Published in final edited form as:

AIDS Behav. 2020 October ; 24(10): 2819–2828. doi:10.1007/s10461-020-02831-3.

Immigrant Status and Sexual Orientation Disclosure: Implications for HIV/STD Prevention among Men Who Have Sex with Men in Seattle, Washington

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Abstract

Men who have sex with men (MSM) are disproportionately affected by HIV and may avoid disclosing their sexual preferences to others. With heightened attention on immigrant status in the United States, foreign-born MSM may be particularly concerned about disclosing their sexual orientation. We sought to examine how immigrant status is associated with sexual orientation disclosure among MSM and to assess the impact of disclosure on HIV/STD prevention outcomes stratified by nativity. We analyzed data from the 2014 and 2017 Seattle-area surveys of MSM from the National HIV Behavioral Surveillance (NHBS) system. Foreign-born MSM were less likely than U.S.-born MSM to have disclosed their sexuality to friends who are not gay, lesbian, or bisexual (85.0% vs. 95.5%; $p < .001$) or to family members (80.5% vs. 91.3%; $p < .001$). Further, disclosure to one's health care provider significantly increased the likelihood of having tested for HIV in the past 12 months among foreign-born and U.S.-born MSM. Findings highlight the need to better understand the risks and benefits of disclosure among foreign-born MSM. Future research may explore how responses and reactions to disclosure among foreign-born MSM shape pathways to HIV risk and prevention.

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COMPLIANCE WITH ETHICAL STANDARDS

Conflict of Interest: The authors declare that they have no conflict of interest.

Ethical Approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent: Informed consent was obtained from all individual participants included in the study.

Resumen

Los hombres que tiene sexo con hombres (HSH) son desproporcionadamente afectados por el VIH y pueden evitar revelar sus preferencias sexuales a los demás. Con más atención al estatus de inmigrante en los Estados Unidos, los HSH nacidos extranjeros pueden estar particularmente preocupados por revelar su orientación sexual. Examinamos cómo el estatus inmigrante está asociado con la divulgación de la orientación sexual entre los HSH y evaluamos el impacto de la divulgación en los resultados de la prevención del VIH/SIDA, estratificados por el estatus inmigrante. Analizamos los datos de las encuestas de 2014 y 2017 realizadas en el área de Seattle del sistema de la Vigilancia Nacional del Comportamiento Relacionado con el VIH (National HIV Behavioral Surveillance [NHBS]). Los resultados demostraron que los HSH nacidos extranjeros tenían menos probabilidad que los HSH nacidos en los EE. UU. de divulgar su orientación sexual a los amigos que no son homosexuales, lesbianos, o bisexuales (85.0% vs. 95.5%; $p < .001$) o a los miembros de la familia (80.5% vs. 91.3%; $p < .001$). Además, la divulgación a su proveedor de salud aumentó la probabilidad de haber hecho la prueba de VIH en los 12 meses pasados entre los HSH nacidos extranjeros y nacidos en los EE.UU. Los hallazgos destacan la necesidad de obtener una mejor comprensión de los riesgos y los beneficios de la divulgación entre los HSH nacidos extranjeros. Las investigaciones futuras pueden explorar cómo las respuestas y las reacciones a la divulgación entre los HSH nacidos extranjeros determinen las trayectorias al riesgo y la prevención del VIH.

Keywords

MSM; sexual orientation disclosure; immigrant status; HIV/STD prevention

INTRODUCTION

HIV and other sexually transmitted diseases (STDs) disproportionately affect men who have sex with men (MSM) in the United States (U.S.) (1). As undiagnosed or untreated STDs can increase risk for HIV transmission, recent increases in reported cases of STDs such as gonorrhea and primary and secondary (P&S) syphilis among MSM (2) highlight the urgent need for innovative and contemporary prevention strategies. While talking openly about one's sexual history can facilitate access to appropriate prevention services, some MSM may conceal their sexual orientation or same-sex behaviors from others to avoid stigma or discrimination (3). Concealment of same-sex behaviors can pose challenges to identification for tailored HIV/STD prevention (4) and can also negatively impact other health outcomes, including mental health (5, 6).

Contextual norms and structural stigma are particularly influential in enabling or constraining sexual orientation disclosure as they can shape the behaviors and attitudes that discriminate against individuals who engage in same-sex behaviors (4). Hence, MSM residing in countries with high levels of stigma may be less likely to disclose their sexual orientation and more likely to experience unmet prevention needs (4). The U.S. receives the greatest number of international migrants in the world; and while the factors driving immigration are complex, living in the U.S. often represents an opportunity for foreign-born MSM to reside in a less stigmatizing context than that of their country of origin and to be

more open about their sexual behaviors (7–9). At the same time, foreign-born MSM may encounter discrimination and stressors in the U.S. as members of multiple marginalized groups (10), and fear potential consequences of disclosing their sexual orientation (6, 11, 12).

While immigrant status intersects with several characteristics such as race/ethnicity, cultural features, and socioeconomic status that have been demonstrated to be associated with sexual orientation disclosure among MSM (6), it also confers a distinct identity with unique legal and social implications. Further, heightened attention on immigration policies and immigrant status in the U.S. in recent years may add to concern among foreign-born MSM about disclosing personal information (13).

There is limited research, however, about the role of immigrant status in sexual orientation disclosure among MSM in the U.S. (5, 6). We sought to advance the literature on differences between foreign-born and U.S.-born MSM in sexual orientation disclosure and HIV/STD preventive behaviors. Specifically, we examined the relationship between immigrant status and sexual orientation disclosure among MSM and assessed whether disclosure to different groups (i.e., friends, family, or health care providers) was differentially linked to HIV/STD prevention among foreign-born versus U.S.-born MSM.

METHODS

Data source and population

We used data from the 2014 and 2017 Seattle-area surveys of MSM from the National HIV Behavioral Surveillance (NHBS) system. Detailed description of the NHBS methodology can be found elsewhere (14, 15). In brief, cross-sectional surveys were conducted via venue-based time-space sampling (16). Health department staff recruited potential participants at venues that were identified to be frequented by MSM, including bars, clubs, and organizations. The specific venue, day, and time periods of recruitment were randomly chosen during each month of recruitment (16). Eligible participants residing in the Seattle area were 18 years of age or older, were assigned male sex at birth and identified as male, reported having had oral or anal sex with another man in the last 12 months, and were able to complete the interview in English or Spanish (16). Questions assessed participants' demographics, sexual behaviors, alcohol and drug use, HIV testing and prevention experiences, health conditions, and prevention activities (16). The study procedures for the 2014 Seattle-area surveys of MSM from the NHBS system were reviewed and approved by the Washington State IRB. The study procedures for the 2017 surveys were determined not to be research (i.e. routine public health surveillance) by the Washington State IRB. Analysis of the 2014 and 2017 MSM survey data was determined not to be human subjects research by the University of Washington Human Subjects Division.

Study measures

We assessed participants' sociodemographic characteristics, including age, race/ethnicity, sexual identity, education, employment, income, health insurance, and whether participants had been homeless in the past 12 months. We also examined participants' reports of their

HIV status and of having been diagnosed with an STD (gonorrhea, chlamydia, or syphilis) in the past 12 months. Immigrant status was determined by participants' report of being born in the U.S. (U.S.-born) or in another country (foreign-born). Participants who reported birth in a U.S. territory (i.e. Puerto Rico, American Samoa) were categorized as foreign-born given that those respondents self-identified the territory as their country of birth and not the United States. Further, those respondents may have more cultural and social similarities with other foreign-born participants than with U.S.-born participants (17).

Outcome variables—We assessed the following self-reported HIV/STD prevention behaviors among participants: whether participants had ever tested for HIV; whether participants had tested for HIV in the past 12 months; whether participants had an STD test in the past 12 months; whether participants were aware of pre-exposure prophylaxis (PrEP, also referred to as 'anti-HIV medication' in the 2014 survey); and whether participants had used PrEP in the past 12 months.

Independent variables—Disclosure of sexual orientation was assessed by whether participants indicated that they had disclosed to anyone that they were attracted to or had sex with men. Participants who reported having disclosed their sexual orientation to anyone were asked whether they had disclosed to friends who are not gay, lesbian, or bisexual (GLB), to family members, or to health care providers. Note that, in 2014, only participants who reported identifying as gay or bisexual (97% of 2014 participants) were asked about sexual orientation disclosure.

Analysis

First, we calculated descriptive statistics for sociodemographic characteristics for all participants. We compared sociodemographic characteristics among U.S.-born versus foreign-born MSM using chi-square tests and t-tests. We excluded all participants who self-reported being HIV positive from subsequent analyses given that the majority of HIV prevention outcomes (i.e. HIV testing, PrEP awareness, PrEP use) were only applicable to HIV negative participants. Second, we compared disclosure of sexual orientation, and HIV/STD prevention behaviors among U.S.-born versus foreign-born MSM using chi-square tests and t-tests. Third, we assessed the association between disclosure of sexual orientation and HIV/STD prevention outcomes (testing for HIV in past 12 months, testing for STDs in the past 12 months, being aware of PrEP, and using PrEP in the past 12 months) stratified by nativity. Given that the prevention outcomes were common among the sample, a modified Poisson regression, with robust error variance, was used to derive prevalence ratios (PR) and corresponding 95% confidence intervals (CIs) of each outcome for foreign-born and U.S.-born participants. Modified Poisson regression was used to avoid convergence issues with log-binomial regression (18). Models were adjusted for variables selected *a priori*: race/ethnicity, age, income, education, and health insurance. Due to potentially correlated indicators of disclosure of sexual orientation, we assessed for multicollinearity among these variables. The variance inflation factor (VIF) values were all less than 1.4, and intercorrelation coefficients among disclosure to friends who are not GLB, to family members, and to health care providers were all less than .49, suggesting minimal collinearity among the disclosure variables.

RESULTS

Comparison of sociodemographic and health characteristics

Sample characteristics are presented in Table I. Among the full sample (n=1010), 13.0% of MSM were foreign-born and 86.9% were U.S.-born MSM. Participants who reported being born outside of the U.S. were born in more than 50 different countries, which included Mexico (25.8%), Vietnam (6.0%), the Philippines (4.5%), and Germany (4.5%). The vast majority of participants (99.1%) completed the survey in English. Foreign-born and U.S.-born MSM did not differ significantly across sociodemographic characteristics apart from race/ethnicity and having health insurance (Table I). A higher proportion of U.S.-born MSM identified as non-Hispanic White (73.7%) and reported having health insurance (88.1%) than foreign-born MSM (28.7%, 81.8%, respectively). Groups did not differ significantly in self-reported HIV status or reports of having gonorrhea, chlamydia, or syphilis in the past 12 months (Table I). Participants who reported being HIV positive (n=171) were excluded from subsequent analyses.

Comparison of sexual orientation disclosure

Overall, most MSM reported having disclosed their sexuality to anyone (97.7%). Among participants who had disclosed their sexuality to anyone, foreign-born MSM were less likely than U.S.-born MSM to have disclosed their sexuality to non-GLB friends (85.0% vs. 95.5%; $p<.001$) or to family members (80.5% vs. 91.3%; $p<.001$) (Table II). Further, 87.8% of participants reported having disclosed their sexuality to health care providers overall; this did not differ significantly by nativity.

Comparison of HIV/STD prevention behaviors

Participants overwhelmingly reported having ever tested for HIV (96.9%), almost three-quarters (74.0%) had tested for HIV in the past 12 months, and nearly two-thirds (63.8%) had tested for STDs in the past 12 months with no statistically significant differences between foreign-born or U.S.-born MSM (Table II). A greater proportion of U.S.-born MSM (83.3%) reported being aware of PrEP than foreign-born MSM (67.8%) ($p<.001$). Overall, among participants who reported being aware of anti-HIV medications or PrEP, 18.5% of U.S.-born MSM compared to 21.7% of foreign-born MSM indicated having used PrEP in the last 12 months, but this difference was not statistically significant ($p=0.412$).

Sexual orientation disclosure as predictors of HIV/STD prevention behaviors

Adjusting for sociodemographic covariates, disclosure of sexual orientation to one's health care provider was associated with greater likelihood of having tested for HIV in the past 12 months among foreign-born MSM (adjusted prevalence ratio [aPR]: 1.73, 95% confidence interval [CI]: 1.02–2.94; $p<.05$) and among U.S.-born MSM (aPR: 1.62, 95% CI: 1.28–2.07; $p<.01$) (Table III). Disclosure to one's health care provider was also associated with increased likelihood of having tested for STDs in the past 12 months among foreign-born MSM (aPR: 2.15, 95% CI: 1.04–4.03; $p<.05$). Among U.S.-born MSM, disclosure to one's health care provider was associated with greater likelihood of being aware of PrEP (aPR: 1.21, 95% CI: 1.04–1.40; $p<.01$). Disclosure to one's family and disclosure to one's health

care provider were also associated with increased likelihood of PrEP use in the past 12 months among U.S.-born MSM (aPR: 4.95; 95%CI: 1.30–18.88; $p < .05$; aPR: 4.57, 95%CI: 1.52–13.72; $p < .01$; respectively) (Table III).

DISCUSSION

This study examined differences in sexual orientation disclosure by immigrant status and assessed how disclosure was associated with specific HIV/STD preventive behaviors among MSM in the U.S. Results indicated that foreign-born MSM were less likely to disclose their sexual orientation to family members or non-GLB friends than U.S.-born MSM, pointing to challenges to disclosure among foreign-born MSM with potentially negative implications. This finding adds to extant evidence that sexual minority men may migrate to the U.S. for reasons that are beyond economic, including escaping potential stigma, resulting from family and friends knowing about their sexual orientation (19). Cultural norms or beliefs in foreign-born MSM's countries of origin may be linked to this stigma and contribute to feelings of rejection or shame and experiences of discrimination and/or violence (20). Further, foreign-born MSM may continue to encounter stigma and victimization in the U.S. due to multiple marginalization related to their social identities, which may prevent openness. As concealment of sexual identity can lead to negative self-image and poor mental health (4, 5), greater understanding about whether concealment leads to such outcomes among foreign-born MSM is warranted. For foreign-born MSM, concealment may be a protective behavior to avoid potential victimization and consequent isolation and depression (21). At the same time, migration to the U.S. may have offered foreign-born MSM opportunities to create new social networks and relationships with other sexual minorities with whom they can be open about their sexuality (7). Future research may consider examining shifts in disclosure or openness prior to and post migration and assess whether these shifts are linked to HIV-related behaviors and other health outcomes.

Notably, groups did not differ significantly in sexual orientation disclosure to health care providers, suggesting that foreign-born MSM may feel comfortable disclosing to providers. Further, as some foreign-born MSM may have left less tolerant systems and contexts in their home countries, health care providers in the U.S. may be viewed as more accepting (4, 22). The lack of differences in sexual orientation disclosure to health care providers is reassuring as disclosure to health care providers was predictive of HIV/STD prevention behaviors among foreign-born and U.S.-born MSM. Unsurprisingly, disclosure to health care providers increased the likelihood of having tested for HIV in the past 12 months among foreign-born and U.S.-born MSM and the likelihood of having tested for STDs in the past 12 months for foreign-born MSM. Differences in practices related to STD screening where U.S.- and foreign-born MSM receive care may have contributed to the observed difference in the associations between disclosure to health care providers and having tested for STDs in the past 12 months. While a similarly high proportion of U.S.- and foreign-born MSM reported having a usual source of care (85.0% vs. 83.3%, respectively), the majority of U.S.-born MSM reported receiving this care at a doctor's office or health maintenance organization (51.7% vs. 33.3% among foreign-born), whereas the majority of foreign-born MSM reported a clinic or health center as their source of usual care (58.3% vs. 39.5% among US-born). Hence, the different services offered as part of regular and routine care in these settings may

have contributed to the findings that disclosure to providers was associated with testing for STDs in the past 12 months among foreign-born MSM but not among U.S.-born MSM.

Disclosure to health care providers was significantly associated with greater likelihood of being aware of PrEP and using PrEP in the past 12 months only among U.S.-born MSM. As foreign-born MSM were significantly less likely to be aware of PrEP than U.S.-born MSM, this finding suggests that other factors may present significant barriers or opportunities to PrEP awareness and/or access among foreign-born MSM. Prior research has shown that Hispanic MSM are significantly less likely to be aware of PrEP than non-Hispanic White or Black MSM (23), which may be linked to immigrant status and reduced access to health care as Hispanic MSM are more likely to be foreign-born. Given that barriers to health and HIV care are well-documented among foreign-born groups (24–26), results demonstrate the importance of ensuring that foreign-born MSM are connected with health care providers who can discuss strategies for prevention. Specifically, without the opportunity to engage with providers who can relay information about PrEP in ways that are linguistically and culturally appropriate, foreign-born MSM may still encounter challenges to PrEP access regardless of sexual orientation disclosure (27).

The finding that U.S.-born MSM who disclosed their sexual orientation to family members were more likely to be aware of PrEP than those who did not disclose points to the significance of social and family networks in shaping HIV knowledge and awareness (28, 29). Family is an important source of health information across racial and ethnic groups (27, 30, 31). Notably, the lack of significant associations between disclosure to non-GLB friends or family with HIV/STD prevention outcomes among foreign-born MSM may be indicative of the limited knowledge or awareness of health and HIV prevention resources among foreign-born MSM's friends and family.

On the other hand, disclosure or lack thereof may be predictive of other HIV-related behaviors. For example, previous studies have documented associations between non-disclosure to parents and friends and sexual risk behaviors among MSM (32). Specifically, the attempt to conceal certain behaviors from family and friends may lead MSM to engage in riskier sexual behaviors that place them at greater risk for HIV/STDs (33–35). Further research may examine whether non-disclosure is more directly linked to sexual risk-taking among foreign-born MSM.

Taken together, our findings highlight the need to better understand the risks and benefits of disclosing one's sexual orientation to different groups among foreign-born MSM. Sexual orientation disclosure may be key for HIV prevention as it has shown to be linked to HIV status disclosure (36), which can promote preventive behaviors (36). Further, being out or open to others may lead to greater self-acceptance and opportunities to develop social support networks; yet the responses and reactions to disclosure can also influence how MSM perceive their own sexual orientation (37). As reactions to disclosure can further shape how MSM manage stigma or beliefs about their sexual behaviors, greater understanding of interventions that promote responses to disclosure that positively influence MSM's health and behaviors are urgently needed (19, 38).

Study results should be interpreted with attention to several limitations. The sample may not be representative of MSM in the Seattle area and, due to the sampling methodology, may represent MSM subpopulations who are at greater risk for HIV (39). Surveys conducted by the health department where recruitment occurred at generally gay-associated sites may be less likely to reach participants who experience greater barriers to accessing HIV/STD prevention services or to disclosing their sexual orientation. Further, the survey was only offered in English and Spanish, thereby excluding MSM who do not speak these languages. The few participants who were born in U.S. territories (e.g. Puerto Rico [1.4%] and American Samoa [1.0%]) were categorized as foreign-born—we acknowledge that they are recognized as U.S. citizens and may have distinct experiences and privileges from those who are not born in U.S. territories. Additionally, data on the documentation status of participants, which may be linked to health care seeking behaviors, was not available in the NHBS data. As undocumented immigrants in the U.S. face considerable barriers to health care access (40, 41), the lack of information on participants' citizenship status presents a limitation to the study. We combined data from two waves (2014 and 2017) of the NHBS Seattle-area cross-sectional surveys, and waves may have differed in changes or factors in the environment that shaped survey reports. For example, PrEP was more widely available in 2017 than in 2014. Given the cross-sectional study design, causality cannot be determined. Data were self-reported which may be subject to recall and social desirability biases. While we examined race/ethnicity and language in examining differences between foreign-born and U.S.-born MSM, we were limited by sample size issues to identify differences among foreign-born MSM by racial or ethnic group or language. Notably, language is an important factor that can pose barriers to disclosure that was not formally examined in our study. Further, we did not assess the length of time that foreign-born MSM have been in the U.S., which may be influential in behaviors examined in the study. Additionally, we note that Seattle is an urban metropolitan area with traditionally liberal policies; this context may have influenced the population and variables of interest in our study such as sexual orientation disclosure and the foreign-born MSM who decided to migrate to Seattle (42, 43).

CONCLUSIONS

We found that foreign-born MSM were less likely to disclose their sexual orientation to family and friends than U.S.-born MSM, which may potentially heighten vulnerability to poor health outcomes. Foreign-born MSM were also less likely to be aware of PrEP than U.S.-born MSM. Notably, foreign-born MSM and U.S.-born MSM did not differ in sexual orientation disclosure to health care providers, and disclosure to health care providers was positively associated with having tested for HIV in the past 12 months among participants. Results demonstrate important opportunities for prevention and directions for research. Future research may explore how responses and reactions to disclosure among foreign-born MSM shape pathways to HIV risk and prevention. Greater understanding of MSM's migration trajectory and its intersection with sexual orientation disclosure may enhance efforts to develop and tailor HIV prevention services for foreign-born MSM. Moreover, research may examine the health and service settings that foreign-born MSM tend to access and whether they differ in the provision of HIV prevention services. Finally, strategies to change contextual norms or negative perceptions about sexual orientation and reduce stigma

surrounding same-sex behaviors are critical for overall efforts to reduce risky behaviors and promote HIV and STD prevention.

Acknowledgements:

The authors would like to thank the following individuals for their valuable contributions to the study: Hanne Thiede, Richard Burt, Austin Anderson, Eric Buley, Victor Cruz, Taylor Farley, Lindsay Jenkins, Jake Ketchum, Richard Lamanna, Sofia Lesesne, Adrien LeMoon, Courtney Moreno, Aaron Ness, Rachel Patrick, Carrie Shriver, Zach Tolley, George Ure, Paco Velez, and Erica Wasmund.

Funding: Funding for this research came from cooperative agreements with the Centers for Disease Control and Prevention (5 NU62PS005094-02 for MSM5 and 5 U1BPS003250-04 for MSM4). This research received additional support from the University of Washington/Fred Hutch Center for AIDS Research (NIH P30 AI027757). The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

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Table 1:

Characteristics of men who have sex with men (MSM) participating in the Seattle area National HIV Behavioral Surveillance (NHBS) survey by immigrant status, 2014 and 2017

	Foreign-Born MSM (n=132) N (%)	U.S.-Born MSM (n=878) N (%)	P
Age (years) (M)	35.8 (SE: .89)	37.7 (SE: .41)	.087
Race/ethnicity			<.001**
Hispanic/Latinx	57 (44.2)	117 (13.4)	
Non-Hispanic Black	6 (4.7)	83 (9.5)	
Non-Hispanic White	37 (28.7)	644 (73.7)	
Non-Hispanic Other ^a	29 (22.5)	30 (3.4)	
Sexual Identity			.281
Heterosexual or "straight"	4 (3.0)	17 (1.9)	
Homosexual, gay, or lesbian	103 (78.0)	730 (83.5)	
Bisexual	25 (18.9)	127 (14.5)	
Education			.076
Less than high school	7 (5.3)	28 (3.2)	
High school or GED	13 (9.8)	148 (16.9)	
Some college	45 (34.1)	325 (37.0)	
Bachelor's degree or higher	67 (50.8)	377 (42.9)	
Employment Status			.091
Employed full time	85 (64.4)	526 (59.9)	
Employed part time	19 (14.4)	101 (11.5)	
Student or homemaker	7 (5.3)	378 (4.2)	
Retired, unable to work for health reasons, or other	6 (4.5)	111 (12.6)	
Unemployed	15 (11.4)	103 (11.7)	
Annual Household Income			.577
< \$20,000	29 (22.0)	221 (25.3)	
\$20,000-\$39,999	28 (21.2)	196 (22.5)	
\$40,000-\$59,999	25 (18.9)	128 (14.7)	
\$60,000	50 (37.9)	327 (37.5)	
Health Insurance			.042*
Yes	108 (81.8)	773 (88.1)	
No	24 (18.2)	104 (11.9)	
Ever Homeless (past 12 months)			.195
Yes	12 (9.1)	115 (13.1)	
No	120 (90.9)	763 (86.9)	
HIV Status (self-report)			.370
Positive	17 (12.9)	154 (17.5)	
Negative	109 (82.6)	693 (78.9)	
Unsure	6 (4.5)	31 (3.5)	
Gonorrhea (past 12 months)			.725
Yes	15 (11.4)	109 (12.4)	

	Foreign-Born MSM (n=132) N (%)	U.S.-Born MSM (n=878) N (%)	P
No	117 (88.6)	767 (87.6)	
Chlamydia (past 12 months)			.469
Yes	17 (13.0)	95 (10.8)	
No	114 (87.0)	781 (89.2)	
Syphilis (past 12 months)			
Yes	12 (9.1)	52 (5.9)	.165
No	120 (90.9)	825 (94.1)	

MSM= men who have sex with men, M = mean, SE = standard error.

*
p<.05

**
p<.01

^aOther included Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander

Table II:

Sexual orientation disclosure and HIV/STD prevention behaviors among MSM participating in the Seattle area National HIV Behavioral Surveillance (NHBS) survey by immigrant status (NHBS Seattle, 2014 and 2017)

	Foreign-Born MSM ^a (n=115) N (%)	U.S.-Born MSM ^a (n=724) N (%)	P
Sexual orientation disclosure			
Disclosed to anyone ^b			.296
Yes	109 (96.5)	691 (98.0)	
No	4 (3.5)	14 (2.0)	
Disclosed to friends who are not gay, lesbian, or bisexual ^c			<.001 **
Yes	96 (85.0)	693 (95.5)	
No	17 (15.0)	32 (4.5)	.25
Disclosed to family members ^c			<.001 **
Yes	91 (80.5)	644 (91.3)	
No	22 (19.5)	61 (8.7)	
Disclosed to health care provider ^c			.474
Yes	97 (85.8)	621 (88.2)	
No	16 (14.2)	83 (11.8)	
HIV/STD prevention behaviors			
Ever tested for HIV			.802
Yes	111 (96.5)	701 (97.0)	
No	4 (3.5)	22 (3.0)	
Tested for HIV in past 12 months			.504
Yes	88 (76.5)	529 (73.6)	
No	27 (23.5)	190 (26.4)	
Tested for STD in past 12 months			.903
Yes	74 (64.3)	461 (63.8)	
No	41 (35.7)	262 (36.2)	
Aware of PrEP ^d			<.001 **
Yes	78 (67.8)	603 (83.3)	
No	37 (32.2)	121 (16.7)	
Used PrEP in past 12 months ^e			.412
Yes	25 (21.7)	134 (18.5)	
No	90 (78.3)	590 (81.5)	

MSM= men who have sex with men, STD= sexually transmitted disease, PrEP= pre-exposure prophylaxis

* p<.05

** p<.01

^a Samples excluded participants who self-reported being HIV positive

^b Not asked to participants identifying as heterosexual or straight in 2014

^c Asked to participants who reported having disclosed to anyone

^d In 2014, participants were asked if they were aware of “anti-HIV medication to keep from getting HIV”

^e Participants who reported not being aware of PrEP were coded as “No”

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Table III:

Modified Poisson regression models for HIV/STD prevention behaviors among MSM participatin Behavioral Surveillance (NHBS) survey by immigrant status (NHBS Seattle, 2014^a

	Tested for HIV in past 12 months		Tested for STDs in past 12 months		Aware of PrEP		PrEP Use in past 12 months ^d	
	Foreign-born aPR ^b (95% CI)	U.S.-born aPR ^b (95% CI)	Foreign-born aPR ^b (95% CI)	U.S.-born aPR ^b (95% CI)	Foreign-born aPR ^b (95% CI)	U.S.-born aPR ^b (95% CI)	Foreign-born aPR ^b (95% CI)	U.S.-born aPR ^b (95% CI)
Disclosed to friends who are not gay, lesbian, or bisexual ^c	1.36 (.79–2.33)	1.07 (80–1.44)	2.01 (.84–4.79)	1.74 (.99–3.05)	1.27 (.66–2.46)	.97 (.78–2.22)	3.78 (.87–16.49)	3.85 (.54–27.55)
Disclosed to family members ^c	1.18 (.84–1.68)	1.25 (.99–1.58)	1.31 (.79–2.17)	1.18 (.79–1.76)	1.10 (.75–1.61)	1.1 (.95–1.30)	1.54 (.45–5.25)	4.95* (1.30–18.88)
Disclosed to health care provider ^c	1.73* (1.02–2.94)	1.62** (1.28–2.07)	2.15* (1.04–4.43)	1.47 (.99–2.19)	.95 (.64–1.42)	1.21* (1.04–1.40)	---***	4.57** (1.52–13.72)

aPR = adjusted Prevalence Ratio, MSM= men who have sex with men, STD= sexually transmitted disease, Pr

*
p<.05

**
p<.01

Prevalence ratio not reported because 100% of participants who used PrEP in the past 12 months disclosed exact test: p<.01

^a Analyses excluded participants who self-reported being HIV positive

^b Adjusted for race/ethnicity, age, income, education, and health insurance

^c Referent group: Did not disclose

^d Participants who reported not being aware of PrEP were coded as “No”