Sex, HIV, and the Internet:

Exploring variations in the online profiles of MSM in the United States

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Abstract

With the increasing pervasiveness of social media, the Internet has become an important venue for dating and sex. Not only does it introduce a unique array of opportunities and risks for men who have sex with men (MSM), it presents a valuable means through which to study sexual behavior. In this study, we collected data on what men report in their online profiles on two dating/hookup websites to explore possible geographical differences in social and cultural norms surrounding sex and HIV (N=5,588). Across the fifteen selected cities, significant differences emerged in reported HIV serostatus and stated preference for safer sex (condom use). These patterns suggest important contextual and demographic variations and point to a need for targeted, population-specific interventions. With a better understanding of the local factors driving risky sexual behavior, health communication messages and tailored online interventions could be developed to address the needs and concerns of specific groups.

Keywords: MSM, the Internet, HIV, Barebacking, Social norms

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Over the past decade, the practice of seeking sex partners via the Internet has become commonplace, particularly among men who have sex with men (MSM) (Bolding, Davis, Hart, Sherr, & Elford, 2007; McFarlane, Bull, & Rietmeijer, 2000; Rosser, West, & Weinmeyer, 2008). Through the proliferation of social networking websites, chat rooms, and mobile apps, the Internet is changing how MSM meet and interact (Berry, Raymond, Kellogg, & McFarland, 2008; Rosser et al., 2008). From the privacy and comfort of one's home, it is now possible to search for potential partners based on their characteristics, interests, and preferences—HIV disclosure and sexual negotiation can be as simple as a few key strokes or the click of a mouse. While the anonymity and relative ease of online interactions may facilitate disclosure and open communication (Carballo-Diéguez, Miner, Dolezal, Rosser, & Jacoby, 2006; Grov, Agyemang, Ventuneac, & Breslow, 2013), data indicate that using the Internet to find sex partners is associated with having more sex partners, more unprotected anal intercourse (UAI) (Benotsch, Kalichman, & Cage, 2002; Berry et al., 2008; Liau, Millett, & Marks, 2006; Rosser, Miner, et al., 2009) and a higher prevalence of STIs (Evans, Wiggins, Mercer, Bolding, & Elford, 2007; Lau, Kim, Lau, & Tsui, 2003; McFarlane et al., 2000).

In particular, the Internet has been implicated in facilitating the high-risk practice of bareback sex (Berg, 2009; Halkitis, Parsons, & Wilton, 2003; Wolitski, 2005). Although there is some ambiguity in the definition with respect to the importance of intention, HIV serostatus, and partner type, "barebacking" refers generally to engaging in anal sex without a condom (Berg, 2008, 2009; Carballo-Diéguez et al., 2009; Halkitis, Wilton, & Galatowitsch, 2005; Wolitski, 2005). For men who want to bareback, the Internet provides convenient access to networks of men willing to engage in condomless sex; there are even websites designed specifically for barebackers (Berg, 2008). Although the majority of men who engage in barebacking seem to select partners who they know or assume to be seroconcordant (Grov et al., 2007), some men express indifference about the status of their partners (Dawson, Ross, Henry, &

Freeman, 2005). Furthermore, from a meta-analysis of online sex seeking among MSM, Liau et al. (2006) report that, for both HIV-positive and HIV-negative men, UAI with serodiscordant partners or men of unknown serostatus was more likely among those who used the Internet to find sex partners.

To understand the emergence of these risky sexual practices, many studies have examined individual level factors (Halkitis et al., 2003; Mansergh et al., 2002), but there is a need for more research on macro-level factors such as the social and cultural environment (Berg, 2009). Applications of social theories such as the Theory of Planned Behavior and the Theory of Reasoned Action to the study of sexual behaviors have highlighted the importance of community perceptions of HIV and attitudes towards risk reduction behaviors (McKechnie, Bavinton, & Zablotska, 2012). Studies show that where subjective norms (perceptions of what is expected) and descriptive norms (perceptions of what others do or accept) are supportive of safer sex, men are more likely to use condoms and the prevalence of UAI is lower (Jones et al., 2008; Kelly et al., 2013; McKechnie et al., 2012; Peterson & Bakeman, 2006). Conversely, perceiving that one's friends engage in UAI has been associated with identifying as a "barebacker" (Parsons & Bimbi, 2007), and men who bareback report lower recognition of community norms promoting safe sex (Berg, 2008). Perceptions of the local prevalence and severity of HIV/AIDS may also influence personal norms (beliefs about what is appropriate or necessary) regarding sexual behavior; individuals who perceive the burden of HIV in their community to be high have been found to be more likely to use condoms, seek HIV testing, and have fewer partners (Kalichman & Cain, 2005; Kalichman, Simbayi, Cain, & Jooste, 2008; Shi, Kanouse, Baldwin, & Kim, 2012).

Particularly in light of increasing rates of HIV among MSM (Centers for Disease Control and Prevention, 2012; Jaffe, Valdiserri, & De Cock, 2007), it is important to understand patterns in online sexual networking and condom use. Measures of the prevalence of barebacking across the United States have generated highly variable estimates (Berg, 2009; Rosser, Oakes, et al., 2009), pointing to possible regional variation in norms and attitudes towards HIV, condoms, and UAI. To explore the role of these contextual factors, this study examines patterns in what men report on their online profiles across 15

United States cities. As the local prevalence of HIV/AIDS may shape how individuals perceive the risk of infection (Kalichman et al., 2008), selected cities were stratified by HIV prevalence tertile.

Method

Data for this passive, observational study were collected from two popular online sexual networking websites for MSM. To obtain a general sample of men, we avoided sites catering to specific populations or interest groups (i.e. sites explicitly for Black MSM or for barebackers), instead opting for prominent sites with a broad user base nationwide. From a list of commonly used sites generated by experts in the field, these two sites were selected on account of having publically available data on the fields of interest. Using 2010 HIV surveillance data (Centers for Disease Control and Prevention, 2012), the 118 Mean Statistical Areas (MSAs) and Divisions with complete data were ranked by HIV prevalence rate and divided into tertiles. Eight MSAs or Divisions were randomly selected in each tertile, from which five were chosen based on programmatic significance and to ensure at least 100 miles between each location to reduce potential spillover between samples. To match the level of geographical reporting on the websites, the largest city in each of the fifteen MSAs or Divisions was taken to represent the area. The selected cities are: Dayton, OH, Des Moines, IA, Providence, RI, and Salt Lake City, UT from the low prevalence tertile; Louisville, KY, Oklahoma City, OK, Portland, OR, Santa Ana, CA, and St. Louis, MO from the medium prevalence tertile; and Detroit, MI, Houston, TX, New Orleans, LA, Philadelphia, PA, and San Francisco, CA from the high prevalence tertile.

Upon creating a profile on the websites used for this study, users are presented with fields in which to enter demographic information, physical characteristics, HIV serostatus, and the types of sexual behavior they are seeking, including options for “safer only” or “anything goes.” Additional information can be typed into a text box. During the months of July and August 2012, study staff members systematically collected data on age, race, preferred sexual position, reported HIV serostatus, and safer

sex preferences from the profiles of 400 men in each city. To minimize recruitment biases by day and time of data collection, staff members enumerated 200 randomly selected profiles from each website out of the sample of men who had been online in the past two weeks. Profiles that advertised escort services or couples looking for a third partner were skipped, restricting the sample to individual men seeking non-exchange sex. No identifying information was recorded and study staff had no interaction with users. This study was reviewed and approved by the Emory University Institutional Review Board.

Of the 6,000 profiles screened, 282 were excluded from analysis due to missing data on race and 117 were excluded due to missing or improbable data on age. An additional 13 who selected "don't know" in the field for HIV status were dropped, as this category did not have sufficient responses for analysis. From the remaining 5,588 profiles, age was categorized into four groups, defined as 18 to 24, 25 to 34, 35 to 44, and 45 to 64 – the small number of men aged 55 to 64 (288, 5.2%) precluded analysis of the oldest cohort as a separate category. The websites elicited information on race/ethnicity in a single field, such that the data did not allow for analysis of race and ethnicity separately. Responses were categorized as White, Black, Hispanic, or "other," the latter of which encompasses the small numbers of men reporting a race/ethnicity other than these primary three. For preferred position, the responses "jerking off," "oral," or "foreplay" were combined to create a single category for non-penetrative sex, and the positions "top/versatile" or "bottom/versatile" were combined with "versatile." An additional variable was constructed to represent safer sex preferences: Men who indicated they were looking for safer sex only were categorized as such, and those who selected "anything goes" or who stated a preference for barebacking or "raw" sex in the narrative section of their profiles were categorized as seeking bareback sex. Users who didn't specify a preference for either safer only or bareback sex were classified as "unlisted."

Data were analyzed using chi-square and Fisher's exact tests to look for variations in age, reported race, preferred position, HIV status, and safer sex preferences across the 15 cities and by HIV prevalence tertile. A second stage of analysis used logistic regression to further examine patterns in HIV

disclosure and safer sex preferences. For HIV status, a new variable was created to distinguish those who disclosed—either as seropositive or seronegative—from those who did not list a status. Safer sex preferences were also dichotomized to set those seeking safer sex only apart from those who either stated a preference for bareback sex or left the field open. The distributions of these two indicators were analyzed by age, race/ethnicity, and preferred position in each city and HIV prevalence tertile. Due to low cell counts for non-penetrative sex, regression analyses by preferred position were restricted to the 5,397 men who expressed an interest in penetrative sex or who did not indicate a preference. Significance at the $\alpha=0.05$ level was used for significance testing, and all analyses were conducted using STATA version 12.0 (StataCorp LP, 2011).

Results

Of the 5,588 men included in the final sample, the mean reported age was 36 (range 18-64; IQR 27-45) and the modal age group was 25 to 34 (Table 1). The majority (70.1%, n=3,916) was White, with 10% (n=578) identifying as Black, 9% (n=504) Hispanic, and 11% (n=590) classified as "other." Where prompted to specify preferred sexual position, only 3% (n=191) indicated a preference for non-penetrative sex and 53% (n=2,945) presented themselves as versatile. In the field for HIV serostatus, 83% (n=4,647) of men reported a negative status, 4% (n=205) reported that they were positive, and 13% (n=736) did not list their status. Less than 5% of the sample (4.6%, n=254) stated that they were looking for bareback sex, while over half of the men (55.8%, 3,118) explicitly indicated a preference for safer sex only.

These characteristics were all found to vary significantly across the 15 cities (Table 1). The age profiles of men in each city were distinct ($p<0.001$), however no significant differences were found when grouping cities by HIV prevalence tertile ($p=0.405$). A substantial amount of variation was observed in racial/ethnic diversity both by city ($p<0.001$) and tertile of HIV prevalence ($p<0.001$). Overall, racial/ethnic diversity increased with HIV prevalence; 79% (n=1,461) of men from cities in the low

prevalence tertile identified as White, compared to 69% (n=1,288) in medium prevalence cities 62% (n=1,167) in high prevalence cities. The distribution of preferred sexual positions also varied by city ($p<0.001$) and by HIV prevalence ($p=0.028$). The most variety was seen in the percent of men looking to be exclusive tops, which ranged from 14% (n=247) in low prevalence cities to 18% (n=330) in cities in the top prevalence tertile.

Although the majority of men in all cities reported a negative HIV serostatus, the relative proportions differed by city ($p<0.001$) and HIV prevalence ($p<0.001$). In high prevalence cities, significantly fewer men reported that they were seronegative, balanced by both a higher proportion disclosing a positive serostatus and more men not listing a status. Reported preferences for safer sex showed geographical variation as well, with the proportion explicitly stating a preference for safer sex ranging from 52% to 63% and the proportion indicating an interest in barebacking ranging from 3% to 8% ($p=0.024$). However, no differences in safer sex preferences were found across the three HIV prevalence tertiles ($p=0.543$), and the variation by city became insignificant after dichotomizing the variable to differentiate those who prefer safer sex only from all others ($p=0.223$).

From the second stage of analysis, the percent of men who disclosed an HIV serostatus (positive or negative) was found to vary by age group and preferred sexual position, but not by race/ethnicity in the sample as a whole (Table 2). Between 80% and 90% of men in all age groups reported an HIV serostatus, yet men aged 35-44 had 30% lower odds of disclosure relative to men aged 18 to 24 (OR=0.7, 95% CI: 0.6, 0.9), as did men aged 45 to 64 (OR=0.7, 95% CI: 0.6, 0.9). By sexual position, reporting an HIV status was most common among men looking to be exclusive tops; the odds of disclosure were 50% lower among men who presented themselves as exclusive bottoms (OR=0.5, 95% CI: 0.3, 0.6), 50% lower among those who indicated that they were versatile (OR=0.5, 95% CI: 0.4, 0.7), and 80% lower among men who did not list their preferred sexual position (OR=0.2, 95% CI: 0.2, 0.3).

Stratifying the sample by city and HIV prevalence tertile, these patterns of HIV disclosure were not observed across the board (Table 2). The proportion of men listing an HIV status varied by age in

three cities – one low prevalence and two medium prevalence. After aggregating the data by HIV prevalence tertile, age was significantly associated with HIV disclosure only among men in the top prevalence tertile (p=0.020). Preferred position was associated with disclosure in thirteen cities and in all three tertiles (p<0.001). In all cases except in Philadelphia, disclosure was highest among exclusive tops and lowest among users who did not indicate a preferred position. Although not a significant factor in the overall sample, race was associated with reporting an HIV status in two low prevalence cities and in the low prevalence tertile (p=0.004), wherein men in the "other" minority category had the lowest levels of disclosure.

As shown in Table 3, the percent of men looking explicitly for safer sex was associated with age, race, and preferred sexual position. Younger men (18 to 24 years) were the most likely to indicate a preference for safer sex; the relative odds of requesting safer sex were 20% lower among men aged 25 to 34 (OR: 0.8, 95% CI: 0.7, 1.0), 30% lower among those aged 35 to 44 (OR: 0.7, 95% CI: 0.6, 0.8), and 20% lower among those aged 45 to 60 (OR: 0.8, 95% CI: 0.7, 0.9). Compared to White users, Black users had 1.9 times the odds of expressing an interest in safer sex only (OR: 1.9, 95% CI: 1.6, 2.3), Hispanic men had 1.6 times the odds (OR: 1.6, 95% CI: 1.4, 2.0), and men of other races/ethnicities had 1.3 times the odds (OR: 1.3, 95% CI: 1.1, 1.5). No difference was observed in safer sex preferences between men who presented themselves as exclusive tops and those who presented themselves as exclusive bottoms or as versatile. Those who did not indicate a preferred position, however, had 50% lower odds of reporting an interest in safer sex only, relative to exclusive tops (OR: 0.5, 95% CI: 0.4, 0.6

Similar patterns in safer sex preferences by age were observed in three cities (Table 3) and among men in medium (p=0.007) and high HIV prevalence tertiles (p=0.011). In the medium prevalence tertile, the odds stating a preference for safer sex only were 30% lower among men 25 to 34 (OR: 0.7, 95% CI: 0.6, 1.0), 40% lower among men 35 to 44 (OR 0.6, 95% CI: 0.5, 0.8), and 30% lower among men 45 to 64 (OR: 0.7, 95% CI: 0.5, 1.0), relative to men in the youngest cohort. For men from cities in the high prevalence tertile, these odds were 40% lower among those aged 35 to 44 (OR 0.6, 95% CI: 0.5, 0.8) and

30% lower among those 44 to 65 (OR 0.7, 95% CI: 0.5, 0.9). Race was found to be an influential factor in seven cities and across all three prevalence tertiles ($p<0.005$). In low prevalence areas, only Hispanic men had higher odds of reporting a preference for safer sex relative to White men (OR: 2.2, 95% CI: 1.4, 3.4). In the medium and high prevalence tertiles, the odds were higher among Black, Hispanic, and other minority men relative to White men: Black men had twice the odds (OR: 2.0, 95% CI: 1.4, 2.8 in medium and OR: 2.2, 95% CI: 1.7, 2.9 in high prevalence areas), Hispanic men had 1.7 times the odds in medium (OR: 1.7, 95% CI: 1.3, 2.3) and 1.4 times the odds in high prevalence areas (OR: 1.4, 95% CI: 1.0, 1.9), and other minorities had 1.5 times the odds in medium (OR: 1.5, 95% CI: 1.1, 2.0), and 1.3 times the odds in high prevalence tertiles (OR: 1.3, 95% CI: 1.0, 1.8). Preferred position was associated with safer sex preferences in all but three cities and in low, medium, and high prevalence tertiles ($p<0.001$). The main difference driving these associations is that men who did not list a preferred position had significantly lower odds of listing a preference for safer sex only relative to men who were exclusive tops (low prevalence OR: 0.4, 95% CI: 0.3, 0.6, medium prevalence OR: 0.5, 95% CI: 0.4, 0.7, and high prevalence OR: 0.5, 95% CI: 0.4, 0.7).

Discussion

The results of this study indicate that patterns of HIV disclosure and safer sex preferences among MSM seeking sex partners online are highly contextual, varying by city and by local HIV prevalence. Not only did the percent reporting an HIV status and the proportion stating a preference for safer versus bareback sex show geographical variation, the associations between these indicators and age, race and sexual position were dependent on the city and HIV prevalence rate. Together, these variations suggest that the local social and cultural environment is an important factor shaping online sex-seeking preferences and behaviors. Although our study did not collect data on constructs relating to social norms, the observed patterns and associations point to ways in which they might be operating, with implications for the design of interventions and areas for future research.

From a sociological perspective, decisions such as whether to disclose one's HIV serostatus to potential partners are influenced by subjective, descriptive, and personal norms (Gorbach et al., 2004; Harawa, Williams, Ramamurthi, & Bingham, 2006; Sheon & Crosby, 2004). If MSM perceive that men in their community expect potential partners to be aware of and disclose their HIV status prior to sex, they may be more inclined to indicate their own status on their profiles. Observed patterns of disclosure among peers – in both online and offline networks — are also likely to influence this decision, as are men's personal values and beliefs regarding the importance of being upfront about HIV serostatus (Gorbach et al., 2004; Harawa et al., 2006). Notably, although the anonymity afforded by the Internet may facilitate disclosure (Carballo-Diéguez et al., 2006; Grov, Hirshfield, Remien, Humberstone, & Chiasson, 2013), it can also facilitate misreporting and misrepresentation; a 2008 survey of Internet-using MSM found that nearly three quarters of men who had never been tested and one quarter of seropositive men reported being seronegative in one or more of their profiles (Horvath, Oakes, & Rosser, 2008). Nonetheless, the variations in the proportion of men listing a serostatus, whether accurate or not, imply differences in the degree to which men perceive HIV status to be an important and normative element of partner selection and sexual negotiation.

Similarly, the safer sex preferences that men choose to state in their online profiles are indicative of local norms and attitudes. In this sample, less than 5% of men indicated that they were looking for bareback sex. Other studies have reported that between 10% and 46% of MSM engage in barebacking (Berg, 2008; Grov et al., 2007; Halkitis et al., 2003; Mansergh et al., 2002), however, these estimates are based on survey data, wherein men were directly asked about their past behaviors. In contrast, the estimate in the present study is based on what men report in their profiles; it is possible that some men who did not list a safer sex preference would consider engaging in bareback sex if the situation arose. Consequently, this analysis focused on the percentage that explicitly indicated that they were looking for safer sex only. The intention to use condoms has been found to be associated with perceptions of whether condom use is expected or accepted among peers (Kelly et al., 2013), observations of how other MSM

negotiate condom use, (Kok, Hospers, Harterink, & De Zwart, 2007) and personal norms regarding whether condoms are appropriate or necessary (Franssens, Hospers, & Kok, 2009). The results of this study suggest that these normative factors vary significantly across the United States.

Contributing to these patterns, another contextual variable that could influence HIV disclosure and safer sex intentions is the local level of awareness about HIV prevalence and risk. Studies have indicated that perceiving a higher local prevalence of HIV is correlated with higher perceived personal risk of infection, lower sexual risk behaviors, and more HIV testing (Kalichman & Cain, 2005; Kalichman et al., 2008; Shi et al., 2012). However, perceptions of local prevalence may not accurately reflect actual prevalence (Kalichman et al., 2008; Lau et al., 2012). From this analysis, the proportion of men looking for safer sex only did not vary by local HIV prevalence, while the proportion listing an HIV status was *lower* in areas where HIV is more prevalent. These results could signify that men do not have an accurate perception of local HIV prevalence or that this perception does not influence online serostatus disclosure or reported condom use intentions. Alternatively, the observed pattern in the percent reporting an HIV status could be shaped by stigma; in high prevalence areas, there are likely to be more HIV-positive men who may choose not to list their HIV status for fear of rejection or discrimination.

Stratifying the data by age, race, and preferred sexual position revealed additional variations suggestive of differential norms, attitudes, and perceptions. That men aged 18 to 24 were more likely than other age groups to report their HIV status and to indicate a preference for safer sex suggests that different norms operate among younger cohorts of MSM. Prior research has posited that fatigue with safer sex campaigns may be a contributing factor to the rise of practices such as barebacking (Halkitis et al., 2003; Wolitski, 2005), which may be more likely to affect older age groups. However, if this phenomenon was driving age differences, one might expect a linear association with age. More research is needed to explore the underlying social and cognitive factors, as a better understanding of these age differences could inform the design of campaigns and services to more effectively reach men at different stages in life.

The observed racial/ethnic variations in disclosure and safer sex preferences are particularly important in light of the disproportionate rate of HIV among Black and Hispanic MSM in the United States (Centers for Disease Control and Prevention, 2012; Prejean et al., 2011). At all levels of analysis, Black and Hispanic men were equally likely to disclose their HIV status on their profiles relative to non-Hispanic White men. With regard to safer sex preferences, Black and Hispanic men had significantly greater odds of explicitly stating a preference for safer sex in medium and high prevalence areas and in the sample overall. Hispanic men were also more likely to indicate an intention to practice safer sex in the low prevalence tertile. These data suggest the influence of norms and attitudes that support safer sex among Black and Hispanic racial groups in particular. Consistent with these findings, other studies have concluded that, despite having higher rates of HIV transmission, Black and Hispanic MSM are equally if not more likely than their White counterparts to engage in protective behaviors, including getting tested for HIV and using condoms during anal sex (Feldman, 2010; Harawa et al., 2004; Koblin et al., 2006; Millett et al., 2012). The present study adds to the existing literature, indicating that the same patterns hold for online sex-seeking.

Lastly, the associations with preferred sexual position point to differences in norms and expectations depending on the sexual role or activity. Research on sexual positioning has described the influence of gender and sexuality scripts in determining the position that MSM assume. Although these roles and scripts can be fluid and situation-dependent, men who identify as tops are often considered to be more masculine and heteronormative than are bottoms (Johns, Pingel, Eisenberg, Santana, & Bauermeister, 2012; Moskowitz & Hart, 2011). Another relevant dimension that may influence norms and expectations is the relative risk of transmission from different sexual positions or acts: non-penetrative acts confer the least risk of HIV infection, followed by insertive anal intercourse, with receptive anal intercourse carrying the highest risk (Vitinghoff et al., 1999). Thus, for instance, the higher levels of HIV disclosure among men identifying as tops may be driven by perceptions of what receptive partners expect. The group least likely to list an HIV status or indicate a preference for safer sex only was

those who did not list a preferred position. However, this trend may simply reflect a preference for a less descriptive public profile, as many men who did not specify a position tended to leave other fields blank as well.

Because this study was based on data derived from what men reported on their profiles, we were unable to measure relevant social constructs or perceptions. To further explore the patterns observed, future research should conduct interviews or surveys that assess perceived social norms and attitudes, perceived stigma, perceived prevalence, and perceived risk of HIV. Additionally, collecting data on variables such as relationship status, socioeconomic status, and substance use would allow for the construction of statistical models to unpack the associations and identify the factors driving them. As a preliminary descriptive study, we did not have sufficient data to control for confounding and examine adjusted associations.

Furthermore, this analysis drew from a convenience sample of men with active profiles on two online sex-seeking websites, limiting the generalizability of the findings. MSM who meet sex partners online have been shown to be distinct form those who do not use the Internet to seek sex partners, both in demographic characteristics and risk profiles (Lau et al., 2012; Liau et al., 2006). However, this study was not intended to be representative of the general population of MSM. Rather, it was intended to better understand patterns of intentions and behaviors among MSM who use the Internet to find sex partners. Admittedly, the data are subject to social desirability biases and misreporting of characteristics such as HIV status or age. Yet, while these biases impair the ability to estimate actual seropositivity or intended condom use, the aim of this study was to explore the image and preferences that men present on their profiles. Truthful or not, these professed characteristics are indicative of what men perceive to be acceptable, desirable, and expected.

Conclusion

With the increasing popularity of the Internet as a venue to meet and connect with sex partners, patterns in online HIV disclosure and condom use intentions have potentially profound implications for HIV transmission. Data from this study indicate that the percent of MSM listing their HIV serostatus and reporting an interest in safer sex only on their profiles vary with the local context. Differences in profile content may reflect local norms and expected behaviors, and it is possible that such self-reporting is influenced by knowledge or perception of the localized HIV prevalence. Further research is needed to identify the types of social and cultural norms and the pathways through which they operate to influence sexual networking and behaviors. The results point to the need for more refined targeting in prevention messaging and programmatic efforts that are reflective of localized patterns of behavior and norms.

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Table 1. Descriptive statistics: age, race, preferred sex position, HIV serostatus, and condom use preferences by city (N=5,588)

	Low HIV Prevalence Cities					Medium HIV Prevalence Cities		
	Dayton	Des Moines	Providence	Salt Lake City	Syracuse	Louisville	Oklahoma City	Portland
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)
Age								
18-24	15.0 (55)	18.1 (67)	16.0 (58)	15.7 (59)	19.7 (72)	14.9 (55)	20.1 (76)	12.4 (47)
25-34	22.3 (82)	31.4 (116)	35.5 (129)	37.5 (141)	23.0 (84)	25.2 (93)	25.7 (97)	32.8 (124)
35-44	30.7 (113)	25.7 (95)	26.7 (97)	29.8 (112)	27.1 (99)	29.5 (109)	28.0 (106)	26.7 (101)
45-64	32.1 (118)	24.9 (92)	21.8 (79)	17.0 (64)	30.1 (110)	30.4 (112)	26.2 (99)	28.0 (106)
Race/ethnicity								
White	81.5 (300)	81.9 (303)	69.4 (252)	78.7 (296)	84.9 (310)	78.6 (290)	74.1 (280)	81.5 (308)
Black	12.0 (44)	7.0 (26)	5.5 (20)	1.9 (7)	4.1 (15)	12.2 (45)	9.0 (34)	2.1 (8)
Hispanic	1.9 (7)	4.6 (17)	10.5 (38)	9.8 (37)	2.5 (9)	1.6 (6)	6.1 (23)	4.8 (18)
Other	4.6 (17)	6.5 (24)	14.6 (53)	9.6 (36)	8.5 (31)	7.6 (28)	10.9 (41)	11.6 (44)
Preferred position								
JO/Oral/foreplay	7.1 (26)	1.9 (7)	3.0 (11)	2.4 (9)	3.6 (9)	5.2 (19)	3.2 (12)	1.9 (7)
Top only	10.6 (39)	16.0 (59)	13.5 (49)	14.6 (55)	12.3 (45)	14.1 (52)	15.1 (57)	17.2 (65)
Bottom only	12.5 (46)	9.2 (34)	10.2 (37)	6.9 (26)	14.3 (52)	12.5 (46)	11.6 (44)	11.1 (42)
Versatile	50.5 (186)	57.3 (212)	52.9 (192)	59.0 (222)	51.0 (186)	50.1 (185)	48.2 (182)	55.0 (208)
Unlisted	19.3 (71)	15.7 (58)	20.4 (74)	17.0 (64)	18.9 (69)	18.2 (67)	22.0 (83)	14.8 (56)
Reported HIV status								
Negative	86.4 (318)	86.0 (318)	86.5 (314)	86.7 (326)	85.6 (327)	79.4 (293)	79.9 (302)	79.4 (300)
Positive	3.5 (13)	2.4 (9)	2.2 (8)	1.9 (7)	1.4 (5)	3.8 (14)	1.6 (6)	7.4 (28)
Unlisted	10.1 (37)	11.6 (43)	11.3 (41)	11.4 (43)	9.0 (33)	16.8 (62)	18.5 (70)	13.2 (50)
Safer Sex Preference								
Safer only	53.8 (198)	55.1 (204)	59.8 (217)	52.1 (196)	56.4 (206)	53.7 (198)	51.9 (196)	55.0 (208)
Bareback	4.4 (16)	7.8 (29)	3.6 (13)	4.5 (17)	2.7 (10)	6.0 (22)	5.8 (22)	5.0 (19)
Unlisted	41.9 (154)	37.0 (137)	36.6 (133)	43.4 (163)	40.8 (149)	40.4 (149)	42.3 (160)	40.0 (151)
Total (N)	368	370	363	376	365	369	378	378

Table 1, continued

	Med. HIV Prevalence Cities		High HIV Prevalence Cities					Total	
	Santa Ana	St Louis	Detroit	Houston	New Orleans	Philadelphia	San Francisco		
	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	% (n)	p-value†
Age									**<0.001****
18-24	25.5 (94)	13.4 (51)	21.0 (79)	14.3 (54)	11.7 (43)	22.8 (86)	7.0 (26)	16.5 (922)	
25-34	31.7 (117)	26.0 (99)	33.0 (124)	33.6 (127)	32.7 (120)	30.2 (114)	27.2 (101)	29.9 (1,668)	
35-44	23.3 (86)	31.0 (118)	24.2 (91)	24.6 (93)	25.6 (94)	28.0 (106)	35.0 (130)	27.7 (1,550)	
45-64	19.5 (72)	29.7 (113)	21.8 (82)	27.5 (104)	30.0 (110)	19.1 (72)	30.9 (115)	25.9 (1,448)	
Race/ethnicity									**<0.001****
White	36.9 (136)	71.9 (274)	63.0 (237)	50.0 (189)	74.9 (274)	55.3 (209)	69.1 (257)	70.1 (3,916)	
Black	3.3 (12)	18.1 (69)	25.0 (94)	14.3 (54)	15.3 (56)	20.9 (79)	4.0 (15)	10.3 (578)	
Hispanic	42.0 (155)	3.2 (12)	2.4 (9)	23.3 (88)	3.8 (14)	7.1 (27)	11.8 (44)	9.0 (504)	
Other	17.9 (66)	6.8 (26)	9.6 (36)	12.4 (47)	6.0 (22)	16.7 (63)	15.1 (56)	10.6 (590)	
Preferred position									**<0.001****
JO/Oral/foreplay	2.7 (10)	3.7 (14)	4.0 (15)	4.2 (16)	2.5 (9)	4.8 (18)	1.3 (5)	3.4 (191)	
Top only	14.9 (55)	17.6 (67)	16.0 (60)	17.5 (66)	19.9 (73)	16.7 (63)	18.3 (68)	15.6 (873)	
Bottom only	13.8 (51)	8.4 (32)	8.8 (33)	10.1 (38)	8.7 (32)	13.8 (52)	8.6 (32)	10.7 (597)	
Versatile	49.1 (181)	53.5 (204)	52.4 (197)	53.2 (201)	50.7 (186)	47.1 (178)	60.5 (225)	52.7 (2,945)	
Unlisted	19.5 (72)	16.8 (64)	18.9 (71)	15.1 (57)	18.3 (67)	17.7 (67)	11.3 (42)	17.6 (982)	
Reported HIV status									**<0.001****
Negative	82.7 (305)	82.9 (316)	84.8 (319)	79.6 (301)	80.1 (294)	85.5 (323)	78.2 (291)	83.2 (4,647)	
Positive	4.3 (16)	4.5 (17)	3.5 (13)	4.0 (15)	1.4 (5)	4.0 (15)	9.1 (34)	3.7 (205)	
Unlisted	13.0 (48)	12.6 (48)	11.7 (44)	16.4 (62)	18.5 (68)	10.6 (40)	12.6 (47)	13.2 (736)	
Safer Sex Preference									**0.024***
Safer only	58.0 (214)	57.7 (220)	56.7 (213)	55.3 (209)	54.8 (201)	62.7 (237)	54.0 (201)	55.8 (3,118)	
Bareback	2.4 (9)	6.0 (23)	4.5 (17)	4.5 (17)	2.2 (8)	3.2 (12)	5.4 (20)	4.6 (254)	
Unlisted	39.6 (146)	36.2 (138)	38.8 (146)	40.2 (152)	43.1 (158)	34.1 (129)	40.6 (151)	39.7 (2,216)	
Total (N)	369	381	376	378	367	378	372	5,588	

**p-value<0.05; **p-value<0.001*; †*Chi-square p-value; fisher's exact p-value where an expected cell value was under 5*

Table 2. Reporting of an HIV status: Percentages, odds ratios and 95% CIs by age, race, and sex position in each city (N=5,588)

	Low HIV Prevalence Cities										**Medium HIV Prevalence Cities**					
	Dayton		Des Moines		Providence		Salt Lake City		Syracuse		Louisville		Oklahoma City		Portland	
	HIV (%)	*p-value*† OR (95% CI)	HIV (%)	*p-value*† OR (95% CI)	HIV (%)	*p-value*† OR (95% CI)	HIV (%)	*p-value*† OR (95% CI)	HIV (%)	*p-value*† OR (95% CI)	HIV (%)	*p-value*† OR (95% CI)	HIV (%)	*p-value*† OR (95% CI)	HIV (%)	*p-value*† OR (95% CI)
Age		*p=0.363*		*p=0.401*		*p=0.373*		***p=0.008****		*p=0.904*		***p=0.043****		*p=0.070*		***p=0.008****
18-24	92.7	1.0 (reference)	92.5	1.0 (reference)	86.2	1.0 (reference)	91.5	1.0 (reference)	90.3	1.0 (reference)	92.7	1.0 (reference)	84.2	1.0 (reference)	95.7	1.0 (reference)
25-34	93.9	1.2 (0.3, 4.7)	89.7	0.7 (0.2, 2.1)	86.1	1.0 (0.4, 2.4)	92.2	1.1 (0.4, 3.3)	92.9	1.4 (0.4, 4.4)	85.0	0.4 (0.1, 1.4)	87.6	1.3 (0.6, 3.2)	79.0	**0.2 (0.0, 0.7)***
35-44	87.6	0.6 (0.2, 1.8)	84.2	0.4 (0.1, 1.3)	92.8	2.1 (0.7, 6.0)	90.2	0.9 (0.3, 2.6)	89.9	1.0 (0.3, 2.7)	76.2	**0.3 (0.1, 0.8)***	73.6	0.5 (0.2, 1.1)	91.1	0.5 (0.1, 2.2)
45-64	88.1	0.6 (0.2, 1.9)	88.0	0.6 (0.2, 1.8)	89.9	1.4 (0.5, 4.0)	75.0	**0.3 (0.1, 0.8)***	90.9	1.1 (0.4, 3.0)	83.9	0.4 (0.1, 1.3)	81.8	0.8 (0.4, 1.9)	87.7	0.3 (0.1, 1.5)
Race/ethnicity		*p=0.243*		***p=0.041****		***p=0.006****		*p=0.909*		*p=0.507*		*p=0.571*		*p=0.100*		*p=0.913*
White	89.3	1.0 (reference)	89.4	1.0 (reference)	91.7	1.0 (reference)	88.2	1.0 (reference)	91.0	1.0 (reference)	82.1	1.0 (reference)	82.9	1.0 (reference)	87.3	1.0 (reference)
Black	95.5	2.5 (0.6, 10.9)	96.2	3.0 (0.4, 22.5)	85.0	0.5 (0.1, 1.9)	85.7	0.8 (0.1, 6.9)	100.0	--	84.4	1.2 (0.5, 2.8)	64.7	0.4 (0.2, 0.8)	87.5	1.0 (0.1, 8.5)
Hispanic	100.0	--	82.4	0.6 (0.2, 2.0)	92.1	1.1 (0.3, 3.7)	91.9	1.5 (0.4, 5.2)	77.8	0.3 (0.1, 1.8)	100.0	--	87.0	1.4 (0.4, 4.8)	83.3	0.7 (0.2, 2.6)
Other	82.3	0.6 (0.2, 2.0)	70.8	**0.3 (0.1, 0.7)***	73.6	**0.3 (0.1, 0.5)****	88.9	1.1 (0.4, 3.2)	90.3	0.9 (0.3, 3.2)	89.3	1.8 (0.5, 6.3)	82.9	1.0 (0.4, 2.4)	84.1	0.8 (0.3, 1.8)
Pref. position		*p=0.055*		***p<0.001****		*p=0.065*		***p<0.001****		***p=0.029****		***p=0.011****		***p=0.017****		***p<0.001****
Top only	94.9	1.0 (reference)	94.9	1.0 (reference)	95.9	1.0 (reference)	96.4	1.0 (reference)	95.6	1.0 (reference)	92.3	1.0 (reference)	89.5	1.0 (reference)	95.4	1.0 (reference)
Bottom only	91.3	0.6 (0.1, 3.3)	85.3	0.3 (0.1, 1.4)	86.5	0.3 (0.0, 1.5)	84.6	0.2 (0.0, 1.2)	94.2	0.8 (0.1, 4.8)	73.9	**0.2 (0.1, 0.8)***	79.6	0.5 (0.1, 1.4)	78.6	**0.2 (0.0, 0.7)***
Versatile	91.4	0.6 (0.1, 2.6)	92.0	0.6 (0.2, 2.2)	89.6	0.4 (0.1, 1.6)	91.4	0.4 (0.1, 1.8)	92.5	0.6 (0.1, 2.6)	85.4	0.5 (0.2, 1.5)	84.1	0.6 (0.2, 1.6)	90.9	0.5 (0.1, 1.7)
Unlisted	80.3	0.2 (0.0, 1.0)	69.0	**0.1 (0.0, 0.4)***	81.1	0.2 (0.0, 0.8)	73.4	**0.1 (0.0, 0.5)***	81.2	**0.2 (0.0, 0.9)***	73.1	**0.2 (0.1, 0.7)***	69.9	**0.3 (0.1, 0.7)***	69.6	**0.1 (0.0, 0.4)***
Total	90.0		88.4		88.7		88.6		91.0		83.2		81.5		86.8	

†*Type 3 p-value; *p-value<0.05; **p-value<0.001;* -- indicates that this category was omitted from analysis due to perfect prediction of success or collinearity, driven by small sample sizes in the category

Table 2, continued

	Med. HIV Prevalence Cities				**High HIV Prevalence Cities**										**Total**	
	Santa Ana		St Louis		Detroit		Houston		New Orleans		Philadelphia		San Francisco			
	HIV (%)	*p-value*[†] OR (95% CI)	HIV (%)	*p-value*[†] OR (95% CI)	HIV (%)	*p-value*[†] OR (95% CI)	HIV (%)	*p-value*[†] OR (95% CI)	HIV (%)	*p-value*[†] OR (95% CI)	HIV (%)	*p-value*[†] OR (95% CI)	HIV (%)	*p-value*[†] OR (95% CI)	HIV (%)	*p-value*[†] OR (95% CI)
Age		*p=0.667*		*p=0.409*		*p=0.246*		*p=0.103*		*p=0.395*		*p=0.197*		*p=0.331*		***p=0.004****
18-24	84.0	1.0 (reference)	94.1	1.0 (reference)	87.3	1.0 (reference)	85.2	1.0 (reference)	83.7	1.0 (reference)	87.2	1.0 (reference)	92.3	1.0 (reference)	88.8	1.0 (reference)
25-34	89.7	1.7 (0.7, 3.7)	85.9	0.4 (0.1, 1.4)	87.0	1.1 (0.4, 2.5)	89.0	1.4 (0.6, 3.6)	85.8	1.2 (0.5, 3.1)	93.9	2.2 (0.8, 6.0)	91.1	0.9 (0.2, 4.2)	88.5	1.0 (0.7, 1.2)
35-44	87.2	1.3 (0.6, 3.0)	86.4	0.4 (0.1, 1.4)	84.6	0.8 (0.3, 1.9)	82.8	0.8 (0.3, 2.1)	78.7	0.7 (0.3, 1.9)	89.6	1.3 (0.5, 3.1)	83.9	0.4 (0.1, 2.0)	85.2	**0.7 (0.6, 0.9)**
45-64	68.1	1.2 (0.5, 2.8)	86.7	0.4 (0.1, 1.5)	93.9	2.2 (0.7, 6.9)	76.9	0.6 (0.2, 1.4)	78.2	0.7 (0.3, 1.8)	84.7	0.8 (0.3, 2.0)	87.0	0.6 (0.1, 2.6)	84.2	**0.7 (0.6, 0.9)**
Race/ethnicity		*p=0.093*		*p=0.343*		*p=0.656*		*p=0.438*		*p=0.168*		*p=0.889*		*p=0.829*		*p=0.959*
White	86.0	1.0 (reference)	87.6	1.0 (reference)	89.9	1.0 (reference)	81.0	1.0 (reference)	79.3	1.0 (reference)	88.5	1.0 (reference)	87.6	1.0 (reference)	86.9	1.0 (reference)
Black	83.3	0.8 (0.2, 4.0)	91.3	1.5 (0.6, 3.7)	85.1	0.6 (0.3, 1.3)	83.3	1.2 (0.5, 2.6)	89.3	2.2 (0.9, 5.3)	89.9	1.2 (0.5, 2.7)	80.0	0.6 (0.2, 2.1)	87.0	1.0 (0.8, 1.3)
Hispanic	84.5	0.9 (0.5, 1.7)	75.0	0.4 (0.1, 1.6)	88.9	0.9 (0.1, 7.5)	86.4	1.4 (0.7, 3.0)	78.6	1.0 (0.3, 3.6)	100.0	--	86.4	0.9 (0.4, 2.3)	86.9	1.0 (0.8, 1.3)
Other	95.5	3.4 (1.0, 12.0)	80.8	0.6 (0.2, 1.7)	86.1	0.7 (0.2, 2.0)	89.4	2.0 (0.7, 5.3)	90.9	2.6 (0.6, 11.5)	87.3	0.9 (0.4, 2.1)	89.3	1.2 (0.5, 3.0)	86.1	0.9 (0.7, 1.2)
Pref. position		***p<0.001****		***p<0.001****		***p=0.043****		***p=0.042****		***p=0.001****		***p=0.046****		***p<0.001****		***p<0.001****
Top only	92.7	1.0 (reference)	98.5	1.0 (reference)	85.0	1.0 (reference)	92.4	1.0 (reference)	94.5	1.0 (reference)	92.1	1.0 (reference)	91.2	1.0 (reference)	93.4	1.0 (reference)
Bottom only	92.2	0.9 (0.2, 3.9)	78.1	**0.1 (0.0, 0.5)***	93.9	2.7 (0.6, 13.5)	81.6	0.4 (0.1, 1.2)	84.4	0.3 (0.1, 1.3)	94.2	1.4 (0.3, 6.2)	93.8	1.5 (0.3, 7.6)	86.4	**0.5 (0.3, 0.6)****
Versatile	90.1	0.7 (0.2, 2.2)	87.3	**0.1 (0.0, 0.8)***	90.9	1.8 (0.7, 4.1)	83.1	0.4 (0.2, 1.1)	78.5	**0.2 (0.1, 0.6)***	89.9	0.8 (0.3, 2.2)	89.8	0.8 (0.3, 2.2)	88.5	**0.5 (0.4, 0.7)****
Unlisted	69.4	**0.2 (0.1, 0.6)***	79.7	**0.1 (0.0, 0.5)***	78.9	0.7 (0.3, 1.6)	73.7	**0.2 (0.1, 0.7)***	71.6	**0.1 (0.0, 0.5)***	79.1	**0.3 (0.1, 1.0)***	64.3	**0.2 (0.1, 0.5)***	74.6	**0.2 (0.2, 0.3)****
Total	87.0		87.4		88.3		83.6		81.5		89.4		87.4		86.8	

[†]*Type 3 p-value; *p-value<0.05; **p-value<0.001;* -- indicates that this category was omitted from analysis due to perfect prediction of success or collinearity, driven by small sample sizes in the category

Table 3. Preference for safer sex: Percentages, odds ratios and 95% CIs by age, race, and sex position in each city (N=5,588)

	Low HIV Prevalence Cities										Medium HIV Prevalence Cities					
	Dayton		Des Moines		Providence		Salt Lake City		Syracuse		Louisville		Oklahoma City		Portland	
	Safer sex (%)	*p-value*† OR (95% CI)	Safer sex (%)	*p-value*† OR (95% CI)	Safer sex (%)	*p-value*† OR (95% CI)	Safer sex (%)	*p-value*† OR (95% CI)	Safer sex (%)	*p-value*† OR (95% CI)	Safer sex (%)	*p-value*† OR (95% CI)	Safer sex (%)	*p-value*† OR (95% CI)	Safer sex (%)	*p-value*† OR (95% CI)
Age		*p=0.372*		*p=0.835*		*p=0.579*		*p=0.625*		*p=0.379*		***p=0.035****		*p=0.828*		*p=0.181*
18-24	56.4	1.0 (reference)	52.2	1.0 (reference)	63.8	1.0 (reference)	50.9	1.0 (reference)	65.3	1.0 (reference)	63.6	1.0 (reference)	51.3	1.0 (reference)	68.1	1.0 (reference)
25-34	57.3	1.03 (0.5, 2.1)	57.8	1.3 (0.7, 2.3)	61.2	0.9 (0.5, 1.7)	48.9	0.9 (0.5, 1.7)	52.4	0.6 (0.3, 1.1)	41.9	**0.4 (0.2, 0.8)***	51.6	1.0 (0.6, 1.8)	56.5	0.6 (0.3, 1.2)
35-44	46.9	0.7 (0.4, 1.3)	52.6	1.0 (0.5, 1.9)	60.8	0.9 (0.4, 1.7)	57.1	1.3 (0.7, 2.4)	54.6	0.6 (0.3, 1.2)	53.2	0.6 (0.3, 1.3)	49.1	0.9 (0.5, 1.7)	49.5	0.5 (0.2, 1.0)
45-64	56.8	1.0 (0.5, 1.9)	56.5	1.2 (0.6, 2.2)	53.2	0.6 (0.3, 1.3)	51.6	1.0 (0.6, 1.7)	55.5	0.7 (0.4, 1.2)	58.9	0.8 (0.4, 1.6)	55.6	1.2 (0.7, 2.2)	52.8	0.5 (0.3, 1.1)
Race/ethnicity		*p=0.764*		*p=0.937*		***p=0.004****		*p=0.120*		*p=0.637*		***p=0.030****		*P=0.237*		*p=0.696*
White	53.0	1.0 (reference)	55.1	1.0 (reference)	58.3	1.0 (reference)	50.0	1.0 (reference)	55.2	1.0 (reference)	49.7	1.0 (reference)	48.9	1.0 (reference)	53.6	1.0 (reference)
Black	56.8	1.2 (0.6, 2.2)	57.7	0.5 (0.5, 2.5)	60.0	1.1 (0.4, 2.7)	42.9	0.8 (0.2, 3.4)	66.7	1.6 (0.5, 4.9)	68.9	**2.2 (1.1, 4.4)***	55.9	1.3 (0.6, 2.7)	62.5	1.4 (0.3, 6.2)
Hispanic	71.4	2.2 (0.4, 11.6)	58.8	1.2 (0.4, 3.1)	84.2	**3.8 (1.5, 9.4)***	70.3	2.4 (1.1, 5.0)	55.6	1.0 (0.3, 3.9)	66.7	2.0 (0.4, 11.2)	65.2	2.0 (0.8, 4.8)	61.1	1.4 (0.5, 3.6)
Other	52.9	1.0 (0.4, 2.7)	50.0	0.8 (0.4, 1.9)	49.1	0.7 (0.4, 1.2)	52.8	1.1 (0.6, 2.2)	64.5	1.5 (0.7, 3.2)	67.9	2.1 (0.9, 4.9)	61.0	1.6 (0.8, 3.2)	61.4	1.4 (0.7, 2.6)
Pref. position		***p=0.004****		***p<0.001****		***p=0.002****		***p=0.002****		***p=0.023****		***p=0.003****		***p=0.008****		***p=0.019****
Top only	64.1	1.0 (reference)	59.3	1.0 (reference)	71.4	1.0 (reference)	49.1	1.0 (reference)	46.7	1.0 (reference)	53.9	1.0 (reference)	54.4	1.0 (reference)	69.2	1.0 (reference)
Bottom only	56.5	0.7 (0.3, 1.7)	47.1	0.6 (0.3, 1.4)	51.4	0.4 (0.2, 1.0)	46.2	0.9 (0.3, 2.3)	51.9	1.2 (0.6, 2.7)	50.0	0.9 (0.4, 1.9)	54.6	1.0 (0.5, 2.2)	54.8	0.5 (0.2, 1.2)
Versatile	58.1	0.8 (0.4, 1.6)	61.8	1.1 (0.6, 2.0)	65.6	0.8 (0.4, 1.5)	59.0	1.5 (0.8, 2.7)	63.4	**2.0 (1.0, 3.8)***	60.5	1.3 (0.7, 2.4)	57.1	1.1 (0.6, 2.0)	53.9	**0.5 (0.3, 0.9)***
Unlisted	35.2	**0.3 (0.1, 0.7)****	31.0	**0.3 (0.1, 0.7)****	43.2	**0.3 (0.1, 0.7)***	32.8	0.5 (0.2, 1.1)	44.9	0.9 (0.4, 2.0)	34.3	**0.4 (0.2, 0.9)***	34.9	**0.5 (0.2, 0.9)***	41.1	**0.3 (0.1, 0.7)***
Total	53.8		55.1		59.8		52.1		56.4		53.7		51.9		55.0	

†*Type 3 p-value; *p-value<0.05; **p-value<0.001;*

Table 3, continued

	Med. HIV Prevalence Cities				**High HIV Prevalence Cities**										**Total**	
	Santa Ana		St Louis		Detroit		Houston		New Orleans		Philadelphia		San Francisco			
	Safer sex (%)	*p-value*[†] OR (95% CI)	Safer sex (%)	*p-value*[†] OR (95% CI)	Safer sex (%)	*p-value*[†] OR (95% CI)	Safer sex (%)	*p-value*[†] OR (95% CI)	Safer sex (%)	*p-value*[†] OR (95% CI)	Safer sex (%)	*p-value*[†] OR (95% CI)	Safer sex (%)	*p-value*[†] OR (95% CI)	Safer sex (%)	*p-value*[†] OR (95% CI)
Age		*p=0.106*		***p=0.005***[*]		*p=0.171*		*p=0.336*		*p=0.798*		*p=0.130*		***p=0.018***[*]		***p<0.001***[**]
18-24	61.7	1.0 (reference)	76.5	1.0 (reference)	59.5	1.0 (reference)	66.7	1.0 (reference)	55.8	1.0 (reference)	69.8	1.0 (reference)	65.4	1.0 (reference)	61.5	1.0 (reference)
25-34	64.1	1.1 (0.6, 1.9)	59.6	**0.5 (0.2, 1.0)**[*]	55.7	0.9 (0.5, 1.5)	53.5	0.6 (0.3, 1.1)	51.7	0.8 (0.4, 1.7)	66.7	0.9 (0.5, 1.6)	65.4	1.0 (0.4, 2.5)	56.4	**0.8 (0.7, 1.0)**[*]
35-44	54.7	0.7 (0.4, 1.4)	47.5	**0.3 (0.1, 0.6)**[*]	48.4	0.6 (0.3, 1.2)	53.8	0.6 (0.3, 1.2)	54.3	0.9 (0.5, 1.9)	58.5	0.6 (0.3, 1.1)	47.7	0.5 (0.2, 1.2)	52.4	**0.7 (0.6, 0.8)**[**]
45-64	52.8	0.6 (0.3, 1.0)	58.4	**0.4 (0.2, 0.9)**[*]	64.6	1.2 (0.7, 2.4)	52.9	0.6 (0.3, 1.1)	58.2	1.1 (0.5, 2.2)	54.2	0.2 (0.3, 1.0)	48.7	0.5 (0.2, 1.2)	55.2	**0.8 (0.7, 0.9)**[*]
Race/ethnicity		***p=0.015***[*]		***p=0.004***[*]		***p<0.001***[**]		***p=0.044***[*]		*P=0.060*		***p<0.001***[**]		*p=0.737*		***p<0.001***[**]
White	47.8	1.0 (reference)	54.4	1.0 (reference)	48.1	1.0 (reference)	48.2	1.0 (reference)	52.4	1.0 (reference)	56.0	1.0 (reference)	54.9	1.0 (reference)	52.6	1.0 (reference)
Black	58.3	1.5 (0.5, 5.1)	75.4	**2.6 (1.4, 4.7)**[*]	75.5	**3.3 (2.0, 5.7)**[**]	64.8	**2.0 (1.1, 3.7)**[*]	67.9	1.9 (1.0, 3.5)	77.2	**2.7 (1.5, 4.8)**[*]	40.0	0.5 (0.2, 1.6)	67.5	**1.9 (1.6, 2.3)**[**]
Hispanic	66.5	**2.2 (1.3, 3.5)**[*]	33.3	0.4 (0.1, 1.4)	44.4	0.9 (0.2, 3.3)	62.5	**1.8 (1.1, 3.0)**[*]	35.7	0.5 (0.2, 1.5)	81.5	**3.5 (1.3, 9.5)**[*]	54.6	1.0 (0.5, 1.9)	64.5	**1.6 (1.4, 2.0)**[**]
Other	59.1	1.6 (0.9, 2.9)	57.7	1.1 (0.5, 2.6)	66.7	**2.2 (1.0, 4.5)**[*]	59.6	1.6 (0.8, 3.0)	63.6	1.6 (0.6, 3.9)	57.7	1.1 (0.6, 2.0)	53.6	0.9 (0.5, 1.7)	58.3	**1.3 (1.1, 1.5)**[*]
Pref. position		***p=0.004***[*]		*p=0.328*		*P=0.144*		***p=0.016***[*]		*p=0.515*		***p<0.001***[**]		***p<0.001***[**]		***p<0.001***[**]
Top only	56.4	1.0 (reference)	52.2	1.0 (reference)	58.3	1.0 (reference)	66.7	1.0 (reference)	56.2	1.0 (reference)	60.3	1.0 (reference)	55.9	1.0 (reference)	58.3	1.0 (reference)
Bottom only	62.8	1.3 (0.6, 2.8)	62.5	1.5 (0.6, 3.6)	54.6	0.9 (0.4, 2.0)	60.5	0.8 (0.3, 1.8)	46.9	0.7 (0.3, 1.6)	78.9	**2.5 (1.1, 5.7)**[*]	34.4	**0.4 (0.2, 1.0)**[*]	55.3	0.9 (0.7, 1.1)
Versatile	63.5	1.3 (0.7, 2.5)	60.8	1.4 (0.8, 2.5)	59.4	1.0 (0.6, 1.9)	54.7	0.6 (0.3, 1.1)	56.5	1.0 (0.6, 1.7)	66.9	1.3 (0.7, 2.4)	60.0	1.2 (0.7, 2.0)	60.0	1.1 (0.9, 1.3)
Unlisted	38.9	0.5 (0.2, 1.0)	50.0	0.9 (0.5, 1.8)	43.7	0.6 (0.3, 1.1)	38.6	**0.3 (0.2, 0.7)**[*]	47.8	0.7 (0.4, 1.4)	41.8	**0.5 (0.2, 1.0)**[*]	31.0	**0.4 (0.2, 0.8)**[*]	39.5	**0.5 (0.4, 0.6)**[**]
Total	58.0		57.7		56.7		55.3		54.8		62.70		54.0		55.8	

[†]*Type 3 p-value; *p-value<0.05; **p-value<0.001*;