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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 U.S

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Abstract

Venue-based characteristics (e.g., alcohol in bars, anonymous chat online, dark/quiet spaces in bathhouses) can impact how men who have sex with men (MSM) negotiate sex and HIV-associated risk behavior. We sought to determine the association between HIV-associated risk factors and the venues where MSM met their most recent new (first-time) male sex partner, using data from a 2004–2005 national online anonymous survey of MSM in the U.S ($n = 2865$). Most men (62%) met their partner through the Internet. Among those reporting anal sex during their last encounter ($n = 1,550$), half had not used a condom. In multivariate modeling, and among men reporting anal sex during their last encounter, venue where partner was met was not associated with unprotected anal intercourse (UAI). Nevertheless, venue was related to other factors that contextualized men's sexual encounters. For example, HIV status disclosure was lowest among men who met their most recent partner in a park, outdoors, or other public place and highest among men who met their most recent partner online. Alcohol use prior to/during last sexual encounter was highest among men who met their most recent partner in a bathhouse or a bar/club/party/event. These data suggest it is possible to reach men online who seek sex in many different venues, thus potentially broadening the impact of prevention messages delivered in virtual environments. Although not associated with UAI, venues are connected to social-behavioral facets of corresponding sexual encounters, and may be important arenas for differential HIV and STI education, treatment, and prevention.

Keywords

Sex venues; gay and bisexual men; Internet; HIV status disclosure; alcohol; condom use

INTRODUCTION

Despite some stabilization in HIV transmission in the U.S. overall, the Centers for Disease Control and Prevention (CDC) estimated that, in 2009, men who have sex with men (MSM) accounted for 57% of all new diagnoses of HIV infection, and 75% of all diagnosed HIV

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infections among males (CDC, 2010). Although effective behavioral interventions to reduce HIV-associated transmission risks (e.g., unprotected anal intercourse [UAI]) have been developed (Herbst et al., 2007; Johnson et al., 2008; Kalichman et al., 2001; Lyles et al., 2007; Morin et al., 2008), community health and service providers have a continued need to identify locations where transmission-risk behaviors occur (Navejas, Neaigus, Torian, & Murrill, 2011).

Venues where MSM gather are important locations where health and community service providers can engage MSM for education and prevention (Blank, Gallagher, Washburn, & Rogers, 2005; Mullens, Staunton, Debattista, Hamernik, & Gill, 2009; Raymond, Bingham, & McFarland, 2008; Reisner et al., 2009). Early in the HIV epidemic, these venues were predominately gay bars and bathhouses (Binson, Blea, Cotten, Kant, & Woods, 2005; de Wit, de Vroome, Sandfort, & van Griensven, 1997; Shilts, 1987). The growth of the Internet as a virtual space where MSM meet partners has presented new challenges for venue-based HIV prevention and education (Liau, Millett, & Marks, 2006; Moskowitz, Melton, & Owczarzak, 2009; Navejas et al., 2011).

The Internet has altered patterns of dating and sex-seeking among MSM (Benotsch, Kalichman, & Cage, 2002; Carballo-Diequez, Miner, Dolezal, Rosser, & Jacoby, 2006; Groves & Parsons, 2006; Menza, Kerani, Handsfield, & Golden, 2009). A meta-analysis found that 40% of MSM seek sex partners online (Liau et al., 2006), and a community-based survey of MSM found that half met partners online in the last 3 months (Groves, Parsons, & Bimbi, 2007). This increasing availability of online sex-seeking among MSM has spawned a variety of research inquiring as to whether the Internet “facilitates” HIV-risk offline (Chiasson et al., 2006; Menza et al., 2009; Mustanski, 2007). Meanwhile, the growth of online sex seeking among MSM presents a valuable arena for researchers and providers to reach a wide array of individuals, including those who might not be otherwise accessible (Mustanski, Lyons, & Garcia, 2011).

Although the Internet is a medium through which MSM meet sex partners, other venues are also common, such as bars, clubs, bathhouses, public cruising, gyms, and private sex parties (Groves, Golub, & Parsons, 2010; Groves et al., 2007; Pollock & Halkitis, 2009; Reisner et al., 2009). Venues can play a role in preventing the spread of HIV and sexually transmitted infections (STIs) (Bingham et al., 2008; Groves et al., 2007; Horvath, Bowen, & Williams, 2006; Mullens et al., 2009; Niccolai, Livingston, Richardson, & Jenkins, 2007; Raymond et al., 2008; Reisner et al., 2009; Wilson, Cook, McGaskey, Rowe, & Dennis, 2008). A venue-based study in Los Angeles found that MSM with unrecognized HIV infection were significantly more likely to frequent public sex environments, highlighting the need for increased location-based HIV testing and education (Raymond et al., 2008). Venue-based characteristics of where men meet partners create social norms that can significantly impact how MSM negotiate HIV-associated risk behavior (e.g., serostatus disclosure, condom use; Groves et al., 2010; Groves et al., 2007; Horvath et al., 2006; Pollock & Halkitis, 2009; Richters, 2007).

Though there has been research conducted *within* venues where men meet sex partners, with few exceptions, little research has assessed behaviors *across* venues. A study of rural MSM found that the odds of UAI increased significantly for men who reported finding sex partners through the Internet (chat rooms or Internet ads) and immediate sex venues (parks and bathhouses/sex cinemas) (Horvath et al., 2006). These findings were in contrast to men who did not report using these venues. In a sample recruited from gay pride events, gay bars/clubs, and private safer sex parties, men from safer sex parties were significantly less likely than others to report UAI (Reisner et al., 2009). Regarding online studies and venues, Chiasson et al. (2007) found no difference in rates of UAI between men who met new or

casual sex partners online and offline in their most recent sexual encounter. In contrast, Rosser et al. (2009) found that men reported almost twice the number of UAI partners met online than offline. These seemingly contrasting findings could be a result of differing analytic strategies (c.f., Mustanski, 2007)—Chiasson et al. analyzed a single event and Rosser et al. reported on aggregate behaviors across a three-month period. Neither study examined the specific offline venues where partners were met and such information could prove vital in the effective placement and targeting of educational and preventive programs. In an effort to address these gaps, the current online study assessed specific sexual behaviors that occurred with new (first-time) male sex partners by venue type.

METHOD

In 2004–2005, an anonymous Internet-based survey was conducted among gay and bisexually-identified men who reported on their most recent sexual encounter within the past year (Hirshfield et al., 2010). Participants were recruited from eight gay-oriented websites ranging from sexual networking, to chat, to news content, and included those catering to ethnic minority MSM. Most (80%) were recruited from sexual networking websites. Potential participants were presented with a banner ad reading “Be part of an important research study about sex. Take this 10–15 minute anonymous survey.” Those interested clicked on the banner ad, consented to participate, and took the anonymous survey for which they received no incentive. Links to HIV and STI education/prevention/treatment websites, drug and alcohol treatment and mental health hotlines appeared at the end of the survey. The Institutional Review Board of the study’s lead investigator approved all procedures and granted a waiver of the requirement to obtain documentation of consent.

In total, 19,253 individuals clicked on the banner and consented to participate. Of those, 7,924 cases were excluded due to missing demographic data and/or key outcome variables; 84% of these cases were men with no past-year sexual partners, who were consequently skipped out of many sections of the survey. Of the remaining 11,329 completed surveys, the following cases were excluded from analyses: those who took the survey twice ($n = 91$); respondents from outside the U.S. ($n = 1,764$); those missing age ($n = 193$); those with no lifetime male oral or anal sex partners ($n = 1,817$); those who had not had sex in the last year ($n = 164$); and those who had sex with females, transgender partners, or had missing partner data during their most recent encounter ($n = 35$). Finally, we excluded men who reported their most recent sexual encounter was with main ($n = 2,278$) or repeat partners ($n = 2,123$), as prior sexual history with partners may impact sexual decision making (e.g., condom use) in ways that are beyond the scope of the present study (Prestage, Jin, Grulich, de Wit, & Zablotska, 2011), which focuses on the venues where men meet *new* sex partners. Our final sample size included 2,865 men who reported oral and/or anal sex with a new (first-time) male partner in their last encounter.

Measures

Men completed questions on their race and ethnicity, age, HIV serostatus, sexual identity and relationship status (single vs. having a main partner/spouse). Participants indicated when they last tested for HIV, regardless of serostatus. Participants were asked a series of questions about the last time they had sex (oral and/or anal). These included how recent the last encounter was (response options shown in Table 2), the number of partners during their last sexual encounter (one, two, three or more), and the type of sex they had (oral, anal, receptive, insertive). Participants also indicated if they had used a condom during both anal and oral sex. Sexual behavior questions were adopted from previous surveys with gay and bisexual men (Chiasson et al., 2005; Chiasson et al., 2007) and worded for ease of comprehension (e.g., “Was his penis in your anus?” “Did he wear a condom?”). Participants also indicated if they had “discussed or disclosed” their HIV status (Yes, No), and if they

knew their partner's HIV status ("Yes – Positive," "Yes – Negative," "No – I assume Negative," "No – I assume Positive"). Men indicated if they drank alcohol, drank "enough to feel drunk," and/or used drugs prior to or during their last sexual encounter (listed in Table 2). The survey included the chemical as well as colloquial names of drugs (e.g., "Ketamine, K, Special K").

Participants indicated where they met their most recent sex partner from a pre-specified list of venues: bar/dance club, party/event, online (website, chat room, instant message, personals, etc.), newspaper/magazine ad, through a friend, school or work, bathhouse, gym, public restroom, park/outdoors/other public place, and "another way." Men who reported more than one partner during their most recent sexual encounter ($n = 453$) were able to indicate all the venues where they met partners. Most (78%) indicated having met all of the partners from their most recent sexual encounters through a single venue, and 100 met partners from multiple venues. As we were unable to determine which partners were met via specific venues, we excluded these 100 participants from analyses.

In light of infrequent response choices for some venue types and in an effort to facilitate statistical analyses, the aforementioned venue categories were collapsed into five. Due to the low frequency of reporting, the categories newspaper/magazine ads ($n = 3$), friends ($n = 18$), gym ($n = 34$), school/work ($n = 101$), and public restrooms ($n = 53$) were collapsed and added to the "another way" category ($n = 132$). We did not combine men who reported meeting their partners in "public restrooms" with "parks/ outdoors/ other public spaces" since men who met new partners in public restrooms were significantly less likely than men who met new partners in parks, outdoors, or other public spaces to report anal sex (27% v. 60%, $p < .001$), have multiple partners during their most recent encounter (9% v. 38%, $p < .001$), or be HIV-positive (8% v. 23%, $p < .05$). Thus, the five venues where participants met their most recent sex partner were (1) The Internet, (2) Bars/clubs or parties/events, (3) Parks, outdoors, or other public places, (4) Bathhouses, and (5) "All Other" venues.

Analytic Plan

Chi-square tests assessed differences in demographic and behavioral characteristics across venues where men met their most recent new (first-time) male partners. Multinomial logistic regression compared multiple venue types through a combination of binary logistic regressions. Thus, we compared meeting the most recent new partner in offline venues to online, and compared meeting in the various offline venues with each other. Independent variables for these models included demographic characteristics (age, race, HIV status, income, relationship status), substance use prior to or during the encounter (alcohol, methamphetamine), HIV status disclosure (knowing partner's, disclosing own), and UAI—these variables were selected based on conceptual relevance and significance in bivariate analyses. This approach allowed for direct comparisons in how various demographic and behavioral characteristics were associated uniquely with the venue where men met their most recent sex partner (Table 4).

Finally, similar to prior studies (Chiasson et al., 2007; Grov et al., 2007), we conducted a logistic regression to identify factors associated with UAI among men who had anal sex during their last sexual encounter (0 = no, 1 = yes). Demographic characteristics (age, race, HIV serostatus, income, relationship status), alcohol or methamphetamine use during the last encounter, the venue where the partner was met, and HIV status disclosure (knowing partner's, disclosing own) were included in the model.

Given the difficulty in interpreting findings related to the "All Other" venue category, these responses were not included in multivariate analyses.

RESULTS

In Table 1, a majority of men were non-Hispanic White and self-identified as gay. The median age was 38 (range 18 to 78). Among those ever tested for HIV ($n = 2,317$), 18% self-reported as HIV-positive. Most men were single and over half reported more than 100 lifetime male partners.

In Table 2, most men reported meeting a new partner online and meeting within the past seven days; 16% reported multiple new partners in their last encounter. Alcohol, nitrite inhalants (poppers), methamphetamine, and marijuana were the most common substances men reported using before or during their last sexual encounter. Overall, 54% ($n = 1,535$) of men did not know their most recent sex partner's HIV serostatus, and almost half of all men did not disclose their own HIV serostatus to their most recent new sex partner. Among men who knew their partner's HIV status, 5% of HIV-negative men and 35% of HIV-positive men indicated that their partner was serodiscordant (HIV status different from their own) ($\chi^2 (1) = 162.7, p < .001$). Among participants who did not know their partner's HIV status, 18% of HIV-negative men and 35% of HIV-positive men assumed their partner was serodiscordant ($\chi^2 (1) = 30.0, p < .001$). Nearly all men reported oral sex in the most recent encounter with a new male partner, while just over half reported anal sex in their last encounter. Among those who reported anal sex ($n = 1,550$), half did not use a condom.

Substance Use, Sexual Behavior, and HIV Status Disclosure

Men who met their most recent new sex partner at a bar/dance club, party/event, or bathhouse were the most likely to be single (see Table 3), while men who met a new partner at a park, outdoors, or other public space were the most likely to be HIV-positive. Substance use before or during sex varied significantly across venues in the most recent encounter. Alcohol and drinking to intoxication were most prevalent among men who met new partners at bars/dance clubs and parties/events. Methamphetamine use was most prevalent among men who met new partners at bathhouses, and use of poppers was reported most frequently by men who met new sex partners in parks, outdoors, or other public places. No racial or ethnic, or sexual orientation differences were found by venue.

Sexual behaviors varied significantly by venue among men reporting their most recent encounter with a new partner. Men who met new partners at parks, outdoors, or other public places were the most likely to report multiple-partner encounters and anal sex, and men who met partners online were the most likely to report single-partner encounters, and second most likely to report anal sex. Giving or receiving oral sex only (i.e., no anal sex) during the most recent sexual encounter with a new partner was significantly highest among men who met their partner through "All Other" venues. Though there were significant differences in reported rates of anal sex during the most recent sexual encounter across venues, there were no differences in rates of condom use among those who engaged in anal sex.

Serostatus disclosure and HIV testing patterns significantly differed by where men met their partner. Meeting online was associated with HIV status disclosure. In contrast, men who met their most recent new sex partner at parks, outdoors, or other public places were least likely to know their partner's HIV status. Among HIV-negative men, recent HIV testing (i.e., < 1 year) was highest among men who met their partner at bathhouses and online.

Multinomial Logistic Regression

Table 4 presents the results of a multinomial logistic regression, with venue of meeting the most recent new partner as the dependent variable. In Section A of Table 4, compared to men who met their partner online (referent group), men who met their partner in a (1) bar/club or party/event or (2) park, outdoors, or other public place were significantly younger

and were significantly less likely to have disclosed their HIV status or to know their most recent sex partner's HIV status. Men who met their most recent partner in a (1) bathhouse or (2) bar/club or party/event were more likely to drink prior to or during their sexual encounter compared to men who met their partner online. No difference was found for UAI by venue.

In Sections B and C of Table 4, we compared meeting in offline venues with each other. In Section B, compared to men who met their partner at a park, outdoors, or other public place, men who met their partner in a (1) bathhouse and (2) bar/club or party/event were significantly younger, were more likely to report alcohol use in the context of their sexual encounter, and were significantly more likely to have known the HIV status of their most recent sex partner. In Section C, compared to men who met their most recent sex partner in a bathhouse, men who met their most recent new sex partner at a bar/club or party/event were significantly more likely to report alcohol in the context of their sexual encounter. No difference was found for UAI by venue.

Logistic Regression Predicting Unprotected Anal Intercourse

Finally, we examined correlates of UAI among men who reported anal sex during their last sexual encounter ($n = 1,550$). In multivariate logistic analysis, men who reported UAI during their encounter were significantly more likely to be over age 40 (AOR = 1.53, 95% CI 1.15–2.02), HIV-positive (AOR = 5.11, 95% CI 3.54–7.37), have a main partner/spouse (AOR = 1.57, 95% CI 1.12–2.20), report alcohol (AOR = 1.48, 95% CI 1.06–2.08), and methamphetamine use before or during sex (AOR = 3.60, 95% CI 2.25–5.76). Men who reported UAI were significantly less likely to disclose their HIV status (AOR = 0.64, 95% CI 0.44–0.93). The venue where the most recent partner was met and knowing the most recent sex partner's HIV status were unrelated to UAI.

DISCUSSION

In this Internet sample of gay and bisexual men, we found that men had used a variety of venues to meet their most recent new male sex partner. These data suggest that it is possible to reach men online who seek sex in many different venues, thus potentially broadening the impact of prevention messages delivered in virtual environments. Further, it appears that venues were related to other factors that contextualized men's sexual encounters, such as serostatus disclosure, HIV testing patterns, alcohol use prior to or during the encounter, multiple sex partners in the encounter, and type of sexual behavior (c.f., Grov, in press; Pollock & Halkitis, 2009). Thus, venues are connected to distinctive risk behaviors and signal the need for differential HIV and STI education, treatment, and prevention. It is possible that men who meet men online, in bars/clubs, and in bathhouses are more likely to be exposed to prevention messages, which may explain their higher rates of recent testing (Navejas et al., 2011).

Unprotected Anal Intercourse

The prevalence of anal sex during the last sexual encounter with a new male sex partner differed significantly by the venue where the partner was met—men who met their partner at a park, outdoors or other public space, and online were the most likely to report anal sex. However, among those who reported anal sex, the prevalence of UAI did not significantly differ by the venue where a partner was met, consistent with prior research (Chiaasson et al., 2007). UAI was reported by nearly half of men who had anal sex in their most recent encounter. It is striking that this behavior occurred with such high frequency in the context of *new* sexual partnerships, especially since many men had not discussed their HIV status and had not been tested in the last year. These data highlight the need for increased HIV prevention efforts where men meet for sex, regardless of venue.

Serostatus Disclosure

In our study, UAI was inversely related to participants disclosing their own HIV status, in contrast to other research (Horvath, Oakes, & Rosser, 2008). Perhaps participants who took the initiative to disclose their own status were more conscientious about safer sex. It is also possible that the high rates of UAI reported in our sample are the result of men assuming that their partner was the same HIV status—more than half of the men had *assumed* this information. Zablotska et al. (2009) have called this behavior “seroguessing.”

Serostatus disclosure (asking and telling) differed significantly by venue. Similar to other studies (Carballo-Diequez et al., 2006; Chiasson et al., 2007; Grov, in press; Horvath et al., 2008), disclosure was highest among men who reported meeting their most recent sex partner online. Many men-for-men websites allow users to post their status in their profile and search for other users based on HIV status. In addition, the impersonal nature of online chatting may facilitate the ease by which sensitive topics can be discussed candidly. It warrants mentioning that researchers have noted high levels of inaccurate serostatus disclosure in online environments (Horvath et al., 2008; Ross, Rosser, Coleman, & Mazin, 2006). HIV status disclosure was also relatively high among men who met their most recent sex partner at bathhouses, which is in contrast to research suggesting that the dark and quiet nature of bathhouses hinders status disclosure (Elwood, Green, & Carter, 2003; Grov, in press; Richters, 2007).

Although many men in our sample believed their most recent sex partner had the same HIV status as their own, questions have been raised in the literature about the efficacy of serosorting for HIV prevention (Wilson et al., 2010). Golden et al. (2008) found 32% of new HIV infections occurred in men who serosorted. This type of information is an example of prevention education that should be disseminated in venues where men meet for sex.

Drug and Alcohol use in the Context of Sex

Drug and alcohol use prior to or during the most recent sexual encounter with a new male sex partner varied greatly by venue where a partner was met. It was highest among men who met partners at bars, clubs, parties or events, and at bathhouses. Alcohol can impair sexual decision making and may be a significant and unappreciated factor driving HIV risk among gay and bisexual men (Mansergh et al., 2008; Woolf & Maisto, 2009). It is interesting that alcohol use was associated with having met a partner in a bathhouse, as many bathhouses do not serve alcohol and have strict policies forbidding the consumption of alcohol on premises. This suggests that men are consuming alcohol prior to attending bathhouses (e.g., at a bar/club), or may be sneaking alcohol into bathhouses. Researches might consider utilizing more precise measures to capture timing of substance use *prior* to sexual encounters, and assessing separately for substance use *during* an encounter. These data highlight the continued need to develop alcohol-centered health education and prevention targeted for men who meet partners at bathhouses and bars, clubs, parties, or events.

Limitations

A strength of this analysis was the ability to connect specific sexual acts to the venue where a partner was met; however, our focus on a single event may not characterize men's behavior in general. Further, this Internet sample may not accurately characterize the behaviors of men who meet their partners exclusively through other venues or who do not have Internet access (and thus are not represented in these data). In addition, this sample was relatively young, mostly White, and restricted to men who reported that their most recent sexual encounter involved a new male partner. Thus, the characteristics of this sample do not reflect all men who have sex with men. Furthermore, many men indicated that their UAI was with a partner they *thought* was the same HIV status. As such, we lacked adequate

power to perform analyses of UAI with a partner *known* to be HIV serodiscordant as the outcome. Similarly, we lacked information on use of anti-retroviral drugs or viral load for both HIV-positive participants and HIV-positive sex partners. Use of anti-retroviral drugs and knowledge of viral load may impact sexual positioning (i.e., insertive v. receptive) and condom use (Elford, 2006; Prestage et al., 2009). Our multinomial logistic models accounted for a host of demographic factors, substance use, HIV status disclosure, and UAI; however, we recognize that other variables (measured and unmeasured) may also significantly interact in multivariable models.

Data for this study were collected in 2004–2005. Since then, “smart” phones with GPS-based applications like Grindr have emerged as popular mediums through which to locate potential sex partners (Lee, 2010). Future studies should assess men’s use of mobile technology for meeting sex partners. This is particularly relevant in light of how these technologies have created structural opportunities for men to search for partners in virtual and physical environments simultaneously (e.g., socializing at a bar while also seeking partners on a mobile phone).

Conclusions

Venues where men meet sex partners remain important locations for providing HIV prevention, education, and testing. Our research method suggests it is possible to reach men online who seek sex in many different venues, thus potentially broadening the impact of prevention messages delivered in virtual environments. In addition, findings highlight how specific efforts placed within venues might be best tailored for that venue’s population. For example, in this study, men who reported that their last sexual encounter took place in public “cruising” areas had high proportions of anal sex and UAI. A potential method for delivering HIV prevention messages in this setting is through the deployment of popular opinion peer leaders, which has demonstrated success in prior studies (Kelly et al., 1991; Sivaram et al., 2007; Young et al., 2010; Zhang et al., 2009). In this setting, the popular opinion peer leaders could address risks associated with having simultaneous multiple sex partners, and encourage HIV serostatus disclosure and condom use.

Our findings highlight the need for tailored, venue-based HIV prevention that addresses the social contexts in which men meet partners. Such approaches should incorporate facets related to the individual as well as the space(s) where he meets his partners. These can include individual-level factors such as age or sexual identity, and group-level aspects such as norms/attitudes around substance use or unprotected sex. In addition, these may include structural-level aspects inherent to the space, such as lighting (dark v. bright), sound (loud v. quiet), and the availability of condoms, lubricant, and safer sex information. Structural-level aspects inherent to the space may set the stage for the types of behaviors and language, or photos and text (in the case of virtual environments) that are encouraged/discouraged—either via norms or explicit rules (Grov et al., 2007; Humphreys, 1975; Pollock & Halkitis, 2009).

Finally, in light of the emerging role that mobile and GPS-based technologies have been playing in the melding of spaces, future research should consider the intersections between the two. Not only can MSM use mobile technology across venues to meet sex partners, but these technologies also can be used to locate the nearest place for free condoms and HIV/STI testing.

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Table 1

Characteristics of men who had oral and/or anal sex with new (first-time) male partners in their most recent sexual encounter. United States online sample, 2004–2005, $n = 2865$ *

	<i>n</i>	%
Race and ethnicity, $n = 2819$		
White, non-Hispanic	2268	80
Black, non-Hispanic	117	4
Hispanic/Latino	244	9
Asian/Pacific Islander	72	3
Mixed/Other	118	4
Sexual orientation, $n = 2865$		
Gay	2532	88
Bisexual	333	12
Age, in categories, $n = 2865$		
18–29	629	22
30–39	973	34
40–49	938	33
50+	325	11
HIV serostatus, $n = 2619$		
Negative	1899	73
Positive	418	16
Untested	302	11
HIV testing patterns (non-HIV positive men only, $n = 2187$)		
Within last year	1396	64
More than a year ago	516	23
Never tested	275	13
Relationship status, $n = 2852$		
Single	2278	80
Has a main partner / spouse	574	20
Number of lifetime male sex partners (oral and/or anal sex), $n = 2865$		
1–10	235	8
11–50	610	21
51–100	503	18
101–500	868	30
501+	649	23
Number of male sex partners, last year (oral and/or anal sex), $n = 2812$		
1–10 partners	1134	40
11–50 partners	1232	44
> 50 partners	446	16

* Some variables have missing data

Table 2

Behavioral characteristics of men who had oral and/or anal sex with new (first-time) male partners in their most recent sexual encounter. United States online sample, 2004–2005, $n = 2865^*$

	<i>n</i>	%
Recency of last sexual encounter, $n = 2865$		
Within the past 7 days	1876	65
> 1 week, but < 1 month	518	18
1 to 3 months	342	12
> 3 months, but < 1 year	129	5
Number of partners during last sexual encounter, $n = 2865$		
One	2412	84
Two	275	10
Three or more	178	6
Venue where met last sex partner, $n = 2865^a$		
Online (website, chat room, instant message, personals, etc.)	1766	63
Bar, dance club, party, or event	361	13
Park, outdoors or other public place	202	7
Bathhouse	95	3
All other	341	12
Substance use immediately before or during last encounter		
Alcohol	724	25
Drank enough alcohol to feel drunk	285	10
Poppers	319	11
Methamphetamine	262	9
Marijuana	184	6
GHB	81	3
Cocaine	47	2
Ecstasy	45	2
Ketamine	23	1
Sexual behavior during last encounter		
Oral sex (gave or received)	2725	95
Anal sex (insertive or receptive)	1550	54
Condom use (among those reporting anal sex, $n = 1550$) ^b		
Yes	771	50
No	757	50
HIV seroconcordance and serodiscordance with last sexual partner, $n = 2286^c$		
Yes, he was HIV serodiscordant	116	5
Yes, he was HIV seroconcordant	965	42
No, assumed partner was HIV serodiscordant	282	13
No, assumed partner was HIV seroconcordant	923	40
Participant disclosed his HIV serostatus to his partner, $n = 2786$		
Yes	1444	52

	<i>n</i>	%
No	1342	48

*
Some variables have missing data

^a
n = 100, excluded, met partner(s) in more than one venue

^b
n = 22, did not report on condom use during last anal sex encounter

^c
n = 302, excluded, participant did not know his own HIV status, thus concordance/discordance could not be determined

Table 3

Demographic and behavioral characteristics of men who had oral and/or anal sex with new (first-time) male partners in their most recent sexual encounter by venue type. United States online sample, 2004–2005, $n = 2865^*$, Bivariate analyses

	Venue where participant met their most recent sex partner(s)					χ^2	df	p
	Bar, dance club, party, or event ($n = 361$)	Bathroom ($n = 104$)	Internet ($n = 1788$)	Park, outdoors or other public place ($n = 202$)	All other ($n = 341$)			
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)			
Race in two categories								
Non-White ($n = 531$)	70 (20)	14 (15)	347 (20)	32 (16)	68 (20)	3.17	4	0.53
White ($n = 2190$)	284 (80)	81 (85)	1393 (80)	166 (84)	266 (80)			
Participant's HIV serostatus								
HIV-negative or status unknown ($n = 2134$)	297 (89)	73 (87)	1355 (84)	140 (77)	269 (87)	15.4	4	<.01
HIV-positive ($n = 398$)	37 (11)	11 (13)	267 (16)	42 (23)	41 (13)			
Sexual orientation								
Gay ($n = 2448$)	327 (91)	87 (92)	1555 (88)	187 (93)	292 (86)	8.84	4	0.07
Bisexual ($n = 317$)	34 (9)	8 (8)	211 (12)	15 (7)	49 (14)			
Substance use before or during last encounter								
Alcohol ($n = 690$)	243 (67)	43 (45)	299 (17)	43 (21)	62 (18)	437	4	<.001
Drank enough alcohol to feel drunk ($n = 270$)	119 (33)	23 (24)	89 (5)	18 (9)	21 (6)	292	4	<.001
Methamphetamine ($n = 245$)	21 (6)	11 (12)	181 (10)	20 (10)	12 (4)	21.5	4	<.001
Marijuana ($n = 169$) ^a	26 (7)	2 (2)	117 (7)	11 (5)	13 (4)	7.51	4	0.11
Poppers ($n = 299$)	34 (9)	7 (7)	196 (11)	41 (20)	21 (6)	28.5	4	<.001
Participant's relationship status								
Single ($n = 2203$)	321 (89)	84 (88)	1410 (80)	151 (75)	237 (70)	47.4	4	<.001
Main partner/spouse ($n = 549$)	39 (11)	11 (12)	347 (20)	51 (25)	101 (30)			
Number of sex partners during last sexual encounter								
One ($n = 2399$)	298 (83)	84 (88)	1598 (90)	125 (62)	294 (86)	136	4	<.001
Two or more ($n = 366$)	63 (17)	11 (12)	168 (10)	77 (38)	47 (14)			
Sexual behavior during last sexual encounter								
Oral sex only (no anal sex, $n = 1218$)	155 (43)	47 (49)	710 (40)	77 (38)	229 (67)	88.7	4	<.001
Oral ejaculation, gave or received ($n = 332$)	28 (18)	7 (15)	186 (26)	18 (23)	83 (36)	20.5	4	<.001

	Venue where participant met their most recent sex partner(s)					χ^2	df	p
	Bar, dance club, party, or event (<i>n</i> = 361)	Bathhouse (<i>n</i> = 104)	Internet (<i>n</i> = 1788)	Park, outdoors or other public place (<i>n</i> = 202)	All other (<i>n</i> = 341)			
	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)			
Any anal sex (<i>n</i> = 1478)	195 (55)	47 (49)	1022 (58)	121 (60)	93 (28)	110	4	< .001
Protected anal sex (<i>n</i> = 740)	114 (59)	26 (58)	501 (50)	54 (45)	45 (50)	7.80	4	0.10
Unprotected anal sex (<i>n</i> = 718)	80 (41)	19 (42)	509 (50)	65 (55)	45 (50)			
Participant disclosed his HIV serostatus to his last sexual partner								
No (<i>n</i> = 1293)	211 (60)	39 (41)	643 (37)	154 (81)	246 (75)	279	4	< .001
Yes (<i>n</i> = 1396)	140 (40)	55 (59)	1082 (63)	36 (19)	83 (25)			
Nested among those reporting anal sex (<i>n</i> = 1419)								
No (<i>n</i> = 604)	100 (53)	17 (38)	338 (34)	92 (82)	57 (66)	130	4	< .001
Yes (<i>n</i> = 815)	87 (47)	28 (62)	651 (66)	20 (18)	29 (34)			
Knowing last sexual partner's HIV serostatus								
No (<i>n</i> = 1476)	222 (62)	46 (48)	779 (45)	170 (88)	259 (78)	239	4	< .001
Yes (<i>n</i> = 1247)	134 (38)	49 (52)	967 (55)	23 (12)	74 (22)			
Nested among those reporting anal sex (<i>n</i> = 1435)								
No (<i>n</i> = 700)	109 (57)	20 (44)	412 (41)	97 (86)	62 (70)	107	4	< .001
Yes (<i>n</i> = 735)	82 (43)	25 (56)	586 (59)	16 (14)	26 (30)			
Participant's HIV testing patterns (non-HIV positive men only, <i>n</i> = 2121)								
Tested within last year (<i>n</i> = 1344)	196 (66)	50 (68)	863 (64)	85 (62)	150 (56)	16.9	8	0.03
Tested more than a year ago (<i>n</i> = 506)	73 (25)	18 (25)	315 (23)	33 (24)	67 (25)			
Never tested (<i>n</i> = 271)	26 (9)	5 (7)	170 (13)	20 (14)	50 (19)			

*Some variables have missing data

^aFisher's exact tests for 2 × 2 differences also not significant

Table 4

Multinomial logistic regression contrasting characteristics associated with the venues where men met their most recent new (first time) male sex partner. Data are limited to men reporting anal sex during their encounter. United States online sample, 2004–2005, valid $n = 1120^a$

SECTION A. Referent outcome group: Met partner online					
	B	AOR	Met partner in a bar/club, or party/event	Met partner in a park, outdoors, or other public place	AOR
Demographic factors					
Age 40+	-0.72 **	0.49	-0.45		0.49 *
White, non-Hispanic	0.31		0.26		-0.05
HIV-positive	-0.03		-0.33		0.30
Income over \$40K	0.03		0.02		0.13
Has a main partner/spouse	-0.47		-0.57		0.11
Substance use					
Alcohol prior to/during sex	2.56 ***	12.99	1.52 ***	4.57	0.50
Methamphetamine prior to/during sex	-0.33		0.70		-0.01
HIV status disclosure					
Participant told his HIV status to partner(s)	-0.67 *	0.51	-0.45		-1.36 ***
Participant knew HIV status of partner(s)	-0.21 *	0.61	0.01		-1.41 ***
Unprotected Anal Sex					
Yes	-0.50		-0.58		-0.23
SECTION B. Referent outcome group: Met partner in a bar/club, or party/event					
	B	AOR	Met partner in a bar/club, or party/event	Met partner in a park, outdoors, or other public place	AOR
Demographic factors					
Age 40+	-1.20 ***	0.30	-0.94 *		0.39
White, non-Hispanic	0.37		0.31		
HIV-positive	-0.34		-0.63		
Income over \$40K	-0.10		-0.11		
Has a main partner/spouse	-0.58		-0.68		
Substance use					
Alcohol prior to/during sex	2.06 ***	7.81	1.01 **		2.75

SECTION B. Referent outcome group: Met partner in a park, outdoors, or other public place				Met partner in a bar/club, or party/event				Met partner in a bathhouse			
				B				B			
				AOR				AOR			
Methamphetamine prior to/during sex				-0.32				0.71			
HIV status disclosure											
Participant told his HIV status to partner(s)				0.69				0.91			
Participant knew HIV status of partner(s)				1.19 **				3.30			
Unprotected Anal Sex								1.42 *			
Yes				-0.27				-0.35			

SECTION C. Referent outcome group: Met partner in Bathhouse				Met partner in a bar/club, or party/event			
				B			
				AOR			
Demographic factors							
Age 40+				-0.27			
White, non-Hispanic				0.05			
HIV-positive				0.30			
Income over \$40K				0.01			
Has a main partner/spouse				0.10			
Substance use							
Alcohol prior to/during sex				1.04 **			
Methamphetamine prior to/during sex				-1.03			
HIV status disclosure							
Participant told his HIV status to partner(s)				-0.22			
Participant knew HIV status of partner(s)				-0.23			
Unprotected Anal Sex							
Yes				0.08			

^d sample *n* = 1550 men reporting anal sex during their last sexual encounter with a new (first time) male partner All independent variables are coded “1 = yes” and “0 = no”

AOR: Adjusted Odds Ratio,

* *p* < .05,

** *p* < .01,

*** *p* < .001