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Disclosure of Sexual Behavior Is Significantly Associated With Receiving a Panel of Health Care Services Recommended for Men Who Have Sex With Men

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Abstract

Background: Men who have sex with men (MSM) are at high risk for sexually transmitted infections (STIs). National guidelines recommend that MSM receive HIV, syphilis, gonorrhea, and chlamydia screening at least annually, and hepatitis A and B and human papillomavirus vaccinations. We investigated associations between disclosure of male-male sexual orientation/behavior and receipt of this panel of services.

Methods: Gay, bisexual, and other MSM aged 18 through 26 years were enrolled from health clinics serving lesbian, gay, bisexual, and transgender communities in Los Angeles and Chicago during 2012 to 2014. Participants completed a computer-assisted self-interview regarding health care services, disclosure of sexual orientation/behavior, and recent HIV test results. Proportions receiving recommended care, prevalence ratios (PRs), and 95% confidence intervals (CIs) were calculated using SAS 9.4.

Results: Overall, 817 participants visited a provider within the past year. Of these, 525 (64.3%) had disclosed, and 749 (91.7%) felt they could disclose if important to health. In total, 548 (67.1%) received all STI screenings, and 74 (9.1%) received all vaccinations. Only 105 (12.9%) received any human papillomavirus vaccination. More disclosing participants received all recommended screenings (adjusted PR [aPR], 1.4; 95% CI, 1.3–1.6) and all recommended care components (aPR, 2.2; 95% CI, 1.4–4.3) than nondisclosing participants.

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Publisher's Disclaimer: Disclaimer: 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.

Conflicts of Interest: None declared.

Conclusions: Despite national recommendations, receipt of a complete panel of STI care services was low among young MSM. Vaccine uptake was lower than STI screening. However, most participants visited a health care provider in the past year and most disclosed, suggesting opportunities to improve services. Providers might encourage disclosure by improving sexual history taking and education, which could increase opportunities for MSM to receive recommended care.

Young gay, bisexual, and other men who have sex with men (MSM) are at high risk for acquiring sexually transmitted infections (STIs), including HIV, syphilis, gonorrhea, chlamydia, hepatitis A, hepatitis B, and human papillomavirus (HPV).¹ Despite MSM only accounting for approximately 4% of males in the United States, 67% of all new HIV infections in 2014 occurred in this population.^{2,3} Furthermore, in 2016, MSM accounted for the largest proportion of reported primary and secondary syphilis cases (58.1%).⁴ In a study of more than 25,000 MSM from 9 US jurisdictions in 2016, prevalence of urogenital gonorrhea ranged from 2.8% to 15.3%, and urogenital chlamydia ranged from 4.8% to 10.3%.⁴ Data from the National Notifiable Disease Surveillance System in 2006 showed that MSM made up 9.3% of reported hepatitis A cases and 14.6% of reported hepatitis B cases.⁵ In reports from 2012 to 2014, HPV prevalence among MSM was as high as 64% among HIV-uninfected MSM and higher still among those with HIV infection.⁶ Given the availability of screening tests and treatments for these STIs, and vaccinations against hepatitis A, hepatitis B and HPV, it is important that MSM receive appropriate and timely care.

Young people ages 15 to 24 years account for approximately half of all new STIs annually in the United States.⁷ Furthermore, Healthy People 2020 has identified several STI-related priorities, which include reducing new infections and increasing screening for chlamydia infections in males ages 24 years and younger; reducing of gonorrhea rates among males ages 15 through 44 years; and reducing of primary and secondary syphilis among males.⁸ Given the high prevalence of STIs among young MSM and the specific objectives aimed at STI reduction among males, it is important that health care providers be aware of STI care guidelines and increase opportunities to offer recommended care to susceptible populations.

Recommendations from the Advisory Committee on Immunization Practices (ACIP) and the Centers for Disease Control and Prevention (CDC) Sexually Transmitted Diseases Treatment Guidelines serve as helpful clinical resources to guide STI treatment and prevention strategies nationwide.¹ Among the recommendations are annual screenings and vaccination recommendations for MSM. These guidelines state that all sexually active MSM should receive HIV, syphilis, gonorrhea, and chlamydia screening at least annually; more frequent screening is recommended for MSM with certain high-risk behaviors. Regarding vaccines, ACIP routinely recommends vaccination against hepatitis A and B for children and for special populations including MSM.^{9,10} Vaccination against HPV is also routinely recommended for all men through age 21 years, and through age 26 years for MSM (including men who identify as gay or bisexual, or intend to have sex with men), transgender people, and people with certain immunocompromising conditions (including HIV).^{11,12}

Receipt of this panel of recommended services for MSM (Fig. 1) not only relies on health care access and use, but also disclosure to a health care provider of sexual orientation or sexual behavior, depending on the age of the patient.^{13,14} When recommended services or age ranges are different for MSM than for other men, disclosure is a prerequisite for MSM to receive the complete panel of recommended STI care services. Discussion of sexual history offers a more complete picture of the patient's health and facilitates identification of risk factors for STIs and referral for indicated services.¹⁵ Lack of sexual history taking due to discordant patient-provider comfort levels or perceived sensitivities might impede disclosure and lead to missed opportunities to provide recommended care to MSM.¹⁶ Because little exists on this topic in the published literature, and population-based data are lacking, clinic-based data can offer insight into this topic. To identify opportunities to improve MSM health, we enrolled young MSM at clinics providing health care services for lesbian, gay, bisexual, and transgender (LGBT) communities, and assessed the relationship between disclosure of sexual orientation or sexual behavior to a health care provider with receipt of a panel of health care services recommended for MSM in the United States.

MATERIALS AND METHODS

Participants and Procedures

Consenting gay, bisexual, and other MSM aged 18 through 26 years were enrolled in the cross-sectional Young Men's HPV (YMHPV) study. Two community LGBT health clinics in Los Angeles, CA and in Chicago, IL enrolled participants between July 2012 and August 2014. Participants completed a confidential computer assisted self-interview regarding demographics, sexual behavior, recent HIV test result, and receipt of health care services including vaccinations. Biological specimens were also collected for HPV typing, but laboratory data were not included in this analysis. Inclusion criteria, specimen collection, and specimen processing have been described in detail previously.¹⁷ The study protocol was reviewed and approved by institutional review boards at the participating institutions. For this analysis, we included all participants who reported a previous visit to a doctor, nurse, or other health care provider at any type of health facility in the past 12 months.

Measures

All demographic, health, sexual history and sexual behavior information provided by participants was via self-report. The exposure of interest was disclosure, defined as participants ever discussing their sexual orientation or sexual behavior with their usual health care provider. Each participant was asked, "Have you ever discussed your sexual orientation or sexual behavior with your usual health care provider?" and selected one of the following responses: No, Yes, Don't Know/Not Sure, or No Answer. Number of unique male or female lifetime sex partners, referred to as lifetime sex partners, was based on the sum of male partners and female partners for vaginal, anal, and/or oral sex. Missing values (ie, nonresponses due to skipped questions) were assumed to have the response "other or unknown" rather than zero. The outcome of interest was receipt of a panel of 7 STI care components nationally recommended for MSM, including 4 screening tests and 3 vaccinations (Fig. 1). The panel is comprised of receipt of 4 STI screenings at least annually (ie, HIV, syphilis, gonorrhea, and chlamydia) and 3 vaccines (ie, hepatitis A,

hepatitis B, and HPV). Among recommended care components, HIV screening was defined as reporting having been tested for HIV by any method within the past 12 months. Syphilis, gonorrhea, and chlamydia testing were defined as having been tested for each within the past 12 months, regardless of body site tested. Participants self-reporting vaccination against hepatitis A, hepatitis B, or HPV (any number of doses) were considered vaccinated for the purpose of this analysis.

Statistical Analyses

Descriptive statistics for demographic characteristics and sexual behavior were calculated for all participants. For each characteristic and care component, crude prevalence ratios (PR) and 95% confidence intervals (CI) were calculated for disclosure. To assess the relationship between each of the 7 care components and disclosure, a set of 4 potential confounders (age, race/ethnicity, lifetime sex partners, and recent HIV test result) were chosen *a priori* to include in each multivariable logistic regression model and adjusted PRs (aPRs) were obtained. For the model of disclosure and HIV screening, recent HIV test result was excluded from the adjustment because it was not possible to determine the time order of the most recent HIV test result and HIV screening in the past 12 months. Confidence intervals that did not include the null value of 1.0 were considered significant at $\alpha < 0.05$. All calculations were performed in SAS, version 9.4 (SAS Institute, Cary, NC).

RESULTS

Among 1033 total participants in the Young Men's HPV study, 817 had visited a health care provider in the past year and were included in this analysis. Of these, 600 (73.4%) were aged 22–26 years, and 753 (92.2%) identified as male (Table 1). Among races and ethnicities represented, 307 (37.6%) were Hispanic or Latino of any race, 221 (27.1%) were non-Hispanic white, 146 (17.9%) were non-Hispanic black, and 61 (7.5%) were Asian/Pacific Islander. Most (590, 72.2%) identified as gay or homosexual and 264 (32.3%) reported more than 20 lifetime sex partners. Over half (466, 57.0%) reported having any type of health insurance and 109 (13.3%) reported that their most recent HIV test result was positive. Visit types (not mutually exclusive) included: 322 (39.4%) private doctors or clinics, 227 (27.8%) STD clinics, 218 (26.7%) LGBT clinics, 185 (22.6%) public health clinics, 157 (19.2%) hospitals, 142 (17.4%) emergency rooms, 93 (11.4%) community clinics, 54 (6.6%) none, 29 (3.5%) other, and 24 (2.9%) with no answer. Overall, 749 (91.7%) felt they could discuss their sexual orientation or sexual behavior with their usual health care provider if important to health.

Overall, 525 (64.3%) of participants had ever disclosed their sexual orientation or sexual behavior to a health care provider. Regarding health information, a greater proportion of those reporting a positive HIV test result had disclosed compared to those reporting any other HIV test result (PR, 1.5; 95% CI, 1.3–1.6). Also, a larger proportion of older (ages 22–26 years) compared with younger (ages 18–21 years) participants reported disclosure (PR, 1.2; 95% CI, 1.0–1.3). Other characteristics associated with disclosure included being female/transgender female or other/unknown gender identity compared with male (PR 1.3, 95% CI: 1.1–1.5, and PR 1.3, 95% CI: 1.1–1.6, respectively); having 11–20 or greater than

20 unique lifetime sex partners compared with 5 or fewer partners (PR, 1.2; 95% CI, 1.0–1.5 and PR, 1.3; 95% CI, 1.1–1.5, respectively), and participating in Chicago compared with Los Angeles (PR, 1.1; 95% CI, 1.0–1.2). A smaller proportion of participants identifying as bisexual (PR, 0.8; 95% CI, 0.7–0.9) disclosed compared with those identifying as gay or homosexual.

Among the 817 participants who visited a health care provider in the past year, 548 (67.1%) received all recommended screenings (ie, HIV, syphilis, gonorrhea, and chlamydia) in the past 12 months; among recommended screenings, the most commonly reported was an HIV test (723 [88.5%]), and about three quarters of participants had received each type of screening in the past 12 months (Table 2). Receiving all recommended vaccines (hepatitis A, hepatitis B, and HPV) was reported by 74 (9.1%). Nearly half of participants reported ever receiving hepatitis A vaccination (353 [43.2%]) or hepatitis B vaccination (397 [48.6%]). The least commonly reported was HPV vaccination (105 [12.9%]). Only a small proportion of participants reported receiving all 7 components of the panel of recommended services (58 [7.1%]).

Among the 525 participants who had ever disclosed their sexual behavior or sexual orientation to a health care provider, the care component most commonly received in the past year was HIV screening (489 [93.1%]) and the majority had received all 4 recommended screenings (398 [75.8%]). Hepatitis B vaccination had the greatest coverage (272 [51.8%]); only a small proportion of disclosing participants had received all 3 vaccines (57 [10.9%]). An even smaller proportion of this subgroup had received the entire panel of care components (47 [9.0%]).

Among the 292 participants who had not disclosed their sexual behavior or sexual orientation to a health care provider, patterns were similar but with generally lower coverage. The care component most commonly received in the past year was also HIV screening (234 [80.1%]). About half of these participants received all 4 recommended screenings (150 [51.4%]). The most commonly reported vaccination was against hepatitis B (125 [42.8%]). Receipt of all 3 vaccines (17 [5.8%]) or the entire panel of care components (11 [3.8%]) was very low in this subgroup.

The proportion of participants who received each care component was significantly higher among those who had disclosed their sexual behavior to a health care provider compared with those who had not. In adjusted models controlling for certain demographic characteristics, disclosure remained significantly associated with receipt of each care component except hepatitis A and B vaccinations. Even after adjusting for age, race/ethnicity, lifetime sex partners, and recent HIV test result, disclosure remained significantly associated with receipt of the entire panel of recommended care components (aPR, 2.2; 95% CI, 1.4–4.3).

DISCUSSION

In this HPV prevalence study conducted at community LGBT health clinics, most young gay, bisexual, and other MSM, and transgender women, had visited a health care provider

within the past 12 months. Among these participants, disclosure of sexual behavior or orientation was significantly associated with receiving a panel of health care services recommended for MSM. The proportion of participants who reported receiving all 7 components was 2.2 times as great among those who had ever disclosed compared with those who had not disclosed. Most participants felt they could discuss their sexual orientation or sexual behavior with their health care provider if important to health. The fact that, overall, most participants visited a health care provider within the past 12 months and had disclosed is encouraging. These findings suggest opportunities to improve services in the future.

Despite national recommendations, receipt of a complete panel of recommended STI care services was quite low among study participants. Disclosure was not significantly associated with receipt of hepatitis A or B vaccination; this could be due to the routine recommendation to administer these vaccines in childhood. Although fairly high proportions reported receiving nationally recommended annual STI screening, fewer reported receiving vaccinations, particularly HPV vaccine. Uptake of HPV vaccine was low overall (12.9%), even among participants who disclosed (15.4%). Estimates of HPV vaccination coverage in similar populations have changed over time since ACIP first recommended routine HPV vaccination for males in 2011. Among US MSM aged 18 through 26 years, self-reported uptake of at least 1 dose of HPV vaccine increased from 4.9% in 2011 to 17.2% in 2014 in the National HIV Behavioral Surveillance survey.¹⁸ Also, the National Immunization Survey-Teen, a nationally representative survey of US adolescents aged 13 to 17 years, has shown an increase in HPV vaccination coverage among males, from 20.8% in 2012 to 56.0% in 2016.^{19–21} Human papillomavirus vaccination coverage among MSM may increase in the future as more males are vaccinated at the recommended age in adolescence.

The importance of disclosing sexual behavior or sexual orientation has been highlighted in additional studies. National HIV Behavioral Surveillance data from 2014 showed that 80.4% of MSM had disclosed same-sex sexual attraction or behavior to a health care provider, and the proportion of those who received at least 1 dose of HPV vaccine was significantly higher (aPR, 1.4; 95% CI, 1.1–1.8) among males who disclosed compared with other males.¹⁸ A previous study of 1750 young MSM aged 18 to 29 years found that only 38.4% had disclosed their sexual orientation to a health care provider, but disclosure was significantly associated with a recent health care provider visit and was a mediator between health care provider visit and receipt of certain STI tests or HPV vaccination.¹⁴ Regarding perceptions of sexual history taking, a qualitative study conducted by Haider et al¹⁶ found that lesbian, gay, bisexual, or heterosexual patients and providers held discordant views on sexual orientation data collection in the emergency department and that patients were more willing to disclose than their health care providers realized.

This analysis is subject to at least 4 limitations. First, participants were recruited from LGBT health clinics and therefore may represent MSM more likely to seek care and to disclose sexual behavior compared with MSM who do not visit these types of community health clinics. Because of this potential selection bias, findings potentially overestimate the extent to which disclosure about same-sex sexual orientation occurs in health clinics. Also, participants in 2 US cities are not necessarily representative of MSM across the

United States. Second, the cross-sectional design of this study does not allow confirmation of the time sequence or causality of disclosure with receiving health care services at any type of health care facility. Third, the 12-month recall period for screenings and lifetime recall for receipt of vaccines (specifically, hepatitis vaccines potentially administered in childhood) may contribute to underreporting of care components. Moreover, self-report of vaccinations and screenings are subject to potential biases if patients might not recall or disclose which tests or vaccines they received. Finally, if certain health care settings do not provide all 7 care components (eg, an STD clinic that does not provide HPV vaccine), then the relationship we describe between disclosure and receipt of the panel could be weakened. In such settings, increasing vaccine availability might have a greater impact on vaccine uptake than encouraging disclosure.

Preventive health care for young MSM might be improved through encouraging disclosure of sexual behavior and sexual orientation to health care providers. Among participants in this study, high health care use but overall low receipt of all 7 recommended care services suggest missed opportunities for MSM to disclose. Educating patients about the value of providing an accurate sexual history might be helpful. Additionally, changes in the structure of health care information collection and the way that preventive services are delivered (eg, alerts in electronic medical records based on sexual orientation or sexual behavior) might improve receipt of recommended services. Perhaps more importantly, disclosure could be encouraged by health care providers who are trained in skills for effective sexual history taking, who are aware of national vaccination and STD care guidelines, and who create clinical environments welcoming for all patients, where MSM may be comfortable disclosing their sexual behavior.

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Health Care Services Recommended for MSM	
STD screenings (at least annually)	
<input type="checkbox"/>	HIV
<input type="checkbox"/>	Syphilis
<input type="checkbox"/>	Gonorrhea
<input type="checkbox"/>	Chlamydia
Vaccines	
<input type="checkbox"/>	Hepatitis A
<input type="checkbox"/>	Hepatitis B
<input type="checkbox"/>	Human papillomavirus (HPV)

Figure 1.
Panel of health care services recommended for MSM.

TABLE 1.
 Characteristics of Young Gay, Bisexual, and Other MSM and Transgender Women Who Visited a Health Care Provider in the Past 12 Months, by Disclosure of Sexual Behavior to Health Care Providers—2 Cities, United States, 2012–2014

Characteristics	All Men, n (%)	Ever Disclosed, n (%)	PR (95% CI)
Total	817 (100.00)	525 (64.3)	
Age, years			
18–21	217 (26.6)	123 (56.7)	Reference
22–26	600 (73.4)	402 (67.0)	1.2 (1.0–1.3)
Gender identity			
Male	753 (92.2)	473 (62.8)	Reference
Female/transgender female	41 (5.0)	33 (80.5)	1.3 (1.1–1.5)
Other/unknown*	23 (2.8)	19 (82.6)	1.3 (1.1–1.6)
Race/ethnicity			
Non-Hispanic white	221 (27.1)	127 (57.5)	Reference
Non-Hispanic black	146 (17.9)	109 (74.7)	0.8 (0.6–1.0)
Non-Hispanic Asian/Pacific Islander	61 (7.5)	32 (52.5)	1.1 (0.9–1.3)
Hispanic/Latino	307 (37.6)	201 (65.5)	0.8 (0.7–1.0)
Other/unknown	82 (10.0)	56 (68.3)	1.0 (0.8–1.1)
Education			
High school or below	363 (44.4)	228 (62.8)	Reference
Some college, 2-year or technical degree	176 (21.5)	120 (68.2)	1.1 (1.0–1.2)
4-year degree or equivalent, or higher	268 (32.8)	171 (63.8)	1.0 (0.9–1.1)
Unknown	10 (1.2)	6 (60.0)	1.0 (0.6–1.6)
City of survey completion			
Los Angeles, CA	551 (67.4)	340 (61.7)	Reference
Chicago, IL	266 (32.6)	185 (69.5)	1.1 (1.0–1.2)
Health insurance status			
None or unknown	351 (43.0)	226 (64.4)	Reference
Any insurance	466 (57.0)	299 (64.2)	1.0 (0.9–1.1)
Sexual orientation			
Gay/homosexual	590 (72.2)	403 (68.3)	Reference

Characteristics	All Men, n (%)	Ever Disclosed, n (%)	PR (95% CI)
Bisexual	170 (20.8)	90 (52.9)	0.8 (0.7–0.9)
Straight/heterosexual	22 (2.7)	12 (54.5)	0.8 (0.5–1.2)
Other/unknown	35 (4.3)	20 (57.1)	0.8 (0.5–1.2)
Number of lifetime sex partners			Reference
0–5	149 (18.2)	83 (55.7)	
6–10	108 (13.2)	62 (57.4)	1.0 (0.8–1.3)
11–20	155 (19.0)	105 (67.7)	1.2 (1.0–1.5)
>20	264 (32.3)	186 (70.5)	1.3 (1.1–1.5)
Other/unknown	141 (17.3)	89 (63.1)	1.1 (0.9–1.4)
Most recent HIV test result			
Negative or unknown	708 (86.7)	428 (60.5)	<i>ref</i>
Positive	109 (13.3)	97 (89.0)	1.5 (1.3–1.6)

* Includes transmale, transitioning, androgynous, queer, gender non-conforming, and others.
 Bold font indicates significance ($P < 0.05$).

Receipt of Recommended Health Care Services, by Disclosure of Sexual Behavior to Health Care Providers, among Young Gay, Bisexual, and Other MSM and Transgender Women who Visited a Health Care Provider in the Past 12 Months — 2 Cities, United States, 2012–2014

TABLE 2.

Panel of Recommended Care Components	All Men n (%)	Ever Disclosed n (%)	No Disclosure, n (%)	PR* (95% CI)	aPR (95% CI)
Screening tests in the past 12 months					
HIV	723 (88.5)	489 (93.1)	234 (80.1)	1.2 (1.1–1.2)	1.2 (1.1–1.2) [†]
Syphilis	618 (75.6)	433 (82.5)	185 (63.4)	1.3 (1.2–1.4)	1.3 (1.2–1.4) [‡]
Gonorrhea	616 (75.4)	433 (82.5)	183 (62.7)	1.3 (1.2–1.4)	1.3 (1.2–1.4) [‡]
Chlamydia	612 (74.9)	431 (82.1)	181 (62.0)	1.3 (1.2–1.5)	1.3 (1.2–1.5) [‡]
All 4 recommended screenings	548 (67.1)	398 (75.8)	150 (51.4)	1.5 (1.3–1.7)	1.4 (1.3–1.6) [‡]
Vaccines					
Hepatitis A	353 (43.2)	241 (45.9)	112 (38.4)	1.2 (1.0–1.4)	1.1 (0.9–1.3) [‡]
Hepatitis B	397 (48.6)	272 (51.8)	125 (42.8)	1.2 (1.0–1.4)	1.1 (1.0–1.3) [‡]
HPV	105 (12.9)	81 (15.4)	24 (8.2)	1.9 (1.2–2.9)	1.7 (1.1–2.7) [‡]
Entire panel of 7 recommended care components	58 (7.1)	47 (9.0)	11 (3.8)	2.4 (1.3–4.5)	2.2 (1.4–4.3) [‡]

* PR of proportion who received care component among participants who ever disclosed versus with no disclosure.

[†] aPR adjusted for: age, race/ethnicity, lifetime sex partners.

[‡] aPR adjusted for: age, race/ethnicity, lifetime sex partners, recent HIV test result.

Bold font indicates significance ($P < 0.05$).