in CAS, and decreased methamphetamine use during their most recent sexual encounter. This pattern of findings clearly demonstrated the protective impact of housing stability on the sexual health of MSM. The option to engage in sex in one's private location reduced engagement in sexual risk behaviors and further cements the assertion that sexual venue matters.

In this sample of substance-using MSM, sexual partner type, sexual risk-taking, and drug use during sex were all a function of the sexual venue in which the sexual encounter took place; the mores, customs, conventions, and stated or implied purpose of CSVs and PSEs may have affected the likelihood of engagement in sex with anonymous partners, in serodiscordant sex, and in drug use during sex, three primary areas of interest in the fight against HIV among MSM [43]. These findings highlight the important connections between sexual venue and risk behavior, and demonstrated the importance of socioenvironmental factors when assessing HIV risk among high-risk, urban MSM.

When studying sexual and drug-taking risks among MSM, it is important to specify how both individual factors (e.g., sexual/racial/ethnic identity, HIV-status) as well as structural factors (e.g., housing status) influence individuals' decisions of where to seek out and engage in sex. Such decisions can strongly influence the amount of risk an individual is likely to encounter during a sexual encounter, especially through the introduction of decreased information/increased uncertainty (i.e., anonymous partners, decreased communication) and drug use. Findings demonstrated that the social characteristics (i.e., identities, socioeconomic status) of some substance-using MSM were associated with their decision to seek sex in riskier environments. As such, their exposure to HIV risk was higher as a result of such factors directly, and also as a result of how such factors correlated with decisions of where to seek out and engage in sex.

Limitations

Although this study reported unique findings related to sexual risk-taking and venue location among a sample of high-risk, urban, substance-using MSM, the study had several limitations. The sample was non-random and was comprised of a convenience sample of substance-using MSM enrolled in a community-based health education/risk reduction program. The community-based program served MSM who self-reported sex with a male and any substance use in the previous 12 months, and many of whom also self-reported low income and/or were experiencing homelessness. Thus, the eligibility criteria not only increased the overall risk behavior of the sample, i.e., all were high-risk, but also greatly reduced the generalizability to other MSM populations, even substance-using MSM in other urban areas. Furthermore, data were self-reported and staff-administered during a private assessment session. Self-reported data collection may have led some participants to alter their responses to increase social desirability. Data were collected across 7 years, which may have allowed for some differences in participant responses due to historical factors (e.g., the proliferation of smartphones and gay geosocial networking applications); however, sensitivity tests of the data revealed no such time effects. Additionally, as the data was taken at a single moment in time (i.e., cross-sectional), it is impossible to infer causality or directionality, although correlations can be established. While the data

reveal associations between sociodemographics, location, and sexual risk behaviors, it is possible that participants had a particular sexual encounter in mind prior to selecting a sex venue, and then sought and carried out those sexual behaviors once at that location.

Conclusions

Results presented here demonstrated that among the MSM sampled, identity (i.e., racial/ethnic identity, sexual identity) and various sociodemographic statuses (i.e., educational attainment, HIV serostatus, housing) were associated with where participants engaged in sex, and also that the location of the sexual encounter was associated with both the type and amount of sexual risk. The social norms, mores, and patterns of behavior specific to the different sexual venues appear to attract (or perhaps cater to) certain subpopulations of MSM more than others (i.e., white, gay-identified MSM at CSVs; minority, non-gay identified MSM at PSEs), and these patterns of interaction appear also to correlate with the decision-making and risk-taking that occur within these venues. Additionally, socioeconomic realities (including lack of stable housing) may have forced some participants to engage in sex in public places, or exchange sex for shelter, making increased sexual risk an economic reality for many MSM. In contrast, housing stability was associated with decreased engagement in multiple risk behaviors including fewer reports of multi-partner sex, more frequent reports of sex with a main partner, and less exchange sex, CAS, or methamphetamine use at their most recent sexual encounter. These findings demonstrated the importance of private locations in the maintenance of MSM sexual health.

Augmenting environments of risk to provide onsite HIV testing services has been shown to reduce sexual risk-taking [44], demonstrating how changes in one's sexual venue can have important impacts on behavior. Interventions designed to intercede at the times and locations of greatest risk (i.e., that take place using mobile technology accessible anywhere, or interventions designed to occur within [or recruit from] high-risk sexual venues) may, thus, be particularly efficacious among MSM populations and should be patterned to appeal to MSM subpopulation(s) most likely to attend such venues (e.g., materials using gay-centric images and words for CSVs, more neutral imagery for PSEs). The results presented here suggest that HIV-positive, substance-using MSM who attend CSVs and PSEs should be targeted for behavioral interventions to reduce HIV transmission and other sexual risk behaviors. Although the HIV-positive participants were more likely to report sex at a private location, given that outreach opportunities are not readily available in private locations, outreach efforts must be focused on CSVs and PSEs. Brief HIV risk reduction interventions have been shown to reduce high-risk sexual behaviors [45], and these brief interventions, such as motivational interviewing [46], could be adapted for delivery in CSVs and PSEs. Future research on the sexual risk behavior(s) of MSM should closely attend to the sexual venue of the sexual encounter and the socio-environmental factors affecting risk-taking among this population, as well as the decision-making processes of venue selection and HIV risk mitigation. Finally, interventions designed to reduce sexual risk-taking among high-risk, urban MSM may look to assess housing stability and provide referrals or resources to improve housing outcomes wherever possible.

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Complaince with Ethical Standards

Conflict of interest The authors declare no conflicts of interest.

Ethical approval All procedures in the study involving human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable standards.

Informed consent As the data were collected during the implementation of a service program and not a research study, no written informed consent was required.

References

1. MacKellar DA, Gallagher KM, Finlayson T, Sanchez T, Lansky A, Sullivan PS. Surveillance of HIV risk and prevention behaviors of men who have sex with men—a national application of venue-based, time-space sampling. Public Health Rep. 2007;122(Suppl 1):39–47.
2. Downing MJ. Internet advertisements for public sexual encounters among men who have sex with men: are safe behaviors communicated? Am J Mens Health. 2011;5(5):386–94.
3. Keogh PG, Weatherburn P. Tales from the backroom: anonymous sex and HIV risk in London's commercial gay sex venues. Venereology. 2000;13(4):150–5.
4. Halkitis PN. Reframing HIV prevention for gay men in the United States. Am Psychol. 2010;65(8):752–63.
5. Frankis J, Flowers P. Men who have sex with men (MSM) in public sex environments (PSEs): a systematic review of quantitative literature. AIDS Care. 2005;17(3):273–88.
6. Neaigus A, Jenness SM, Hagan H, Murrill CS, Torian LV, Wendel T, et al. Estimating HIV incidence and the correlates of recent infection in venue-sampled men who have sex with men in New York City. AIDS Behav. 2012;16(3):516–24.
7. Semple SJ, Strathdee SA, Zians J, Patterson TL. Factors associated with sex in the context of methamphetamine use in different

sexual venues among HIV-positive men who have sex with men. BMC Public Health. 2010;10(1):178.
8. Humphreys L. Tearoom trade: impersonal sex in public places. Hawthorne: Aldine de Gruyter; 1975.
9. Binson D, Woods WJ, Pollack L, Paul J, Stall R, Catania JA. Differential HIV risk in bathhouses and public cruising areas. Am J Public Health. 2001;91(9):1482–6.
10. Grov C, Crow T. Attitudes about and HIV risk related to the "most common place" MSM meet their sex partners: comparing men from bathhouses, bars/clubs, and Craigslist. org. AIDS Educ Prev. 2012;24(2):102–16.
11. Newman PA, Lee S-J, Roungprakhon S, Tepjan S. Demographic and behavioral correlates of HIV risk among men and transgender women recruited from gay entertainment venues and community-based organizations in Thailand: implications for HIV prevention. Prev Sci. 2012;13(5):483–92.
12. Reback CJ, Larkins S. Maintaining a heterosexual identity: sexual meanings among a sample of heterosexually identified men who have sex with men. Arch Sex Behav. 2010;39(3):766–73.
13. Reisen CA, Zea MC, Bianchi FT, Poppen PJ. Characteristics of latino MSM who have sex in public settings. AIDS Care. 2011;23(4):456–9.
14. Reisner SL, Mimiaga MJ, Skeer M, Van Derwarker R, Gaucher MJ, O'Connor CA, et al. Differential HIV risk behavior among men who have sex with men seeking health-related mobile van services at diverse gay-specific venues. AIDS Behav. 2009;13(4):822–31.
15. Weatherburn P, Davies P, Hickson F, Hartley M. A class apart: the social stratification of HIV infection among homosexually active men. London: Trust TH; 1999.
16. Reece M, Dodge B. Exploring the physical, mental and social well-being of gay and bisexual men who cruise for sex on a college campus. J Homosex. 2004;46(1–2):111–36.
17. Stall R, Paul JP, Greenwood G, Pollack LM, Bein E, Crosby GM, et al. Alcohol use, drug use and alcohol-related problems among men who have sex with men: the urban men's health study. Addiction. 2001;96(11):1589–601.
18. Colfax G, Coates TJ, Husnik MMJ, Huang Y, Buchbinder S, Koblin B, et al. Longitudinal patterns of methamphetamine, popper (amyl nitrite), and cocaine use and high-risk sexual behavior among a cohort of San Francisco men who have sex with men. J Urban Health. 2005;82(1):i62–70.
19. Halkitis PN, Moeller RW, Siconolfi DE, Jerome RC, Rogers M, Schillinger J. Methamphetamine and poly-substance use among gym-attending men who have sex with men in New York City. Ann Behav Med. 2008;35(1):41–8.
20. Halkitis PN, Palamar JJ, Mukherjee PP. Poly-club-drug use among gay and bisexual men: a longitudinal analysis. Drug Alcohol Depend. 2007;89(2-3):153–60.
21. Parsons J, Halkitis PN. Sexual and drug-using practices of HIV-positive men who frequent public and commercial sex environments. AIDS Care. 2002;14(6):815–26.
22. Grov C, Hirshfield S, Remien RH, Humberstone M, Chiasson MA. Exploring the venue's role in risky sexual behavior among gay and bisexual men: an event-level analysis from a national online survey in the US. Arch Sex Behav. 2013;42(2):291–302.
23. Beyrer C, Baral SD, van Griensven F, Goodreau SM, Chariyalertsak S, Wirtz AL, et al. Global epidemiology of HIV infection in men who have sex with men. Lancet. 2012;380(9839):367–77.
24. Allman D, Xu K, Myers T, Aguinaldo J, Calzavara L, Maxwell J, et al. Delayed application of condoms with safer and unsafe sex: factors associated with HIV risk in a community sample of gay and bisexual men. AIDS Care. 2009;21(6):775–84.
25. Xia Q, Tholandi M, Osmond DH, Pollack LM, Zhou W, Ruiz JD, et al. The effect of venue sampling on estimates of HIV prevalence and sexual risk behaviors in men who have sex with men. Sex Transm Dis. 2006;33(9):545–50.
26. van Beneden CA, O'Brien K, Modesitt S, Yusem S, Rose A, Fleming D. Sexual behaviors in an urban bathhouse 15 years into the HIV epidemic. J Acquir Immune Defic Syndr. 2002;30(5):522–6.
27. Grov C, Parsons JT, Bimbi DS. Sexual risk behavior and venues for meeting sex partners: an intercept survey of gay and bisexual men in LA and NYC. AIDS Behav. 2007;11(6):915–26.
28. Ko N-Y, Lee H-C, Hung C-C, Tseng F-C, Chang J-L, Lee N-Y, et al. Trends of HIV and sexually transmitted infections, estimated HIV incidence, and risky sexual behaviors among gay bathhouse attendees in Taiwan: 2004–2008. AIDS Behav. 2011;15(2):292–7.
29. Thiede H, Jenkins RA, Carey JW, Hutcheson R, Thomas KK, Stall RD, et al. Determinants of recent HIV infection among Seattle-area men who have sex with men. Am J Public Health. 2009;99(Suppl 1):S157–64.
30. Schrimshaw EW, Siegel K, Downing MJ. Sexual risk behaviors with female and male partners met in different sexual venues among non-gay-identified, nondisclosing MSMW. Int J Sex Health. 2010;22(3):167–79.
31. Frankis JS, Flowers P. Public sexual cultures: a systematic review of qualitative research investigating men's sexual behaviors with men in public spaces. J Homosex. 2009;56(7):861–93.
32. Weinberg MS, Williams CJ. Gay baths and the social organization of impersonal sex. Soc Probl. 1975;23(2):124–36.
33. Elwood WN, Greene K, Carter KK. Gentlemen don't speak: communication norms and condom use in bathhouses. J Appl Commun Res. 2003;31(4):277–97.
34. Wolitski RJ, Bailey CJ, O'Leary A, Gómez CA, Parsons JT. Self-perceived responsibility of HIV-seropositive men who have sex with men for preventing HIV transmission. AIDS Behav. 2003;7(4):363–72.
35. Millett GA, Peterson JL, Flores SA, Hart TA, Jeffries WL, Wilson PA, et al. Comparisons of disparities and risks of HIV infection in black and other men who have sex with men in Canada, UK, and USA: a meta-analysis. Lancet. 2012;380(9839):341–8.
36. Reback CJ, Fletcher JB. Reductions in HIV prevalence rates among substance-using men who have sex with men in Los Angeles County, 2008–2011. AIDS Educ Prev. 2014;26(5):459–70.
37. Grov C. HIV risk and substance use in men who have sex with men surveyed in bathhouses, bars/clubs, and on Craigslist. org: venue of recruitment matters. AIDS Behav. 2012;16(4):807–17.
38. Reback CJ. The social construction of a gay drug. 1997. http://friendscommunitycenter.org/reports.html.
39. Johnson BD, Ream GL, Dunlap E, Sifaneck SJ. Civic norms and etiquettes regarding marijuana use in public settings in New York City. Subst Use Misuse. 2008;43(7):895–918.
40. Diaz RM. Latino gay men and HIV: culture, sexuality, and risk behavior. New York: Routledge; 2013.
41. Martinez DG, Sullivan SC. African American gay men and lesbians: examining the complexity of gay identity development. J Hum Behav Soc Environ. 1998;1(2–3):243–64.
42. Courtenay-Quirk C, Wolitski RJ, Parsons JT, Gomez CA. Is HIV/AIDS stigma dividing the gay community? perceptions of HIV-positive men who have sex with men. AIDS Educ Prev. 2006;18(1):56–67.
43. Centers for Disease Control and Prevention. HIV among gay and bisexual men. Atlanta: Centers for Disease Control and Prevention; 2015.
44. Pollack LM, Woods WJ, Blair J, Binson D. Presence of an HIV testing program lowers the prevalence of unprotected insertive anal intercourse inside a gay bathhouse among HIV-negative and

HIV-unknown patrons. J HIV AIDS Soc Serv. 2014;13(3):306–23.
45. Belcher L, Kalichman S, Topping M, Smith S, Emshoff J, Norris F, et al. A randomized trial of a brief HIV risk reduction counseling intervention for women. J Consult Clin Psychol. 1998;66(5):856–61.
46. Rollnick S, Miller WR. What is motivational interviewing? Behav Cogn Psychother. 1995;23(04):325–34.