Offering of HIV screening to men who have sex with men by their healthcare providers and associated factors

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Abstract

Objective—In 2006, CDC recommended offering HIV testing at least annually to men who have sex with men (MSM), but few studies describe the extent to which routine offering occurred after 2006.

Methods—Data were collected March-April 2009 using an online survey of US MSM aged 18 years. Multivariable logistic regression estimated the odds of being offered HIV testing for demographic factors and for having disclosed male-male sex behavior to the healthcare provider.

Results—Of 4,620 MSM reporting visiting a healthcare provider in the past year, 1,385 (30%) were offered HIV testing. Being offered testing was associated with disclosing male-male sex to the provider (decreasing odds by age from age 20: adjusted odds ratio (aOR) 19.22, 95% confidence interval (CI): 15.79-23.41) and other demographic factors.

Conclusions—Less than one-third of MSM visiting a provider reported being offered HIV testing. Providers should actively assess male-male sex risk to potentially improve offering of HIV screenings.

Keywords

HIV screening; men who have sex with men; CDC guidelines; disclosure

Introduction

HIV disproportionately impacts men who have sex with men (MSM) in the United States, and recent surveillance data indicate that HIV diagnoses are increasing among MSM ages 13-24 in nearly all racial/ethnic groups [1]. These findings emphasize the need for regular testing, especially among young MSM. Testing is the critical step toward reducing HIV transmission, because most persons who become aware of their positive serostatus modify high-risk sexual behaviors and begin antiretroviral or other treatment [2-3].

The Centers for Disease Control and Prevention (CDC) provide guidelines for HIV testing in healthcare settings to assist providers in preventing, identifying, and treating HIV. In 2006, the CDC recommended that HIV screening be offered in an "opt-out" model to all patients ages 13-64. For persons at high-risk for HIV transmission, including MSM, repeat screening is recommended at least annually [3]. Among MSM who have multiple or anonymous sex partners, who engage in illicit drug use concurrent with sexual activity, or whose partners engage in these behaviors, STD screening is indicated every 3 to 6 months[4]. Findings from a 5-city cross-sectional survey of risk behaviors related to HIV

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infection reported that, among HIV-positive MSM, nearly half were unaware of their serostatus; of these, over half had not been tested for HIV within the past 12 months [5].

Many national professional organizations have endorsed CDC's recommendations for routine HIV screening in whole or in part, but important barriers remain to implementation [6-7]. Few studies have examined the extent to which medical providers offer HIV testing to MSM in accordance with CDC guidelines. We used data from a national online HIV prevention survey to describe the prevalence of being offered HIV testing among MSM, and associated factors.

Methods

We conducted an analysis using data collected between March-April of 2009 from an online survey to evaluate the proportion of MSM who were offered testing by a healthcare provider and to determine factors associated with being offered an HIV test by a healthcare provider. A secondary analysis determined factors associated with patients' disclosure of previous male-male sexual activity.

Participants were recruited from MySpace, a large social networking site, using banner ad recruitment. Once linked to the study site, participants were screened for eligibility and provided informed consent. The study protocol was reviewed and approved by Emory University's Institutional Review Board. Eligibility men were age 18 year, male sex, resided in the United States, and had at least one male sex partner in the past year. For this analysis, we included only participants who had visited a doctor, nurse, or other healthcare provider in prior 12 months.

For our secondary analysis, we hypothesized that disclosing a history of male-male sexual activity would be associated with higher odds of being offered HIV testing by a healthcare provider. In addition to disclosure of male-male sexual activity, other independent variables of interest were demographic characteristics (self-reported age, race, ethnicity, and highest level of education), sexual behaviors (self-reported sexual orientation, number of male sexual partners in the previous year, and having a main sexual partner), and ever having been tested for HIV.

Univariate analyses considered crude associations between each exposure variable and being offered an HIV test by a healthcare provider. Statistically significant ($P < 0.05$) independent variables were used in multivariate logistic regression models to identify factors independently associated with being offered HIV testing. Variable selection was accomplished by backward elimination. Interaction terms were considered based on their scientific plausibility to interact with the main outcome variable and were entered into the model individually to assess their significance. One significant interaction was discovered (Wald chi-square = 5.88, $P = 0.02$) between age and disclosure of male-male sexual activity and was included in the final model.

A second model considered crude associations between each exposure variable and disclosure of a history of male-male sexual activity to the healthcare provider. Independent variables significant ($P < 0.05$) in univariate analyses were used in multivariate logistic regression models to identify factors independently associated with disclosure of sex with men to the healthcare provider. No significant interaction terms were discovered. All findings are reported as aORs with 95% CIs. Analyses were conducted with SAS version 9.2.

Results

A total of 9,005 HIV-negative MSM from all 50 states consented and began the survey. 2,514 (28%) persons who started the survey dropped out before the questions on access to healthcare, which were presented late in the survey; this rate of attrition is typical of lengthy online surveys. Of, 6,491 men who provided information on visiting a healthcare provider, 5,010 (79%) reported visiting a medical provider in the 12 months before the interview, of whom 4,620 (92%) completed relevant exposure and outcome survey questions and were included in the analysis. 1,426 did not visit a healthcare provider at least once in the previous year. Those who did not have at least one healthcare visit were significantly (P < 0.001) more likely to be younger, Hispanic, less educated, have fewer sex partners in the previous year, and have never been tested for HIV compared to participants who did have at least one healthcare visit in the previous year. Among participants without at least one healthcare visit, five were excluded due to missing variables; one was missing information on highest level of education and four were missing information regarding ever having been tested for HIV (Table 1).

Of the 4,620 participants included in the analysis, 30% had been offered HIV testing by their medical provider in the previous year. The median age of participants was 21 years, and 60% had attended some college or technical school or had an Associate's degree. Most participants were racial/ethnic minorities, and identified as homosexual or gay. The median number of sex partners in the last year was three, and 75% of participants reported having a main sex partner in the previous year. 76% of all participants had been tested for HIV at least once, and 44% had disclosed their history of male-male sexual activity to their healthcare provider.

In multivariate analysis, being offered HIV testing was associated with disclosing male-male sexual activity to the healthcare provider at all age levels. Younger participants who disclosed their male-male sexual activity had greater odds of being offered testing relative to older participants. Being offered testing was significantly associated with black race and Hispanic ethnicity, with both groups having nearly twice the odds of being offered testing relative to non-Hispanic Whites. Ever having been tested for HIV and a higher number of male sex partners in the past year were both significantly associated with being offered testing (Table 2).

A second multivariate model (adjusting for race/ethnicity, age, ever having been tested for HIV, and number of male sex partners) showed that while black race (aOR 0.96, CI: 0.80, 1.16) was not associated with disclosure of male sex to a healthcare provider, Hispanic participants (aOR 1.24, CI: 1.08, 1.43) were more likely than white non-Hispanic participants to disclose having sex with men to their healthcare provider. Disclosure of sex with men to a healthcare provider was also associated with younger age (aOR 1.30, CI: 1.20, 1.41 per 10 years younger), ever having been tested for HIV (aOR 1.54, CI: 1.37, 1.72), and a higher number of male sex partners in the past year (aOR 1.14, CI: 1.09, 1.20 per quartile increase).

Discussion

Less than one-third of HIV-negative or -unknown MSM in our survey reported being offered HIV testing by their healthcare provider in the year before the interview, suggesting limited adoption of CDC recommendations for HIV screening, even among this high-risk group. Disclosure of male-male sexual activity was the factor most strongly associated with being offered testing at all ages. Being offered testing was also significantly associated with black race and Hispanic ethnicity relative to non-Hispanic whites, and Hispanic participants

were more likely than non-Hispanic whites to disclose previous male-male sexual activity to their healthcare provider.

CDC recommends that clinicians evaluate the STD/HIV risk of all male patients, including establishing the gender of patients' sexual partners [4]; this is especially important because spontaneous disclosure of male sex partners by men may be low. The New York City National HIV Behavioral Surveillance (NHBS) project found that 39% of HIV-negative MSM did not disclose same-sex attraction to their medical providers, and black and Hispanic participants were less likely than non-Hispanic white participants to disclose their sexual orientation [8]. Our findings add information suggesting that younger men and those with more male sex partners have a higher odds of disclosure. Our results are also consistent with CDC estimates of screening for syphilis (36%) and gonorrhea (39%) among MSM [9].

Although MSM may seek voluntary counseling and testing services in community settings, routine offering of HIV screening by medical providers in all healthcare settings is an important safety net to increase awareness of HIV serostatus. The 2006 National Health Interview Survey found that the majority of HIV testing was performed by private doctors/ HMOs (53%) and in hospital/outpatient settings (18%) as opposed to HIV counseling/testing services (5%) or STD clinics (0.1%) [10]. Similarly, the 2003-2005 NHBS found that among 7,057 MSM obtaining an HIV test in the previous year, the most frequently reported test providers were private doctors (36%) [11].

Our study has important limitations. Our respondents were not a representative sample of MSM, and our results cannot be generalized to US MSM. Our data may be subject to recall bias if participants had difficulty remembering their healthcare encounters in the past year, and misclassification of having been offered HIV testing may have occurred. Also, our questions did not establish the temporal relationship between disclosure of male sex partners and offering of HIV testing, so we do not assert causality of the relationship between disclosure of male partners and being offered testing. Finally, we emphasize that our results are not an evaluation of CDC's HIV screening recommendations. Such an evaluation will be better conducted by use of a national probability sample of US residents with a more complete set of data about provider and visit types.

However, these data do provide an important insight into the experience of young internet-using MSM who seek health care, and suggest opportunities for improvement of both dialogue and offering of screening services to MSM. We recommend that health care providers ask all patients about their sexual partners, including sex of partners, and periodically update that information. We also recommend that efforts be made to encourage MSM to disclose that they have male sex partners to their health care providers. Both of these steps may increase the chance that MSM are offered recommended health screenings. In the longer term, efforts to develop and implement curricula to improve the comfort of healthcare providers with discussing same-sex partners, and to routinize the collection of this information may also be important.

Acknowledgments

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Table 1

Demographic characteristics and sexual behaviors among 4,620 sexually active MSM by being offered HIV testing in the previous year by a healthcare provider, United States, 2009

	Visited a healthcare provider			Did not visit a healthcare provider
	Total	Not offered testing	Offered testing	
	(n = 4620)	(n = 3235)	(n = 1385)	(n = 1426)
	No. (%)	No. (%)	No. (%)	No. (%)
Age group, y [*]				
18-29	3850 (83.3)	2689 (83.1)	1161 (83.8)	1249 (87.6)
30-39	501 (10.8)	349 (10.8)	152 (11.0)	142 (10.0.)
40-49	203 (4.4)	144 (4.5)	59 (4.3)	27 (1.9)
50	66 (1.4)	53 (1.6)	13 (0.9)	8 (0.6)
Race/ethnicity [*,†]				
White/Caucasian (non-Hispanic)	2054 (44.5)	1557 (48.1)	497 (35.9)	529 (37.1)
Black/African American (non-Hispanic)	606 (13.1)	407 (12.6)	199 (14.4)	193 (13.5)
Hispanic	1417 (30.7)	901 (27.9)	516 (37.3)	525 (36.8)
Other/Unknown	543 (11.8)	370 (11.4)	173 (12.5)	179 (12.6)
Highest level of education [*]				
College, post graduate, or professional school	770 (16.7)	536 (16.6)	234 (16.9)	149 (10.5)
Some college, Associate's degree, or Technical school	1983 (43.0)	1418 (43.9)	565 (40.9)	606 (42.5)
High school or GED	1506 (32.6)	1042 (32.2)	464 (33.6)	540 (37.9)
Some high school or less/Other	355 (7.7)	236 (7.3)	119 (8.6)	130 (9.1)
Sexual orientation [‡]				
Homosexual, Gay	3370 (72.9)	2315 (71.6)	1055 (76.2)	1085 (76.1)
Heterosexual, Straight	29 (0.6)	22 (0.7)	7 (0.2)	7 (0.5
Bisexual	1122 (24.3)	829 (25.6)	293 (21.2)	312 (21.9)
Prefer not to answer/Other	99 (2.1)	69 (2.1)	30 (2.2)	22 (1.5)
Had a male main sex partner [†]				
Yes	3507 (75.9)	2379 (73.5)	1128 (81.4)	1003 (70.3)
No	1113 (24.1)	856 (26.5)	257 (18.6)	423 (29.7)
Number of male sex partners in previous year [*,†]				
1	1073 (23.2)	815 (25.2)	258 (18.6)	423 (29.7)
2-5	2134 (46.2)	1541 (47.6)	593 (42.8)	661 (46.4)
6-9	580 (12.6)	383 (11.8)	197 (14.2)	158 (11.1)
10	833 (18.0)	496 (15.3)	337 (24.3)	184 (12.9)
Ever tested for HIV [*,†]				
Yes	3496 (76.0)	2223 (68.9)	1273 (92.5)	757 (53.2)
No	1063 (23.1)	968 (30.0)	95 (6.9)	637 (44.8)

	Visited a healthcare provider			Did not visit a healthcare provider
	Total	**Not offered testing**	**Offered testing**	
	(n = 4620)	**(n = 3235)**	**(n = 1385)**	**(n = 1426)**
	No. (%)	**No. (%)**	**No. (%)**	**No. (%)**
Prefer not to answer/Don't know	44 (1.0)	36 (1.1)	8 (0.6)	28 (2.0)
Disclosure of male-male sexual activity to healthcare provider [†]				
Yes	2054 (44.5)	866 (26.8)	1188 (85.8)	-
No	2566 (55.5)	2369 (73.2)	197 (14.2)	-

[*] Significant (P <0.001) difference between those with a healthcare provider visit and without

[†] Significant (P <0.001) difference between those offered testing and not offered testing

[‡] Significant (P >0.05) difference between those offered testing and not offered testing

Table 2

Factors associated with being offered HIV testing in the previous year by a healthcare provider among 4,620 sexually active MSM, United States, 2009

	OR (95% CI)*	P Value (two tailed)
Disclosure of sex with men to healthcare provider by age		0.02
Age = 20		
No	1.0 (Reference)	
Yes	19.22 (15.79, 23.41)	
Age = 30		
No	1.0 (Reference)	
Yes	14.45 (11.46, 18.21)	
Age = 40		
No	1.0 (Reference)	
Yes	10.86 (7.06, 16.70)	
Age = 50		
No	1.0 (Reference)	
Yes	8.16 (4.22, 15.77)	
Ever tested for HIV		
No	1.0 (Reference)	
Yes	1.14 (1.04, 1.26)	0.01
Race/ethnicity		
White/Caucasian (non-Hispanic)	1.0 (Reference)	
Black/African American (non-Hispanic)	1.87 (1.47, 2.39)	<0.001
Hispanic	1.88 (1.56, 2.25)	<0.001
Number of male sex partners		
Per quartile increase	1.13 (1.06, 1.20)	<0.001

*Adjusted for all other covariates in the table including individual first order terms involved in the interaction (disclosure of sex with men to healthcare provider and age)